BEFORE THE

INDEPENDENT CITIZENS' OVERSIGHT COMMITTEE
TO THE
CALIFORNIA INSTITUTE FOR REGENERATIVE MEDICINE
ORGANIZED PURSUANT TO THE
CALIFORNIA STEM CELL RESEARCH AND CURES ACT

REGULAR MEETING

LOCATION: MARRIOTT WATERFRONT SFO
1800 OLD BAYSHORE HIGHWAY
BURLINGAME, CALIFORNIA

DATE: JULY 26, 2012
9 A.M.

REPORTER: BETH C. DRAIN, CSR
CSR. NO. 7152

BRS FILE NO.: 91119

I N D E X

SAN FRANCISCO, CALIFORNIA; THURSDAY, JULY 26, 2012

9 A.M.

CHAIRMAN THOMAS: EVERYBODY PLEASE TAKE YOUR SEATS. GOOD MORNING, EVERYBODY. WE'D LIKE TO CALL THIS MEETING OF THE INDEPENDENT CITIZENS OVERSIGHT COMMITTEE OF THE CALIFORNIA INSTITUTE OF REGENERATIVE MEDICINE TO ORDER. MARIA, WOULD YOU PLEASE LEAD US IN THE PLEDGE OF ALLEGIANCE.

(THE PLEDGE OF ALLEGIANCE.)

CHAIRMAN THOMAS: MARIA, PLEASE CALL THE ROLL.

MS. BONNEVILLE: ROBERT PRICE.

DR. PRICE: HERE.

MS. BONNEVILLE: DAVID BRENNER.

DR. BRENNER: HERE.

MS. BONNEVILLE: JACOB LEVIN.

DR. LEVIN: HERE.

MS. BONNEVILLE: CLAIRE POMEROY.

DR. POMEROY: HERE.

MS. BONNEVILLE: MARCY FEIT.

MS. FEIT: HERE.

MS. BONNEVILLE: TED KRONTIRIS.

DR. KRONTIRIS: HERE.

MS. BONNEVILLE: LEEZA GIBBONS.

MS. GIBBONS: HERE.

MS. BONNEVILLE: MICHAEL GOLDBERG. SAM HAWGOOD.

DR. HAWGOOD: HERE.

MS. BONNEVILLE: STEPHEN JUELSGAARD.

DR. JUELSGAARD: HERE.

MS. BONNEVILLE: SHERRY LANSING.

MS. LANSING: HERE.

MS. BONNEVILLE: BERT LUBIN.

DR. LUBIN: HERE.

MS. BONNEVILLE: MICHAEL MARLETTA. SHLOMO MELMED.

DR. MELMED: HERE.

MS. BONNEVILLE: PHIL PIZZO. FRANCISCO PRIETO.

DR. PRIETO: HERE.

MS. BONNEVILLE: ROBERT QUINT. DUANE ROTH.

MR. ROTH: HERE.

MS. BONNEVILLE: JOAN SAMUELSON.

MS. SAMUELSON: HERE.

MS. BONNEVILLE: DAVID SERRANO-SEWELL.

MR. SERRANO-SEWELL: HERE.

MS. BONNEVILLE: JEFF SHEEHY.

MR. SHEEHY: HERE.

MS. BONNEVILLE: JONATHAN SHESTACK.
MR. SHESTACK: HERE.
MS. BONNEVILLE: OSWALD STEWARD.
DR. STEWARD: HERE.
MS. BONNEVILLE: JONATHAN THOMAS.
CHAIRMAN THOMAS: HERE.
MS. BONNEVILLE: ART TORRES.
MR. TORRES: HERE.
MS. BONNEVILLE: KRISTINA VUORI.
DR. VUORI: HERE.
MS. BONNEVILLE: JAMES ECONOMOU.
DR. ECONOMOU: HERE.
MS. BONNEVILLE: CARMEN PULIAFITO.
CHAIRMAN THOMAS: LET THE RECORD SHOW DEAN POMEROY JUST TOOK HER SEAT.
DR. POMEROY: HERE.
CHAIRMAN THOMAS: THANK YOU. THANK YOU TO EVERYBODY WHO HAS COME TO WHAT PROMISES TO BE A VERY INTERESTING MEETING COVERING VERY SERIOUS SUBJECT MATTER. WE APPRECIATE EVERYBODY'S VERY HIGH LEVEL OF INTEREST AND LOOK FORWARD TO A ROBUST DISCUSSION ON THE ITEMS ON TODAY'S AGENDA.
LET ME BEGIN BRIEFLY WITH A CHAIR'S REPORT. MARIA, MR. GOLDBERG IS IN THE HOUSE, AND DR. STEWARD IS IN THE HOUSE AS WELL. WELCOME,

GENTLEMEN.

THE PAST TWO MONTHS SINCE OUR LAST BOARD MEETING HAD A NUMBER OF VERY INTERESTING DEVELOPMENTS. LET ME JUST START BRIEFLY BY DESCRIBING TO THE BOARD DISCUSSIONS WE HAVE HAD ON A MATTER NEAR AND DEAR TO EVERYBODY'S HEART WHICH IS CONTINUED FUNDING FOR CIRM OPERATIONS.

WE HAVE HAD MULTIPLE DISCUSSIONS WITH THE STATE TREASURER'S OFFICE AND THE DEPARTMENT OF FINANCE WHEREBY WE HAVE SECURED A FUNDING REGIMEN GOING FORWARD THAT WILL FULLY MEET OUR NEEDS. AS YOU MAY RECALL FROM PREVIOUS DISCUSSION, WE HAD A SIGNIFICANT BALANCE OF OUTSTANDING BOND PROCEEDS THAT THE GOVERNOR'S OFFICE HAS HIGHLIGHTED TO US AND TO A BUNCH OF OTHER AGENCIES THAT HAD SURPLUS PROCEEDS AS WELL. THEY'VE ASKED FOR ALL OF THE AGENCIES IN QUESTION TO SPEND DOWN THOSE PROCEEDS BEFORE FURTHER ISSUANCE OF BONDS ON THEIR BEHALF.

WE HAVE DUTIFULLY DONE THAT, AND WE'RE AT THE POINT NOW WHERE ON AN ONGOING BASIS WE'RE GOING TO BE FUNDED, NOT BY BOND PROCEEDS IMMEDIATELY, BUT BY COMMERCIAL PAPER DRAWN DOWN BY THE STATE TREASURER'S OFFICE WHICH IS AVAILABLE TO US AT SEVERAL DAYS' NOTICE AND WILL BE DONE ON A MONTHLY BASIS TO MEET OUR ONGOING FUNDING NEEDS.

IN ADDITION TO THE MONTHLY FUNDING, WE'RE GOING TO HAVE A COUPLE OF MONTHS OF ADDITIONAL CUSHION JUST AS A SAFEGUARD, THOUGH WITH COMMERCIAL PAPER, BECAUSE YOU CAN ACCESS THE MARKET SO QUICKLY, UNLIKE AS IS THE CASE WITH THE BOND MARKET WHICH YOU CAN ONLY TAP INTO TWICE A YEAR. WE ARE IN A VERY GOOD SPOT WHERE WE'LL BE ABLE TO ENSURE THAT WE HAVE ALL THE FUNDING WE NEED AT EACH MONTHLY INTERVAL GOING FORWARD.

AT CERTAIN POINTS DOWN THE ROAD, THE TREASURER'S OFFICE WILL REFINANCE THE OUTSTANDING COMMERCIAL PAPER IN BOND ISSUES, WHICH IS FINE. WE'RE AGNOSTIC AS TO THAT. WE DON'T CARE. WE WILL HAVE OUR MONEY. THAT IS HOW THE STATE TREASURER'S OFFICE WILL PROCEED WITH THE MANAGEMENT OF THE DEBT THAT IT HAS. BUT THE MAIN MESSAGE TO ALL HERE IS THAT WE ARE IN A VERY GOOD SITUATION WHERE WE'LL BE BORROWING THROUGH COMMERCIAL PAPER, WHICH, BY THE WAY, BECAUSE OF ITS SHORT DURATION, HAS THE LOWEST POSSIBLE INTEREST RATE. SO IT'S A WIN FOR US, IT'S A WIN FOR THE STATE, AND WE ARE VERY PLEASED THAT THAT HAS BEEN PUT IN PLACE.

WOULD LIKE TO THANK LYNN HARWELL WHO HAS BEEN A PRINCIPAL CONTACT WITH THE STATE TREASURER'S OFFICE AND DOF, AND TOGETHER WE HAVE PUT THIS PLAN

TOGETHER. SO I JUST WANTED EVERYBODY TO BE AWARE THAT WE ARE IN VERY GOOD SHAPE AS FAR AS FUNDING.

IN ADDITION TO THAT, AS A NUMBER OF YOU KNOW AND ATTENDED, WE HAD THE 10TH ANNUAL ISSCR MEETING IN YOKOHAMA, WHICH IS A FIVE- TO SIX-DAY AFFAIR, WHICH BROUGHT TOGETHER, AS ALWAYS, THE WORLD'S TOP SCIENTISTS IN THE STEM CELL ARENA. THERE WERE MANY PRESENTATIONS OF GREAT NOTE, AND THERE WERE, IN ADDITION TO BEING ABLE TO HEAR THE LATEST AND MOST CUTTING-EDGE WORLDWIDE, WE ALSO TOOK THE OPPORTUNITY THROUGH DR. TROUNSON TO HAVE A SERIES OF MEETINGS WITH A NUMBER OF OUR COLLABORATIVE FUNDING PARTNERS TO GET THE STATUS REPORT ON HOW WE ARE PROCEEDING WITH ALL THE RELATIONSHIPS THAT WE HAVE BOTH INTERNATIONALLY AND DOMESTICALLY THROUGH, I BELIEVE, ALAN, 21 -- 26 -- YOU JUST KEEP ADDING THEM RIGHT AND LEFT -- 26 COLLABORATIVE FUNDING AGREEMENTS.

AND WE'D LIKE TO THANK NANCY KOCH, WHO WILL BE LEAVING THE AGENCY TO GO BE GENERAL COUNSEL FOR THE GORDON AND BETTY MOORE FOUNDATION, WHICH IS A TERRIFIC OPPORTUNITY, LIKE TO THANK HER FOR HER MANY YEARS OF WORK IN CONNECTION WITH THE COLLABORATIVE FUNDING AGREEMENTS AND RELATIONSHIPS THAT SHE HAS BUILT, WHICH HAS BEEN VERY PIVOTAL TO

THE SUCCESS OF THOSE PROGRAMS.

WE HAD ONE LITTLE INTERESTING, VERY INTERESTING ADDITIONAL THING HAPPEN IN JAPAN. SHENYA YAMINAKA WHO IS, OF COURSE, THE GREAT, RENOWNED WITH HIS IPS WORK AND WAS SORT OF THE HONORARY CHAIR OF THE 10TH ANNIVERSARY OVER THERE, WAS ABLE TO GET THE EMPEROR AND EMPRESS OF JAPAN TO ACTUALLY COME TO THE 10TH ANNIVERSARY CELEBRATION, WHICH WAS A GREAT THRILL FOR EVERYBODY WHO WAS THERE. THEY WERE VERY INTERESTED AND ENGAGED, AND IT WAS REALLY SOMETHING THAT WAS A VERY NOVEL THING FOR ALL IN ATTENDANCE, AND WE GREATLY APPRECIATED THAT OPPORTUNITY.

IN ADDITION TO ISSCR, WE HAD THE ANNUAL BIO CONVENTION BACK IN BOSTON WHICH BROUGHT TOGETHER LEADERS OF INDUSTRY. AS ALWAYS, A VERY GOOD NETWORKING OPPORTUNITY. IN THE MIDST OF THAT, THE ALLIANCE FOR REGENERATIVE MEDICINE HELD A ONE-DAY FORUM WHERE THEY TALKED ABOUT ISSUES CONNECTED TO STEM CELLS WITH MORE OF AN EMPHASIS ON GETTING TO THE CLINIC. I THINK THAT WAS VERY INTERESTING. DR. FEIGAL DID A WONDERFUL JOB HOSTING ONE OF THE EARLY PANELS WHICH WAS PARTICULARLY NOTEWORTHY SINCE SHE HAD JUST COME FROM JAPAN AND WAS 12 HOURS REMOVED, AND YOU NEVER WOULD HAVE KNOWN IT. SHE WAS

ENTIRELY COGENT, ARTICULATE, AS ALWAYS. SO THAT WAS A VERY INTERESTING DAY'S SESSION BACK THERE.

WE'VE HAD, OF COURSE, SINCE OUR LAST MEETING TWO MORE GRANTS WORKING GROUP MEETINGS. I SHOULD NOTE AS AN ASIDE THAT THE YEAR 2012 WILL GO DOWN AS ONE OF THE MOST ACTIVE IN AGENCY HISTORY IN TERMS OF THE NUMBER OF RFA'S REVIEWED BY GRANTS WORKING GROUPS ACROSS THE FUNDING SPECTRUM OF ALL THE PROGRAMS THAT CIRM HAS. SINCE OUR LAST MEETING, WE HAD SUCH MEETINGS FOR THE RESEARCH LEADERSHIP AWARD AND FOR OUR FOURTH BASIC BIO RFA. AS ALWAYS, THESE MEETINGS FEATURED VERY IN-DEPTH ANALYSIS AND DISCUSSION AND, I THINK, ARRIVED AT VERY GOOD RESULTS.

LASTLY, I'D JUST LIKE TO COMMENT ON ONE OF OUR, I THINK, GREATEST PROGRAMS, WHICH IS THE BRIDGES PROGRAM. WE BROUGHT TOGETHER THE BRIDGES STUDENTS FROM AROUND THE STATE WHO CAME TO HEAR A NUMBER OF PRESENTATIONS AND TO DISPLAY THEIR POSTERS ON WORK THAT THEY'RE DOING IN CONNECTION WITH THEIR FUNDED FELLOWSHIPS AT OUR VARIOUS INSTITUTIONS. THIS WAS A WONDERFUL EVENT. THE ENTHUSIASM AND INTEREST LEVEL OF THE STUDENTS IS PALPABLE.

WE NOW HAVE, AS I UNDERSTAND IT, PUT OUT ROUGHLY $50 MILLION THROUGH THE PROGRAM AND HAVE

OVER THE YEARS FUNDED OVER 350 BRIDGES SCHOLARS.

AND IN TALKING TO A NUMBER OF PEOPLE, WE THINK THAT THIS IS, AT THE END OF THE DAY, GOING TO BE SOME OF OUR MONEY THAT IS BEST SPENT BECAUSE WE'RE TRAINING THE FUTURE STEM CELL SCIENTISTS OF TOMORROW. DR. LUBIN GAVE A GREAT TALK AT THAT MEETING AND I THINK REALLY ENJOYED HIS TIME THERE. AND SO IT'S A TESTIMONY TO THE INTEREST THAT HAS BEEN GENERATED BY CIRM AND WHAT WE DO THAT WE HAVE SO MUCH INTEREST BY THE STUDENTS IN THIS. AND I THINK THAT WILL CONTINUE TO BE ONE OF OUR HALLMARK PROGRAMS AS WE PROGRESS DOWN THE ROAD. SO BUSY COUPLE MONTHS.

THAT CONCLUDES MY CHAIRMAN'S REPORT. I'D LIKE TO TURN IT OVER NOW TO DR. TROUNSON FOR THE PRESIDENT'S REPORT.

DR. TROUNSON: THANK YOU VERY MUCH, CHAIR. I'M GOING TO BE A LITTLE BIT BRIEF OR BRIEF AS I CAN TODAY. SO, CHAIR, I WONDER IF I CAN INTRODUCE TO THE BOARD A VISITOR FROM ANDALUCIA. I HOPE I GOT THAT PRONOUNCED CLOSE ENOUGH. NATTI QUENDI, SHE'S HERE. STAND UP, NATTI.

(APPLAUSE.)

DR. TROUNSON: NATTI IS AN M.D. PH.D. AND IS THE REPRESENTATIVE WHO WORKS WITH US FROM

ANDALUCIA. SHE'S OBVIOUSLY GOING TO HAVE SOME INTERESTING TALKS WITH US TODAY, AND WE'LL ALSO BE INVOLVED, I GUESS, IN SOME FURTHER DISCUSSIONS WITH STAFF.

I'VE BEEN AWAY IN MELBOURNE. I'M GOING TO BRIEFLY SHOW YOU A FEW SLIDES ON WHAT I THINK IS REALLY QUITE INCREDIBLY INTERESTING NANOTECHNOLOGY BECAUSE WE HAVEN'T REALLY EMBRACED NANOTECHNOLOGY, AND I WANTED TO GIVE YOU A LITTLE BIT OF A FLAVOR FOR WHAT I'VE BEEN DOING FOR TWO WEEKS DOWN IN SYDNEY.

BEFORE I DO THAT, I'VE CUT DOWN MY PRESENTATION, BUT YOU HAVE IN YOUR NOTES SOME MATERIAL ON MEETINGS THAT HAVE HAPPENED. I WANT TO DRAW YOUR ATTENTION TO THE ISSCR. AND, CHAIR, I WONDER, WE HAVE REPORTS, DIGESTED REPORTS, FROM THE SCIENCE OFFICERS. SO IF THE BOARD WOULD LIKE TO HAVE THAT ABOUT 20 PAGES OF SPECIFIC DOWNLOADS FROM OUR SCIENCE OFFICERS, I'M QUITE PREPARED TO GET THAT CIRCULATED TO THE BOARD. OR IF YOU REQUEST MY OFFICE SPECIFICALLY, I'LL SEND IT TO YOU.

CHAIRMAN THOMAS: DR. TROUNSON, I THINK THAT'S AN EXCELLENT IDEA. I'M SURE THE BOARD WOULD LIKE TO SEE THAT REPORT. THANK YOU.

DR. TROUNSON: SO WITH THOSE THINGS, YOU

CAN READ THAT AT YOUR LEISURE. AND, AS JON SAID, IT'S BEEN VERY, VERY INTERESTING.

WELL, THE NANOTECHNOLOGY I WANT TO QUICKLY TALK TO YOU ABOUT IS, FIRST, THE ENCAPSULATION, STEM CELL TRACKING, MAGNETIC-BASED NANOFECTION; THAT IS, WAYS OF INTRODUCING GENES INTO CELLS, AND NANOPARTICLE GROWTH FACTOR RELEASE, BIOMATERIALS OR BY NANOMATERIALS USED IN REGENERATIVE MEDICINE TARGETING CANCER STEM CELLS. AND I WANT TO SHOW YOU A VERY BRIEF VIDEO OF HOW TO CLEAR CLOTS WITH NANOPARTICLES WHICH MAY BE VERY SIGNIFICANT FOR A NUMBER OF US.

IF YOU LOOK AT THE ENCAPSULATION TECHNOLOGY, AND WE USE THIS IN BIOSITE IN A DIFFERENT WAY, BUT THERE ON THE LEFT-HAND SIDE, YOU CAN ACTUALLY ENCAPSULATE A CELL WHICH PREVENTS THE IMMUNE CELLS FROM ATTACKING THOSE CELLS. SO IN MANY ALLOGENEIC THERAPIES, THE BODY'S OWN CELLS WILL TRY AND ATTACK THE CELLS THAT YOU PUT IN, EMBRYONIC DEVELOPED CELLS OR MAYBE EVEN IPS CELLS. SO IF YOU ENCAPSULATE THEM, YOU CAN PREVENT THAT. EITHER PUT A MATRIX IN THERE OR YOU CAN PUT A LIQUID IN THERE OR YOU CAN JUST COAT THE CELLS, AND YOU CAN ENABLE THOSE CELLS TO GROW WITHIN THOSE PARTICLES, SO ONE OR A FEW OR MANY CELLS WITHIN. THIS TECHNOLOGY IS

REALLY MOVING VERY WELL.

ON THE BOTTOM I SHOW YOU WORK ON STEM CELL TRACKING WHERE YOU CAN LABEL PARTICLES AND INTRODUCE THEM INTO THE GREEN. THIS IS A GREEN STEM CELL. THESE ARE THE PARTICLES THAT HAVE BEEN -- THEY'RE LABELED WITH IRON OR GOLD. THEY'RE TAKEN UP BY THE CELL IN A CULTURE DISH, AND THEN YOU CAN INJECT THEM INTO THE PERSON AND FOLLOW THESE CELLS EVERYWHERE THROUGHOUT THE BODY.

SO THESE THINGS ARE HAPPENING. WE CAN LOOK AT MAGNETIC NANOPARTICLES HERE THAT YOU CAN TAKE, SAY, THE GENES TO CREATE IPS CELLS, TAKE YOUR SOMATIC CELLS, BLOOD CELLS, OR SKIN CELLS AND TOGETHER THE DNA WILL ATTACH TO THESE PARTICLES. AND THEN WHEN YOU MIX THESE PARTICLES TOGETHER WITH CELLS IN A CULTURE DISH USING MAGNETIC-BASED NANOFECTION, YOU CAN DRAW THAT DNA INTO THE CELL. THE PARTICLES DON'T HAVE ANY TROUBLE DRAWING THEM INTO THE CELL. SO THIS IS A NANOFECTION OR A WAY OF CREATING CHANGE USING DNA.

I THINK THIS VIRUS-BASED LIPOSOME DELIVERY SYSTEM IS VERY INTERESTING, VERY NOVEL. YOU CAN ACTUALLY, SHOWN DOWN ON THE BOTTOM HERE, YOU CAN TAKE A LIPOSOME AND YOU CAN ACTUALLY ADD THESE LITTLE Q DOTS SHOWN AT THE BOTTOM HERE. YOU CAN

INTRODUCE THESE INTO THE NANOPARTICLE AND FUSE IT TOGETHER WITH A VIRUS. AND HERE'S THE NANOPARTICLE. FUSE IT TOGETHER WITH A VIRUS, AND NOW YOU'VE GOT A VIRUS TOGETHER WITH THE NANOPARTICLES AND YOU CAN INTRODUCE THESE INTO THE CELLS. YOU CAN COAT THESE NANOPARTICLES AGAIN WITH DNA, AND IT'S A WAY IN WHICH YOU CAN ACTUALLY GET THIS MATERIAL INTO THE CELL IN A VERY, VERY SPECIFIC WAY.

SO IF WE'RE INTERESTED IN CONVERTING, LET'S SAY, HEART FIBROBLASTS TO CARDIOMYOCYTES, MAYBE THIS WOULD BE A VERY SMART WAY TO SPECIFICALLY ENGINEER THOSE CELLS TO CHANGE. SO THIS IS A WHOLE NEW PLATFORM, IF YOU LIKE, WHERE THE VIROLOGISTS ARE WORKING WITH THE NANOTECHNOLOGISTS, AND I THINK THEY START TO NEED TO WORK TOGETHER WITH US. YOU CAN TAKE THE NANOPARTICLES AND YOU CAN ADD VARIOUS GROWTH FACTORS JUST SHOWN HERE, ALL THESE DIFFERENT GROWTH FACTORS IN DIFFERENT COLORS, AND YOU ADD THEM TO, SAY, MESENCHYMAL STEM CELLS, YOU CAN GET THOSE CELLS THEN TO CHANGE TO CARTILAGE, TO SKIN, TO HEART, OR TO ADIPOSE CELLS REALLY JUST WITH THE PRESENCE OF THESE PARTICLES WITH THE GROWTH FACTORS IN THEM.

AGAIN, BEING ABLE TO DIRECT THESE CELLS TO DO SOMETHING THAT YOU WANT IN THE BODY IS QUITE

EMPHATIC. IF YOU TAKE A MESENCHYMAL STEM CELL, AGAIN, AND USING BIOMATERIALS, YOU CAN TURN THEM INTO ADIPOSE TISSUE, YOU CAN TURN THESE INTO CELLS THAT ARE HEPATOCYTE TISSUES, CARTILAGE, ETC. AND THIS IS USING NANOMATERIALS. SO YOU CAN COAT THE NANOMATERIAL ON ONE SIDE WITH CERTAIN GROWTH FACTORS, ON THE OTHER SIDE DIFFERENT GROWTH FACTORS. SO AS SHOWN HERE ON THIS SIDE OF THE MATERIAL, YOU GET GROWTH OF THESE CELLS EXPRESSING THIS MARKER, AND ON THE OTHER SIDE YOU GET CELLS EXPRESSING THIS MARKER. SO YOU'VE NOW GOT CELLS THAT WILL GROW ONE SIDE DIFFERENT FROM THE OTHER SIDE. SO THIS CAN BECOME A BONDING MECHANISM FOR CELLS WHICH YOU NEED TO BOND TOGETHER WITH FRACTURES AND SO FORTH.

IT'S A VERY, VERY SMART TECHNOLOGY PASSING INTO TRANSLATIONAL WORK TOWARDS THE CLINIC. YOU CAN MIX GROWTH FACTORS TOGETHER WITH CELLS AND MATERIALS, AND YOU CAN USE THESE INJECTIONS INTO THE HEART TO CREATE -- IN ANIMALS TO CREATE REPAIRING THE HEART.

I WANTED TO SHOW YOU THIS. THIS MATERIAL HERE CAN BE BONDED TOGETHER. THIS LOOKS LIKE A LOOP. SO YOU BOND IT TOGETHER WITH FIVE OTHER LOOPS AND YOU GROW CARDIOMYOCYTES IN IT. THEN THIS WHOLE STRUCTURE WILL TWITCH AND TWITCH IN UNISON WITH ALL

THE CARDIOMYOCYTES. SO THEN IF YOU ATTACH IT TO THE HEART, THIS IS GOING TO THEN OPERATE AS A MATERIAL WHICH IS THEN FUNCTIONING IN SYNC WITH THE HEART. AND THIS MATERIAL CAN DISSOLVE AWAY EVENTUALLY, LEAVING YOU WITH FUNCTIONAL HEART STRUCTURES THERE. THIS IS REALLY, REALLY SMART NANOTECHNOLOGY. AND IT IS THINGS I THINK WE OUGHT TO BE REALLY INTERESTED IN.

FINALLY, I WANTED TO SHOW YOU SOMETHING BECAUSE I THINK THIS IS SOMETHING THAT FRANCISCO AND OTHERS WILL SEE AS MAYBE QUITE INTERESTING. YOU CAN ACTUALLY USE NANOPARTICLES TO CLEAR THE OBSTRUCTIONS THAT HAPPEN IN BLOOD VESSELS. NOW, THIS IS A SERIOUS PROBLEM FOR THE HEART. IF YOU GET THAT, YOU'RE ENTERING THE CHANCE OF HAVING A HEART ATTACK. IF YOU USE THESE NANOPARTICLES AND YOU COAT THEM WITH A PLASMINOGEN ACTIVATOR OR SOME APPROPRIATE MATERIAL, THIS IS WHAT YOU SHOULD SEE. SEE IF I CAN GET THIS VIDEO WORKING.

HERE IS THE CLOT IN THE CENTER HERE. AND THESE ARE THE NANOPARTICLES YOU CAN SEE. THEY WERE MADE FLUORESCENT, AND YOU SEE IT DISPERSING THE CLOT. OFTEN YOU DON'T KNOW WHERE THESE CLOTS ARE. AND HERE IT IS DISPERSING THOSE CLOTS IN VERY RAPID TIME. WITHIN ONE OR TWO MINUTES IT WILL REMOVE ALL

OF THE CLOTS -- THIS IS IN AN ANIMAL AT THE MOMENT -- REMOVE ALL OF THOSE CLOTS. AND IT IS A VERY INTERESTING PROCESS WHICH I THINK NEEDS TO BE THOUGHT ABOUT ADOPTING IN DUE COURSE.

HERE'S THE POWER OF THESE NANOTECHNOLOGIES WHICH I THINK WE OUGHT TO ENGAGE WITH. SO JUST AN ARRAY OF THOSE THINGS.

JUST NOW TO COME BACK ON OUR PROGRAMS, THIS IS OUR CURRENT PROGRAM. CLEARLY ALL THE PEOPLE HERE TODAY ARE INTERESTED, I THINK, IN THE DISEASE TEAM THERAPY DEVELOPMENT. WE'RE HAVING AN EARLY TRANSLATIONAL IV CONCEPT PROPOSAL AT THIS MEETING, AND THE IPS CELL INITIATIVE, THE RFA HAS BEEN POSTED AND THE POST WEBINAR HAS BEEN HELD.

THE GENOMICS INITIATIVE WE EXPECT TO POST IN AUGUST. BASIC BIOLOGY, AN ICOC FUNDING DECISION IN SEPTEMBER. THE STRATEGIC PARTNERSHIP AWARDS ALSO LOOK FORWARD TO, I THINK, HERE BY THE BOARD. THE GRANTS WORKING REVIEW OF APPLICATIONS WILL BE IN SEPTEMBER. AND THEN, JUST TO REMIND YOU, THE NEW FACULTY PHYSICIAN SCIENTIST TRANSLATIONAL RESEARCH AWARD, THE REVIEW OF APPLICATIONS WILL BE IN OCTOBER. SO ALL OF THESE THINGS, THERE'S A MASSIVE AMOUNT OF WORK TO BE DONE BY THE REVIEWERS AND ALSO BY THE BOARD OVER THE NEXT SIX MONTHS.

I'VE TALKED ABOUT THE MEETINGS PRIOR TO THIS AND I PUT THOSE IN YOUR FOLDERS, SO I WON'T ACTUALLY GO THROUGH ANY OF THOSE. YOU CAN READ THOSE AT YOUR LEISURE, AND THAT INCLUDES THE CHINA WORKSHOP. I THOUGHT WE'D HIDDEN ALL THESE AWAY.

THE COLLABORATIVE FUNDING PARTNERS MEETING, THERE'S A WORKSHOP IN BRAZIL, THERE'S A BRIDGES MEETING, THE STEM CELL MEETING IN THE MESA AND THE ALPHA CLINIC WORKSHOP, THEY'RE ALL MEANT TO BE HIDDEN.

NOW, THE PERFORMANCE AUDIT REPORT, I SAID THAT I WOULD LET YOU KNOW ABOUT PROGRESS EACH TIME THAT I MET WITH YOU. IT WAS PRESENTED IN MAY, FOUND TO BE IN FULL COMPLIANCE, AND THE RECOMMENDATIONS FOR IMPROVED PERFORMANCE WERE GATHERED, AND THE REPORTS ARE AVAILABLE AS SHOWN THERE ON THE WEBSITE. AND THE ACTION PLAN, THERE'S AN INDIVIDUAL RESPONSIBILITY BEING ALLOCATED AGAINST EACH OF THOSE RECOMMENDATIONS. WE'RE COORDINATING AND TRACKING AND REPORTING THAT, AND THE FULL REPORTS WILL BE TO YOU AT SIX AND TWELVE MONTHS AND UPDATES AS WE MOVE ALONG.

SO RECENTLY COMPLETED, A BOARD CODE OF CONDUCT AS RECOMMENDED, THE SCO SYSTEM ACCESS AS RECOMMENDED, THE PROCUREMENT OF DOCUMENTATION AS

RECOMMENDED, AND GRANT OUTCOME SURVEY AS RECOMMENDED. SO WE'VE DONE -- WE'VE ACHIEVED SEVERAL OF THOSE, AND WE WILL KEEP REPORTING TILL WE FINISH THE ENTIRE 30 OF THEM, SOMETHING LIKE THAT, 30 RECOMMENDATIONS.

SO NOW I WANT TO HAND OVER TO MATT TO PRESENT THE FINANCE REPORT.

MR. PLUNKETT: GOOD MORNING. SO FIRST A NUMBER OF OPERATIONAL UPDATES FOR YOU FROM THE FINANCE GROUP. FIRST IS THAT DUE TO THE JUNE 30TH YEAR-END CLOSE, YEAR-END ACCRUALS AND ADJUSTMENTS AND SO FORTH ARE ONGOING; THEREFORE, WE INTEND TO PRESENT FULL YEAR FINANCIALS AT THE SEPTEMBER ICOC MEETING.

WHAT WE CAN SAY AT THIS POINT IS THAT OUR PREVIOUS ESTIMATES OF THE SPENDING FOR THE 2011-2012 FISCAL YEAR DO REMAIN UNCHANGED AT THIS POINT.

THE YEAR-END AUDIT IS SCHEDULED FOR AUGUST AND OCTOBER THIS YEAR, AND WE ARE TENTATIVELY PLANNING TO HAVE THE AUDITOR PRESENTATION AND THE ICOC REVIEW OF THE AUDIT AT THE DECEMBER BOARD MEETING.

AND THEN FINALLY, THE UPDATING OF FINANCIAL RECORDKEEPING AND REPORTING TO REFLECT THE NEW DEPARTMENTS AND COST CENTERS THAT WE DISCUSSED

AT THE MAY ICOC MEETING IS SUBSTANTIALLY COMPLETE. SO GOING FORWARD, WE DO EXPECT THAT, WITH THE NEW FINANCIAL REPORTING STRUCTURE, THAT YOU WILL BE ABLE TO HAVE A LITTLE BIT GREATER VISIBILITY AND TRANSPARENCY INTO WHERE THE DOLLARS ARE GOING AT THE ORGANIZATION AND FOR WHAT PURPOSE.

SO A REALLY HIGH LEVEL OVERVIEW OF THE FINANCIAL HIGHLIGHTS AS OF JUNE 30TH OF 2012. THE GRANT DISBURSEMENTS FOR THE FISCAL YEAR WAS $232.7 MILLION. THAT'S UP FROM THE PRIOR FISCAL YEAR OF $201.4 MILLION. THE AVAILABLE BOND CASH AS OF JUNE 30TH WAS 50.9 MILLION, A DECREASE OF $42 MILLION FROM TWO MONTHS BEFORE, WHICH WE REPORTED AT THE MAY ICOC MEETING. AND AS DR. THOMAS PREVIOUSLY MENTIONED, WE HAVE RECEIVED SUBSTANTIAL ADDITIONAL CASH FROM THE STATE DUE TO THE SALE OF COMMERCIAL PAPER. SO WE'RE IN VERY GOOD SHAPE TO FUND CONTINUING OPERATIONS INTO THE FALL OF THIS YEAR.

THAT IS BRIEF, AS I MENTIONED. ARE THERE ANY QUESTIONS ABOUT THE FINANCIALS? WE WILL HAVE A FULL REPORT FOR YOU FOR THE FISCAL YEAR IN SEPTEMBER.

CHAIRMAN THOMAS: THANK YOU, DR. TROUNSON. THANK YOU, MATT. ALAN, DO YOU HAVE ANY FURTHER COMMENTS?

DR. TROUNSON: NO. WE WERE GOING TO GIVE YOU AN UPDATE, AN UPDATE ON EXPENDITURES OVERALL, BUT I DON'T KNOW WHERE THAT'S GONE. SO I'M NOT SURE WHAT'S HAPPENED TO THAT.

MR. PLUNKETT: WE'RE GOING TO DO A QUICK COMPUTER SWITCH HERE. THERE ARE A COUPLE MORE SLIDES THAT WE WANT TO SHOW YOU WITH RESPECT TO THE BALANCE OF FUNDING FOR THE AGENCY. WE'LL DO THIS A LITTLE BIT DOWN THE ROAD. SORRY ABOUT THAT.

CHAIRMAN THOMAS: THANK YOU, MATT. GOING TO PROCEED NOW TO ITEM NO. 6, WHICH IS CONSIDERATION OF THE APPLICATIONS FOR DISEASE TEAM THERAPY DEVELOPMENT AWARDS. I'D LIKE TO MAKE, BECAUSE I KNOW THAT IS THE ITEM OF PRINCIPAL INTEREST TO MOST IN THE AUDIENCE, JUST MAKE A COUPLE OF PRELIMINARY COMMENTS.

THE MISSION OF CIRM IS TO TRY TO DEVELOP CURES OR THERAPIES FOR MANY OF THE WORLD'S CURRENTLY INCURABLE DISEASES AND CONDITIONS. ALL OF THE DISEASES AND CONDITIONS THAT ARE THE SUBJECT OF GRANT APPLICATIONS ARE OF TREMENDOUS IMPORTANCE. NONE ARE MORE IMPORTANT THAN ANY OTHER, AND WE ARE VERY, VERY SERIOUS IN OUR EFFORTS TO TRY TO GET THE BEST SCIENCE AVAILABLE AND TO FUND IT FOR THE DEVELOPMENT OF THESE CURES OR THERAPIES.

THE PROCESS ITSELF, AS YOU KNOW, IS A VERY RIGOROUS ONE. WHEN PROP 71 WAS PUT IN PLACE, IT PROVIDED THAT, WITH EACH SET OF PROPOSALS, A GROUP OF THE WORLD'S LEADING STEM CELL SCIENTISTS FROM OUTSIDE CALIFORNIA WOULD BE CONVENED TO ANALYZE THE SCIENCE IN EACH OF THE APPLICATIONS IN QUESTION.

THESE MEETINGS ARE LENGTHY. THEY ARE EXCEPTIONALLY THOROUGH. THEY ARE RIGOROUS. AND THEY INEXORABLY ARRIVE AT CONCLUSIONS WITH RESPECT TO EACH OF THE PROPOSALS THAT ARE BEING CONSIDERED. THEY THEN ENGAGE IN PRIORITIZING BASED ON THEIR ANALYSIS OF WHICH OF THE AWARDS MERIT FUNDING IN THIS PARTICULAR ROUND. THOSE DECISIONS ARE NOT TAKEN LIGHTLY. THEY ARE THE PRODUCT OF A GREAT DEAL OF THOUGHT, AND THEY PRODUCE A LIST OF PROPOSED PROJECTS FOR APPROVAL THAT ARE THEN BROUGHT TO THE BOARD FOR ITS CONSIDERATION. WE'RE GOING TO HEAR ABOUT A NUMBER OF THOSE THAT WERE RECOMMENDED FOR APPROVAL THIS MORNING.

THERE ARE, AS WITH ANY GRANT APPLICATION PROCESS, GOING TO BE APPLICATIONS WHICH AT THE TIME OF PEER REVIEW ARE NOT RECOMMENDED FOR APPROVAL. AND I SHOULD SAY, IN ADDITION TO PEER REVIEW, WHICH ADDRESSES THE SCIENCE, WE HAVE A PROCESS WHICH I'M GOING TO ASK MR. SHEEHY TO DESCRIBE IN MORE DETAIL

IN A MINUTE WHICH FACTORS IN OTHER THINGS BESIDES THE SCIENCE. IT'S SOMETHING WE CALL PROGRAMMATIC REVIEW. ALL OF THAT IS UNDERTAKEN AT THE GRANTS WORKING GROUP LEVEL. THE PROPOSED AWARDS ARE THEN BROUGHT BEFORE THE BOARD AND WE HAVE DISCUSSION.

AND WITH RESPECT TO THOSE PROPOSALS THAT WERE NOT RECOMMENDED FOR APPROVAL DOES NOT IN ANY WAY, SHAPE, OR FORM MEAN THAT WE DON'T BELIEVE EACH OF THOSE DISEASES AND CONDITIONS MERIT FULL INQUIRY AND THE BEST RESEARCH AVAILABLE. IT JUST MEANS THAT WITH RESPECT TO THE PARTICULAR DISCUSSION AND THE CONTEXT OF OTHERS, OTHER PROPOSALS THAT WERE ANALYZED AND SCORED IN THAT MEETING, THAT IN THIS PARTICULAR ROUND CERTAIN PROPOSALS WERE NOT RECOMMENDED FOR APPROVAL.

WE HAVE AVAILABLE A PROCESS FOR APPEALING. THAT IS THE EXTRAORDINARY PETITION. A NUMBER OF THOSE PROJECTS THAT WERE NOT RECOMMENDED FOR APPROVAL HAVE SUBMITTED EXTRAORDINARY PETITIONS. WE'RE GOING TO BE HEARING ABOUT THOSE THIS MORNING. WE TAKE THIS VERY SERIOUSLY. I DO WANT TO SAY AT THE OUTSET WE HAVE A LARGE NUMBER OF SPEAKERS ANTICIPATED HERE. AS WITH OUR NORMAL COURSE, WE NEED TO LIMIT AND MANAGE THE TIME OF THIS PROCESS. SO WE'RE GOING TO REQUEST THAT EACH SPEAKER KEEP

THEIR COMMENTS TO THREE MINUTES. WE WILL HAVE MARIA -- MARIA, WAVE TO EVERYBODY THERE. MARIA IS GOING TO BE KEEPING TRACK.

I KNOW THAT WITH RESPECT TO PROBABLY ALL OF THE EXTRAORDINARY PETITIONS THERE WILL BE MULTIPLE SPEAKERS. EACH SPEAKER WILL BE GIVEN THE SAME AMOUNT OF TIME FOR HIS OR HER PRESENTATION SO THAT EVERYBODY WHO WANTS TO SPEAK CAN SPEAK.

SO WITHOUT FURTHER ADO, LET ME TURN THE MIKE OVER TO MR. HARRISON WHO IS GOING TO DESCRIBE THE PROCESS FOR HANDLING THE APPLICATIONS TODAY.

MR. HARRISON: GOOD MORNING. AS USUAL, STAFF WILL MAKE A PRESENTATION REGARDING THE DISEASE TEAM THERAPY AWARD REQUEST FOR APPLICATIONS, INCLUDING A SUMMARY OF THE CRITERIA AND THE RECOMMENDATIONS MADE BY THE GRANTS WORKING GROUP. AS THE CHAIR INDICATED, HE WILL THEN ASK JEFF SHEEHY, WHO IS THE CO-VICE CHAIR OF THE GRANTS WORKING GROUP, TO OFFER HIS COMMENTS REGARDING THE REVIEW. AND AT THAT POINT IN TIME, WE WILL ASK YOU, THE MEMBERS OF THE BOARD, TO IDENTIFY THOSE APPLICATIONS ABOUT WHICH YOU DESIRE ADDITIONAL INFORMATION, INCLUDING THOSE APPLICATIONS THAT ARE THE SUBJECT OF EXTRAORDINARY PETITIONS.

SO WE WILL NOT BE DEALING SEPARATELY WITH

THE EXTRAORDINARY PETITIONS. IF ANY OF YOU HAVE QUESTIONS ABOUT AN APPLICATION, INCLUDING THOSE THAT HAVE EXTRAORDINARY PETITIONS, YOU CAN IDENTIFY THEM AT THAT TIME, AND WE WILL GO THROUGH EACH OF THEM INDIVIDUALLY.

FIRST, WE WILL ASK STAFF TO MAKE A PRESENTATION REGARDING THE APPLICATION. NEXT, WE WILL OPEN THE FLOOR TO YOU FOR QUESTIONS. TO THE EXTENT THAT YOUR QUESTION RAISES AN ISSUE THAT WOULD REQUIRE THE STAFF TO DISCUSS PROPRIETARY INFORMATION, SUCH AS PRELIMINARY DATA OR A POTENTIAL AGREEMENT WITH A COMMERCIAL PARTNER, WE WILL MAKE NOTE OF THOSE QUESTIONS, AND WE WILL RESERVE THEM FOR CLOSED SESSION.

ONCE THE BOARD HAS EXHAUSTED ITS QUESTIONS OF THE STAFF REGARDING THAT PARTICULAR APPLICATION, WE WILL THEN ASK FOR PUBLIC COMMENT REGARDING THE APPLICATION. ALL MEMBERS OF THE PUBLIC WHO WOULD LIKE TO BE HEARD, AS THE CHAIR SAID, WILL BE LIMITED TO THREE MINUTES. AND IN THAT MANNER THE BOARD WILL HAVE ALL THE INFORMATION THAT'S NONPROPRIETARY ABOUT A PARTICULAR APPLICATION AT THE SAME TIME.

WE'LL GO THROUGH THE LIST OF APPLICATIONS IDENTIFIED BY BOARD MEMBERS IN THAT MANNER. AND ONCE WE'VE COMPLETED THAT EXERCISE, WE WILL THEN ASK

FOR PUBLIC COMMENT REGARDING ANY OF THE REMAINING APPLICATIONS. WE WILL GO THROUGH EACH APPLICATION, TO THE EXTENT THERE'S PUBLIC COMMENT, INDIVIDUALLY. AND AFTER PUBLIC COMMENT, WE WILL ASK WHETHER ANY OF THE PUBLIC COMMENTS MADE SUGGEST TO THE BOARD THAT THEY WOULD LIKE TO HEAR ANY ADDITIONAL INFORMATION FROM STAFF, INCLUDING A PRESENTATION REGARDING THAT APPLICATION.

ONCE WE'VE HEARD ALL PUBLIC COMMENTS REGARDING THE REMAINING APPLICATIONS, WE'LL GO TO CLOSED SESSION TO DISCUSS ANY PROPRIETARY INFORMATION THAT'S BEEN IDENTIFIED. WE WILL THEN RETURN TO OPEN SESSION TO ENTERTAIN MOTIONS WITH RESPECT TO THE APPLICATIONS EITHER TO MOVE AN APPLICATION FROM THE DO-NOT-FUND CATEGORY INTO THE FUND CATEGORY OR FROM THE FUNDING CATEGORY INTO THE DO-NOT-FUND CATEGORY.

AND ONCE WE GO THROUGH ALL OF THOSE MOTIONS, WE'LL ASK THE BOARD TO APPROVE FUNDING FOR THOSE APPLICATIONS IN TIER I AND TO DENY FUNDING FOR THOSE APPLICATIONS IN TIER III. I'D BE HAPPY TO ANSWER ANY QUESTIONS YOU HAVE ABOUT THE PROCESS.

CHAIRMAN THOMAS: ANY MEMBERS OF THE BOARD HAVE QUESTIONS ON THE PROCESS?

I WOULD LIKE TO HIGHLIGHT ONE POTENTIAL

AVENUE THAT COULD BE PURSUED WITH RESPECT TO ONE OR MORE APPLICATIONS. IN THE PAST, AT THE TIME OF EXTRAORDINARY PETITION, WE HAVE HAD QUESTIONS RAISED AS TO NEW DATA THAT WAS MADE AVAILABLE SINCE THE GRANTS WORKING GROUP THAT COULD BEAR ON THE DECISION TO FUND OR NOT. WE HAVE ISSUES WHERE THE SCIENTIFIC ANALYSIS HAS BEEN CALLED INTO QUESTION AND, AGAIN, POTENTIAL NEW DATA REFLECTING ON THAT PRESENTED.

THE BOARD, AS IT SITS HERE LISTENING TO APPEALS BASED ON DIFFERENCES OF SCIENTIFIC OPINION, HAS A VERY DIFFICULT CHORE BECAUSE THE GRANTS WORKING GROUP SPENDS HOURS ANALYZING THE SCIENCE OF THESE APPLICATIONS. AND FOR THE BOARD TO TRY TO SIT HERE AND GET A BRIEF, THOUGH HIGHLY ELOQUENT AND COMPELLING PRESENTATION ON EITHER NEW DATA OR THE DIFFERENCES IN SCIENTIFIC OPINION OR WHATEVER, VERY, VERY DIFFICULT WHEN YOU WEREN'T IN THE ROOM AT THE TIME OF THE ANALYSIS TO TRY TO SECOND-GUESS THAT.

SO ONE OF THE OPTIONS THAT WE'RE GOING TO LOOK AT, IF THE BOARD SO CHOOSES WITH RESPECT TO, AS I SAY, MAYBE ONE MORE, MAYBE NONE, WE'LL SEE HOW IT PLAYS OUT, OF THE APPLICATIONS IS TO REFER THAT APPLICATION BACK TO A SUBSET OF THE GRANTS WORKING GROUP WHO ANALYZED IT IN THE FIRST INSTANCE AND TO GIVE THEM THE BENEFIT OF THE NEW DATA AND

INFORMATION PRESENTED AT THE TIME OF THE EXTRAORDINARY PETITION SO THEY CAN MAKE A JUDGMENT ON WHETHER TO MOVE THAT PARTICULAR PROPOSAL UP INTO THE FUNDING CATEGORY OR NOT.

THIS, WE BELIEVE, IS A VERY PRUDENT MOVE WHICH GIVES THE PROPOSAL THE BEST CHANCE OF BEING ANALYZED AND A CONCLUSION ARRIVED AT AFTER THE PRESENTATION HERE.

MR. HARRISON, WOULD YOU LIKE TO SAY ANYTHING MORE ABOUT THIS PARTICULAR ADDITIONAL ANALYSIS OPTION?

MR. HARRISON: YES. JUST BRIEFLY, AS THE CHAIR SAID, THE BOARD DOES HAVE THE AUTHORITY TO DEFER CONSIDERATION OF AN APPLICATION IN ORDER TO OBTAIN ADDITIONAL PEER REVIEW OF NEW INFORMATION, AND THE PURPOSE OF THAT REVIEW IS REALLY TO DETERMINE WHETHER THE NEW INFORMATION WOULD CHANGE THE RECOMMENDATION OF THE PEER REVIEW GROUP.

THE BOARD HAS UTILIZED THIS PROCESS ONCE BEFORE WITH RESPECT TO A TOOLS AND TECHNOLOGY APPLICATION FOR WHICH THERE WAS A PUBLICATION THAT WAS PRESENTED TO THE BOARD FOLLOWING THE GRANTS WORKING GROUP REVIEW. AND THE PURPOSE OF THE PROCESS IN THAT CASE WAS TO DETERMINE WHETHER THAT PUBLICATION, THE NEW INFORMATION PRESENTED, WOULD,

IN FACT, HAVE CHANGED THE PEER REVIEW RECOMMENDATION. AND IN THAT PARTICULAR CASE, THE GRANTS WORKING GROUP RECOMMENDED THAT THE APPLICATION SHOULD BE FUNDED AND THE BOARD APPROVED IT.

THAT WAS HANDLED PURSUANT TO A PROCESS THAT THE BOARD HAD ADOPTED IN NOVEMBER OF 2011 THAT HAD AN 18-MONTH SUNSET ON IT. SO THAT PROCESS ITSELF HAS ELAPSED. NOTWITHSTANDING THAT, THE BOARD DOES HAVE THE INHERENT AUTHORITY TO DEFER CONSIDERATION OF AN APPLICATION FOR CONSIDERATION OF NEW INFORMATION BY THE PEER REVIEW GROUP AND TO HAVE THAT THEN BROUGHT BACK TO THE BOARD AT ITS NEXT MEETING.

THE PROCESS THAT THE BOARD HAD ESTABLISHED IS ILLUSTRATIVE OF WHAT YOU MIGHT CONSIDER, ALTHOUGH YOU HAVE THE OPTION TO REQUEST THAT STAFF CONDUCT THE PEER REVIEW IN WHATEVER MANNER YOU LIKE. IN THAT CASE THERE WERE TWO DIFFERENT PATHWAYS. ONE WAS TO HAVE THE REVIEW CHAIR AND THE ADMINISTRATIVE CHAIR TOGETHER REVIEW THE NEW INFORMATION. AND IF THEY DETERMINED THAT THEY COULD ADEQUATELY ASSESS THE INFORMATION AND IF THEY REACHED A CONCURRENCE REGARDING THEIR VIEW OF IT, THEIR RECOMMENDATION WOULD GO BACK TO THE BOARD. IF THEY FELT THAT THEY

NEEDED MORE INPUT OR IF THEY DID NOT AGREE, THEN IT WAS REFERRED TO A SUBSET OF THE GRANTS WORKING GROUP THAT INCLUDED THE REVIEW CHAIR, THE CHAIR OF THE GRANTS WORKING GROUP, THE TWO CO-VICE CHAIRS OF THE GRANTS WORKING GROUP, TWO SCIENTIFIC MEMBERS OF THE GRANTS WORKING GROUP, AND THE CHAIR OF THE GOVERNING BOARD ACTING IN EX OFFICIO CAPACITY.

AS I SAID, THAT'S OFFERED JUST FOR ILLUSTRATIVE PURPOSES. YOU COULD DIRECT STAFF TO CONDUCT THE PEER REVIEW IN A DIFFERENT MANNER IF YOU SO CHOSE.

CHAIRMAN THOMAS: ANY QUESTIONS OR COMMENTS?

DR. ECONOMOU: I JUST WANT TO STRONGLY SUPPORT THIS PROPOSAL. THIS WOULD ALLOW US TO PRESERVE THE INTEGRITY OF THE PEER REVIEW, THE SCIENTIFIC PEER REVIEW PROCESS. IT WOULD ALSO BETTER INFORM THIS COMMITTEE ABOUT DECISIONS REGARDING EXTRAORDINARY PETITIONS. AND THIS IS THE WAY THINGS ARE DONE IN MOST PEER REVIEWED REVIEWS FOR LARGE FEDERAL GRANTS. SO I THINK THIS WOULD BE VERY WELCOME FOR OUR COMMITTEE.

MR. SHESTACK: JAMES, I JUST WONDERED ARE THERE ACTUALLY ANY IMPLICATIONS IN THE SUNSET, THE 18-MONTH PASSING AND THE SUNSET OF THE NOVEMBER 2011

PRACTICE THAT YOU JUST DESCRIBED?

MR. HARRISON: NO. THE ONLY IMPLICATION IS THAT THAT PROCESS ITSELF HAS LAPSED. THE BOARD IS THE FINAL DECISION MAKER WITH RESPECT TO ALL APPLICATIONS FOR FUNDING. SO IF THE BOARD DETERMINES THAT IT WOULD BE HELPFUL TO HAVE ADDITIONAL PEER REVIEW OF NEW INFORMATION, THEN THE BOARD CAN REQUEST THAT PRIOR TO MAKING ITS FINAL DECISION. THAT PROCESS ITSELF WAS PUT IN PLACE, BUT IS NOT REFLECTIVE OF THE BOARD'S INHERENT AUTHORITY.

MR. SHESTACK: SO IT WOULDN'T BE WITHOUT PRECEDENT TO SAY WE'LL FOLLOW THE PREVIOUS PRECEDENT AND AVAIL OURSELVES OF THAT?

MR. HARRISON: CORRECT. I SHOULD ADD ONE OTHER POINT, WHICH IS AT THE TIME THE BOARD MADE CLEAR THAT THAT PROCESS WAS NOT INTENDED TO RESOLVE PROGRAMMATIC ISSUES. TO THE EXTENT THAT AN EXTRAORDINARY PETITION PRESENTED PROGRAMMATIC ISSUES, THE BOARD IS CAPABLE OF RESOLVING THOSE IN THIS SETTING.

CHAIRMAN THOMAS: OTHER COMMENTS OR QUESTIONS ON THIS PROCESS ISSUE?

MS. SAMUELSON: MR. CHAIRMAN, A PROCEDURAL QUESTION. AND FORGIVE ME IF I DIDN'T HEAR THIS, BUT THE CLOSED SESSION IS GOING TO ADDRESS BOTH THE

DISEASE TEAM AND RESEARCH LEADERSHIP AWARD APPLICATIONS; IS THAT RIGHT?

CHAIRMAN THOMAS: THERE ARE ACTUALLY GOING TO BE TWO DIFFERENT CLOSED SESSIONS, ONE FOR EACH.

MS. SAMUELSON: AND THEN THE RESEARCH LEADERSHIP AWARDS, THE OPEN SESSION IS AFTER THAT.

CHAIRMAN THOMAS: NO. WE WILL GO THROUGH THE DISEASE TEAM, WE'LL HAVE CLOSED SESSION. WE'LL COME BACK, WE'LL FINISH THAT ISSUE, AND THEN WE WILL EITHER MOVE IMMEDIATELY INTO THE RESEARCH LEADERSHIP QUESTION, WHICH WILL FIRST BE IN PUBLIC SESSION, CORRECT, MR. HARRISON, AND THEN WE'LL HAVE CLOSED SESSION ON THAT AS WELL.

MS. SAMUELSON: OKAY. THANK YOU.

CHAIRMAN THOMAS: ANY OTHER COMMENTS, QUESTIONS FROM THE BOARD ON THE PROCESS? SEEING NONE, DR. TROUNSON, PLEASE, WOULD LIKE TO HAVE THE PRESENTATION ON THE PROPOSALS IN THE DT II ROUND.

DR. TROUNSON: I'LL ASK DR. FEIGAL TO OPEN UP WITH SOME COMMENTS, AND THEN DR. TALIB TO MAKE THE PRESENTATION.

DR. FEIGAL: OKAY. THANKS VERY MUCH. AND FIRST OFF, I JUST WANT TO SAY WE'RE EXCITED TO BRING FORWARD THE RECOMMENDATIONS FROM THE GRANTS REVIEW GROUP ON THE DISEASE TEAM THERAPY RESEARCH AWARDS.

AS CONTEXT, BEFORE DR. TALIB MAKES THE PRESENTATION, AND DR. TALIB, I SHOULD ACKNOWLEDGE, AS A CIRM SCIENCE OFFICER, HAS BEEN LEADING THIS INITIATIVE AND WILL PROVIDE THE RESULTS. I WOULD LIKE THE BOARD TO CONSIDER THE FOLLOWING POINTS AS YOU DELIBERATE TODAY.

THIS INITIATIVE IS ALIGNED WITH CIRM'S FIVE-YEAR STRATEGIC GOALS, WHICH CIRM, OUR OVERSIGHT BOARD, AND THE PUBLIC HAD BEEN WORKING ON SINCE LATE AUGUST AND WHICH WERE PRESENTED TO THIS BOARD AND APPROVED BY THIS BOARD AT THE MAY BOARD MEETING. IT INCLUDED GOALS FOR SCIENTIFIC, FOR CLINICAL, FOR ECONOMIC, AND FOR COMMUNITY PERSPECTIVES. AND THE KEY FIVE-YEAR CLINICAL GOALS INCLUDED THE ABILITY TO ACHIEVE BY THE END OF THAT FIVE YEARS TEN THERAPIES IN PHASE I OR PHASE II CLINICAL TRIALS IN AT LEAST FIVE DIFFERENT THERAPEUTIC AREAS BASED ON THE STEM CELL RESEARCH AND, TWO, THAT THERE WOULD BE CLINICAL PROOF OF CONCEPT THAT TRANSPLANTED CELLS DERIVED FROM PLURIPOTENT OR PROGENITOR CELLS CAN BE USED TO RESTORE FUNCTION IN DISEASE OR INJURY.

I THINK, AS WE ALL KNOW, WE'VE BEEN ACTIVELY INVOLVED AND ENGAGED IN FUNDING RESEARCH TO HELP ACHIEVE THESE GOALS. AND OUR INITIATIVES, PARTICULARLY THE DISEASE TEAM INITIATIVES AND THE

MORE RECENT STRATEGIC PARTNERSHIP INITIATIVES, WERE SET IN PLACE TO FOSTER THIS ADVANCEMENT OF STEM CELL-BASED SCIENCE TO CLINICAL TRIALS FOR PATIENTS.

AT THE MARCH BOARD MEETING, SO JUST A FEW MONTHS AGO, I PROVIDED A PROGRESS UPDATE ON THE 14 DISEASE TEAMS THAT CIRM HAS ALREADY FUNDED IN THE FIRST COHORT OF FOUR-YEAR PROJECTS THAT WERE BEGUN IN 2010. AND THE GOAL OF THAT PROGRAM WAS TO FUND THE PRECLINICAL WORK TO ACHIEVE THE FILING OF A WELL-SUPPORTED IND WITH THE FDA TO ALLOW THOSE FIRST-IN-HUMAN CLINICAL TRIALS TO ENTER PATIENTS.

AN UPDATE REVEALS THAT ONE DISEASE TEAM OF THOSE 14 WAS TERMINATED IN MARCH 2012 FOR THEIR INABILITY TO PASS THE GO/NO-GO MILESTONES. ONE DISEASE TEAM, HOWEVER, SUCCEEDED IN FILING A WELL-SUPPORTED IND THAT RECEIVED FDA APPROVAL IN JUNE 2012 TO ENTER FIRST-IN-HUMAN CLINICAL TRIALS. THE REMAINING 12 DISEASE TEAMS ARE UNDERGOING ASSESSMENT BY CIRM WITH OUR EXTERNAL CLINICAL DEVELOPMENT ADVISORY EXPERTS BETWEEN NOW AND THE END OF THIS YEAR, AND I WILL BRING THE PROGRESS UPDATE TO THIS BOARD IN EARLY 2013.

I WANT TO REFER YOU TO THE CURRENT UPDATED TRANSLATIONAL PORTFOLIO THAT WAS PROVIDED TO YOU AS A PREREAD WHICH SHOWS OUR CURRENT DISEASE TEAMS, OUR

CURRENT EARLY TRANSLATION PROGRAMS AND PROJECTS, AND ALSO INCLUDES THE RECOMMENDATIONS FROM THE GRANTS REVIEW GROUP ON THE CURRENT COHORT DISEASE TEAM THERAPY RESEARCH AWARDS BY THERAPEUTIC AREA AND BY THERAPEUTIC APPROACH AND BY CLINICAL AREA.

YOU CAN SEE FROM LOOKING AT THAT PORTFOLIO THAT IT INCLUDES VERY COMMON DISEASES, FOR EXAMPLE, IN DIABETES AND HEART DISEASE, AND ALSO VERY RARE DISEASES, INCLUDING THOSE IN PEDIATRIC CONDITIONS INCLUDING SICKLE SELL ANEMIA AND ALSO VERY RARE CONGENITAL SKIN DISEASES.

THIS NOW BRINGS ME TO THE CURRENT COHORT BEING RECOMMENDED FOR THE DISEASE TEAM THERAPY RESEARCH AWARDS. WE HAVE FUNDED AND WILL CONTINUE TO FUND INITIATIVES THAT FOSTER THE ENGINE OF DISCOVERY. THOSE HAVE BEEN FUNDED AND WILL CONTINUE TO BE FUNDED IN THE FUTURE. THIS PARTICULAR DISEASE TEAM THERAPY RESEARCH AWARD IS REALLY GEARED TO THOSE TEAMS THAT HAVE THE STRONG SCIENCE, THAT HAVE THE STRONG PLAN THAT IS REASONABLE AND ABLE TO BE COMPLETED, AND THAT HAVE THE STRONG TEAM THAT HAS THE REQUISITE EXPERTISE TO EXECUTE ON THEIR GOAL.

WE RECEIVED IN THIS ROUND 21 PROPOSALS. OF THOSE 21, SIX ARE TRYING TO REACH THE IND STAGE. I WAS ADVANCING THE SLIDES WHILE I WAS TALKING. SIX

OF THESE ARE IND ENABLING IN WHICH THE TEAMS ARE TRYING TO FILE THE IND TO ENTER FIRST IN HUMAN. FOURTEEN ARE IND ENABLING AND ALSO PLAN TO COMPLETE AN EARLY PHASE CLINICAL TRIAL, AND ONE PROPOSED THE COMPLETION OF A PHASE II CLINICAL TRIAL. SIX CAME FROM FOR-PROFITS AND 15 CAME FROM ACADEMICS. OF THE 21 PROPOSALS THAT WERE REVIEWED BY THE GRANTS REVIEW GROUP, SIX ARE BEING RECOMMENDED FOR FUNDING, FIVE FROM ACADEMIC AND ONE FROM A FOR-PROFIT. THEY'RE IN A BROAD RANGE OF THERAPEUTIC APPROACHES, AND THEY'RE LOOKING AT CLINICAL AREAS OF HIGH UNMET MEDICAL NEED.

AND LOOKING BEYOND THIS PARTICULAR BOARD MEETING, WE HAVE STRATEGIC PARTNERSHIP PROPOSALS THAT ARE BEING SUBMITTED, THAT WERE SUBMITTED TO CIRM IN JUNE THAT ARE BEING REVIEWED, AND THAT WILL BE COMING BACK TO YOU IN OCTOBER WITH THE GRANT REVIEW GROUP RECOMMENDATIONS FOR YOUR DECISION. AND YOU'VE SET ASIDE ABOUT 30 MILLION TO LOOK AT THOSE AWARDS.

IN ADDITION, IN NOVEMBER OF THIS YEAR, WE PLAN TO POST NEW SOLICITATIONS FOR THE NEXT ITERATION OF DISEASE TEAM AND STRATEGIC PARTNERSHIP AWARDS.

SO I'M PROVIDING ALL THIS TO YOU AS A

CONTEXT TO SHOW YOU REALLY THE DENOMINATOR OF THINGS THAT WE'RE WORKING ON TO TRY AND FOSTER DEVELOPMENT PROGRAMS THAT CAN REACH OUR GOAL. AS NOTED EARLIER, THE PROCESS FOR ALL OF THESE INITIATIVES IS BUILT ON A ROBUST PEER REVIEW AND PROGRAMMATIC INPUT FROM THE PATIENT VOICE. AND THE GRANT REVIEW GROUP EXPERTISE AND EXPERIENCE IS EXTENSIVE, AND IT SPANS PRECLINICAL, MANUFACTURING, STEM CELL BIOLOGY, DISEASE, CLINICAL EXPERTISE, PRODUCT DEVELOPMENT, AND COMMERCIAL VIABILITY.

AND WE REALLY WANT TO COMMEND THE BOARD FOR YOUR SUPPORT OF THE STRONG PEER REVIEW PROCESS THAT WAS PUT TOGETHER UNDER YOUR GUIDANCE. SO WITH ALL THAT AS CONTEXT, WHAT I'D LIKE TO DO NOW IS PRESENT DR. SOHIL TALIB, WHO IS GOING TO BRING FORWARD THE RECOMMENDATIONS FROM THE GRANT REVIEW GROUP, REVIEWING THE OBJECTIVES OF THE INITIATIVE AND THE REVIEW CRITERIA. AND I'D ALSO LIKE TO ACKNOWLEDGE, WHILE HE'S COMING UP TO THE PODIUM, THE TREMENDOUS WORK THAT'S BEEN DONE ON THIS INITIATIVE BY THE ENTIRE CIRM SCIENCE OFFICE, PARTICULARLY DRS. BETTINA STEFFEN, INGRID CARAS, KAREN BERRY, KEVIN WHITTLESEA, AND ZACH *SHINER, THE SCIENCE REVIEW OFFICE THAT'S BEEN LED BY DR. GIL SAMBRANO, AND VALUED INPUT FROM DR. PAT OLSON, MATT PLUNKETT,

ELONA BAUM, AND IAN SWEEDLER, AND ALL OF THIS, OF COURSE, DONE WITH THE STRONG SUPPORT OF DR. ALAN TROUNSON. SO NOW I'D LIKE TO INTRODUCE DR. TALIB.

DR. TALIB: THANK YOU, ELLEN. WHAT I WOULD LIKE TO DO, MR. CHAIRMAN, MEMBERS OF THE BOARD, IS PRESENT TO YOU THE RECOMMENDATIONS FROM THE GRANTS WORKING GROUP FOR THE DISEASE TEAM THERAPY DEVELOPMENT AWARD.

NOW, BEFORE I DO THAT, JUST TO GIVE YOU A PERSPECTIVE, WE DECIDE IF IT FITS INTO OVERALL PORTFOLIO OF CIRM. AS YOU KNOW, THAT CIRM FUNDS RESEARCH AT ALL THE STAGES STARTING FROM BASIC RESEARCH TO THE CLINICAL TRIALS.

NOW, DISEASE TEAM I AWARD, WHICH YOU APPROVED IN 2010, BASICALLY COVERED BOTH THE AREAS OF PRECLINICAL RESEARCH AS WELL AS PRECLINICAL DEVELOPMENT. AND WE HAVE REALIZED IN LAST FEW YEARS THAT FIELD OF STEM CELL RESEARCH HAS MOVED FORWARD AND HAS ADVANCED AND MATURED. SO TAKING THAT INTO CONSIDERATION, THE DISEASE TEAM II, WHICH WE CALL DISEASE TEAM THERAPY DEVELOPMENT AWARD, WHICH IS THE TOPIC OF DISCUSSION TODAY, WILL START WITH PRECLINICAL DEVELOPMENT AND WILL END WITH SUBMITTING CLINICAL TRIALS FOR SPECIFIC DISEASE INDICATIONS. SO IT WILL COVER BOTH AREAS THAT IS STARTING A

LITTLE BIT LATE, AND THEN WHERE DISEASE TEAM I WAS, THAT IS, STARTING AT THE PRECLINICAL DEVELOPMENT AND COMPLETING A PHASE I OR PHASE II CLINICAL TRIAL, SO EARLY PHASE CLINICAL TRIALS.

SO JUST TO REMIND YOU, THE GOAL FOR THESE AWARDS IS TO ACHIEVE WITHIN FOUR YEARS OF THE TIME FRAME FOLLOWING SUBMIT A WELL-SUPPORTED IND FOR A CLINICAL STUDY, AND/OR COMPLETE A PHASE I OR PHASE II CLINICAL STUDY, AND/OR COMPLETE A PHASE II STUDY.

NOW, IN TERMS OF THE SCOPE, THE SINGLE THERAPEUTIC CANDIDATE WHICH IS PROPOSED MUST MEET THE FOLLOWING CRITERIA. THAT IS, THE CANDIDATE DERIVED FROM OR UTILIZING HUMAN EMBRYONIC STEM CELLS, IPS, NEURAL STEM CELLS, OR REPROGRAMMED OR GENETICALLY ENGINEERED STEM CELLS. NOW, THE SMALL MOLECULE OR BIOLOGICAL CANDIDATE THAT ARE CHARACTERIZED OR GENERATED BY USING STEM CELLS ARE ELIGIBLE. SO ARE THE CANDIDATES THAT TARGET CANCER STEM CELL OR ENDOGENOUS STEM CELLS IN VIVO. ENGINEERED FUNCTIONAL TISSUE CANDIDATE FOR TRANSPLANTATION ARE ALSO ELIGIBLE FOR THESE AWARDS.

NOW, IN TERMS OF THE SUPPORTED ACTIVITIES WHICH THIS AWARD WILL SUPPORT ARE THOSE PROJECTS WHICH ARE BEGINNING WITH IND-ENABLING STUDIES. THIS RFA WILL SUPPORT ALL NECESSARY ACTIVITIES WHICH ARE

REQUIRED TO FILE A WELL-SUPPORTED IND AT THE END OF THE FOUR YEARS. NOW, THOSE PROJECTS WHICH ARE BEGINNING WITH CLINICAL STUDIES, THIS RFA WILL SUPPORT ALL THE ACTIVITIES TO ENABLE A COMPLETION OF AN EARLY PHASE CLINICAL TRIAL.

NOW, THE ACTIVITIES WHICH ARE OUTSIDE OF THE SCOPE ARE THOSE THAT IS THE PIVOTAL CLINICAL EFFICACY STUDIES LIKE PHASE III CLINICAL TRIALS AND VERY EARLY TRANSLATION RESEARCH ACTIVITIES LIKE IDENTIFICATION, CHARACTERIZATION OF A DISEASE-MODIFYING ACTIVITY, WHICH ARE COVERED BY OUR EARLY TRANSLATION AWARDS, AND YOU WILL BE HEARING ABOUT IT LATER TODAY.

NOW, IN NEXT FEW SLIDES I'D LIKE TO DESCRIBE TO YOU THE REVIEW CRITERIA WHICH THE GRANTS WORKING GROUP USE TO EVALUATE THESE APPLICATIONS WHICH WE RECEIVED. I SHOULD POINT OUT TO YOU THAT THE DISEASE TEAM I AWARDS, WHICH IS NOW TWO YEARS OLD, WE HAVE LEARNED SOME LESSONS. AND WE SPECIFICALLY ASKED THE REVIEW COMMITTEE TO TAKE INTO CONSIDERATION THOSE CRITERIA WHICH WE FOUND PARTICULARLY USEFUL. SO THE REVIEW CRITERIA INCLUDES THESE SEVEN CATEGORIES. THAT IS, SIGNIFICANCE AND IMPACT, PROJECT RATIONALE, DEVELOPMENT READINESS, FEASIBILITY OF THE PROJECT

PLAN, QUALIFICATIONS OF PRINCIPAL INVESTIGATOR AND THE DEVELOPMENT TEAM, COLLABORATIONS, AND IN SOME CASES WHERE THE CONDITIONS WERE PUT ON SOME SPECIFIC APPLICATIONS AT THE TIME OF THE PLANNING AWARDS. SO WE ASKS GRANTS WORKING GROUP TO REVIEW THOSE CONDITIONS AS WELL.

NOW, THE SIGNIFICANCE AND IMPACT IS IMPORTANT REVIEW CRITERIA. WE ASKED THE REVIEW PANEL TO SEE WHETHER THE TARGET PRODUCT PROFILE IS SCIENTIFICALLY AND CLINICALLY REASONABLE. WE ASKED THE GRANTS WORKING GROUP TO SEE WHETHER THE APPLICATIONS WHICH ARE SUBMITTED, THEY HAVE OVERALL DEVELOPMENT STRATEGIES WELL CONSIDERED, AND THERE IS AN EVIDENCE THERE IS A COMMITMENT OF MOVING A CANDIDATE THROUGH DEVELOPMENT TO THE PATIENTS AND IT'S NOT FOR ANOTHER PUBLICATION. WE ASKED WHETHER IF THIS PARTICULAR CANDIDATE CAN BE SUCCESSFULLY DEVELOPED AND MADE AVAILABLE TO THE PATIENTS, WHETHER IT WILL HAVE A SIGNIFICANT IMPACT ON THE STANDARD OF CARE, AND IT'S NOT ANOTHER ME TOO CANDIDATE. WE ASKED THE REVIEWERS TO LOOK AT THE RESPONSIVENESS OF THOSE APPLICATIONS IN VIEW OF THE RFA OBJECTIVES.

PROJECT RATIONALE IS IMPORTANT REVIEW CRITERIA. AND THAT MUST BE STRONG, THAT THEY HAVE

PROVIDED EVIDENCE THAT THERE IS STRONG SCIENTIFIC RATIONALE WHICH IS SUPPORTED BY THE COMPELLING PRECLINICAL STUDIES FOR THE PROPOSED THERAPEUTIC INTERVENTION OF THE TARGET DISEASE OR INJURY WHICH A PARTICULAR APPLICATION IS TARGETING.

THERAPEUTIC DEVELOPMENT READINESS IS AN IMPORTANT REVIEW CRITERIA. THOSE PROJECTS WHICH ARE BEGINNING WITH IND-ENABLING STUDIES, WE ASK THE REVIEW PANEL TO SEE WHETHER THERE IS COMPELLING AND REPRODUCIBLE PRECLINICAL DATA DEMONSTRATING THE DISEASE-MODIFYING ACTIVITIES AND OTHER ATTRIBUTES WHICH SPECIFICALLY SEES WHETHER THE PROGRAM OR THE PROJECT IS, IN FACT, READY TO ENTER INTO PRECLINICAL IND-ENABLING STUDIES.

WITH REGARD TO THE PROJECTS WHICH ARE BEGINNING WITH CLINICAL STUDIES, WE ASK GRANTS WORKING GROUP TO SEE WHETHER THE IND HAS BEEN FILED AND THE FDA CORRESPONDENCE ARE INCLUDED IN THE APPLICATIONS. AND IF THERE WAS A CLINICAL HOLD, THE MAJOR ISSUES, IN FACT, HAVE BEEN RESOLVED. SINCE THESE ARE ENTERING INTO THE CLINIC, WE SPECIFICALLY ASKED WHETHER THE PRECLINICAL STUDIES HAVE BEEN COMPLETED AND, OF COURSE, OTHER ACTIVITIES WHICH ARE REQUIRED FOR A SUCCESSFUL TRANSLATION OF THESE PROJECTS INTO THE CLINIC AND THOSE ACTIVITIES, IN

FACT, HAVE BEEN COMPLETED.

FEASIBILITY OF THE PROJECT PLAN IS ANOTHER IMPORTANT REVIEW CRITERIA. WE SPECIFICALLY ASKED THE REVIEW PANEL TO SEE WHETHER THE APPLICANTS HAVE PROVIDED PROJECT MILESTONES, THEY HAVE PROVIDED GO/NO-GO DECISION POINTS, AND THE SUCCESS CRITERIAS ARE VERY WELL DEFINED, AS WELL AS THE PROJECT TIMELINES ARE COMPLETE AND REALISTIC.

WE ASKED GRANTS WORKING GROUP TO COMMENT ON THE QUALIFICATIONS OF THE PRINCIPAL INVESTIGATOR AND THE DEVELOPMENT TEAM AS WELL AS ON THE CLINICAL INVESTIGATORS OF THE CLINICAL SITES WHERE THESE CLINICAL TRIALS WILL TAKE PLACE.

THE COLLABORATION RESOURCES AND ENVIRONMENT ARE IMPORTANT REVIEW CRITERIA. WE ASKED GRANTS WORKING GROUP TO ASSESS WHETHER THE PRINCIPAL INVESTIGATOR HAS PROVIDED EVIDENCE THAT THEY HAVE ACCESS TO THE RELEVANT ASSETS WHICH ARE CRITICAL FOR THE DEVELOPMENT OF A THERAPEUTIC CANDIDATE. THAT INCLUDES INTELLECTUAL PROPERTY, MT AGREEMENTS, LICENSES CROSS-REFERENCED TO THE DRUG, DEVICE, OR MASTER FILES, AS WELL AS THE COLLABORATIONS WHERE THERE IS EVIDENCE THAT COLLABORATIONS HAVE BEEN DEVELOPED.

NOW, IN TERMS OF THE CLINICAL TRIALS, IN

THE RFA, WHICH WE HAD ENCOURAGED THE APPLICANTS, ESPECIALLY FROM THE INDUSTRY, TO PROVIDE EVIDENCE THAT THEY HAVE, IN FACT, SECURED ADDITIONAL FUNDS TO FINISH OR CARRY OUT THESE CLINICAL TRIALS. SO WE ASKED THE REVIEW PANEL TO GIVE DUE CONSIDERATION FOR THOSE APPLICANTS WHICH HAVE SECURED ADDITIONAL FUNDS FOR THE CLINICAL TRIALS.

NOW, THE CONTRACT RESEARCH ORGANIZATIONS, MANUFACTURING ORGANIZATIONS, AND CONSULTANTS ARE REQUIRED. BECAUSE THESE PROJECTS ARE COMPLEX AND REQUIRED PROFESSIONAL HELP, SO WE ASKED THE REVIEW PANEL TO SEE WHETHER THEY, IN FACT, HAVE ALL THOSE ACTIVITIES AND ALL THOSE COLLABORATIONS ALREADY ESTABLISHED.

SO AS ELLEN POINTED OUT, IN THE REVIEW PANEL WHICH REVIEWS THESE GRANTS, IT CONTAINS EXPERTS FROM ALL DIFFERENT AREAS WHICH ARE IMPORTANT FOR THESE TRANSLATIONAL AND CLINICAL AWARDS. SO THAT INCLUDES EXPERTS WITH THE PRECLINICAL STUDIES INCLUDING PRECLINICAL TOX, PHARMACOLOGY EXPERTISE, AS WELL AS EXPERTS WHO HAVE KNOWLEDGE AND EXPERTISE IN THE CMC, THAT'S CHEMISTRY MANUFACTURING CONTROLS, AND EXPERTS WITH THE DISEASE IN THE CLINICAL AREA WHICH WAS SPECIFIED IN A PARTICULAR APPLICATION, AS WELL AS REGULATORY EXPERIENCE WHICH ARE REQUIRED TO

SUBMIT THESE APPLICATIONS.

PRODUCT DEVELOPMENT, PEOPLE WHO HAD EXPERIENCE FROM THE INDUSTRY EXPERIENCE IN TAKING PRODUCTS ALL THE WAY TO COMMERCIALIZATION WERE INCLUDED IN THE GRANTS WORKING GROUP PANEL.

SO THIS SLIDE ACTUALLY DESCRIBES THE SCORE DISTRIBUTION OF THE 21 APPLICATIONS WHICH WERE REVIEWED BY THE GRANTS WORKING GROUP USING THE REVIEW CRITERIA WHICH I JUST DESCRIBED. NOW, THESE 21 APPLICATIONS WERE REVIEWED ON THE SCIENTIFIC MERIT USING THE SCORE FROM ZERO TO ONE HUNDRED. NOW, THOSE APPLICATIONS WHICH RECEIVED A SCORE OF 72 OR ABOVE WERE PUT ON TIER I. THOSE APPLICATIONS WHICH RECEIVED A SCORE OF LESS THAN 57 WERE PLACED IN TIER III AND THE REST IN TIER II.

AFTER THE PROGRAMMATIC DISCUSSION, THE APPLICATIONS WHICH WERE TIER II WERE EITHER MOVED TO TIER I OR TO TIER III. AND OUTCOME WAS THAT SIX APPLICATIONS WERE RECOMMENDED FOR FUNDING BY THE GRANTS WORKING GROUP, WITH A TOTAL BUDGET UP TO $113 MILLION.

NOW, IN THE LAST FEW SLIDES I WILL DESCRIBE TO YOU THE SIX PROJECTS WHICH WERE RECOMMENDED BY THE GRANTS WORKING GROUP.

CHAIRMAN THOMAS: SOHIL, MR. JUELSGAARD

HAS A QUESTION.

DR. JUELSGAARD: SO JUST A LITTLE BIT AGO YOU REVIEWED A NUMBER OF THE REVIEW CRITERIA. YOU OUTLINED THEM FOR US. THEY CAME IN SIX DIFFERENT GROUPS. DID EACH AND EVERY APPLICATION THAT IS BEING RECOMMENDED MEET EACH AND EVERY ONE OF THOSE REVIEW CRITERIA?

DR. TALIB: SO THE WHOLE APPLICATIONS ARE REVIEWED ON ALL THE SIX REVIEW CRITERIAS. THERE IS NO WAY WHICH ON A PARTICULAR REVIEW CRITERIA. SO THE APPLICATIONS WERE REVIEWED ON THE SIX CRITERIAS AND ON THAT COMPOSITE BASIS WERE RECOMMENDED FOR FUNDING. SO THERE WAS NO SPECIFIC REASON FOR RECOMMENDING A PARTICULAR APPLICATION ON THE BASIS OF A SINGLE REVIEW CRITERIA, IF THAT IS THE QUESTION.

DR. JUELSGAARD: WELL, I GUESS I'M STILL NOT CLEAR AS TO THE ANSWER, SO LET ME JUST ASK THE QUESTION AGAIN. IT'S EITHER YES OR NO, AND THAT WILL HELP. SO DID EACH AND EVERY ONE OF THE APPLICATIONS THAT ARE BEING RECOMMENDED FOR APPROVAL MEET EACH AND EVERY ONE OF THE REVIEW CRITERIA THAT YOU OUTLINED? THAT'S EITHER A YES OR A NO.

DR. FEIGAL: YES, THAT EACH AND EVERY CRITERIA THAT YOU SAW WERE CONSIDERED BY THE GRANTS

REVIEW GROUP, AND THEY TOOK THAT INTO CONSIDERATION, EACH AND EVERY CRITERIA, AS THEY ARRIVED AT A SCORE.

DR. JUELSGAARD: PERFECT. THANK YOU, ELLEN.

DR. MELMED: YOU MENTIONED THE SCORE SHEET THAT WE RECEIVED SHOWS 68 AS THE CUTOFF. CAN YOU CLARIFY THAT, PLEASE?

DR. FEIGAL: LET ME CLARIFY.

DR. MELMED: WITH THE SCORE SHEET THAT WE RECEIVED IN OUR PACKAGES THIS MORNING.

DR. FEIGAL: WHAT YOU RECEIVED, I DON'T HAVE THAT PIECE OF PAPER RIGHT IN FRONT OF ME, BUT OF THE SIX, WHAT HAPPENED IS, AS SOHIL MENTIONED, SOME OF THE PROPOSALS WERE MOVED TO TIER I, RECOMMENDED FOR FUNDING, OTHERS WERE MOVED TO TIER III, AND THE PLACEMENT FOR WHAT IS FUNDABLE WAS, I BELIEVE, 68 AND ABOVE.

CHAIRMAN THOMAS: I THINK THE ANSWER TO THE QUESTION IS THAT THE PROPOSALS SCORED 68 AS A RESULT OF THE PROCESS WAS RECOMMENDED FOR FUNDING. SO THAT TIER II LINE PROPERLY AT THIS POINT SHOULD BE -- GIL, NO.

DR. SAMBRANO: NO. SO WHAT HAPPENS IN THIS PROCESS, THE GRANTS WORKING GROUP LOOKS AT THE SCORE DISTRIBUTION INDEPENDENT OF KNOWING WHAT THE

APPLICATIONS ARE. SO THEY VOTE AND DRAW A LINE, IN THIS CASE AT 71. SO ABOVE 71 THEY'VE DETERMINED THAT THESE ARE SCIENTIFICALLY MERITORIOUS BASED ON THE SCORE ALONE. ANYTHING BELOW 56 WAS DEEMED TO NOT BE MERITORIOUS. THOSE THAT FALL BETWEEN 56 AND 71 ARE TIER II, AND THOSE ARE OFTEN DISCUSSED. DURING THE COURSE OF THE GRANTS WORKING GROUP, EACH OF THOSE APPLICATIONS WERE EITHER PLACED INTO TIER III OR INTO TIER I.

SO THE ONE THAT SCORED A 68 WAS ORIGINALLY IN TIER II. IT WAS DISCUSSED AND RECOMMENDED TO BE MOVED INTO TIER I, WHICH IT WAS.

CHAIRMAN THOMAS: THANKS AGAIN, DR. SAMBRANO.

DR. TALIB: MR. SHEEHY WILL BE GOING THROUGH THE SCORES A LITTLE BIT LATER ON AS WELL.

SO I WAS DESCRIBING THAT WHAT I WOULD LIKE TO DO IN THE NEXT FEW SLIDES IS TO DESCRIBE TO YOU THE SIX PROJECTS WHICH WERE RECOMMENDED FOR FUNDING BY THE GRANTS WORKING GROUP.

THE NO. 1 DISEASE TEAM DISEASE, THE DISEASE INDICATION FOR THIS PARTICULAR DISEASE TEAM IS HUNTINGTON'S DISEASE. AND THE APPROACH THIS TEAM IS TAKING IS ALLOGENEIC MESENCHYMAL STEM CELLS WHICH ARE GENETICALLY ENGINEERED TO SECRETE BDNF TO TREAT

HUNTINGTON'S DISEASE. AND THE GOAL OF THIS PARTICULAR DISEASE TEAM IS AT THE END OF FOUR YEARS FILE AN IND, CONDUCT AND COMPLETE OBSERVATIONAL CLINICAL TRIAL, AND COMPLETE A PHASE I CLINICAL TRIAL.

THE SECOND TEAM WHICH THE DISEASE INDICATION FOR THE SECOND TEAM IS METASTATIC MELANOMA. THE APPROACH THIS DISEASE TEAM IS TAKING IS AUTOLOGOUS HEMATOPOIETIC STEM CELL WHICH ARE GENETICALLY ENGINEERED TO REDIRECT THE PATIENT'S IMMUNE RESPONSE AGAINST ADVANCE FROM THE AGGRESSIVE SKIN CANCER. THE GOAL OF THIS DISEASE TEAM IS TO FILE AN IND AND COMPLETE A PHASE I CLINICAL TRIAL.

NEXT DISEASE TEAM WHICH IS RECOMMENDED FOR FUNDING, THE DISEASE INDICATION IS OSTEOPOROSIS. AND THE APPROACH OF THIS TEAM IS TAKING A SMALL MOLECULE, LLP2A, THAT ENDOGENOUS MESENCHYMAL STEM CELLS TO THE BONE SURFACE TO FORM NEW BONE. THE GOAL OF THIS DISEASE TEAM IS TO FILE AN IND AND COMPLETE A PHASE I CLINICAL TRIAL.

NEXT DISEASE TEAM, THE DISEASE INDICATION WHICH THIS PARTICULAR DISEASE TEAM IS TARGETING IS CRITICAL LIMB ISCHEMIA. AND THE APPROACH IS TO USE ALLOGENEIC MESENCHYMAL STEM CELLS WHICH ARE GENETICALLY ENGINEERED TO PRODUCE VASCULAR

ENDOTHELIAL GROWTH FACTOR OR VEG-F THAT PROMOTE BLOOD VESSEL GROWTH FORMATION. AND GOAL, AGAIN, OF THIS TEAM IS TO FILE AN IND AND COMPLETE A PHASE I STUDY.

NEXT DISEASE TEAM, THE DISEASE INDICATION IS CERVICAL SPINAL CORD INJURY. THE APPROACH THIS TEAM IS TAKING IS AN ALLOGENEIC NEURAL STEM CELL TRANSPLANTATION TO TREAT CHRONIC CERVICAL SPINAL CORD INJURY. AND THE GOAL IS TO COMPLETE AND FILE AN IND AT THE END OF FOUR YEARS.

NEXT DISEASE TEAM, AGAIN, THE DISEASE INDICATION FOR THIS DISEASE TEAM IS HEART FAILURE. THE APPROACH THIS DISEASE TEAM IS TAKING IS ALLOGENEIC HEMATOPOIETIC STEM CELL-DERIVED CARDIOMYOCYTES TO TREAT END-STAGE HEART FAILURE. AND THE GOAL IS TO CARRY OUT IND-ENABLING STUDIES AND AT THE END OF FOUR YEARS FILE A WELL-SUPPORTED IND. AND I BELIEVE THIS IS THE LAST TEAM.

SO IN TERMS OF THE SUMMARY, AS I POINTED OUT EARLIER, THERE ARE SIX PROPOSALS RECOMMENDED FOR FUNDING AND TWO, AS ELLEN POINTED EARLIER, AND THE GOAL IS TO FILE A WELL-SUPPORTED IND. FOUR OF THE DISEASE TEAM, THEY WILL DO IND-ENABLING STUDIES AS WELL, AND THEN THEY WILL COMPLETE EARLY PHASE CLINICAL TRIALS, PHASE I OR PHASE II CLINICAL TRIAL.

THE TOTAL BUDGET IS UP TO $113 MILLION FOR THESE SIX DISEASE TEAMS.

AND, MR. CHAIRMAN, THIS CONCLUDES MY PRESENTATION, AND I'LL BE HAPPY TO ANSWER ANY QUESTIONS WHICH THE BOARD MAY HAVE.

CHAIRMAN THOMAS: ANY QUESTIONS ON THIS PRESENTATION? JOAN.

MS. SAMUELSON: THERE WAS A TIMELINE THAT I THINK ELLEN, DR. FEIGAL, REVIEWED, BUT YOU PROBABLY KNOW IT TOO. YOU HAD CERTAIN NUMBERS OF GRANTS THAT WOULD BE ABLE TO COMPLETE AN IND-ENABLING PROCESS. THERE WERE SIX, AND THEN I THINK THERE WERE 14 IN LATER A CATEGORY. COULD YOU REPEAT?

DR. FEIGAL: CAN YOU HEAR ME FROM HERE? SO IT WASN'T REALLY A TIMELINE. WHAT I WAS TELLING YOU IS THE DENOMINATOR OF THE 21 PROPOSALS THAT CAME IN, AND OF THE 21 PROPOSALS, SIX WERE PROPOSING TO COMPLETE THE FILING OF A WELL-SUPPORTED IND TO THE FDA TO ALLOW THEM TO GO INTO FIRST-IN-HUMAN CLINICAL TRIALS. FOURTEEN WERE GOING TO DO THE FILING PLUS CONDUCT THE EARLY PHASE CLINICAL TRIALS. SO THEY HAD A LATER MATURATION OF THE DEVELOPMENT OF THEIR THERAPEUTIC CANDIDATE. AND ONE WAS AT A STAGE WHERE THEY PROPOSE TO START AND COMPLETE A PHASE II

CLINICAL TRIAL.

MS. SAMUELSON: FORGIVE ME, BUT COULD YOU JUST REPEAT THAT ONE MORE TIME BECAUSE THAT'S A LOT OF DATA. AND JUST A LITTLE MORE SLOWLY JUST REPEAT THE SAME THING.

DR. FEIGAL: WHAT I CAN DO IS SUPPLY IT IN WRITING.

MS. SAMUELSON: THIS IS THE PROPOSALS THAT WERE RECEIVED; IS THAT RIGHT?

DR. FEIGAL: THOSE WERE THE PROPOSALS THAT WERE RECEIVED.

MS. SAMUELSON: YOU ANALYZED THEM.

DR. FEIGAL: WE ANALYZED ALL 21. AND ACTUALLY IF YOU LOOK AT YOUR -- IT IS ALSO IN YOUR PREREAD. I JUST DID THE MATH. BUT BASICALLY OF THE 21 PROPOSALS THAT CAME IN, SIX WERE PROPOSING TO FILE THE IND, 14 WERE PROPOSING TO FILE THE IND AND COMPLETE AN EARLY PHASE CLINICAL TRIAL, AND ONE WAS PROPOSING TO START AND COMPLETE A PHASE II CLINICAL TRIAL. SO THAT ADDS UP TO 21.

CHAIRMAN THOMAS: MR. JUELSGAARD.

DR. JUELSGAARD: YES, ELLEN. SO THIS VERY LAST SLIDE INDICATES A BUDGET OF AROUND $113 MILLION. HOW RIGOROUSLY DO YOU TEST THE BUDGETS THAT ARE BEING PROPOSED FOR THE WORK THAT'S TO BE

DONE?

DR. FEIGAL: SO --

DR. JUELSGAARD: I DIDN'T SEE THOSE LISTED, BY THE WAY, ON THE REVIEW CRITERIA. THERE WASN'T ANYTHING ABOUT BUDGET REASONABLENESS. I'M JUST CURIOUS.

DR. FEIGAL: WE ACTUALLY HAD A GOOD -- FIRST OF ALL, THE BUDGET WAS LOOKED AT BY THE REVIEWERS AND COMMENTS WERE CAPTURED. IF YOU LOOK AT YOUR SUMMARIES, WE TRIED TO CAPTURE THE COMMENTS THAT WERE MADE BY THE REVIEWERS, THE GRANT REVIEWERS, AND PUT THOSE FORWARD AS PART OF THE SUMMARY THAT WE PROVIDED TO YOU.

WHAT WE'RE ACTUALLY PROPOSING TO DO IN THE FUTURE IS TO TRY AND FORMALIZE THAT IN A MORE ROBUST WAY THE BUDGET EVALUATION. BUT THESE BUDGETS ARE LOOKED AT DURING THE TIME OF GRANT REVIEW. THEY ARE ALSO LOOKED AT BEFORE MONEY GOES OUT THE DOOR WITH SCIENCE STAFF WORKING WITH THE APPLICANTS TO GO OVER THE BUDGET IN GREAT DETAIL AND DETERMINE THOSE ITEMS THAT ARE APPROPRIATE FOR THE LEVEL OF ACTIVITY THAT'S BEEN APPROVED.

DR. JUELSGAARD: SO JUST ONE FOLLOW-UP QUESTION. ARE YOU PERSONALLY SATISFIED THAT THE BUDGETS FOR EACH AND EVERY ONE OF THESE SIX

APPLICATIONS ARE REASONABLE FOR THE WORK THAT'S TO BE DONE?

DR. FEIGAL: AS AN AGENCY, I GUESS I WON'T SPEAK AS THE INDIVIDUAL, BUT AS AN AGENCY, I THINK WE DO FEEL THAT THE BUDGETS HAVE BEEN ASSESSED AND EVALUATED. AND IN COMBINATION WITH THE WORK THAT WILL CONTINUE TO TAKE PLACE BEFORE MONEY GOES OUT THE DOOR, WE WILL HAVE A COMPLETE ASSESSMENT.

WE SHOULD NOTE THE CAVEAT THAT SAYS UP TO 113 MILLION BECAUSE THAT DOESN'T TAKE INTO ACCOUNT THE CAVEATS THAT WERE RAISED AT THE TIME OF GRANTS REVIEW AND THAT MAY ARISE DURING WHAT WE CALL PREFUNDING ADMINISTRATIVE REVIEW. SO THAT IS THE CEILING. AND THERE WILL BE THE OPPORTUNITY TO MODIFY THAT BASED UPON OUR CONTINUED ASSESSMENT.

MR. JUELSGAARD: GREAT. THANK YOU.

MR. SHESTACK: DO YOU WANT TO JUST ADDRESS WHAT THE COMMITTEE DISCUSSED LAST NIGHT IN TERMS OF TRYING TO BUILD IN BUDGETARY REVIEW INTO THE PROCESS BECAUSE IT IS A CONCERN SOME PEOPLE HAVE.

CHAIRMAN THOMAS: MR. SHEEHY.

MR. SHEEHY: SURE. AND SHOULD I JUST FLOW INTO THAT THE DISCUSSION OF THE PROGRAMMATIC REVIEW?

CHAIRMAN THOMAS: YES. THAT WOULD BE GOOD. SO MR. SHEEHY IS GOING TO ANSWER MR.

SHESTACK'S QUESTION, AND THEN HE IS GOING TO GO NEXT TO A DISCUSSION OF THE PROGRAMMATIC REVIEW ELEMENTS OF THE GRANTS WORKING GROUP AND GIVE SOME STATEMENTS AS TO THOUGHTS ON SOME OF THE PROPOSALS.

MR. SHEEHY: AND I DID WANT TO NOTE, PER MR. JUELSGAARD'S QUESTION, THAT THESE ARE MILESTONE-DRIVEN GRANTS. AND WE HAVE, I THINK, A VERY ROBUST PROCESS FOR EVALUATING HOW THESE GRANTS PROCEED THROUGH THEIR MILESTONES. AND GRANTS ARE ENDED, AS WE KNOW, IF THEY DON'T MEET THEIR MILESTONES. I KNOW THAT LOOKS LIKE A VERY BIG NUMBER. BUT I DO HAVE TO COMPLIMENT STAFF ON THEIR WORK IN TRYING TO MAKE SURE THAT THE MONEY IS WELL SPENT AND THAT WE GET GOOD SCIENCE AND GOOD RESULTS FOR PATIENTS AT THE END OF THE DAY WITHOUT NEEDLESSLY SPENDING MONEY.

NOW, LAST NIGHT WE HAD A DISCUSSION. WHEN WE ORIGINALLY SET UP THE PEER REVIEW PROCESS, WE DID NOT INCLUDE BUDGETS AS ONE OF THE CRITERIA FOR EVALUATING THE GRANTS. SO WHAT WE'RE DOING NOW, AND AFTER HAVING SAT THROUGH GOING ON EIGHT YEARS -- WELL, SIX YEARS OF PEER REVIEW WHERE REVIEWERS HAVE MENTIONED FROM TIME TO TIME THAT THEY THOUGHT THE BUDGETS WERE EXCESSIVE, WE WERE PUTTING IN PLACE -- WE'RE IN THE INITIAL STAGES, WORKING WITH STAFF, IN

PUTTING IN A PROCESS BY WHICH WE CAN GET REVIEWER'S SPECIFIC DIRECTION ON SPECIFIC BUDGET ITEMS SO THAT STAFF CAN APPROPRIATELY TRIM THE BUDGETS.

WE CAN ATTACH CONDITIONS TO BUDGETS, FOR INSTANCE, AND I CAN TALK ABOUT THAT AS PART OF PROGRAMMATIC REVIEW. BUT THIS WAY WILL GIVE US A LITTLE BIT OF FINE-TUNING.

I THINK WHEN WE INITIALLY STARTED DOING THIS, BOTH THE LEVEL OF GRANTS AND THE TYPE OF FUNDING THAT WE WERE DOING, WE WERE NOT PREPARED AT THAT TIME, I THINK, TO REALLY SERIOUSLY ADDRESS BUDGETS. BUT I THINK BY THE END OF THE PROCESS THAT WE STARTED ON LAST NIGHT, WE'LL BOTH HAVE A GOOD PROCESS FOR EVALUATING THE BUDGETS AND WE WILL ALSO BE ABLE TO SUPPORT STAFF. AS DR. FEIGAL NOTED, STAFF HAS THE ABILITY NOW TO LOOK AT BUDGETS, BUT IT'S KIND OF DIFFICULT. AFTER WE'VE APPROVED A GRANT WITH A SPECIFIC BUDGET, THE POWER RATIO BETWEEN THE GRANTEE AND THE ADMINISTRATION OF THE GRANTS IS A LITTLE BIT SKEWED.

WE'VE SAID YOU'RE GOING TO GET ALL THIS MONEY, AND THEN THEY SAY, WELL, MAYBE NOT ALL OF IT, AND I THINK IT MAKES IT CHALLENGING FOR STAFF. SO WE WANT TO BE ABLE TO SUPPORT STAFF WITH GOOD, SOLID EVIDENCE AND WITH THE PEER REVIEWERS' STRONG

DIRECTION THAT THE BUDGETS ARE APPROPRIATE FOR THE TASKS THAT ARE BEING DONE.

SO DOES THAT KIND OF BRING US WHERE WE ARE? WE SHOULD HAVE SOMETHING --

DR. LUBIN: SO I THINK THAT'S A GOOD IDEA. SO I'M SURE MOST OF YOU, IF NOT ALL OF YOU, KNOW AT NIH THE BUDGETS ARE REVIEWED BY REVIEWERS, BUT THE DECISION REGARDING THE SCIENCE IS DONE SEPARATE FROM THE BUDGET. SO IF SOMEONE HAD A BUDGET THAT WAS FOUR TIMES SOMETHING ELSE, THEY'D SAY WE DON'T WANT TO DO THAT BECAUSE WE COULD REALLY DO THIS OTHER THING, BUT IT'S THE SCIENCE THAT DRIVES IT. AND THEN AFTER A SCORE IS GIVEN, THE BUDGET IS CAREFULLY REVIEWED TO BE SURE IT'S WELL JUSTIFIED. AND I SUSPECT WE'RE GOING TO DO THE SAME, BUT I THINK OBVIOUSLY A BUDGET REVIEW IS CRITICAL, BUT IT SHOULDN'T IMPAIR THE QUALITY OF THE SCIENCE IN THE APPLICATION.

MR. SHEEHY: YOU BASICALLY HAVE RECAPITULATED ALMOST THE EXACT DISCUSSION WE HAD LAST NIGHT.

DR. LUBIN: I'M SORRY I COULDN'T COME LAST NIGHT.

MR. SHEEHY: I WAS GOING TO SAY, DR. LUBIN, WE'RE BRINGING BACK WHATEVER PROPOSAL IS

PREPARED BY STAFF WITH MUCH OF THE DIRECTION THAT YOU JUST ENUNCIATED. WE'RE BRINGING THAT BACK TO THE SCIENCE SUBCOMMITTEE. SO YOU WILL HAVE AN OPPORTUNITY ALONG WITH THE OTHER MEMBERS TO REALLY GO OVER THIS WITH A FINE-TOOTHED COMB.

SO NOW THAT -- I WAS GOING TO LEAD INTO A DISCUSSION OF PROGRAMMATIC REVIEW JUST TO BE CLEAR ON WHAT HAPPENS. SO FIRST, WE GET THE SCIENTIFIC SCORES AND WE HAD THE HISTOGRAM UP. AND TO BE CLEAR, THE REASON WE DO THOSE FIRST CUTS IS IN ORDER TO ALLOW THE GROUP TO SPEND THEIR TIME ON GRANTS THAT MAY HAVE MERIT, BUT HAVE NOT REALLY CLEARLY FALLEN WITHIN A SCORE RANGE OF FUNDABLE OR NOT FUNDABLE. BECAUSE OF OUR CONFLICTS ISSUES, WE ONLY WANT TO DISCUSS GRANTS WITH PEOPLE IN THE ROOM WHO ARE WITHOUT CONFLICT.

SO IN TERMS OF TIME, IT REALLY BENEFITS US TO TAKE THE GRANTS WITH MERIT CLEARLY OFF THE TABLE. IT DOESN'T MEAN THAT ONCE WE IDENTIFY THEM, WE CAN'T BRING THEM BACK INTO PLAY, BUT IT REALLY ALLOWS US TO SPEND MOST OF OUR TIME WITH THOSE GRANTS THAT ARE ON THE EDGE, WHICH DON'T ALWAYS GET PULLED UP IN NUMERICAL RANK. IT JUST SO HAPPENS AT THIS PARTICULAR TIME THE ONE GRANT THAT WAS MOVED UP DURING PROGRAMMATIC REVIEW HAPPENED TO BE THE NEXT

SCORING GRANT. BUT THERE IS, AS PEOPLE WILL KNOW, THEY'VE BEEN PULLED UP NOT NECESSARILY IN THAT ORDER BEFORE.

AND SOME OF THE CONSIDERATIONS THAT COME INTO PLAY IN PROGRAMMATIC REVIEW ARE SPECIFICALLY DISEASES THAT WE'RE TACKLING TO MAKE SURE THAT WE HAVE BREADTH IN OUR PORTFOLIO IN THE DISEASES THAT WE ARE TACKLING. SOME DISEASES FOR A LOT OF REASONS ARE NOT -- DON'T RECEIVE THE FUNDING THAT OTHER DISEASES DO. AND IF WE HAVE AN OPPORTUNITY TO ADVANCE SOME SCIENCE THAT HAS SOME MERIT, MIGHT NOT BE PERFECT, BUT IT CAN MAKE A DIFFERENCE IN A DISEASE, WE WANT TO BE ABLE TO DO THAT. AND I THINK THAT THAT'S A FEATURE OF OUR PROGRAM THAT'S BEEN A BENEFIT.

THAT'S WHY PATIENT ADVOCATES ARE IN THE ROOM. WE DO NOT REREVIEW THE SCIENCE. THE SCORES ARE FIXED. SO THE SCORES ARE NOT CHANGED, BUT WE DO LOOK AT DISEASE OR CONDITION AS ONE ASPECT. ANOTHER MIGHT BE APPROACH. SOME APPROACHES ARE INHERENTLY MORE RISKY. AND CERTAINLY, AS WE KNOW, BASED ON HOW WE WERE ESTABLISHED, PLURIPOTENT APPROACHES STILL DON'T HAVE A VERY CLEAR AND CLEAN PATHWAY TO THE CLINIC. THERE'S A LOT OF CONCERNS ABOUT THOSE APPROACHES. AND FROM TIME TO TIME WE'VE MOVED

APPLICATIONS UP BECAUSE WE WANT TO ENCOURAGE THESE APPROACHES. WE'RE UNIQUELY PLACED WITH THE ABILITY TO MOVE SOME OF THOSE THINGS FORWARD.

NOW, I THINK THAT THE PROGRAMMATIC REVIEW FOR THIS PARTICULAR CYCLE WAS WELL DONE, AND I THOUGHT IT WAS A VERY, VERY SPIRITED AND VIGOROUS REVIEW ALTOGETHER. AS YOU CAN SEE, THEY WERE VERY COMPLEX APPLICATIONS. AND THE DILIGENCE OF STAFF AND THE REVIEWERS IN TACKLING THE GRANTS I REALLY COMMEND BOTH. IT'S A TON OF WORK TO DO SO.

DID YOU HAVE A QUESTION?

DR. PIZZO: THANKS, JEFF. AND I THINK YOU'VE GIVEN A VERY HELPFUL DESCRIPTION OF THE PROCESS, WHICH, I'M SURE, IS ENORMOUSLY DIFFICULT AND COMPLICATED. SO THANK YOU FOR THAT. I HAVE SORT OF JUST A GENERIC NUMERICAL QUESTION, AND IT IS THE FOLLOWING. IN TERMS OF THE REVIEWS THAT ARE DONE PER GRANT OR APPLICATION, ON AVERAGE HOW MANY ARE THERE? AND IS THERE AN EQUALIZATION OF THE NUMBERS PER SUBMISSION?

AND THE REASON I'M ASKING THAT IS, AS I SCAN THE DATA LOOKING AT THIS, WITHOUT EVEN RECONCILING IT TO THE MERIT OF THE GRANT, THERE SEEMS TO BE A CONSIDERABLE SPREAD IN TERMS OF THE SCORES LOW AND HIGH. THEY'RE TIGHTER IN THE FIRST

SIX GROUPS. THERE ARE HIGHER NUMBERS OVERALL. WHEN YOU GET TO THE NEXT GROUP, THEY VARY A LOT. THE HIGHS ARE LOWER AND THE LOWS ARE REALLY LOWER, BUT THERE'S A RANGE BETWEEN THEM.

FROM A PURELY METHODOLOGICAL POINT OF VIEW, I'M QUERYING IN THOSE WHERE YOU'VE GOT A HIGH-LOW SCORE, DO YOU RECONCILE THE NUMBER OF RATERS PER GRANT SO THAT THAT COMES INTO ACCOUNT?

AND SECONDLY, AS JUST SORT OF AN INTEREST SCORE, HAVE YOU EVER LOOKED AT THE INTERRATER VARIANCE AS AN INDEPENDENT VARIABLE? MEANING THE LOW PEOPLE, LOW SCORES GENERALLY CONVEY FROM CERTAIN INDIVIDUALS WHO MORE LOWLY RANK, OR IS THERE A SPREAD AMONG THEM? BECAUSE IT'S HARD TO UNDERSTAND HOW WE SEE SO MUCH IN THE VARIANCE.

MR. SHEEHY: WELL, FIRST OF ALL, THE 15 SCORERS SCORE EVERY GRANT. AND THEN TO GO TO YOUR SECOND QUESTION, I MAY NOT HIT THIS EXACTLY RIGHT. WHEN WE UNBLIND AND WE LOOK AT THE ACTUAL GRANTS, WE GET THIS INFORMATION THAT YOU HAVE. SO THE STANDARD DEVIATION. SO WE GET THE AVERAGE, THE MEDIAN, AND THE STANDARD DEVIATION. AND WHEN WE SEE A HIGH STANDARD DEVIATION IN PROGRAMMATIC REVIEW, THAT ALMOST CERTAINLY CAUSES A DISCUSSION TO TAKE PLACE. AND I THINK SOMETIMES THAT CAN BE -- IF YOU HAD A

DISEASE THAT IS FAIRLY DIFFICULT TO TACKLE WITH AN APPROACH THAT'S FAIRLY DIFFICULT TO OPERATIONALIZE, LIKE AN EMBRYONIC STEM CELL OR IPS CELL APPROACH IN A DISEASE THAT'S HARD TO TACKLE, AND YOU HAD A HIGH STANDARD DEVIATION, THAT MIGHT BE SOMETHING WHERE YOU MIGHT THINK -- CLEARLY WHAT DRIVES THOSE DEVIATIONS TEND TO BE THE ACTUAL REVIEWERS. AND YOU WILL HAVE SOMEONE WHO'S REALLY ENTHUSIASTIC ABOUT THE GRANT AND SOMEONE WHO DOESN'T BELIEVE IT WILL WORK. AND THESE WILL BE EXPERTS IN THE FIELD WHO JUST SIMPLY DON'T AGREE.

AND THAT'S WHERE PROGRAMMATICALLY MANY TIMES WE MAKE THE DECISION AS AN AGENCY THIS IS WHERE SOMETIMES WE WANT TO TAKE THOSE RISKS BECAUSE IT WILL MAKE A DRAMATIC DIFFERENCE IN THE LIVES OF PATIENTS. SOMETIMES THAT'S WHERE THE GREAT SCIENCE IS. A LOT OF PEOPLE DON'T THINK IT CAN BE DONE, BUT THERE'S SOMEBODY WHO THINKS IT DOES.

AGAIN, WE ALWAYS WANT TO MAINTAIN THE INTEGRITY OF THE SCIENTIFIC REVIEW. IF SOMEBODY IS GIVING IT A VERY SOLID FUNDING SCORE AND BELIEVES IN THE SCIENCE AND WAS A REVIEWER WHO CLEARLY LOOKED AT THE GRANT CAREFULLY, WE DON'T REREVIEW THE SCORES, WE DON'T REREVIEW THE SCIENCE, BUT THOSE OTHER CONSIDERATIONS, THEN, WE CAN REALLY BRING TO BEAR

WITH SOME CONFIDENCE THAT WE HAVEN'T UNDERMINED THE INTEGRITY OF THE PROCESS AND THAT THE QUALITY OF THE PROJECT CAN BE THERE ULTIMATELY. DOES THAT MAKE SENSE?

DR. PIZZO: YES, IT DOES. AND I'M ACTUALLY ASSURED BY THE FACT THAT YOU ARE LOOKING AT THAT STANDARD DEVIATION BECAUSE MANY PEOPLE WOULD SAY THAT SOME OF THE MOST IMPORTANT SCIENTIFIC DISCOVERIES HAVE GOTTEN THE LOWEST GRANT SCORES OR NOT EVEN BEEN FUNDED. SO THE FACT THAT YOU'RE ACTUALLY LOOKING AT THAT VARIANCE AND QUESTIONING IT IS A REALLY GOOD THING. THANK YOU.

MR. ROTH: SO THIS IS A REPEAT COMMENT THAT I MADE AFTER DISEASE TEAM I, THAT WHEN I THINK ABOUT IND-ENABLING AND CLINICAL TRIALS, I ASSOCIATE THAT WITH THE EXPERTISE OF INDUSTRY IN GENERAL. AND I GUESS, ONCE AGAIN, I'M DISAPPOINTED THAT SO FEW INDUSTRY PROPOSALS ACTUALLY ENDED UP. I THINK WE HAVE ONE, IF I HEARD CORRECTLY, ONE INDUSTRY PROPOSAL.

SO A QUESTION TO YOU, JEFF, AND TO THE STAFF IN GENERAL. WERE THERE COMMONALITIES THAT CAUSED THIS FALLOUT RATE TO TAKE PLACE? ONE OTHER CLARIFICATION. HOW MANY PRE-APPS WERE THERE, PREAPPLICATIONS?

DR. FEIGAL: DO YOU WANT ME TO ANSWER THAT QUESTION? I BELIEVE THERE WERE 19 PLANNING AWARDS THAT WERE ELIGIBLE TO SUBMIT A PROPOSAL, AND THEN THE REMAINDER -- GIL, YOU HAVE EXACT NUMBERS THAT YOU CAN GIVE NOW.

DR. SAMBRANO: THERE WAS NO PRE-APP PROCESS. SO THE PLANNING AWARDS WERE DONE IN LIEU OF PREAPPLICATIONS. SO THERE WERE --

MR. ROTH: HOW MANY INDUSTRY WERE IN THE PLANNING AWARDS THEN?

DR. SAMBRANO: SO THERE'S SIX TOTAL THAT CAME IN VIA THE FINAL BOUT. I NEED TO LOOK UP THE NUMBER THAT WERE THROUGH THE PLANNING AWARD. IT WAS, SAY, FOUR.

MR. ROTH: I WANT TO POINT THAT OUT, THAT THERE'S SOMETHING HAPPENING IN GENERAL. I'M NOT THERE, SO I DON'T UNDERSTAND WHY THESE DON'T GET THROUGH. MAYBE YOU COULD COMMENT, JEFF.

MR. SHEEHY: WE HAD SEVERAL REVIEWERS WITH SIGNIFICANT INDUSTRY EXPERIENCE. SO AT LEAST IN THIS PARTICULAR ROUND, I DON'T BELIEVE THAT THERE WAS A BIAS AGAINST INDUSTRY. AND I WOULD NOTE THAT SIMULTANEOUS WITH THIS WE HAVE THE STRATEGIC PARTNERSHIP OPPORTUNITY, WHICH I THINK THERE MAY HAVE BEEN -- THAT SOME FOLKS MAY HAVE DECIDED THAT

THEY PREFERRED TO BE IN THAT ROUND AS OPPOSED TO THIS ROUND. DR. FEIGAL HAS A COMMENT.

DR. FEIGAL: I JUST WANT TO COMMENT THAT 100 PERCENT OF THE PROPOSALS FOR THE STRATEGIC PARTNERSHIP ARE COMING FROM INDUSTRY.

MR. SHEEHY: I BELIEVE THAT IS HIGHLY OVERSUBSCRIBED. AND I HOPE THAT IF WE FIND GOOD PROPOSALS, THAT -- I THINK THAT WILL BALANCE OUT. THIS HAD A RELATIVELY LARGE BUDGET, AND THE STRATEGIC OPPORTUNITY HAD A RELATIVELY LOW BUDGET. AND I HAVE A FEELING AT THE END OF THE DAY THAT THEY'RE GOING, BETWEEN THE TWO OF THEM, TO FIND THEIR LEVEL.

DR. TROUNSON: SO, JEFF, I THINK IT WAS ONE OUT OF FOUR VERSUS ONE OUT OF THREE. I DON'T THINK THIS IS REALLY STATISTICALLY SIGNIFICANT AT THAT LEVEL. ONE WOULD HOPE IT WOULD IN TIME BE BALANCED, BUT IT WAS ONE OUT OF THREE VERSUS ONE OUT OF FOUR. ONE OUT OF THREE NOT-FOR-PROFITS AND ONE OUT OF FOUR FOR THE FOR-PROFITS.

MR. SHEEHY: DR. LUBIN.

DR. LUBIN: SO I WAS JUST CURIOUS IF YOU COULD COMMENT ON THE PREAPPLICATION SCORES OR LEVEL OF ENTHUSIASM AND THE FINAL SCORES.

MR. SHEEHY: YOU MEAN THE PLANNING GRANT

SCORES? WELL, YOU KNOW, THAT I'D HAVE TO GO BACK AND LOOK AT IT. I JUST REALLY GOT ALERTED TO THAT, I THINK, LOOKING AT THE BLOGGER, THAT THERE WAS A DISCREPANCY THERE. I WILL SAY THAT THERE'S A CONSIDERABLE DIFFERENCE BETWEEN THE TWO APPLICATIONS. AND ONE IS RELATIVELY BRIEF, AND CERTAINLY THESE FINAL APPLICATIONS, YOU NEED A PLANNING AWARD, I THINK, IN MANY INSTANCES TO BE ABLE TO PULL TOGETHER JUST ALL THE PAPER ETC., ETC. IT TAKES TO PULL THESE TOGETHER.

DR. FEIGAL: I WANT TO SAY THAT OUR SCIENCE OFFICERS HAVE ACTUALLY LOOKED AT THAT IN TERMS OF THE PLANNING AWARDS IN RELATIONSHIP TO THE ACTUAL RESEARCH AWARD. AND I THINK IN SOME INSTANCES THERE MIGHT HAVE BEEN CONCORDANCE AND OTHERS THERE WAS NOT. IT DEPENDED SOME WHETHER THE ADVICE WAS TAKEN AND/OR WHETHER OTHER THINGS HAPPENED.

BUT AS JEFF VERY CLEARLY POINTED OUT, VERY DIFFERENT CONTENT OF APPLICATIONS BETWEEN WHAT'S IN A PLANNING AWARD AND WHAT COMES IN A RESEARCH AWARD. WE'LL ACTUALLY BE BRINGING THAT UP TO YOU WHEN WE PRESENT THE NEXT SET OF CONCEPTS.

DR. JUELSGAARD: SO THIS IS A QUESTION BOTH FOR YOU, JEFF, AND FOR YOU, DR. FEIGAL. SO IN

THE REVIEW CRITERIA, UNDER THE PROJECTS BEGINNING WITH IND-ENABLING STUDIES, THE FOURTH ONE THAT'S MENTIONED IS ARTICULATED DEVELOPMENT STAGE APPROPRIATE REGULATORY STRATEGY. AND I NOTE THAT ON THE SLIDE THAT HAS THE WORKING GROUP EXPERTISE, THERE'S A REGULATORY EXPERTISE.

AND THIS IS A FOLLOW-UP SORT OF ON DR. PIZZO'S QUESTION, BUT IN A LITTLE DIFFERENT FASHION. SO IF THE PEOPLE WITH REGULATORY EXPERTISE REALLY GRADE THAT PARTICULAR APPLICATION LOW, WHEREAS EVERYTHING ELSE WERE GRADED ESPECIALLY HIGH, WOULD THE FAILURE OR THE LOW GRADE ON THE PART OF THE REGULATORY EXPERTISE PEOPLE ON THE REGULATORY FRONT DISQUALIFY THAT APPLICATION?

DR. FEIGAL: TO ADDRESS YOUR QUESTION, LET ME ANSWER IT THIS WAY. THE SCORES, THERE'S A PRELIMINARY SCORE THAT EACH REVIEWER MAY LOOK AT IN ISOLATION. AND THEY MAY FOCUS A LOT OF THEIR ATTENTION IN THAT AREA WHERE THEY HAVE THE MOST EXPERTISE. BUT BEFORE THEY PROVIDE THEIR FINAL SCORE, THEY LISTEN TO ALL THE OTHER REVIEWERS' COMMENTS ON OTHER ASPECTS IN THEIR PARTICULAR AREA OF EXPERTISE, AND THEY MAY IN MANY INSTANCES ALTER THEIR SCORE TO TAKE INTO ACCOUNT OTHER STRENGTHS AND WEAKNESSES ON A COMPOSITE AREA OF WHAT THE ISSUES

ARE.

HOWEVER, IF THEY FEEL THERE'S A REAL FATAL FLAW OR SERIOUS, EGREGIOUS ISSUE, THEY MAY VERY WELL KEEP THAT SCORE LOW BECAUSE THEY SEE THAT AS A DEAL BREAKER IN TERMS OF MOVING THE PROGRAM FORWARD.

I CAN'T GIVE YOU A BLACK-AND-WHITE YES OR NO. IT'S A NUANCED ANSWER TO YOUR QUESTION.

MR. SHEEHY: BUT, AGAIN, TO REPEAT DR. FEIGAL'S POINT, THE REVIEWERS STATE THEIR INITIAL SCORE. AND THROUGH THE DISCUSSION, THE REGULATORY INDIVIDUALS DO, I THINK, HAVE CONSIDERABLE WEIGHT. AND TO GIVE YOU AN EXAMPLE OF JUST AN ALMOST TRIED EXAMPLE, BUT HAS COME UP, IF YOU HAVEN'T PICKED THE RIGHT ANIMAL MODEL IN WHICH TO TEST YOUR PRODUCT, THAT SAYS A LOT. AND THE REGULATORY SPECIALIST SAYS THE NIH -- FIRST OF ALL, I JUST WANT TO GIVE ENORMOUS CREDIT TO STAFF FOR BRINGING IN, I THINK, WHAT ARE REALLY TOP-FLIGHT REGULATORY SPECIALISTS TO ADVISE US ON THESE GRANTS. THEY'VE REALLY DONE A GREAT JOB WITH THIS, AND I AM IMPRESSED EVERY TIME I HEAR THESE DISCUSSIONS.

WHEN THEY SIT THERE AND THEY SAY THE FDA REQUIRES THESE TYPES OF EXPERIMENTS AND THESE TYPES OF ANIMALS IN ORDER TO GET APPROVAL FOR AN IND, IF PEOPLE HAVEN'T REALLY THOUGHT THAT THROUGH VERY

WELL, ARE THEY REALLY PREPARED TO TAKE $20 MILLION OF OUR MONEY AND GET TO AN IND IN FOUR YEARS? I THINK THAT THAT SEVERELY ALTERS THE SCORE AND APPROPRIATELY IN MOST INSTANCES.

DR. PIZZO: THIS IS ANOTHER EXTENSION OF STEVE'S COMMENT, AND I REALIZE THESE DATA MAY NOT BE TOTALLY AVAILABLE. BUT JUST TO ASSESS THE PURITY OF THE PROCESS, I THINK JEFF IS ALLUDING TO THIS, AS YOU LOOK AT THE SCORERS, IS THERE SIGNIFICANT OR SUFFICIENT VARIANCE FROM THOSE WHO MIGHT HAVE SCORED EITHER LOW OR HIGH BECAUSE IT CAN BE BIDIRECTIONAL FROM PRELIMINARY TO THE FINAL SCORING? THAT IS, DO PEOPLE CHANGE THEIR MINDS IS WHAT I'M REALLY ASKING.

AND SECONDLY, IS THERE A CLUSTER OF CERTAIN TYPES OF INDIVIDUALS WHO ARE JUST LOW SCORERS OR HIGH SCORERS CONSISTENTLY ACROSS THE SPECTRUM?

DR. FEIGAL: I COULD GIVE AN ANSWER, GIL COULD GIVE A BROADER ANSWER BASED ON A SIGNIFICANT AMOUNT OF MORE DATA, BUT I CAN SAY THAT ALL OF THE ABOVE CAN OCCUR IN ANY KIND OF A REVIEW PROCESS. THAT WHAT I THINK HELPS MITIGATE SOME OF THE VARIABILITY IS THERE CAN BE ALMOST A RECALIBRATION. SO THAT THOSE WHO HEAR THE OTHER DISCUSSIONS, HEAR THINGS ARE BEING RATED, AND THEY VOLUNTARILY SAY I

MAY HAVE BEEN TOO HARSH OR I MAY HAVE BEEN TOO OPTIMISTIC, AND THEY MAY GO UP OR COME DOWN BASED UPON THE CALIBRATION OF WHAT'S GOING ON IN THAT ROOM IN THAT PARTICULAR REVIEW SESSION.

DR. PIZZO: THAT'S WHAT I'M HOPING YOU WERE GOING TO SAY BECAUSE I THINK THAT TENDS TO MAKE ANY POTENTIAL BIAS ON ONE SIDE OR THE OTHER LESS RELEVANT. I THINK WHEN WE JUST LOOK AT SCORES THAT ARE HIGHLY VARIANT, IT BECOMES IMPORTANT JUST TO UNDERSTAND THE PROCESS. I THINK THIS LAST ANSWER HELPS WITH THAT. THANK YOU.

DR. TROUNSON: JUST IN ADDITION, JEFF, I THINK WE ASKED THEM TO USE THE FULL RANGE, PHIL. AND WE REALLY DO SO THAT THEY'RE NOT ALL CLUSTERED TOGETHER SO TIGHTLY THAT WE CAN'T SEPARATE THEM. AND IF YOU HAVE A REVIEWER WHO FEELS THERE'S A FATAL FLAW, IT WILL GET DOWN INTO AGGRESSIVELY DOWN HIGH OR AGGRESSIVELY UP HIGH, AND THERE WILL BE VARIANCE ASSOCIATED WITH THAT BECAUSE WE'VE INSTRUCTED THEM TO USE THAT WHOLE RANGE.

DR. PIZZO: I UNDERSTAND THAT. I'M JUST TRYING TO MAKE SURE THAT THE PROCESS DOESN'T BRING TOGETHER PEOPLE WHO ALWAYS SEE A FATAL FLAW OR ALWAYS SEE NIRVANA, BUT ARE ABLE TO SEE SOME VARIATION BETWEEN THAT AND MOVE IN ONE DIRECTION OR

THE OTHER. THAT'S A GOOD PROCESS.

DR. FEIGAL: I ALSO JUST WANT TO CLARIFY BECAUSE I DON'T THINK IT'S BROUGHT UP. THERE IS AN OPPORTUNITY NOT JUST TO CONSIDER THOSE PROPOSALS THAT WERE IN TIER II. THERE IS ALSO AN OPPORTUNITY TO LOOK AT THOSE PROPOSALS IN TIER III. AND I JUST DON'T THINK THAT HAD BEEN MADE CLEAR, SO I WANTED TO CLARIFY THAT AS WELL.

MR. SHEEHY: I HAVE MS. GIBBONS AND THEN DAVID SERRANO-SEWELL AND THEN DR. LEVIN.

CHAIRMAN THOMAS: COULD I JUST ASK, WHEN PEOPLE ARE MAKING THEIR COMMENTS, WE WANT TO PROCEED TO ACTUAL CONSIDERATION OF THE PROPOSALS. SO LET'S TRY TO KEEP OUR COMMENTS SUCCINCT. THANK YOU.

MS. GIBBONS: JEFF, WITH ALL OF THAT AS A BACKGROUND, AS IT MAY BECOME RELEVANT TO OUR UPCOMING DISCUSSION ON ALL OF THE PETITIONS AND OTHER APPLICATIONS THAT WE MAY WANT TO MOVE AROUND, HOW COMMON IS IT THAT A PLANNING GROUP SCORE WOULD BE WILDLY DIFFERENT FROM THE FINAL SCORE? DOES THAT RARELY HAPPEN?

MR. SHEEHY: I HAVEN'T LOOKED AT THAT. SO I CAN'T -- YOU KNOW, IF THAT'S SOMETHING THAT COMES UP DURING THE LATER DISCUSSION, I THINK THAT THAT'S FINE, BUT I PERSONALLY HAVE NOT LOOKED AT THAT

MYSELF. SO I CAN'T REALLY OFFER THAT. I HAD NOT CONSIDERED THAT. I TAKE EACH OF THESE REVIEWS SEPARATELY MYSELF.

DR. SAMBRANO: CAN I OFFER JUST MAYBE PERHAPS A LITTLE BIT OF CONTEXT ON THAT? I THINK THE THING TO CONSIDER, GOING BACK A LITTLE BIT TO THE NUMBERS OF PLANNING AWARDS, THERE WERE A TOTAL OF 36 PLANNING AWARDS THAT WERE REVIEWED, AND SEVEN OF THOSE WERE FROM FOR-PROFIT COMPANIES. NOW, WHEN THEY WERE SCORED, WHAT WE ASKED REVIEWERS TO DO IS TO SPREAD THE SCORES OUT. SO THEN THOSE THAT WERE INVITED, THEN, IN A RANGE FROM 87 TO 57. SO NOW YOU IMAGINE THOSE COMING IN FOR A FULL APPLICATION REVIEW, THE APPLICATION IS DIFFERENT, IT HAS MORE DETAIL. THERE ARE THINGS THAT HAVE EVOLVED SINCE THE TIME OF THE PLANNING AWARD BECAUSE THERE WAS AT LEAST A SIX- TO SEVEN-MONTH PERIOD THAT OCCURRED IN BETWEEN. AND THEN SO WE ASKED THEM AGAIN TO SPREAD THE SCORES.

SO THE SCORES BETWEEN THE PLANNING AWARD AND THE RESEARCH AWARD ARE NOT NECESSARILY DIRECTLY RELATED. THEY ARE NOW IN THE CONTEXT OF ALL THOSE THAT CAME IN INITIALLY AS HAVING A PLANNING AWARD AND, THUS, WERE ALREADY AT THE VERY TOP. SO I THINK ONE HAS TO BE CAUTIOUS ABOUT COMPARING THOSE TWO.

MR. SHEEHY: DR. FEIGAL AND THEN WE'LL HAVE DAVID SERRANO-SEWELL AND DR. LEVIN.

DR. FEIGAL: JUST QUICKLY, IN ADDITION TO THE CONTENT BEING DIFFERENT, THE BUDGETS ARE QUITE DIFFERENT. THE BUDGET FOR A PLANNING AWARD WAS 100,000. THE BUDGET FOR A DISEASE TEAM IS UP TO 20 MILLION. SO THERE'S A DIFFERENT MIND-SET WHEN YOU'RE LOOKING AT SOMETHING WHERE THERE IS A MUCH SMALLER BUDGET VERSUS A $20 MILLION BUDGET.

MR. SERRANO-SEWELL: JEFF, I JUST WANTED TO AMPLIFY SOMETHING ELLEN SAID TO DEAN PIZZO'S QUESTION. THAT IS THAT IT IS A ROBUST DISCUSSION, BUT IT IS NOT -- WHILE ALL OF THE ABOVE DOES HAPPEN, IT IS NOT UNUSUAL TO HAVE AN INSTANCE WHERE YOU HAVE, WHEN WE START WITH OUR THREE SCORES, THREE REVIEWERS AND THEY ANNOUNCE THEIR SCORES, TO HAVE TWO HIGH SCORES AND ONE VERY LOW SCORE. AND THAT INFLUENCES THE PROCESS WHEN THE FULL 16 DO THEIR NOTATIONS. THAT DOES NOT HAPPEN. IT HAPPENS WITH SOME FREQUENCY. AT LEAST THAT'S BEEN MY EXPERIENCE. THE SCORES ARE WHAT THE SCORES ARE, BUT THAT DOES HAPPEN.

DR. LEVIN: SO I'M NOT SURE THIS IS THE TIME FOR THIS QUESTION, BUT TO THIS POINT, I DON'T FEEL LIKE WE'VE HEARD THE OPINION OF THE CIRM

SCIENTIFIC STAFF. LAST NIGHT IN SCIENCE SUBCOMMITTEE, WE APPROVED THE DOCUMENT FOR THE ROLES AND RESPONSIBILITIES DURING THE GRANTS WORKING GROUP. AND ONE OF THEM WAS THAT THE SCIENTIFIC STAFF WOULD CONSIDER WHETHER THERE ARE APPLICATIONS WHICH THEY BELIEVE WARRANT PARTICULARLY CLOSE REVIEW BY THE BOARD. AND I HAVEN'T HEARD THAT.

AND FURTHERMORE, WE HAVE AN UNPRECEDENTED NUMBER OF EXTRAORDINARY PETITIONS, MOST OF WHICH CAME ON TIME. AND IN PREVIOUS ROUNDS, WE'VE GOTTEN SOME SORT OF RESPONSE FROM THE PRESIDENT AND THE SCIENTIFIC STAFF ON THAT, AND I DON'T BELIEVE WE GOT ANY OF THAT EITHER.

SO IS THAT UPCOMING?

MR. SHEEHY: WELL, I WAS GOING TO ADDRESS THAT NEXT. AND TO BE CLEAR, WE HAVE DECIDED NOT TO RESPOND TO EVERY EXTRAORDINARY PETITION, BUT ONLY THOSE THAT STAFF WOULD LIKE TO RESPOND TO. SO I WILL COME BACK TO YOUR POINT.

JOAN HAD A COMMENT SHE WANTED TO MAKE, AND THEN I THINK IF WE COULD MOVE ON BECAUSE WE'RE REALLY TALKING ABOUT PROCESS NOW.

MS. SAMUELSON: THERE'S ANOTHER THING THAT OPERATES IN SETTING THE SCORES, AND THAT IS THAT THERE'S STRONG ENCOURAGEMENT AT TIMES TO BRING

SCORES TOGETHER. AND IT HAS BEEN THE CASE THAT WHEN THERE IS SOMEONE WHO CHOOSES TO HAVE A VERY LOW SCORE AND THERE'S ENCOURAGEMENT TO BRING SCORES TOGETHER, IT HAS THE EFFECT OF DRIVING SCORES DOWN. AND THAT IS NOT -- AND I'VE SEEN IT DONE, NOT BECAUSE THERE WAS A CONSENSUS BELIEF THAT THE GRANT HAD NO MERIT, BUT SIMPLY TO HAVE A COMMON CONSENSUS ABOUT WHAT THE SCORE IS. AND THAT AT LATER POINTS CAN PROVE HARMFUL TO A GIVEN GRANT'S CHANCES OF BEING FUNDED.

AND THERE WILL BE TIMES, I THINK, IN OUR PROCESS WHEN WE HAVE TO LOOK AT THE HISTORY OF A GRANT AND SEE WHETHER THAT HAPPENED AND TAKE IT INTO CONSIDERATION BECAUSE IF WE DECIDE TO VOTE AGAINST A GRANT SIMPLY BECAUSE IT HAS A LOW SCORE, IT MAY NOT BE BECAUSE OF LACK OF MERIT EXCLUSIVELY OR PREDOMINANTLY, AND THAT COULD BE A REAL PROBLEM IF IT HAS OTHER IMPORTANT PROGRAMMATIC BENEFITS. AND THEN THERE'S AN ASSUMPTION THAT IT LACKS SCIENTIFIC MERIT. I'M SAYING THAT IT'S NOT ALWAYS BEEN THE CASE, AND I THINK WE'LL HAVE TO LOOK AT THAT AND MAYBE TALK ABOUT IT AT GREATER LENGTH IN CLOSED SESSION.

MR. SHEEHY: SO I WOULD LIKE TO GO AHEAD AND SPECIFICALLY TALK ABOUT TWO GRANTS THAT STAFF

HAS IDENTIFIED. AND I'M SEPARATING THESE OUT BECAUSE THESE ARE REALLY NOT PROGRAMMATIC ISSUES. I THINK WHEN THE BOARD DOES DISCUSS THE GRANTS AND THE EXTRAORDINARY PETITIONS LATER, WE WILL BE LOOKING PREDOMINANTLY FROM A PROGRAMMATIC POINT OF VIEW. AND THESE TWO GRANTS, ONE IS 5426, IF MY EYES DON'T DISTURB ME, WHICH IS FOR DUCHENNE MUSCULAR DYSTROPHY. AND THE OTHER IS 5735. BOTH OF THESE GRANTS, AND I'M GOING TO TURN THIS OVER TO DR. TROUNSON IN A SECOND, WE RECEIVED SIGNIFICANT NEW INFORMATION, SCIENTIFIC INFORMATION, THAT LEADS US TO WANT TO EMPLOY THE ADDITIONAL ANALYSIS OPTION.

I THINK DR. TROUNSON HAS EXPRESSED THIS, AND I HAVE TO SAY I CONCUR. I'M NOT COMFORTABLE AT THIS LEVEL MOVING THESE GRANTS INTO THE FUNDABLE CATEGORY WITHOUT GIVING AT LEAST THIS PARTICULAR PROCESS WHICH ALLOWS FOR ANOTHER LOOK AT IT BY SCIENTISTS ANOTHER REVIEW WITHOUT GIVING THE SCIENCE A GOOD LOOK. BUT THE NEW DATA THAT'S BEEN PROVIDED FOR BOTH OF THESE GRANTS, I THINK, IS VERY POWERFUL. IT'S INCLUDED IN THEIR EXTRAORDINARY PETITIONS.

I WOULD HOPE THAT WE COULD SEND AT LEAST THESE TWO GRANTS BACK FOR ADDITIONAL ANALYSIS. AND THEN, OF COURSE, AFTER WE GET THAT INPUT FROM THE SCIENTISTS, THOSE GRANTS WILL COME BACK TO THE BOARD

FOR FINAL DISPOSITION. I'LL REPEAT. IT'S 5426 FOR DUCHENNE MUSCULAR DYSTROPHY, AND THE OTHER IS 5735, WHICH IS A HEART DISEASE GRANT.

CHAIRMAN THOMAS: MR. HARRISON HAS A COMMENT, MR. SHEEHY.

MR. HARRISON: NOW THAT WE'VE IDENTIFIED PARTICULAR APPLICATIONS, I'D JUST LIKE TO REMIND THE MEMBERS THAT YOU SHOULD EACH HAVE A LIST OF THE APPLICATIONS FOR WHICH A CONFLICT HAS BEEN IDENTIFIED IN FRONT OF YOU. SO PLEASE LOOK AT THAT LIST BEFORE OFFERING ANY COMMENTS REGARDING ANY OF THE APPLICATIONS THAT HAVE BEEN IDENTIFIED.

MR. SHEEHY: DR. TROUNSON.

DR. TROUNSON: THANK YOU, JEFF. IN THE SPIRIT OF WHAT JAMES JUST SAID, NOTE THAT ANY OF MY COMMENTS DON'T RELATE AT ALL TO 736, 416, OR 365 FOR WHICH I HAVE A CONFLICT. OKAY.

SO I'M GOING TO BE -- STAFF HAVE LOOKED AT THESE PROJECTS, ALL OF THEM, IN THESE CATEGORIES. AND WE THINK THAT THESE TWO CASES THAT JEFF IDENTIFIED, WHICH BOTH HAVE PRETTY LOW SCORES, ONE DOWN PRETTY LOW IN THE SYSTEM THERE, I THINK EVERYBODY KNOWS THE SCORES, SO THEY'RE DOWN AT 45 AND 51. SO THESE ARE NORMALLY WAY BELOW WHAT IS BEING CONSIDERED TO BE FUNDED.

THERE HAS BEEN NEW INFORMATION AND I THINK SIGNIFICANT NEW INFORMATION. IN THE CASE OF THE CAPRICOR PROJECT, WHICH IS 735, THEY HAVE OBTAINED AN IND AND WE DIDN'T KNOW THIS. THERE ARE MATERIALS ASSOCIATED WITH THAT IND. WE DIDN'T KNOW THAT. THEY'VE ALSO GOT FUNDING FROM NIH FOR THE PHASE I PART OF THEIR PROJECT.

SO THIS NEEDS, I THINK, SOME CONSIDERATION BECAUSE I FEEL THAT ADDRESSES MANY OF THE COMMENTS MYSELF. AND STAFF AGREE WITH ME THAT THAT IS THE CASE.

AND THE OTHER PROJECT IS INTERESTING BECAUSE IT WAS ONLY TWO DAYS AGO THAT THERE WAS A SIGNIFICANT RELEASE OF NEW INFORMATION, ONLY TWO DAYS BEFORE THIS, AND IT WAS A PUBLIC RELEASE OF INFORMATION THAT SHOWED THAT THE DRUG, THE EXON-SKIPPING DRUG, THAT THE APPLICANTS WERE USING HAS SHOWN SOME BENEFIT IN WALKING, IN FUNCTION FOR PATIENTS, AND THEY WANT TO ADD AN ADDITIONAL DRUG TO IMPROVE THAT.

I THINK SOME OF THE REAL ISSUES WITH THAT PARTICULAR PROJECT, THAT THE DRUG THAT THEY WERE USING HADN'T SHOWN ANY BENEFIT WHATSOEVER TO PATIENT; WHEREAS, THE COMPETITIVE DRUG HAD SHOWN A LOT OF EFFECT AND WAS ACTUALLY MOVING, HAS MOVED

INTO PHASE III. SO THERE WAS A REAL COMPETITIVE ISSUE THERE. I THINK THAT NEEDS TO GO BACK AND BE REFERRED TO SEE WHETHER THAT LARGELY ADDRESSES THE ISSUES THAT THE GRANTS WORKING GROUP HAD.

ON THE OTHER PROJECTS I COULDN'T REALLY FIND WHAT I CONSIDER SIGNIFICANT DIFFERENCES IN TERMS OF ADDING NEW INFORMATION, NOR DOES STAFF BELIEVE THAT'S THE CASE. SO I'M NOT GOING TO COMMENT ON THOSE THREE PROJECTS. I'LL ASK ELLEN TO MAKE A COMMENT ON THOSE. SO THAT EXCLUDES THOSE THREE PROJECTS FOR WHICH I HAVE A CONFLICT. BUT I'M NOT SURE HOW DEEP, JEFF, YOU WANT ME TO SORT OF GO IN THIS, BUT I THINK BOTH OF THESE WOULD WARRANT THAT PROCESS. THEY'RE LOW SCORES. THEY NEED TO GO BACK TO SEE WHETHER THE NEW INFORMATION WOULD, IN FACT, BRING THEM INTO A SCORABLE RANGE. I THINK THAT WOULD BE THE CHALLENGE FOR THE REVIEW. I THINK THAT WOULD CONSIDERABLY HELP THE ICOC.

MR. TORRES: IS A MOTION IN ORDER, MR. SHEEHY, AT THIS POINT?

MR. SHEEHY: I WAS GOING TO ASK THE CHAIR. IT MIGHT BE HELPFUL FOR US IF WE COULD DO THAT AT LEAST FOR THOSE TWO. AND IN ANTICIPATION OF YOUR MOTION, I WOULD HOPE THAT IT WOULD INCLUDE DIRECTION THAT WE RENEW THIS PROCESS AT LEAST FOR ANOTHER

PERIOD OF TIME BECAUSE IT HAD ELAPSED AND THAT WE BRING TO THE BOARD CONSIDERATION OF RENEWAL OF THE ADDITIONAL ANALYSIS PROCESS AS WELL. DR. THOMAS, IS THIS OKAY FOR A MOTION AT THIS POINT?

CHAIRMAN THOMAS: I THINK SENATOR TORRES IS CORRECT. THOSE ARE TWO MOTIONS. I, HOWEVER, WOULD ENCOURAGE BOTH OF THOSE MOTIONS TO BE MADE IF SENATOR TORRES SO CHOOSES.

MR. TORRES: SO MOVED.

MR. SHESTACK: I'LL SECOND.

CHAIRMAN THOMAS: I THINK YOU HAVE TO HAVE ONE AT A TIME.

MR. SHEEHY: WELL, THEY CAN GO AS A JOINT MOTION, I THINK, CAN'T THEY, JAMES?

MS. FEIT: CAN WE HAVE A CLEAR STATEMENT OF WHAT THE MOTIONS ARE GOING TO BE AS THE IDENTIFICATION OF THE TWO PROGRAMS WE'RE MAKING THE MOTION ON?

MR. HARRISON: I WAS FIRST GOING TO RECOMMEND THAT WE TAKE EACH OF THE APPLICATIONS SEPARATELY BECAUSE THERE ARE DIFFERENT CONFLICTS AND A DIFFERENT QUORUM REQUIREMENT FOR EACH, AND MEMBERS MAY HAVE DIFFERENT VIEWS ABOUT THEM.

AS I UNDERSTAND THE MOTION, IT IS TO REFER, FIRST, APPLICATION NO. 5426 TO THE PEER

REVIEW GROUP OR A SUBSET OF IT FOR ADDITIONAL ANALYSIS AND RECOMMENDATION TO THE BOARD AS TO WHETHER THE NEW INFORMATION WOULD CHANGE THE RECOMMENDATION.

THE SECOND APPLICATION THAT WAS IDENTIFIED IS APPLICATION 5735, AND I ASSUME THERE WOULD BE DISCRETION VESTED IN DR. TROUNSON AND JEFF SHEEHY AS CO-VICE CHAIR TO DETERMINE WHETHER SOME SUBSET OF THE PEER REVIEW GROUP COULD RESOLVE THIS ISSUE.

MR. TORRES: WHO ARE THE CONFLICTS FOR 5426?

MR. HARRISON: TYPICALLY WE SIMPLY DO NOT CALL THOSE MEMBERS WHO HAVE CONFLICTS. YOU HAVE THE LIST IN FRONT OF YOU. SO IF YOU'RE ON THAT LIST, YOUR NAME WILL NOT BE CALLED.

MR. TORRES: A LOGISTICAL QUESTION, MR. COUNSEL. SHOULD WE PROCEED FIRST WITH A MOTION TO REINSTATE THE LAPSED PROCESS?

MR. HARRISON: NO. THE BOARD HAS INHERENT AUTHORITY TO REFER THESE APPLICATIONS BACK TO PEER REVIEW FOR ADDITIONAL CONSIDERATION. AS MR. SHEEHY SAID, STAFF HAS CLEARLY HEARD THE DIRECTION TO BRING A PROCESS BACK TO THE BOARD FOR ITS CONSIDERATION, AND WE WILL DO SO.

MR. TORRES: THEN I MOVE THAT WE MOVE ITEM

NO. 5426 FOR THIS ADDITIONAL REVIEW.

MR. SHESTACK: I'LL SECOND THAT.

CHAIRMAN THOMAS: DISCUSSION? IT'S BEEN MOVED AND SECONDED. DISCUSSION BY MEMBERS OF THE BOARD? MR. JUELSGAARD.

DR. JUELSGAARD: YES. JUST SO I'M CLEAR, EITHER DR. TROUNSON CAN ANSWER THIS OR MR. SHEEHY. BUT WHAT SPECIFIC ITEMS WERE IDENTIFIED IN THE APPEAL THAT PRECIPITATED THE DESIRE TO REVIEW THESE, TO RELOOK AT THESE ONE MORE TIME? CAN YOU IDENTIFY THE TOP THREE, FOUR, OR FIVE ITEMS OF NEW INFORMATION, PLEASE?

DR. TROUNSON: IF I CAN HELP YOU BY PROVIDING YOU SOME ANSWERS. IT WAS PUBLICLY RELEASED TWO DAYS AGO THAT THE DRUG THAT THIS GROUP IS WORKING WITH AND THE GROUP IS INTENDING TO USE A DUAL DRUG APPROACH, BUT THE PRIMARY DRUG, THE EXON-SKIPPING DRUG, THAT THE GROUP IS WORKING WITH HAS SHOWN BENEFIT TO PATIENTS. NOW, THAT WAS AN ISSUE FOR THE ORIGINAL GROUP, THAT, IN FACT, IT HADN'T SHOWN ANY FUNCTION IN PATIENTS AND ALSO WAS LAGGING, I THINK, ON TERMS OF ITS SKIPPING ABILITY TO A COMPETITIVE DRUG.

NOW, I THINK THAT'S CHANGED WITH THE RELEASE OF THAT INFORMATION. NOW, THAT IS PUBLIC

INFORMATION THAT'S AVAILABLE. AND WE WANTED TO DRAW THAT TO YOUR ATTENTION BECAUSE WE THINK THAT THAT MAY ACCOUNT FOR A CONSIDERABLE COMPONENT OF THE CRITIQUE THAT WAS AIMED AT THIS. IF YOU WERE GOING TO USE AN ENHANCEMENT TO THESE EXON SKIPPING, WHY WOULDN'T YOU DO IT WITH THE PREFERRED DRUG WHICH WAS SHOWING FUNCTION RATHER THAN THE ONE THAT WAS NOT SHOWING ANY FUNCTION? THAT SEEMED TO BE A CONCERN AND I THOUGHT A PRETTY VALID CONCERN ON BEHALF OF THE REVIEW TEAM.

AND SO I THINK THAT MIGHT MAKE A DIFFERENCE, STEVE. I DON'T KNOW. I'M JUST GIVING YOU THIS INFORMATION, AND IT APPEARED TO ME AND TO STAFF, TO DR. FEIGAL AND OLSON AND OTHERS, THAT THIS WAS AT LEAST ADDRESSING ONE OF THE PRIMARY CONCERNS THAT THE REVIEWERS HAD, NOT COMPLETELY ALL OF THEM, BUT AT LEAST ONE OF THE PRIMARY CONCERNS.

MR. SHEEHY: IF I COULD JUST FOLLOW UP, IF YOU LOOK AT THE SCORES, THE LOW IS 15, STANDARD DEVIATION OF 17. AND WHAT HAPPENED WAS PRECISELY WHAT DR. TROUNSON HAS MENTIONED, WHICH I THINK WAS A FAIR FATAL FLAW, I HAVE TO SAY. I REALLY HAD FELT THAT FOR PROGRAMMATIC REASONS WE SHOULD TRY TO ADDRESS THIS DISEASE. BUT THE FACT THAT THE DRUG THAT THEY WERE HOPING TO USE WAS IN THE CONTEXT OF

THE COMBINATION PRODUCT HAD SIMPLY NOT PROVIDED ANY THERAPEUTIC BENEFIT WAS VERY COMPELLING TO THAT REVIEWER AND BASICALLY KEPT THE GRANT FROM BEING EVEN CONSIDERED FOR FUNDING.

SO I THINK THIS NEW INFORMATION IS SIGNIFICANT. IT'S SCIENCE-BASED INFORMATION AND WE SHOULD REEVALUATE THAT AND RECONSIDER WHAT WE DO WITH THIS GRANT.

DR. PIZZO: SO, ELLEN, YOU MENTIONED THE DATA WITH REGARD TO THE EXON-SKIPPING DRUG AND ITS IMPACT ON WALKING OR MOVEMENT. I NOTE IN THE REVIEW, THE FIRST BULLET SAYS, "A MAJOR FLAW WAS THE ABSENCE OF ANY DATA OR DISCUSSION ADDRESSING WHETHER POTENTIAL THERAPY WOULD IMPACT CARDIAC MUSCLES." THAT'S A SPECIFIC ONE.

MY WORRY ABOUT THAT IS TWOFOLD. ONE OF THEM IS THAT'S A PRETTY LATE ENDPOINT IN A DISEASE LIKE MUSCULAR DYSTROPHY. AND I WONDER ABOUT, A, THE RATIONALE FOR HAVING THAT AS A VALID ENDPOINT. AND SECONDLY, BECAUSE IT DOES STATE IT AS A MAJOR FLAW, I DON'T KNOW THAT THERE'S A CORRELATION BETWEEN THAT STATEMENT AND THE SCORE, BUT ONE MIGHT THINK THAT THAT IS. AND THAT JUST RAISES A LOT OF METHODOLOGICAL ISSUES. YOU'RE TALKING ABOUT EXPLORING NEW AGENTS FOR A PRETTY SIGNIFICANT

DISEASE AS WELL STATED IN THE OUTLINE, AND I WOULD THINK THAT IF WE PUT FORWARD ENDPOINTS THAT MEASURED DEATH AS THE END POINT, WE WOULD HAVE A LOT OF PROBLEMS GETTING ANY DRUGS STUDIED AND APPROVED. SO I'M JUST RAISING THAT AS A CONCERN AND AN ISSUE.

DR. TROUNSON: WELL, I AGREE WITH YOU, PHIL. MAYBE I THINK ELLEN IS ANXIOUS TO MAKE A COMMENT HERE, BUT I THINK THIS NEEDS TO GO BACK AND TO BE FURTHER CONSIDERED. BUT I THINK THAT'S THE BEST PLACE TO DO THAT BECAUSE I THINK WE NEED TO GET HOLD OF THIS WITH GOOD SCIENCE AND JUST SEE HOW WE FEEL ABOUT IT, THEN BRING IT BACK TO YOU WITH WHATEVER REVISED. IT MAY BE THAT THEY STILL DON'T AGREE, BUT LET'S FIND OUT WHAT THEY THINK, THAT IT INCLUDES THAT.

DR. STEWARD: THIS IS JUST TO CLARIFY THE MOTION. I THINK I HEARD TWO THINGS. ONE WAS -- AND THE MOTION WAS TO SEND IT BACK FOR CONSIDERATION, WHICH IS FINE, BUT THE TWO POSSIBILITIES WERE TO, IN FACT, USE, AGAIN, THE PROCEDURE THAT WE HAD IN PLACE BEFORE. AND THE SECOND, I THINK, WAS THAT IT WOULD BE LEFT TO THE DISCRETION OF MR. SHEEHY AND DR. TROUNSON TO ACTUALLY FIGURE OUT EXACTLY HOW TO DO IT. I JUST WANT TO CLARIFY WHICH IT IS, WHAT OUR MOTION IS.

MR. TORRES: I THOUGHT IT COULD BE EITHER.

DR. STEWARD: COULD I SUGGEST THAT IT BE THE ONE WHERE MR. SHEEHY AND DR. TROUNSON DECIDE EXACTLY HOW TO UNDERTAKE THIS?

MR. TORRES: I'LL ACCEPT THAT AMENDMENT.

DR. STEWARD: THANK YOU.

MR. SHESTACK: TO JEFF OR WHOMEVER, FIRST OF ALL, I AGREE STRONGLY THAT BOTH GRANTS ACTUALLY THERE WAS SUBSTANTIAL NEW INFORMATION, BUT ADDRESSING THE DMD GRANT, SUBSTANTIAL NEW INFORMATION THAT CAME IN AT AN UNFORTUNATELY LATE DATE, BUT VERY SUBSTANTIAL. AND ALSO AGREE STRONGLY WITH DR. PIZZO, THAT PERHAPS THE STANDARD OF AFFECTING CARDIAC FUNCTION WAS NOT THE RIGHT ONE, AND IT WAS MORE IT REALLY SHOULD BE MORE OF A PULMONARY FUNCTION THAT SHOULD HAVE BEEN -- PULMONARY FUNCTION IS MORE IMPORTANT ULTIMATELY IN THIS CASE.

BUT WHAT I REALLY ASK YOU, JEFF, IS WE SHOULD VOTE ON THIS MOTION, BUT FOR BOTH OF THESE GRANTS, THERE ARE ALSO SPECIAL PETITIONS, I THINK, FOR THEM, AND THERE ARE PEOPLE IN THE PUBLIC. I THINK THERE'S SOMEONE ACTUALLY SITTING IN MY OFFICE IN LOS ANGELES, BUT THERE ARE PEOPLE IN THE PUBLIC WHO WILL WANT TO ADDRESS IT. AND AT WHAT POINT

SHOULD THEY DO THAT?

CHAIRMAN THOMAS: LET ME ANSWER THAT QUESTION, MR. SHESTACK. WE FULLY INTEND FOR EVERYBODY WHO WANTS TO SPEAK TO BE HEARD. WE'RE GOING TO INITIALLY HAVE THE BOARD DISCUSSION. AND THEN WHEN THE BOARD HAS DISCUSSED, THEN WE WILL TURN TO PUBLIC COMMENT FOR THE RELEVANT PROPOSAL AT ISSUE.

MR. SHESTACK: THE QUESTION HERE IS WE'RE CONSIDERING -- THAT MAY BE TOTALLY APPROPRIATE. WE'RE ACTUALLY CONSIDERING A VOTE ON THIS OTHER PROCEDURE FOR THESE TWO GRANTS SEPARATELY. AND DOES THE PUBLIC -- DO WE GIVE THE PUBLIC WHO HAS THOUGHTS ON THAT AN OPPORTUNITY TO ADDRESS THAT?

CHAIRMAN THOMAS: ABSOLUTELY.

MR. HARRISON: COULD I JUST MAKE ONE SUGGESTION WITH RESPECT TO PROCESS, AND WE MAY BE PAST THAT POINT WITH RESPECT WITH THIS PARTICULAR APPLICATION. BUT FOR THE NEXT ONE THAT'S BEEN IDENTIFIED, IT MIGHT BE HELPFUL TO HAVE SCIENTIFIC STAFF MAKE A BRIEF PRESENTATION TO SET THE STAGE SO THAT MEMBERS UNDERSTAND WHAT'S AT ISSUE. AND THEN WE CAN DISCUSS IN GREATER DETAIL THE NEW INFORMATION THAT'S BEEN IDENTIFIED.

CHAIRMAN THOMAS: I THINK IF WE WOULD LIKE

TO DO THAT FOR THIS, IF THAT WOULD BE THE WISH OF THE BOARD, LET'S HAVE A BRIEF PRESENTATION JUST TO GIVE A BIT MORE DETAIL.

DR. FEIGAL: LET ME ASK DR. BETTINA STEFFEN TO STEP UP TO THE MICROPHONE TO GIVE A BRIEF SCIENCE OFFICER SUMMATION OF THE ISSUES.

DR. STEFFEN: WE'RE JUST TRYING TO FIGURE OUT HOW TO WORK WITH THE COMPUTER AND THE BINDER.

THIS PROPOSAL IS FOCUSED ON THE DEVELOPMENT, AS YOU'VE HEARD, OF A COMBINATION THERAPY WHICH IS BOTH AN ANTISENSE OLIGONUCLEOTIDE, WHICH I WILL CALL AN AO, AND IT'S IN CLINICAL TRIALS AS A SINGLE AGENT, AND IT'S BEEN PROPOSED TOGETHER WITH AN FDA-APPROVED SMALL MOLECULE DRUG TO TREAT DUCHENNE MUSCULAR DYSTROPHY. AND THE CONCEPT IS BASED ON AN APPLICANT'S PRECLINICAL OBSERVATION THAT THE SMALL MOLECULE CAN ENHANCE THIS EXON-SKIPPING ACTIVITY IN A PRECLINICAL MODEL OF DMD IN AN ASSAY OF HUMAN SKELETAL MUSCLE MYOTUBES.

SO WE TALKED ABOUT THE NEW INFORMATION. IN THE SUMMARY IN FRONT OF YOU, I'M GOING TO TAKE OFF THE TABLE RIGHT NOW ANY OF THE COMMENTS THAT RELATE TO THE PHASE II-B DATA BECAUSE THAT'S WHERE THE GRANTS WORKING GROUP HAD EARLIER INFORMATION FROM A 24-WEEK ENDPOINT VERSUS THE PRESS RELEASE

THAT CAME TO OUR ATTENTION WITH THE NEW DATA OF 36 WEEK.

SO THE STRENGTHS OF THE PROPOSAL, THAT THE DISEASE IS ONE OF THE MOST COMMON LETHAL MONOGENIC DISEASES, AND THERE ARE NO EXISTING TREATMENTS TO REDUCE THE BURDEN OF DISEASE. THE EXON SKIPPING IS AN ACTIVE AREA OF DEVELOPMENT, EXCITING RESEARCH. SO AT A MINIMUM, IF YOU WERE TO TAKE THIS COMBINATION NOW ALL THE WAY THROUGH DEVELOPMENT, AND IF THERE WERE NO ENHANCEMENT OF THE CLINICAL BENEFIT, BUT IT ALLOWED YOU TO GIVE LESS OF THE DRUG BECAUSE IT ENHANCED THE ACTIVITY OF THE ANTISENSE OLIGONUCLEOTIDE, THERE WOULD BE A DECREASE OF THE COST TO TREAT THE PATIENTS WITH THESE EXPENSIVE THERAPIES. AND THAT WAS RECOGNIZED AT THE GRANTS WORKING GROUP AS A REAL POTENTIAL BENEFIT.

THE TEAM WAS JUDGED TO BE STRONG. BOTH THE PI AND CO-PI'S COMMITMENT TO TRANSLATIONAL RESEARCH WAS ACKNOWLEDGED, AND THE GRANTS WORKING GROUP NOTED THAT THE PRODUCT DEVELOPMENT AND REGULATORY EXPERTISE WAS PROVIDED BY INDUSTRY PARTNERS IN THIS CASE. AND THE APPLICANT INSTITUTION WAS JUDGED TO BE WELL-SUITED TO SUPPORT THE RESEARCH AND THE PROPOSAL.

NOW, THE CHALLENGES WITH THE PROJECT, AND,

AGAIN, I'M TAKING THE PHASE II-B CLINICAL DATA OFF THE TABLE RIGHT NOW, AND I'M GOING TO COME BACK AND IDENTIFY WHERE THOSE COMMENTS WERE MADE. SO AS YOU FOLLOW THROUGH ON YOUR BINDER, YOU CAN LOOK AT THOSE SPECIFICALLY.

SO THE KEY CHALLENGES WERE READINESS OF THE COMBINATION PRODUCT TO MOVE INTO THIS STAGE OF DEVELOPMENT AND THE DEVELOPMENT PLAN AS IT WAS PROPOSED IN THE APPLICATION. SIMILARLY, THE BUDGET WAS FELT TO BE HIGH WITH SOME OVERLAP WITH THE COMPANY'S OWN PROGRAM FOR DEVELOPMENT OF THE SINGLE AGENT.

I'LL GO THROUGH A FEW OF THESE POINTS THAT WERE CHALLENGES IN DETAIL. SO THERE ARE TWO COMPANIES WORKING ON SINGLE-AGENT ANTISENSE OLIGONUCLEOTIDES THAT SKIP THE SAME AGENT. THEY ARE BOTH IN LATE CLINICAL TRIALS. ONE IS IN PHASE III, AND THIS IS IN PHASE II.

THE GRANTS WORKING GROUP QUESTIONED THE STRENGTH OF THE DATA TO SUPPORT THE PREMISE THAT THE DRUG CAN ACTUALLY INCREASE EXON SKIPPING. THE APPLICATION DIDN'T ADDRESS THE MAXIMUM LEVELS OF MUSCLE FIBERS THAT THE TEAM CAN AFFECT BY INCREASING THE EXON SKIPPING, NOR WAS A THRESHOLD DEMONSTRATED THAT MIGHT ALTER THE CLINICAL OUTCOMES. THE IN VIVO

XENOGENIC MODEL, THAT'S WHERE THE ANIMAL -- THE PRECLINICAL MODEL IS AN ANIMAL HOST AND HUMAN CELLS ARE PUT INTO IT, BUT IS PROPOSED FOR EFFICACY, AND DOSE FINDING WAS NOT JUDGED TO BE APPROPRIATE OR READY TO CONDUCT THE DOSE RANGING AND EFFICACY STUDIES.

REVIEWERS IDENTIFIED A RELEVANT PRECLINICAL MODEL WHICH IS IMPORTANT FOR ASSESSMENT OF STRUCTURAL OR FUNCTIONAL OUTCOMES.

THE APPLICANT NOTED THE POOR SOLUBILITY OF THE SMALL MOLECULE, SO THIS IS NOW THE FDA-APPROVED SMALL MOLECULE THAT'S PROPOSED WHICH MAY BE SUBOPTIMAL FOR ORAL ADMINISTRATION. THE GRANTS WORKING GROUP NOTICED REPLACEMENT WITH A MORE SOLUBLE COMPOUND IN THE CANDIDATE COMBINATION WOULD BE A DRAWBACK AND NECESSITATE FURTHER TESTING.

THE GRANTS WORKING GROUP POINTED OUT A NUMBER OF PRECLINICAL STUDIES THAT WOULD BE NEEDED TO DEMONSTRATE SAFETY OF THE PROPOSED COMBINATION PRODUCT ABOVE AND BEYOND SAFETY OF THE SINGLE AGENT. THE APPLICANT DIDN'T PRESENT DATA OR DISCUSS WHETHER THE POTENTIAL THERAPY WOULD IMPACT THE CARDIAC MUSCLE, AND WE'VE HEARD THE VIEWS ON THAT.

THE BUDGET COMMENTS, HERE, AGAIN, REGARDING REDUNDANCY WITH THE COMPANY'S SINGLE AGENT

DEVELOPMENT PROGRAM. THERE WERE TWO POINTS THAT ARE HIGHLIGHTED IN YOUR SUMMARY ABOUT THE CARCINOGENICITY FOR THE STUDY FOR THE SINGLE AGENT. THEY DIDN'T FEEL THAT THAT WAS APPROPRIATELY FUNDED IN THIS COMBINATION DRUG STUDY AND THE SIGNIFICANT AMOUNT OF FUNDS GOING TO THE INDUSTRY PARTNER FOR SUPPLIES FOR THE STUDIES IN YEAR ONE.

THE PROGRAMMATIC DISCUSSION, I'M GOING TO SKIP OVER THAT, AND THEN NOTE THAT THERE WAS AN EXTRAORDINARY PETITION SUBMITTED FOR THE APPLICATION.

BRIEFLY, I WANT TO TALK ABOUT THE NEW INFORMATION THAT CAME TO OUR ATTENTION. THIS WAS ISSUED AS A PRESS RELEASE BY THE COMPANY WHICH HAS PUT THIS OUT ON JULY 24TH, TWO DAYS AGO. AND IT SHOWED TWO THINGS. ONE, THAT DYSTROPHIN LEVELS INCREASE WITH THE SINGLE AGENT ANTISENSE OLIGONUCLEOTIDE TREATMENT, AND THERE'S A STATISTICALLY SIGNIFICANT BENEFIT IN FUNCTIONAL OUTCOMES AT 36 WEEKS IN THE WALK TEST.

THE GRANT WORKING GROUP DIDN'T HAVE THIS INFORMATION. AT THE TIME OF THE APRIL REVIEW, THEY HAD DATA THAT SHOWED AN INCREASE IN THE DYSTROPHIN LEVELS, BUT NO FUNCTIONAL BENEFIT, AS DR. TROUNSON HAS MENTIONED. AND THOSE COMMENTS IN THE RATIONALE

SECTION, SPECIFICALLY THE SECOND AND THIRD SUB-BULLETS THERE, REFLECT THAT EARLIER DATA.

SO I JUST WANTED TO DRAW THOSE TO YOUR ATTENTION. THE REST OF THE COMMENTS ARE NOT IMPACTED BY THAT DATA.

DR. PIZZO: SO, FIRST OF ALL, I CAN SAY THIS AS SOMEONE WITH PEDIATRIC BACKGROUND ON HOPE THAT THERE ARE THERAPIES THAT WILL BE AVAILABLE FOR CHILDREN WITH MUSCULAR DYSTROPHY, AND THAT IS ENCOURAGING. I'M MINDFUL OF TWO THINGS, ONE OF WHICH IS DATA RELEASE IN A PRESS RELEASE THAT COMES TWO DAYS BEFORE THIS MEETING HAS TO BE TAKEN WITH A CERTAIN DEGREE OF SUSPENDED BELIEF. I THINK THAT'S IMPORTANT. IF YOU DIDN'T HEAR THAT LAST COMMENT, MY FIRST COMMENT WAS TO SUPPORT AND HOPE THAT THERE WILL BE THERAPIES FOR CHILDREN WITH MUSCULAR DYSTROPHY.

THE SECOND IS THAT ONE IS MINDFUL THAT THE PROMISING DATA COMES IN A PRESS RELEASE FROM A COMPANY JUST TWO DAYS BEFORE THIS MEETING, AND THAT SHOULD REGISTER SOME DEGREE OF SUSPENDED BELIEF UNTIL WE SEE MORE DATA.

BUT THE THIRD IS REALLY A QUESTION TO THE PROGRAMMATIC GROUP. AND THAT IS, CAN YOU TELL US OR TELL ME WHAT THE RELEVANCE OF THESE STUDIES ARE TO

STEM CELL RESEARCH PER SE? I UNDERSTAND THE NATURE OF THE STUDY THAT'S BEING PROPOSED, BUT HOW DO WE DEFINE THIS IN THE SCOPE OF STEM CELL BIOLOGY AND THE WORK THAT WE'RE DOING AT CIRM?

DR. STEFFEN: SO THE STEM CELL COMPONENT OF THE PROJECT IS THAT THE APPLICANT STATES THAT THE ACTIVITY OF THE ENHANCED EXON SKIPPING WAS DEMONSTRATED AND OBSERVED IN A MYOTUBE, SO REPROGRAMMED FIBROBLAST TO MYOTUBES, AND IN AN IPS-DERIVED MUSCLE CELL ASSAY. SO IT WAS A TOOL FOR THE DISCOVERY OF THE SECOND AGENT.

CHAIRMAN THOMAS: OTHER COMMENTS BY THE BOARD? OKAY. NOW LIKE TO GO TO PUBLIC COMMENT. MR. SHESTACK, YOU INDICATE THERE ARE A NUMBER OF SPEAKERS IN YOUR OFFICE?

MR. SHESTACK: THERE'S A FAMILY IN MY OFFICE, BUT I THINK THERE ARE FAMILIES AND INVESTIGATORS HERE. I WOULD JUST LIKE TO ACTUALLY TAKE A BRIEF OPPORTUNITY TO -- WELL, ACTUALLY LET THEM SPEAK, AND LET'S TRY AND GET THE PEOPLE IN MY OFFICE BECAUSE THEY DROVE A LONG WAY, AND THEY'RE JUST PERCHED ON A CHAIR. I WOULD LOVE TO TURN TO THE FAMILIES AND EXPERTS IN OUR AUDIENCE FIRST.

CHAIRMAN THOMAS: OKAY. CAN I REMIND EVERYBODY THAT WE ARE GOING TO HAVE A LOT OF PUBLIC

COMMENT, AND WE WOULD LIKE TO KEEP ALL COMMENTS TO THREE MINUTES IN LENGTH. START FIRST WITH MR. REED.

MR. REED: JUST AN APPRECIATION THAT THIS HOPEFULLY WILL BE GIVEN A CHANCE FOR ADDITIONAL VIEWING BECAUSE IT IS A SINGULARLY VICIOUS DISEASE WHICH NOT ONLY RUINS MANY PEOPLE'S LIVES, BUT ALSO THE FAMILIES AS WELL. THANK YOU.

CHAIRMAN THOMAS: NEXT SPEAKER, PLEASE. EACH SPEAKER PLEASE IDENTIFY THEMSELVES AT THE OUTSET OF YOUR COMMENTS. THANK YOU.

DR. NELSON: THANK YOU VERY MUCH FOR THE OPPORTUNITY AND THE PREVIOUS DISCUSSION. WE FOUND IT VERY INTRIGUING TO HAVE OUR OWN SCIENCE DISCUSSED BY ALL OF YOU. I'M STANLEY NELSON. I'M A PHYSICIAN SCIENTIST AT UCLA, AND I'M OBVIOUSLY LOSING MY VOICE. SO WE'LL SEE IF I CAN EVEN LAST THREE MINUTES.

BUT ONE OF THE THINGS THAT DOES DISTINGUISH OUR PROPOSAL IS ACTUALLY A VERY HIGH LIKELIHOOD OF MOVING THROUGH THE SUCCESSFUL IND PROCESS AND INTO CLINICAL TRIALS FOR A SUBSTANTIAL PEDIATRIC DISEASE WITH A LARGE UNMET NEED. WE APPRECIATE THAT THE GRANTS WORKING GROUP RECOGNIZED THIS AND THE SUGGESTION TO TRY TO MOVE US TO TIER I. WE APPRECIATE THIS DISCUSSION HERE AS WELL.

WE WANTED TO SAY A FEW THINGS IN SUPPORT OF THE PROPOSAL BECAUSE WE THINK IT'S USEFUL IN THE CONTEXT OF SOME OF THE COMMENTS THAT HAVE BEEN MADE ALREADY. FIRST OF ALL, TEAM LEADERS FROM UCLA ARE PREPARED TO DISCUSS ANY ASPECTS. WE UNDERSTAND THAT THIS IS NOT A FORUM FOR A SCIENTIFIC DISCUSSION; BUT IF YOU HAVE QUESTIONS, THEY CAN BE DIRECTED TO ANY OF US THAT ARE HERE.

DR. MACELI AND I ARE CO-PI'S OF THE PROPOSAL. WE'RE ALSO THE PARENTS OF AN 11-YEAR-OLD BOY WITH DUCHENNE. SO WE CAN ALSO SHARE WITH YOU OUR UNIQUE PERSPECTIVE OF THE STATE OF THE FIELD, URGENCY OF THE UNMET NEED. SOME OF THE COMMENTS WERE ABOUT THIS IS A RELATIVELY SLOW PROCESS. I GUARANTEE YOU THERE ARE NOT TWO PEOPLE ON THE PLANET MORE COMMITTED TO MOVING THIS FORWARD.

THE URGENCY OF THE UNMET NEED IS NOT LOST ON MANY IN THE FAMILIES. AND I THINK YOU'LL HEAR SOME OF THE COMMENTS FROM THAT AS WELL. AND ALSO WE CAN SHARE OUR PERSPECTIVE ON THE OVER 1,000 FAMILIES AFFECTED BY THIS DISEASE DIRECTLY IN THE STATE OF CALIFORNIA ALONE, MAKING IT ONE OF THE MOST COMMON GENETIC DISEASES.

OUR COMBINATION THERAPY, AS YOU HEARD, IS A COMBINATION OF ANTISENSE OLIGONUCLEOTIDE BEING

DEVELOPED ACTIVELY AND IN HUMAN CLINICAL TRIALS BY SAREPTA THERAPEUTICS AND AN ALREADY APPROVED FDA DRUG THAT WE DISCOVERED AT UCLA USING PATIENT-DERIVED STEM CELL MODELS IN OUR LABORATORIES.

THE FURTHER CLINICAL DEVELOPMENT, PRECLINICAL DEVELOPMENT, AND ACTUALLY IN FORMING THE CLINICAL TRIAL DESIGN RELIES ON AN ONGOING USE OF STEM CELLS FOR THIS PROJECT. SO WE ACTUALLY FEEL THIS PROVIDES A MODEL FOR HOW WE'RE GOING TO MOVE FORWARD WITH PERSONALIZED GENETIC MEDICINE FOR RARE DISEASES. IT'S NOT ONLY RELEVANT TO DUCHENNE. IT'S RELEVANT TO A WHOLE SERIES OF OTHER RARE AND, WE THINK, ULTIMATELY COMMON DISEASES WHICH WILL PARTLY BE COMPOSED OF AN AGGREGATE SET OF RARE DISEASES.

THERE WAS ONE REVIEWER COMMENT WHICH CUTS TO THE PHASE II-B DATA INDICATING THAT THIS PROGRAM SHOULDN'T MOVE FORWARD UNTIL THE ANTISENSE OLIGONUCLEOTIDE ALONE WAS PROVEN TO HAVE NO FUNCTIONAL BENEFIT. I THINK THIS MAY HAVE BEEN CONFOUNDED NOW THAT WE HEAR ABOUT THE TWO DIFFERENT ALTERNATE CHEMISTRIES MOVING FORWARD. WE APPRECIATE THAT DISCUSSION. THERE IS, INDEED, EXCITING PHASE II-B DATA THAT WAS RELEASED INDEPENDENTLY OF US. WE HAD NO IDEA THAT THIS WAS COMING AT THIS TIME. I

THINK THESE ARE ISSUES THAT HAVE TO DO WITH CORPORATE RELEASE OF INFORMATION IN AN APPROPRIATE WAY TO SHAREHOLDERS AND THE PUBLIC.

THIS EXCITING PHASE II-B DATA DOES INDEED DEMONSTRATE -- WE FEEL LIKE WE ADDRESS IN ALL OF OUR COMMENTS ALL OF THE REVIEWER CONCERNS THAT WERE PROVIDED TO US FROM THIS STATEMENT, PARTICULARLY THE FACT, AND ECHO DR. PIZZO'S COMMENTS, CARDIAC ENDPOINTS ARE NOT THE CRITICAL COMPONENT HERE. THE MOUSE MODEL THAT WE PROPOSE, THE ANIMAL MODEL THAT WAS CALLED INTO QUESTION IS THE EXACT ANIMAL MODEL THAT'S BEEN USED BY PROSENSA, GSK, SAREPTA, THE MAJOR ANTISENSE OLIGONUCLEOTIDE COMPANIES, TO MOVE THIS DRUG AND THE STRATEGY THROUGH TO IND STUDIES FOR DUCHENNE. THEREFORE, WE HAVE A STRONG BASIS TO STAND ON FOR THAT. THANK YOU.

CHAIRMAN THOMAS: OTHER SPEAKERS ON THIS ISSUE?

MS. FURLONG: GOOD MORNING. MY NAME IS PAT FURLONG. I'M PRESIDENT OF PARENT PROJECT MUSCULAR DYSTROPHY, A NATIONAL NONPROFIT FOCUSED ON DUCHENNE MUSCULAR DYSTROPHY. I'M VERY GRATEFUL FOR THE OPPORTUNITY TO SPEAK TO YOU ABOUT THIS COMPELLING NEED.

DUCHENNE CAN AFFECT ANY FAMILY. ONE IN

10,000 EGG AND SPERM HAVE THE MUTATION AS A NEW EVENT. I AM A DE NOVO FIRST-TIME CARRIER IN MY FAMILY WITH NO FAMILY HISTORY. IN 1984 MY TWO SONS WERE DIAGNOSED WITH DUCHENNE MUSCULAR DYSTROPHY. THEY FOLLOWED THE NORMAL TRAJECTORY OF THE ILLNESS, GETTING STRONGER BETWEEN THE AGES OF FIVE AND SEVEN, LOSING ALL STRENGTH BY THE TIME THEY WERE 13, AND DEAD AT 15 AND 17.

TODAY YOU HAVE AN EXTRAORDINARY OPPORTUNITY TO REREVIEW THIS PROPOSAL TO THINK ABOUT WHAT THIS IMPACT MIGHT BE ON THIS HIGH UNMET MEDICAL NEED. OVER THE COURSE OF THE DIAGNOSIS TO THE DEATH OF MY SONS, MY HUSBAND, A PHYSICIAN, AND I, A NURSE, COULD NO LONGER WORK, BUT CARED FOR MY SONS. WE SPENT $3 MILLION TO REACCOMMODATE OUR HOME BY VANS, WHEELCHAIRS, LOSS OF INCOME, AND REALLY A LOSS OF A FAMILY. MY TWO DAUGHTERS CONTINUE TO HAVE A RIPPLE EFFECT OF THIS DISEASE NOW EVEN 16 YEARS LATER.

I ASK THAT YOU CONSIDER THIS PROPOSAL. I ASK THAT YOU RECOGNIZE THAT YOU CAN GALVANIZE THE FIELD. YOU CAN CHANGE THE COURSE OF AN ILLNESS FOR A SUBSET OF BOYS AND POTENTIALLY FOR A GREAT NUMBER OF BOYS, A THOUSAND IN CALIFORNIA AND 250,000 IN THE WORLD. CALIFORNIA IS THE MECCA OF SCIENTIFIC RESEARCH.

WE AS AN ORGANIZATION FUND PROJECTS AT UCLA, UC DAVIS, AND STANFORD. WE, I'M FROM OHIO, AND OUR OFFICE IN HACKENSACK, NEW JERSEY, LOOK TO YOU BECAUSE WE'D LIKE NOT TO BURY ANY MORE OF THESE CHILDREN. THANK YOU.

MS. MILLER: THANK YOU FOR YOUR TIME THIS MORNING. MY NAME IS DEBRA MILLER, AND I'M THE FOUNDER AND PRESIDENT OF CURE DUCHENNE, A NATIONAL NONPROFIT ORGANIZATION WITH HEADQUARTERS IN NEWPORT BEACH, CALIFORNIA.

OVER THE PAST NINE YEARS, WE HAVE FUNDED VARIOUS RESEARCH PROJECTS THAT TARGET MECHANISMS INVOLVED IN THIS DEVASTATING DISEASE, INCLUDING EXON-SKIPPING THERAPIES FOR DUCHENNE. THE TEAM AT UCLA IS HIGHLY COMMITTED TO DUCHENNE RESEARCH AND CLINICAL CARE THROUGH THE ESTABLISHMENT OF THE CENTER FOR DUCHENNE MUSCULAR DYSTROPHY. AND WE'RE CONFIDENT THAT THEIR KNOWLEDGE OF THE FIELD AND EXPERTISE IN LEADING THE DEVELOPMENT OF THE PROPOSED COMBINATION THERAPY. IN FACT, CURE DUCHENNE HAS HELPED RAISE OVER $800,000 FOR UCLA.

AS A CALIFORNIA RESIDENT WHO PAYS TAXES, EMPLOYS PEOPLE, AND DIRECTS SUBSTANTIAL FUNDING TO CALIFORNIA INSTITUTIONS, I'M GRATEFUL TO THE CIRM FOR CONSIDERING FUNDING OF THIS EXTRAORDINARY

PROPOSAL THAT MAY GREATLY IMPROVE THE QUALITY OF LIFE FOR MY SON AND THE MANY OTHERS AFFECTED BY DUCHENNE IN CALIFORNIA AND AROUND THE WORLD.

MY SON HAWKIN WAS DIAGNOSED TEN YEARS AGO AT THE AGE OF FIVE. THERE HAD NEVER BEEN AN OCCURRENCE OF DUCHENNE IN MY FAMILY, AND I'M NOT A CARRIER OF THE MUTATION. AT THE AGE OF 15, MY SON IS UNUSUAL IN THAT HE IS STILL ABLE TO WALK. BUT WE ARE SEEING THE SIGNS OF WEAKNESS ACCELERATING. EVERY YEAR HE IS AWARE THAT HE IS ABLE TO DO LESS THAN THE YEAR BEFORE. IT IS HEARTBREAKING TO WATCH.

THE PROPOSAL FOR COMBINATION THERAPY HOLDS A PROMISE TO EITHER IMPROVE ANTISENSE EXON SKIPPING OR MAKE IT MORE COST EFFECTIVE. FOR HAWKIN THIS IS AN IMPORTANT POINT IN THIS DISEASE PROGRESSION. HAWKIN IS A TALENTED PHOTOGRAPHER AND VIDEO MAKER AND A STRAIGHT A STUDENT. IF HE IS ABLE TO MAINTAIN SOME MUSCLE FUNCTION, EVEN IF HE IS WHEELCHAIR BOUND, MEANS THAT HE'LL BE ABLE TO FUNCTION IN SCHOOL BY USING A COMPUTER, BETTER PURSUE HIS HOBBIES, AND HAVE A BETTER ABILITY TO HAVE A CAREER, EARN AN INCOME. HE WILL BE ABLE TO DRIVE, HE'LL BE ABLE TO GIVE HIS MOM A HUG AT GRADUATION, AND JUST MAYBE SOMEDAY HE'LL BE ABLE TO HOLD A CHILD IN HIS ARMS.

IT IS WELL-KNOWN IN THE FIELD THAT ANTISENSE IS NOT RESCUING DYSTROPHIN IN THE HEART OF DUCHENNE BOYS. BUT EVEN IF IT DOES NOT, ADVANCEMENTS IN CARDIAC CARE HAVE ALREADY IMPROVED CARDIAC FUNCTION IN DUCHENNE. AND I BELIEVE THAT WITH IMPROVED SKELETAL MUSCLE, THE HEART ISSUES CAN BE MANAGED WITH VARIOUS INTERVENTIONS.

HAWKIN IS OUR ONLY CHILD, AND I ASK YOU FROM THE BOTTOM OF THIS MOM'S HEART TO FUND THIS IMPORTANT PROJECT THAT CAN TRANSFORM ONE OF THE MOST DEVASTATING DISEASES THAT CAN OCCUR IN ANY FAMILY. THANK YOU VERY MUCH.

MS. CAMERON: THANK YOU FOR THE OPPORTUNITY TO TELL YOU ABOUT THE IMPACT THE DISEASE HAS HAD ON MY FAMILY. MY NAME IS MINDY CAMERON. I'M FROM ORANGE COUNTY. I HAVE TWO SONS, AND MY YOUNGEST, 11-YEAR-OLD CHRISTOPHER, HAS DUCHENNE MUSCULAR DYSTROPHY. THREE YEARS AGO GENETIC TESTING DETERMINED THAT I AM A CARRIER OF THE DISEASE THAT IS AFFECTING MY SON. I'M THE FIRST KNOWN CARRIER IN MY FAMILY.

CHRISTOPHER WAS DIAGNOSED EARLY IN LIFE, AND SO FOR THE PAST DECADE WE'VE LIVED WITH THE KNOWLEDGE THAT THIS DEVASTATING DISEASE IS GOING TO TAKE ALL OF HIS ABILITIES AWAY AS HE GROWS INTO A

TEENAGER. ALL INDICATIONS ARE THAT CHRIS IS ABOUT TO LOSE HIS ABILITY TO WALK, AND WE ARE INCURRING MASSIVE EXPENSE AS WE PREPARE FOR THIS TRANSITION. CHRISTOPHER DOES NOTICE THAT HE'S LOSING HIS PHYSICAL CAPABILITIES, AND WE DO WHAT WE CAN TO ASSURE HIM THAT HE WILL STILL HAVE MANY OPPORTUNITIES IN LIFE. HOW DO YOU TELL AN 11-YEAR-OLD BOY THAT HE'LL BECOME COMPLETELY DEPENDENT ON YOU BY THE TIME HE'S 20?

WE'VE NOT YET DISCUSSED WITH CHRIS THAT HIS CONDITION IS CURRENTLY CONSIDERED 100 PERCENT FATAL USUALLY BY AGE 30. WE CONTINUE TO HOPE THAT THIS IS NOT THE CASE FOR OUR SON. I'M A VERY ACTIVE ADVOCATE IN THE DUCHENNE COMMUNITY, AND MY SON HAS BEEN A WILLING PARTICIPANT IN FIVE CLINICAL STUDIES AND TRIALS. IT IS MY HOPE THAT THE WORK REPRESENTED IN THIS GRANT WILL BE A MAJOR STEP IN OUR SEARCH FOR TREATMENTS FOR DUCHENNE. THANK YOU.

MS. SALISBURY: HI. MY NAME IS REBECCA SALISBURY. I LIVE IN BERKELEY, CALIFORNIA. MY SON MILO HAS DUCHENNE MUSCULAR DYSTROPHY. HE WAS DIAGNOSED WHEN HE WAS SIX JUST AT THE TIME WHEN WE THOUGHT HIS INDEPENDENCE WOULD BEGIN. HIS LIFE AND OURS HAVE BEEN PERMANENTLY ALTERED.

HE IS NOW 11. HE USES A WHEELCHAIR AND

CANNOT WALK OR STAND. HE CANNOT REACH HIS HANDS ABOVE HIS SHOULDERS. EVERY MOVE HE MAKES EXHAUSTS HIM AND IS CAUSE FOR PATIENCE. HE CANNOT DO ANY OF HIS OWN PERSONAL BODY CARE. FOR A PERSON ENTERING ADOLESCENCE, THIS MEANS HE CANNOT HAVE THE SAME LIFE AS HIS PEERS. HIS IS A LIFE OF FRUSTRATION. GOING TO A FRIEND'S HOUSE, GETTING A BOOK OFF THE SHELF, OR EVEN OPENING THE FRONT DOOR OF HIS OWN SCHOOL ARE INCREDIBLY DIFFICULT OR IMPOSSIBLE, NOT TO MENTION THE COMPLICATIONS OF WHAT SHOULD BE A JOY, FIELD TRIPS, PARTIES, OR TRAVEL.

HE IS HARDLY EVER WITHOUT AN ADULT HOVERING NEARBY WAITING TO ASSIST HIM. HE IS STARED AT WHEREVER HE GOES, DESPITE BEING A HANDSOME, INTELLIGENT, AND FRIENDLY PERSON. MILO IS AWARE OF WHAT'S HAPPENING TO HIM, THAT THINGS GROW MORE DIFFICULT EVERY DAY, AND HE HANDLES IT WITH A QUIET GRACE.

WHAT KEEPS OUR FAMILY GOING IS THE IDEA THAT A TREATMENT WILL COME ALONG IN TIME TO CHANGE HIS ABILITY TO LIVE A FULL, LONG, AND COMPLETE LIFE WITH LOVE, WORK, HIGHER EDUCATION, HOME, AND CHILDREN. THIS IS OUR DREAM FOR HIM, TO BE ABLE TO MOVE INTO THE WORLD UNINHIBITED AND TO ENJOY THE FRUITS OF HIS OWN LABOR. EACH INCREMENTAL MOVE IN

THAT DIRECTION IS ONE WE WAIT FOR WITH BAITED BREATH.

HIS HEART IS TREATED, BUT HIS BODY IS NOT. ANY DAY TREATMENT POSSIBILITIES ARE DELAYED IS A DAY TOO LATE FOR SOMEONE'S CHILD. LIFE WITH DUCHENNE MAY BE A DEATH BY A THOUSAND CUTS, BUT WE HOLD OUT THE HOPE THAT SOMETHING SOMEDAY WILL CHANGE.

SOON I ENVISION DUCHENNE WILL NO LONGER BE CONSIDERED A FATAL DIAGNOSIS, BUT INSTEAD THOUGHT OF AS A TREATABLE CHRONIC CONDITION. I LOOK FORWARD TO THAT DAY. I HOPE YOU CAN SEE THE URGENT NEED TO MOVE FORWARD WITH SUPPORTING TREATMENTS TO AUGMENT THE SUCCESSES OF THE EXON-SKIPPING TRIALS. OUR FAMILY AND OUR COMMUNITY ARE WAITING FOR A CHANGE.

MR. BALDY: HI. MY NAME IS DAVID BALDY. I'M THE PARENT OF A YOUNG MAN JOSEPH WHO SUFFERS FROM DUCHENNE. I'LL MAKE MY COMMENTS BRIEF. I JUST WANT TO IMPRESS UPON THE BOARD TO CONSIDER THAT WE'RE NOT JUST TALKING ABOUT AVOIDING WHEELCHAIRS. OF COURSE, WE'D ALL LOVE THESE BOYS TO JUMP OUT OF THEIR CHAIRS SOMEDAY. WE'RE TALKING ABOUT TIME. MY SON HAS REACHED THAT POINT WHERE HE'S NO LONGER WORRIED ABOUT WHETHER HE CAN PLAY BASEBALL WITH HIS FRIENDS OR DO THOSE SORTS OF THINGS. HE JUST WANTS TO HAVE THE TIME TO GROW UP AND TO BE A MAN.

AND THE ANTISENSE TECHNOLOGY HAS CLEARLY DEMONSTRATED THAT IT IS THE MOST ADVANCED THAT WE HAVE TODAY, THAT HAS PERFORMED THE MOST AMAZING THINGS. AND TO HEAR THE PRESS RELEASE THIS WEEK WAS, I THINK, FOR ALL THE PARENTS HERE SOMETHING WE'VE BEEN WAITING FOR FOR QUITE SOME TIME. SO I URGE THE BOARD TO CONSIDER THAT THE TIME IS OF THE ESSENCE. THANK YOU.

MS. COSGROVE-GARCIA: THANK YOU FOR HAVING A CHANCE TO TALK. I'M THE PARENT OF A 20-YEAR-OLD. HE'S OUR YOUNGEST SON. I'M JULIE COSGROVE-GARCIA FROM SACRAMENTO, CALIFORNIA. NICHOLAS WAS DIAGNOSED ALMOST TEN YEARS AGO. MY HUSBAND AND I WERE TOLD TO GO HOME AND ENJOY HIM. THERE'S NOTHING WE CAN DO. WE WERE OFFERED NOTHING.

I'M NOT A CARRIER. IT IS THE FIRST TIME IT OCCURRED IN OUR FAMILY. SO WE HAVE NO FAMILY HISTORY. THIS CAN HAPPEN TO ANYONE. I'M 56 YEARS OLD. I'VE WORKED FOR 33 YEARS. MY HUSBAND IS 62, AND WE'RE BOTH FULLY EMPLOYED. OUR SON IS STILL ABLE TO DO THINGS LIKE CRAWL AROUND THE HOUSE. AT 20 YEARS OF AGE HE CAN CRAWL, AND THAT'S AMAZING THAT HE CAN DO THAT HAVING DUCHENNE. WE'RE GRATEFUL FOR THAT AND WE COUNT OUR BLESSINGS FOR THAT. WE WANT TO HOLD HIM AND HAVE HIM LONGER. WE WANT HIM

TO BE ABLE TO THROW SOMETHING AT US. HE CAN STILL DO THIS AND, AGAIN, THAT IS A BLESSING.

OUR FAMILY, WE'VE SPENT THOUSANDS OF DOLLARS EACH YEAR FOR DURABLE MEDICAL EQUIPMENT, TRAVELING, WHATEVER WE CAN DO TO OPTIMIZE HIS CARE, TO OPTIMIZE HOPE, TO TRY TO HELP HIM AND MAKE SURE HE HAS THE BEST OF CARE. WE HAVE THREE OTHER CHILDREN AS WELL. AND WHEN HE WAS DIAGNOSED, OUR WORLDS CHANGED FOREVER AS A FAMILY.

I HAD -- AT ONE TIME MY DAUGHTER SAID TO ME WHEN I WAS TALKING ON THE PHONE TO ANOTHER PARENT, SHE SAID TO ME, "I'M RIGHT HERE. DON'T YOU HEAR ME" BECAUSE SHE KNEW I WAS TALKING ABOUT OUR SON. I JUST WANT TO SAY THAT NICHOLAS IS SHY AND HE'S TAKING COLLEGE COURSES. HE'S TAKING A BREAK RIGHT NOW. HIS HOPE IS TO CONTINUE. HE WILL CONTINUE TO GO, BUT HE IS LOSING ABILITY. AND AS HE LOSES HIS ABILITY, HE WILL HAVE TO LEARN TO ADJUST SO SOMEBODY CAN HELP TAKE CARE OF HIM. RIGHT NOW HE CAN USE THE BATHROOM BY HIMSELF. BUT AS A SHY YOUNG MAN OF TWENTY, TO HAVE SOMEONE ASSIST HIM IN THIS PROCESS WILL BE DEVASTATING. AT EACH MOMENT, AT EACH TIME WHEN HE LOSES CAPABILITY, IT BREAKS OUR HEARTS. BUT ALSO MY HUSBAND AND I ARE OLDER, AND AS WE GET OLDER, I WONDER WHO WILL TAKE CARE OF MY SON

WHEN WE ARE NO LONGER THERE.

ALSO, WILL IT BANKRUPT US? WORKING 33 YEARS IN OUR LIVES AND TRYING TO REFINANCE, TO REBUILD OUR HOUSE TO MAKE CHANGES, IT'S DEVASTATING NOT ONLY EMOTIONALLY ON ALL OF THE FAMILY, BUT FINANCIALLY. AND ANY TYPE OF RESEARCH IN THE DIRECTION I JUST LEAVE AND WANT TO THANK YOU FOR THE OPPORTUNITY. THANK YOU.

MS. MARTIN: MY NAME IS AMY MARTIN. I'M FROM LOS ANGELES. I HAVE THREE CHILDREN. MY YOUNGEST IS TEN, WILL. HE HAS DUCHENNE. I APPRECIATE YOUR TAKING THE TIME TO HEAR ALL OF OUR STORIES, AND I CAN EMPATHIZE WITH HOW DIFFICULT IT MUST BE TO DECIDE AGAINST ALL THESE VERY IMPORTANT DISEASES. I'VE LOST MANY FRIENDS TO SOME OF THE ONES YOU'RE THINKING ABOUT TODAY, AND I'VE STOOD BY PARENTS WHEN THEY'VE HAD TO BURY THEIR SON. I DON'T HAVE $3 MILLION, AND I CAN'T IMAGINE BURYING MY OWN SON. THANK YOU.

CHAIRMAN THOMAS: IS THERE A SPEAKER ON THE PHONE?

MR. SHESTACK: IS THE FERRAR FAMILY, IS THAT THEIR NAME? I WOULD JUST LIKE TO SAY THAT MY OFFICE HAS BEEN NOTICED FOR FIVE YEARS, AND THIS IS THE FIRST TIME. THIS IS AN AMAZING OUTPOURING FROM

THIS COMMUNITY. THIS IS THE FIRST TIME ANYONE HAS AVAILED THEMSELVES TO COME TO MY OFFICE, SO I WAS VERY GLAD IT COULD BE OPEN TO THEM. SO IF YOU COULD SAY WHATEVER YOU HAD TO SAY.

MR. FERRAR: IF YOU CAN HEAR ME FINE, I'LL CONTINUE HERE. THANK YOU FOR THE OPPORTUNITY TO SPEAK TODAY FROM YOUR SATELLITE OFFICE IN LOS ANGELES WHERE WE RESIDE. MY WIFE'S NAME IS ANGEL FERRAR, AND MY NAME IS BRUCE FERRAR. AND WE HAVE TWO-YEAR-OLD TWINS JASON AND MELINA WHO ARE BOTH AFFECTED BY DUCHENNE MUSCULAR DYSTROPHY.

WE ARE HERE TO ADD OUR VOICES TODAY WITH ALL OF THE FAMILIES AFFECTED BY DUCHENNE AND THE CLOCK IS TICKING OVER THE HEADS OF OUR CHILDREN.

THERE IS GREAT URGENCY FOR SOLUTIONS, AND THE ANSWER MAY NOT BE FOUND WITH THERAPY ALONE. UCLA'S WORK WITH COMBINED FDA-APPROVED SMALL MOLECULE AND EXON-SKIPPING AGENTS SHOWS AN AMAZING POTENTIAL IN THE LABORATORY. WE RESPECTFULLY ASK THAT YOU SUPPORT THIS PROMISING RESEARCH SO WE CAN GIVE A CHANCE FOR SCIENCE TO SAVE OUR CHILDREN'S LIVES.

IN OCTOBER 2009 WE WERE VERY EXCITED WHEN OUR DOCTOR ANNOUNCED THAT OUR EFFORTS TO CONCEIVE WERE SUCCESSFUL. WE WERE TOLD WE WOULD BE HAVING

TWINS. DAY BY DAY WE WATCHED THE PREGNANCY CAREFULLY AND MADE SURE THAT BOTH OF THE FETUSES WERE HEALTHY. MY WIFE GAVE BIRTH ON MAY 20, 2010, TO THE MOST WONDERFUL BABIES IN THE WORLD, AND WE DID EVERYTHING POSSIBLE TO RAISE THEM RIGHT FROM THAT POINT.

IN MARCH OF THIS YEAR WE WERE INTRODUCED TO A THREAT THAT WE COULD NEVER IMAGINE. BOTH OF OUR CHILDREN WERE DIAGNOSED WITH THE MUTATION THAT CAUSES DUCHENNE. JASON IS SHOWING SYMPTOMS, AND OUR PHYSICIANS ARE CONCERNED THAT HIS CONDITION IS AGGRESSIVE. HIS TWIN SISTER MELINA IS SHOWING SIGNS THAT SHE MAY BE A MANIFESTED CARRIER. ALL OF OUR LIVES ARE FOREVER CHANGED. OUR DREAMS ARE RUNNING ON THE BEACH, BEING SOCCER PARENTS, AND FINDING THOSE TOGETHER ARE ALL BUT GONE. UNLESS SIGNIFICANT ADVANCES IN THERAPIES ARE NOT ACTUALLY PUT INTO PRACTICE, OUR CHILDREN'S FUTURE WILL INCLUDE WHEELCHAIRS AND A LIFE SPAN TERMINATED AT A YOUNG AGE.

WE NEED TO USE OUR TIME THE BEST WAY POSSIBLE. OUR SON, LIKE EVERY CHILD AFFECTED BY DUCHENNE, NEEDS HELP TO LIVE LIFE THE WAY EACH ONE OF US DESERVES TO LIVE. WE ARE RESPECTFULLY ASKING YOU TO HELP OUR CHILDREN AND ALL THE INNOCENT YOUNG

VICTIMS BY SHOWING FAITH IN THE UCLA TEAM. WE KNOW VERY WELL THAT THEY HAVE A STRONG, ETHICAL, SCIENTIFIC, AND EMOTIONAL DRIVE TO TREAT AND CURE DUCHENNE. THE COMBINATION THERAPY TO ENHANCE ANTISENSE MEDIATED EXON SKIPPING THEY PROPOSE IS VIABLE.

TAKING A BECKERS-LIKE SOLUTION AND USING UCLA'S APPROACH TO TURN IT INTO SOMETHING MUCH CLOSER TO A CURE FOR DUCHENNE WILL BE THE ANSWER TO OUR PRAYERS. YOUR COMMITTEE HAS THE POTENTIAL TO MAKE THIS A REALITY. PLEASE FULLY SUPPORT THIS RESEARCH PROPOSAL. THANK YOU.

CHAIRMAN THOMAS: ARE THERE ANY FURTHER COMMENTS IN LOS ANGELES? ARE THERE ANY COMMENTS BY MEMBERS OF THE BOARD WHO ARE JOINING US BY PHONE?

DR. LUBIN: I JUST, FIRST OF ALL, WOULD LIKE TO THANK ALL THE PARENTS WHO CAME HERE AND GAVE US THIS DESCRIPTION OF THIS DISEASE. AS A PEDIATRICIAN, I'VE SEEN CHILDREN WITH THIS DISEASE. AND I WANT THEM ALL TO KNOW ALSO THAT THE BOARD UNDERSTANDS HOW DIFFICULT THE CHALLENGES THAT THEY FACE AND THEIR CHILDREN FACE AND THE FEARS THAT THEY HAVE, AND THAT WE'RE GOING TO DO OUR BEST TO SUPPORT RESEARCH THAT WE FEEL IS IN OUR PURVIEW AND IS THE BEST RESEARCH POSSIBLE.

I JUST WANT TO ALERT THEM THAT IF A DECISION ULTIMATELY IS NOT MADE TO SUPPORT THIS, IT'S NOT BECAUSE WE'RE NOT INTERESTED IN A CURE FOR MUSCULAR DYSTROPHY.

CHAIRMAN THOMAS: SENATOR TORRES.

MR. TORRES: I WANTED TO MAKE SURE THAT WE WERE AWARE THAT THE MOTION THAT I MADE IN RESPECT TO ALLOWING DR. TROUNSON AND JEFF SHEEHY TO REVIEW THIS PROPOSAL, THEIR RECOMMENDATIONS WILL BE BACK SEPTEMBER 6TH TO OUR BOARD. IN OTHER WORDS, 41 DAYS FROM TODAY WE WILL MAKE A FINAL VOTE ON THIS RESEARCH BASED UPON THE REVIEW OF NEW INFORMATION THAT THEY HAVE ACQUIRED.

I ALSO WANT TO ASSOCIATE MY REMARKS WITH DR. LUBIN. WE ARE ALL VERY MOVED BY THE PARENTS WHO SPOKE TODAY, AND WE TREASURE WHAT YOU HAVE GONE THROUGH. AND I KNOW I SPEAK FOR EVERY MEMBER OF THIS BOARD AND EVERY STAFF MEMBER AT CIRM. THEY ARE ALL SO VERY DEDICATED TO MAKE SURE THAT WE PROVIDE THE BEST SCIENCE TO GET TO THESE CURES AS SOON AS WE CAN. SO I WANT TO THANK YOU ALL FOR COMING.

(APPLAUSE.)

MR. SHESTACK: I JUST WANT TO THANK YOU, ART, FOR REMINDING US WHAT THE ACTUAL MOTION IS. AND IF THE CHAIR --

CHAIRMAN THOMAS: THE QUESTION HAS BEEN CALLED. MR. HARRISON, DO YOU WANT TO JUST RESTATE THE MOTION AND WE'LL PROCEED TO A VOTE.

MR. HARRISON: YES. THE MOTION IS TO REFER APPLICATION NO. 5426 FOR ADDITIONAL REVIEW OF NEW INFORMATION BY THE PEER REVIEW GROUP WITH DIRECTION TO THE PRESIDENT AND CO-VICE CHAIR SHEEHY TO DETERMINE THE MAKEUP OF THE PEER REVIEW PANEL OR SUBSET OF THE PANEL AND TO BRING THE RECOMMENDATION BACK TO THE BOARD FOR ITS CONSIDERATION.

CHAIRMAN THOMAS: MR. HARRISON, DOES THIS REQUIRE A ROLL CALL VOTE?

MR. HARRISON: IT DOES.

MR. TORRES: MOTION SHOULD ALSO INCLUDE A REPORT BACK TO US SEPTEMBER 6TH.

MR. HARRISON: I WILL ADD THAT, TO REPORT BACK TO THE BOARD BY SEPTEMBER 6TH.

MS. BONNEVILLE: BOB PRICE.

DR. PRICE: YES.

MS. BONNEVILLE: DAVID BRENNER.

DR. BRENNER: YES.

MS. BONNEVILLE: JACOB LEVIN.

DR. LEVIN: YES.

MS. BONNEVILLE: TED KRONTIRIS.

DR. KRONTIRIS: YES.

MS. BONNEVILLE: LEEZA GIBBONS.
MS. GIBBONS: YES.
MS. BONNEVILLE: MICHAEL GOLDBERG.
MR. GOLDBERG: YES.
MS. BONNEVILLE: SAM HAWGOOD.
DR. HAWGOOD: YES.
MS. BONNEVILLE: STEVE JUELSGAARD.
MR. JUELSGAARD: YES.
MS. BONNEVILLE: BERT LUBIN.
DR. LUBIN: YES.
MS. BONNEVILLE: MICHAEL MARLETTA. PHIL PIZZO.
DR. PIZZO: YES.
MS. BONNEVILLE: CARMEN PULIAFITO. ROBERT QUINT.
DR. QUINT: YES.
MS. BONNEVILLE: DUANE ROTH.
MR. ROTH: YES.
MS. BONNEVILLE: JOAN SAMUELSON.
MS. SAMUELSON: YES.
MS. BONNEVILLE: DAVID SERRANO-SEWELL.
MR. SERRANO-SEWELL: YES.
MS. BONNEVILLE: JEFF SHEEHY.
MR. SHEEHY: YES.
MS. BONNEVILLE: JON SHESTACK.

MR. SHESTACK: YES.
MS. BONNEVILLE: OS STEWARD.
DR. STEWARD: YES.
MS. BONNEVILLE: JONATHAN THOMAS.
CHAIRMAN THOMAS: YES.
MS. BONNEVILLE: ART TORRES.
MR. TORRES: AYE.
MS. BONNEVILLE: KRISTINA VUORI.
DR. VUORI: YES.
CHAIRMAN THOMAS: MOTION PASSES, MR. HARRISON.
MS. FEIT: YOU DIDN'T CALL ME, AND I VOTE YES.
MR. HARRISON: WE'LL RETRACT THAT FROM THE RECORD. MS. FEIT HAS A CONFLICT. FOR THAT REASON WE DIDN'T CALL HER NAME.
MS. FEIT: I'M SORRY.
CHAIRMAN THOMAS: THANK YOU, MR. HARRISON. IT'S BEEN NOTED THAT PERHAPS WE SHOULD TAKE A FIVE-MINUTE BREAK. THE MOTION DOES CARRY. THANK YOU. WE'LL RESUME WITH THE NEXT MOTION. FIVE-MINUTE BREAK. WE NEED TO KEEP STRICTLY ON SCHEDULE. THANK YOU.
(A RECESS WAS TAKEN.)
CHAIRMAN THOMAS: COULD EVERYBODY PLEASE

TAKE YOUR SEATS? WE'RE GOING TO RECONVENE MOMENTARILY. EVERYBODY PLEASE TAKE YOUR SEATS. SENATOR TORRES.

MR. TORRES: MR. CHAIRMAN AND MEMBERS, I MOVE TO MOVE ITEM NO. 5735 FOR THE SIMILAR REVIEW THAT WE MOTIONED PREVIOUSLY SO THAT DR. TROUNSON AND MR. SHEEHY MAY REVIEW THE NEW INFORMATION ON THIS GRANT AND BRING US BACK A REPORT OF A RECOMMENDATION FOR OUR SEPTEMBER 6TH BOARD MEETING.

DR. PRIETO: SECOND.

CHAIRMAN THOMAS: IT'S BEEN MOVED AND SECONDED. CAN WE PLEASE HAVE A STAFF REPORT? MR. HARRISON, YOU HAVE A COMMENT FIRST.

MR. HARRISON: YES. I JUST WANTED TO MAKE ONE COMMENT. I'VE HAD DISCUSSIONS WITH SHERRY LANSING, WHO'S CHAIR OF THE GOVERNANCE SUBCOMMITTEE, ABOUT A PROPOSAL THAT WE PLAN TO BRING FORWARD TO THE BOARD THAT WOULD REQUEST THAT MEMBERS WHO HAVE CONFLICTS WITH RESPECT TO AN APPLICATION THAT'S IDENTIFIED THROUGH AN EXTRAORDINARY PETITION TO LEAVE THE ROOM WHILE THAT APPLICATION IS DISCUSSED.

THOUGH WE HAVEN'T BROUGHT THE POLICY TO THE GOVERNANCE SUBCOMMITTEE YET FOR ITS CONSIDERATION, MS. LANSING LEFT THE ROOM DURING THAT LAST DISCUSSION BECAUSE SHE HAS A CONFLICT, NOT

BECAUSE SHE LACKS INTEREST IN THE SUBJECT. SHE WAS SORRY TO MISS IT. BUT I JUST WANTED TO MAKE CLEAR IT'S A RESULT OF THE POLICY WE'VE BEEN DISCUSSING, NOT FOR ANY OTHER REASONS.

MS. LANSING: I JUST REALLY WANT TO REEMPHASIZE THAT. I GUESS I CAN NOW SAY HOW HAPPY I AM THAT THE PROPOSAL PASSED AND HOW MUCH I CARE ABOUT THE DISEASE TEAM AND PEOPLE WHO SUFFER FROM THIS DISEASE.

THERE IS A PROPOSAL BEFORE THE GOVERNANCE COMMITTEE, WHICH I GUESS I'M ALLOWED TO SAY I SUPPORT, AND I DON'T KNOW IF THE GOVERNANCE COMMITTEE WILL, THAT ANYONE WHO HAS A CONFLICT DURING THESE LEAVE SO THAT NONE OF US COULD EVER BE ACCUSED OF WRITING A NOTE OR LOOKING FUNNY AT SOMEBODY WHO WASN'T DOING THAT. I THINK OUR INTEGRITY AND THE PROCESS IS SO IMPORTANT. SO THAT IS THE ONLY REASON THAT I WILL LEAVE WHEN I HAVE A CONFLICT. I REALLY WANT TO MAKE IT CLEAR. IT IS NOT FROM A LACK OF INTEREST OR A LACK OF CARING, AND IT IS SO IMPORTANT THAT ALL OF YOU HEAR THAT. THANK YOU.

CHAIRMAN THOMAS: THANK YOU, SHERRY. DR. LUBIN.

DR. LUBIN: I REALLY APPRECIATE WHAT

SHERRY SAID, AND I THINK HER RECOMMENDATION IS SOMETHING WE SHOULD ALL CONSIDER. BEING ON THIS BOARD FOR NOT A LONG PERIOD OF TIME, BUT IT'S ALWAYS CONCERNED ME A BIT WHEN PEOPLE HAVE CONFLICTS OF INTEREST AND THEY'RE STILL IN THE ROOM. MY EXPERIENCE AT THE NIH IS THAT IF YOU HAVE A CONFLICT, YOU'RE NOT IN THE ROOM DURING THE DISCUSSION.

MS. LANSING: AND THAT IS THE WAY THE SCIENTIFIC ADVISORY GROUP GOES. THIS IS SOMETHING THAT GOVERNANCE IS GOING TO HANDLE, SO THERE'S NO NEED TO TAKE AWAY FROM THE IMPORTANT BUSINESS OF THE DAY, BUT THANK YOU. I JUST REALLY WANTED TO MAKE IT SO CLEAR TO THE AUDIENCE.

CHAIRMAN THOMAS: THANK YOU, SHERRY. CAN WE HAVE A BRIEF STAFF REPORT ON PROPOSAL 5735?

DR. FEIGAL: DR. INGRID CARAS IS GOING TO BE DOING THAT.

DR. CARAS: THIS PROPOSAL IS FOCUSED ON THE CLINICAL DEVELOPMENT OF AN ALLOGENEIC CARDIAC-DERIVED STEM CELL PRODUCT INTENDED FOR USE IN PATIENTS WITH HEART DYSFUNCTION FOLLOWING A MYOCARDIAL INFARCTION. THE APPLICANT IS PROPOSING TO CONDUCT A MIDSTAGE CLINICAL TRIAL TO DEMONSTRATE BOTH SAFETY AND EFFICACY OF THE PRODUCT.

IN GENERAL, REVIEWERS AGREED THAT THIS PROGRAM IS WELL SUPPORTED BY DATA FROM A PREVIOUS CLINICAL TRIAL AS WELL AS DATA FROM THREE ANIMAL MODELS, EACH WITH DIFFERENT ITERATIONS OF THE PRODUCT. THEY ALSO AGREED THAT THE DATA TRENDS IN ANIMAL MODELS ARE INTERESTING AND THAT THE APPROACH WARRANTS FURTHER TESTING. ALSO, THE CELL PRODUCTION METHODS AND SCALE-UP MANUFACTURING ARE WELL THOUGHT OUT AND ARE READY FOR CLINICAL DEVELOPMENT.

THE MAIN WEAKNESS WAS THE PROPOSED CLINICAL PLAN. THERE WERE THREE MAIN PROBLEMS. FIRST, THE PROPOSED CLINICAL PLAN WAS SEEN AS MAJOR POTENTIAL RISK GIVEN THAT THE APPLICANT PROPOSED STARTING WITH A PHASE II TRIAL WITH A CURRENT CANDIDATE; BUT AT THE TIME OF THE REVIEW WAS STILL AWAITING DATA FROM A PIVOTAL PRECLINICAL STUDY AND HAD NOT YET FILED AN IND. ALTHOUGH THE REVIEWERS SAW THE APPROACH AS PROMISING, THEY FELT THAT THE PROPOSED TRIAL ATTEMPTS TO ACCOMPLISH TOO MANY STEPS AT ONCE, THAT A NEW PHASE I STUDY IS WARRANTED FIRST, AND THE PROPOSED CLINICAL PLAN SHOULD BE RETHOUGHT.

SECOND, THE PHASE II STUDY AS PROPOSED IN THE APPLICATION IS DESIGNED AROUND A SURROGATE ENDPOINT THAT HAS NOT BEEN SHOWN TO CORRELATE WITH

FUNCTIONAL OUTCOME MEASURES. AND REVIEWERS SAW THIS AS A SERIOUS DESIGN FLAW AND FELT THAT IT WOULD NOT HELP THE PROJECT IN TERMS OF MOVING FORWARD TO ACHIEVE REGULATORY APPROVAL.

AND A THIRD CONCERN WAS THAT NEITHER OF THE TWO PRIMARY LEADERS HAS RUN A TRIAL OF THIS SIZE, MAKING THE INVESTMENT RISKY IN TERMS OF EXPERIENCE. AND REVIEWERS STRONGLY RECOMMENDED THAT AN EXPERIENCED CONTRACT RESEARCH ORGANIZATION BE HIRED TO CONDUCT THE TRIAL.

SO BASED ON THESE CONCERNS, THE GWG CAME TO A RECOMMENDATION NOT TO APPROVE THIS PROPOSAL FOR FUNDING. AND I JUST WANT TO VERY BRIEFLY DESCRIBE THE KEY POINTS IN THE EXTRAORDINARY PETITION THAT WAS SUBMITTED, WHICH DESCRIBES A NUMBER OF SIGNIFICANT ADVANCES THAT HAVE BEEN MADE SINCE THE REVIEW.

FIRST, THE PIVOTAL PRECLINICAL STUDY WAS COMPLETED AND THE DATA SUBMITTED TO FDA. COMPLETE IND APPLICATION WAS SUBMITTED TO THE FDA AND HAS OBTAINED APPROVAL TO MOVE FORWARD INTO THE CLINIC.

IN ADDITION, IMPROVEMENTS HAVE BEEN MADE TO THE STUDY WHICH IS NOW DESIGNED AS A PHASE I/II STUDY. AND THE APPLICANT HAS SECURED NON-CIRM FUNDING TO FUND THE PHASE I PORTION.

IN ADDITION, THE APPLICANT STATES THAT THEY'VE INCORPORATED ADDITIONAL ENDPOINTS INTO THE STUDY DESIGN, INCLUDING A STANDARD BIOMARKER OF CARDIAC FUNCTION. THE TRIAL HAS BEEN SIMPLIFIED, AND THE TEAM HAS BEEN EXPANDED AND STRENGTHENED AND INCLUDES TWO CRO'S.

CHAIRMAN THOMAS: THANK YOU, DR. CARAS. IS THERE BOARD DISCUSSION?

MS. LANSING: I'M VERY HAPPY TO LEAD OFF WITH THIS. I THINK WHAT'S SO GREAT ABOUT CIRM IS THAT WE'RE WILLING TO LOOK AT THE PROGRESS OF THINGS AND COME BACK AND REEVALUATE THEM. SO THE DECISION X AMOUNT OF TIME AGO HAS NOW CHANGED BECAUSE, FROM WHAT I CAN UNDERSTAND, ALL OF THE PROBLEMS HAVE BEEN ADDRESSED. AND THAT SHOWS THAT THIS PROCESS IS REALLY WORKING.

SO FIRST OF ALL, LET ME SAY THAT THE SCIENTIFIC ADVISORY GROUP IDENTIFIED PROBLEMS, AND THEN LET ME SAY THAT THE DISEASE TEAM ANSWERED THOSE PROBLEMS, WHICH I THINK IS REALLY THE BEST OF ALL OF US WORKING TOGETHER.

I STILL REMEMBER WHEN WE HAD OUR BOARD MEETING AT CEDARS HOSPITAL AND I SAW THE POTENTIAL OF WHAT WAS GOING ON WITH THE HEART AND STEM CELLS. AND IT WAS ONE OF THE TIMES WHEN I LEFT A MEETING SO

ENTHUSIASTIC AND ACTUALLY THINKING THAT WE COULD HAVE SOMETHING CONCRETE THAT WOULD REALLY BE AN EXAMPLE OF ADVANCES MADE IN HEART DISEASE. AND COMING FROM A FAMILY WHERE THAT DISEASE EXISTS, EXISTING IN A FAMILY WHERE IT EXISTS, I CANNOT BEGIN TO EMPHASIZE HOW IMPORTANT THIS TREATMENT COULD BE FOR PEOPLE WITH HEART FAILURE, CONGESTIVE HEART FAILURE, HEART ATTACKS, ANY KIND OF HEART DISEASE.

THE CORRECTIONS THAT THIS DISEASE TEAM HAS MADE ARE EXTRAORDINARY. THEY ACTUALLY, AS THEY SAID, ADDRESSED THE PHASE I/PHASE II PROBLEM. THEY'VE HIRED FRANK LITVAK, WHO I THINK ALL OF US KNOW AND RESPECT, TO BE THE MANAGER AND CEO OF THE ORGANIZATION, AND THEY GOT FDA APPROVAL, WHICH IS, I THINK, THE FIRST TIME THAT THAT'S ACTUALLY HAPPENED IN ONE OF OUR GRANTS. THESE ARE OUTSTANDING THINGS THAT HAVE HAPPENED. AND I ENTHUSIASTICALLY ENDORSE ACTUALLY APPROVAL, BUT I GUESS I ENDORSE GOING BACK TO LOOK AT IT. AND I JUST THINK IT'S AN EXAMPLE OF A DISEASE TEAM ADDRESSING THE PROBLEMS AND OF THE SCIENTIFIC ADVISORY GROUP SHOWING WHAT THE PROBLEMS ARE AND THEN BEING SMART ENOUGH TO COME BACK AND SAY, HEY, THERE'S BEEN A LOT OF PROGRESS SINCE IT WAS FIRST PRESENTED TO US. SO I THINK IT'S A WIN-WIN ON BOTH SIDES. SO I MOVE THIS.

CHAIRMAN THOMAS: FURTHER COMMENT BY MEMBERS OF THE BOARD?

DR. STEWARD: I GUESS I HAVE TO SAY I'M JUST A LITTLE BIT CONCERNED ABOUT THE PROCESS THAT WE'RE CONSIDERING HERE. AND I'M NOT ARGUING AGAINST SENDING THIS ONE BACK FOR RECONSIDERATION, BUT JUST TO POINT OUT EVERY GRANT, IF GIVEN THE OPPORTUNITY TO RESPOND TO THE CRITIQUES, COULD BE MADE BETTER BETWEEN THE TIME OF THE REVIEW AND THE TIME THAT WE SEE IT. AND I'M JUST A LITTLE BIT CONCERNED THAT IN THIS CASE IN PARTICULAR WE HAVEN'T NECESSARILY MADE IT CLEAR TO THE OTHER APPLICANTS THAT, IN FACT, THAT WOULD BE A POSSIBILITY. I'M NOT REALLY QUITE SURE THAT ALL OF THE APPLICANTS CLEARLY UNDERSTOOD THAT THEY COULD COME BACK TO US TO ADDRESS THE CRITICISMS.

SO I JUST RAISE THAT AS A CONCERN. I'M NOT SURE HOW I'M GOING TO VOTE ON IT.

DR. TROUNSON: IF I CAN ADD SOMETHING TO THIS, OS, IS THAT IN THIS PARTICULAR CASE, I THINK THERE WAS AN ISSUE OF TIMING. AND THE GRANTS REVIEW REALLY WANTED TO SEE THE INFORMATION THAT WAS BEING PRESENTED TO FDA AND WANTED TO SEE THE WHOLE APPROACH TO THE PHASE II STUDIES. AND THEY WERE SORT OF TRAPPED IN A SPACE THAT THE APPLICANTS

COULDN'T PROVIDE IT TO US WITH THAT REVIEW.

NOW, IT WAS VERY CLEAR THAT THAT INFORMATION, THE PRINCIPAL PART OF THE INFORMATION, WAS THEN AVAILABLE. AND THEY MADE IT VERY CLEAR IN THEIR RESPONSE THAT YOU HAVE WITH THE BOARD, BUT ALSO THEY MET WITH US, WITH ELLEN FEIGAL AND MYSELF, AND WE WENT THROUGH WHAT INFORMATION THAT THEY HAD. AND IT'S VERY SUBSTANTIAL WITH RESPECT TO THE ISSUES THAT WERE CONCERNED.

SO I BELIEVE, MAYBE EVEN MORE THAN THE LAST ONE, THERE'S MORE INFORMATION HERE TO CONSIDER, AND JUST THAT IT'S GOT A LOW MARK THAT I THINK IT NEEDS TO GO BACK AND TO MAKE SURE THE GRANTS WORKING GROUP REPRESENTATIVES FEEL THAT THAT ACTUALLY DOES ADDRESS BECAUSE IT WAS LOWLY MARKED BECAUSE OF THAT. AND I THINK THE BOARD COULD FEEL REALLY COMFORTABLE IF IT COMES BACK WITH A STRONG REVIEW THAT, YES, IT NOW IS IN THE FUNDABLE RANGE. I THINK IT'S JUST MUCH MORE COMFORTABLE FOR YOU IF THAT HAPPENS.

NOW, I DON'T THINK THE OTHERS, AND TAKE OUT THE ONES THAT I CAN'T COMMENT ON, THE OTHERS DIDN'T REALLY MEET THAT LEVEL, AND THEY HAD THE OPPORTUNITY. WE RECEIVED THOSE JUST RECENTLY WITHIN THE LAST WEEK, AND WE WENT THROUGH THEM AND WE ANALYZED THEM. AND FROM OUR POINT OF VIEW, THEY

DIDN'T REALLY MEET. THOSE TWO PROJECTS WERE REALLY THE ONES THAT WE'RE TALKING ABOUT REALLY MET THAT STANDARD; WHEREAS, THE OTHERS WE DIDN'T REALLY FEEL THAT THE NEW INFORMATION MET THAT DEGREE -- WAS WORTHY FOR US TO SUGGEST TO YOU THAT YOU MIGHT WANT TO SORT OF RELOOK AT THAT THROUGH THIS GRANTS WORKING GROUP.

CHAIRMAN THOMAS: DR. STEWARD. MR. SERRANO-SEWELL.

MR. SERRANO-SEWELL: THANK YOU, CHAIRMAN. SO I'M GOING TO SUPPORT THE MOTION, AND I THINK IT'S THE RIGHT THING TO DO BECAUSE ANY TIME, ANY INSTANCE IN WHICH YOU HAVE MORE INFORMATION, YOU CAN ALWAYS MAKE A BETTER DECISION. AND TO THE EXTENT THAT WE'RE THROUGH OUR ACTIONS TODAY ESTABLISHING A PROCESS, WHICH IS WHAT WE ARE -- TO OS' POINT, WHAT WE ARE DOING. LET'S BE CLEAR ABOUT THAT. I'M OKAY WITH AS WELL.

WHERE I DO RESERVE FOR MY OWN OPINION, AND I KNOW EACH ONE OF US DO AS WELL, THE QUESTION OF WHETHER THERE IS SUFFICIENT ADDITIONAL INFORMATION, WHATEVER ADJECTIVES YOU WANT TO USE, TO WARRANT EITHER, A, FUNDING TODAY OR FOLLOWING THIS PROCESS OF SENDING IT BACK TO A GROUP OF FOLKS TO LOOK AT AND FOR US TO TAKE ACTION IN 41 DAYS. THESE ARE

WELL WRITTEN, EXTRAORDINARY PETITIONS. EACH ONE OF THEM MAKE A GOOD ARGUMENT, AND IN MY MIND IT WOULDN'T BE HARD TO IDENTIFY NEW INFORMATION. ANYBODY COULD DO A PRESS RELEASE AND ADDRESS WHATEVER THE MAIN CRITIQUE FROM THE GRANTS WORKING GROUP FOR AN INDIVIDUAL PROPOSAL.

SO I DO WANT TO MAKE THAT COMMENT. AND SO ALSO MY QUESTION TO ALAN IS IT'S NOT TOTALLY GERMANE TO THIS, SO MAYBE WE COULD DISCUSS AFTERWARDS, CHAIRMAN, AND THAT IS TO THOSE PROPOSALS THAT YOU HAVE IDENTIFIED THAT YOU HAD A CONFLICT, AND YOU'VE STATED THAT FOR THE OTHER ONES THAT YOU DIDN'T HAVE A CONFLICT, YOU DIDN'T THINK ANYTHING WAS SUFFICIENT. DID YOU HAVE ELLEN TAKE A LOOK AT AND GO THROUGH THE SAME ANALYSIS?

DR. FEIGAL: YEAH. I WANT TO SAY ALAN, FOR CONFLICT OF INTEREST REASONS, IT'S NOT JUST TODAY, IT'S BEEN GOING ON FOR YEARS IN TERMS OF HAVING TO RECUSE HIMSELF FROM CERTAIN REVIEWS OR ASSESSMENTS TO MAINTAIN THE INTEGRITY OF THE PROCESS. SO I'VE BEEN LEADING WITH THE SCIENTIFIC OFFICERS AND GOING THROUGH THE ISSUES IN-DEPTH.

SO I WOULD SAY ACTUALLY EVEN ON THE COMMENTS THAT ARE GOING FORWARD TODAY, ALAN AND I HAVE TALKED EXTENSIVELY ABOUT THAT. AND ACTUALLY IT

CONCURS WITH THE PREVIOUS CONVERSATIONS I'VE HAD WITH SCIENTIFIC OFFICERS. SO I CAN ASSURE YOU THAT WE HAVE ROBUST DISCUSSION OF ALL OF THESE PROPOSALS, INCLUDING THOSE IN WHICH THERE WEREN'T EVEN EXTRAORDINARY PETITIONS.

MR. SERRANO-SEWELL: THE ONES THAT ALAN HAD A CONFLICT ON?

DR. FEIGAL: I LOOKED AT THEM. I'VE LOOKED AT ALL OF THEM. AND TO CLARIFY, I DON'T HAVE A CONFLICT WITH ANY OF THEM.

MS. LANSING: I SO RESPECT WHAT OS IS SAYING. I DO THINK WE HAVE A PROCESS. I GUESS WHERE I COME OUT IS IN THIS FIELD, NOT THIS PARTICULAR PROPOSAL, IN THE FIELD OF STEM CELL, IN THE FIELD OF SCIENCE IN GENERAL, IT MOVES SO FAST, AND WE HAVE A FIDUCIARY RESPONSIBILITY TO DO THE BEST SCIENCE. AND IF SOMETHING HAS CHANGED QUICKLY AND WE DON'T HAVE THE ABILITY TO BE NIMBLE, THEN I WOULD FEEL VERY BAD. I DO THINK THERE HAS TO BE A PROCESS SO EVERYBODY HAS AN EQUAL OPPORTUNITY. THAT I TOTALLY AGREE WITH. BUT WHAT I LIKE ABOUT THESE EXTRAORDINARY PETITIONS IS THIS CHANGED. YOU DIDN'T HAVE THIS INFORMATION. SO NO ONE IS SAYING YOUR DECISION AT THE TIME WASN'T RIGHT. BUT IF IN A MATTER OF WEEKS OR MONTHS SOMETHING CHANGES SO FAST,

I WANT US, REPRESENTING THE CITIZENS, TO BE ABLE TO DO THE BEST SCIENCE AND BE MINDFUL IF SOMETHING CHANGED QUICKLY. THAT'S WHY WE HAVE EXTRAORDINARY PETITIONS.

MR. TORRES: I THINK WE ARE ALL AWARE THAT THIS IS AN ALTERNATIVE TO GAIN MORE INFORMATION AND MORE INPUT BEFORE WE MAKE A FINAL DECISION ON THESE TWO PROPOSALS THAT ARE BEFORE US. THAT DOESN'T PRECLUDE THIS BOARD, AS WE HAVE DONE IN THE PAST AFTER LISTENING TO AN EXTRAORDINARY PETITION AND PUBLIC COMMENT, TO VOTE TODAY TO VOTE IT OUT. THAT'S ALWAYS AVAILABLE TO YOU. AS A MATTER OF FACT, YOU MAY DECIDE, AFTER YOU HEAR THE PUBLIC COMMENTS TODAY ON THIS MOTION, THAT YOU WOULD PROVIDE A SUBSTITUTE MOTION TO FUND TODAY. AND THAT IS OUR OPTION AS A BOARD BASED UPON WHAT YOU HEAR.

I JUST FEEL THAT THIS PROCESS, WHICH WAS, IN FACT, INTACT UNTIL IT LAPSED, PROVIDED US AN OPPORTUNITY TO HAVE ANOTHER REVIEW WHEN WE'VE BEEN GIVEN NEW INFORMATION THAT OUR SCIENTIFIC STAFF, WHICH WE HAVE TO RELY UPON AS WELL, FEELS NEEDS TO BE REREVIEWED AND THEN COME BACK TO US WITH A RECOMMENDATION. ON THE OTHER HAND, YOU MAY DECIDE, AFTER HEARING THE PUBLIC COMMENT, THAT THE FUTURE EXTRAORDINARY PETITIONS THAT COME BECOME YOU, YOU

MAY WANT TO REFER TO THIS PROCESS AS WELL. THAT'S ALSO AN OPTION THAT THIS BOARD HAS.

CHAIRMAN THOMAS: ADDITIONAL COMMENTS BY MEMBERS OF THE BOARD?

DR. STEWARD: JUST ONE. I GUESS I HAVE TO SAY THAT OBVIOUSLY SCIENCE MOVES ON, ALL SCIENCE MOVES ON, IN THE PERIOD OF TIME BETWEEN THE TIME IT'S INITIALLY REVIEWED BY THE GRANTS WORKING GROUP AND THE TIME THAT WE SEE IT. THERE'S ALWAYS GOING TO BE NEW INFORMATION, AND IT'S GOING TO BE SCIENTIFIC INFORMATION. AND WE ALL HAVE ADMITTED THAT, IN FACT, IT IS NOT OUR POSITION TO REREVIEW SCIENTIFIC INFORMATION.

SO JUST TO SAY I THINK THAT THIS PROCESS IS GOING TO LEAD TO MORE -- COULD POTENTIALLY LEAD TO MANY MORE REFERRALS TO THIS. JUST SAY THAT.

CHAIRMAN THOMAS: ANY COMMENT BY BOARD MEMBERS ON THE PHONE? COMMENTS FROM MEMBERS OF THE PUBLIC? AGAIN, PLEASE KEEP YOUR COMMENTS TO THREE MINUTES. PLEASE STATE YOUR NAME AT THE OUTSET.

DR. LITVAK: THANK YOU SO MUCH. GREAT TO BE BACK. I'M HERE. THE GRANT HAS BEEN SUBMITTED BY CAPRICOR, WHICH IS A LOS ANGELES STEM CELL COMPANY. AND SINCE APRIL I'VE BEEN THE EXECUTIVE CHAIRMAN. I'D LIKE TO GO ON THE RECORD, FIRST OF ALL, TO

COMPLIMENT THE GRANT REVIEW PROCESS AT ITS ORIGINAL LEVEL. I THOUGHT IT WAS VERY THOUGHTFUL. I WASN'T INVOLVED IN THE WRITING OF THE ORIGINAL GRANT. THE REVIEW WAS THOUGHTFUL. IT WAS DONE WITH INTEGRITY, AND THE POINTS THAT WERE RAISED WERE EXCELLENT, AND WE TOOK THEM TO HEART.

THE REASON WE'RE HERE FOR AN EXTRAORDINARY PETITION IS THAT EXTRAORDINARY EVENTS HAVE OCCURRED SINCE THE TIME OF THE SUBMISSION. BY WAY OF BACKGROUND, WE ARE TREATING PATIENTS WHO HAVE HAD HEART ATTACKS. PATIENTS WHO HAVE HEART ATTACKS, 1.6 MILLION PER YEAR IN THE UNITED STATES. A SUBSET OF THOSE HAVE LARGE HEART ATTACKS AND GO ON TO GET HEART FAILURE. OUR INTERVENTION, OUR DRUG, IS DESIGNED TO PREVENT THE PROGRESSION OF HEART ATTACKS AFTER LARGE HEART ATTACKS.

THIS IS UBIQUITOUS DISEASE. EVERYBODY IN THIS ROOM IS EITHER GOING TO HAVE HEART DISEASE OR IS GOING TO BE RELATED TO SOMEONE WHO HAS HEART DISEASE. SO THIS IS A VERY, VERY IMPORTANT PROJECT. ONCE YOU GET CONGESTIVE HEART FAILURE, THERE IS NO TREATMENT OTHER THAN HEART TRANSPLANTATION. I JUST WANTED TO PUT THAT IN CONTEXT.

OUR DRUG, CAP 102 IS AN ALLOGENEIC CARDIAC-DERIVED STEM CELL. THE AUTOLOGOUS VERSION

OF THAT PRODUCT WAS VERY SUCCESSFUL IN A HUMAN RANDOMIZED PHASE I TRIAL AND REDUCED HEART ATTACK SIZE BY 50 PERCENT, REDUCED SCAR BY 50 PERCENT, AND WAS PUBLISHED AFTER THE SUBMISSION OF THIS GRANT IN THE PRESTIGIOUS PEER REVIEW JOURNAL *THE LANCET*.

BASED ON THE RESULTS OF THAT TRIAL AND AN EXTRAORDINARY AMOUNT OF PRECLINICAL WORK THAT THE COMPANY DID, THE FDA APPROVED IN JUNE A PHASE I/PHASE II CLINICAL TRIAL WHICH IS READY TO GET GOING AND, IN FACT, IS GOING TO START ENROLLING PATIENTS LATE IN AUGUST HOPEFULLY.

THE PRODUCT, THE CAP 102, WAS VALIDATED BY A DISEASE TEAM I GRANT THAT WAS GIVEN TO DR. MARBAN AT CEDARS-SINAI. THIS IS THE FIRST PROGRESSION OF A CIRM-SUPPORTED PROGRAM INTO PHASE II. AND I THINK YOU SHOULD BE VERY PROUD OF THAT. WHAT WE'RE ASKING FOR HERE IS FUNDING FOR THE PHASE II PORTION OF THIS INTEGRATED PHASE I/PHASE II GRANT. THE PHASE I GRANT IS BEING FUNDED BY THE NIH. IT'S ALREADY APPROVED. THE COMPANY WILL RECEIVE ALMOST $3 MILLION TO SUPPORT WHAT I CALL THE LEADING OR PHASE I OF 14 PATIENTS. NOT ONLY WILL THAT MONEY SUPPORT THE PHASE I, BUT IT ALSO IS ENOUGH TO SET UP THE ENTIRE TRIAL INFRASTRUCTURE, THE DATASETS, THE COMPUTER PROGRAMS THAT ARE REQUIRED TO COLLECT DATA,

THE CASE REPORT FORMS, ETC., ETC. SO YOUR MONEY WOULD BE HIGHLY LEVERAGED BY THE NIH MONEY.

AND I WOULD JUST REVIEW THAT THIS GRANT HAS NOW BEEN APPROVED UNCONDITIONALLY, THIS PHASE I/PHASE II, BY THE FDA AND BY THE CLINICAL TRIALS COMMITTEE OF THE NIH AND HAS RECEIVED FUNDING FROM THE NIH. SO THERE IS A LOT OF EXTERNAL VALIDATION TO THIS PROGRAM.

MR. HARRISON: DR. LITVAK, THAT'S THREE MINUTES, SO IF YOU COULD TRY TO WRAP UP YOUR COMMENTS.

DR. LITVAK: I WAS JUST GOING TO SAY THAT BECAUSE OF ALL THIS, I THINK THE TRIAL IS READY TO BE FUNDED NOW. IF WE INITIATE THIS TRIAL AND DON'T RECEIVE CIRM FUNDING, IT WILL STOP AFTER THE PHASE I PORTION, AND THAT WILL DELAY THE AVAILABILITY OF POTENTIALLY IMPORTANT TREATMENTS TO THE PATIENT. SO THANK YOU FOR YOUR ATTENTION AND WE APPRECIATE THE TIME.

CHAIRMAN THOMAS: THANK YOU, DR. LITVAK.

DR. MARBAN: GOOD MORNING. I'M HERE AS THE PRINCIPAL INVESTIGATOR OF THE DISEASE TEAM I GRANT THAT LED TO THE VALIDATION OF THE THERAPEUTIC CANDIDATE THAT'S PROPOSED TO BE USED IN THIS COMMERCIALLY SPONSORED DT II APPLICATION BY

CAPRICOR.

THIS IS A TRANSFORMATIVE OPPORTUNITY FOR CIRM BECAUSE IT'S ACTUALLY GOING FROM THEORY TO PRACTICE, AND ACTUALLY HAS THE POTENTIAL TO TAKE SOMETHING INTO ADVANCED CLINICAL TESTING AS A VALIDATION OF THE WHOLE NOTION OF PROPOSITION 71. SO I WOULD URGE THE ICOC TO RECOGNIZE THIS FOR THE AMAZING OPPORTUNITY THAT IT IS AND TO ALLOW US THE OPPORTUNITY TO REALLY DO SOMETHING THAT HAS HOME RUN POTENTIAL. IT'S HERE AND NOW, AND THERE'S NO QUESTION WHATSOEVER THAT IT COULD CHANGE THE FACE OF STEM CELL THERAPY WORLDWIDE, NOT JUST IN CALIFORNIA, TO THE BENEFIT OF MANY MILLIONS OF AMERICANS THAT SUFFER FROM ADVANCED HEART DISEASE. THANK YOU.

CHAIRMAN THOMAS: NEXT SPEAKER, PLEASE.

MS. MARBAN: GOOD MORNING. I'M LINDA MARBAN AND I'M THE CEO OF CAPRICOR. I WOULD JUST LIKE TO SAY I'M SPEAKING TO YOU TODAY FROM THE DESERT, WHICH IS THE VALLEY OF DEATH THAT MANY SMALL BIOTECHNOLOGY COMPANIES INHABIT, AND IS THE FOUNDATION OF CIRM TO HELP COMPANIES THROUGH THAT VALLEY OF DEATH. YOU ARE THE OASIS. YOU HAVE THE ABILITY TO FUND OUR TRIAL AND TAKE OUR THERAPY TO PATIENTS.

TWO HUNDRED FIFTY PATIENTS POTENTIALLY

COULD BENEFIT FROM OUR THERAPY, WHICH WE WILL FIRST DEMONSTRATE TO BE SAFE. WE'VE BEEN VETTED BY THE NATIONAL INSTITUTES OF HEALTH. OUR PROTOCOL HAS BEEN APPROVED BY THEM. AND THE FOOD AND DRUG ADMINISTRATION HAS GIVEN US A GREEN LIGHT TO MOVE FORWARD.

THE ONLY THING STANDING IN OUR WAY IS THE FUNDING OF THIS GROUNDBREAKING CLINICAL TRIAL BASED ON RESULTS FROM CEDARS-SINAI HEART INSTITUTE AND DISEASE TEAM WORK THAT YOU'VE ALREADY FUNDED.

I'M PROUD TO REPRESENT A CALIFORNIA COMPANY. MY COMPANY HAS GROWN FROM WHEN WE CAME HERE ONE EMPLOYEE, AND YOU'RE LOOKING AT HER, TO NOW 14 EMPLOYED CALIFORNIA CITIZENS WITH THE IDEA OF GROWING EVEN FURTHER. AND THE CROWN JEWEL IN MY RECRUITING CROWN HAS BEEN FRANK LITVAK WHO IS WELL-KNOWN TO HAVE THE ABILITY TO TAKE COMPANIES FROM BABY ITERATIONS ALL THE WAY THROUGH A GIANT UPSIDE AND ULTIMATELY TO THE CLINIC AND BEYOND.

SO THANK YOU VERY MUCH, AND THANK YOU FOR THE OPPORTUNITY JUST TO BE HERE TODAY. I'M PROUD TO BE A CALIFORNIA CITIZEN.

CHAIRMAN THOMAS: THANK YOU. NEXT SPEAKER.

DR. QUINT: YES. DR. ROBERT QUINT. I'M A

MEMBER OF THE ICOC, AND IT'S MY PLEASURE TO GIVE MY WHOLEHEARTED SUPPORT TO THIS PROJECT. I'VE BEEN IN PRACTICE AS A CARDIOLOGIST FOR THE PAST 44 YEARS AND PRACTICING INTERVENTIONAL CARDIOLOGY FOR THE PAST 33 YEARS.

I REMEMBER THE VERY FIRST ANGIOPLASTY THAT I WAS INVOLVED WITH IN 1979. IT WAS AN EXHILARATING FEELING THAT I'VE NEVER HAD BEFORE. AND I WOULD HOPEFULLY BE AROUND LONG ENOUGH TO BE ABLE TO PERFORM THE FIRST INTERCARDIAC ADMINISTRATION OF CARDIOMYOCYTES WHEN IT BECOMES AVAILABLE AND TO EXPERIENCE THAT EXHILARATION ONCE AGAIN.

I CERTAINLY SHARE WITH SHERRY LANSING AND HER FEELING AFTER HEARING DR. MARBAN'S PRESENTATION IN DECEMBER OF LAST YEAR REGARDING THE CADUCEUS STUDY. THANK YOU VERY MUCH.

DR. PIZZO: COULD YOU JUST EXPLAIN WHY YOU'RE STANDING UP MAKING PUBLIC TESTIMONY WHEN YOU'RE SITTING ON THE ICOC? I AM ABSOLUTELY CONFUSED BY THAT.

DR. QUINT: I'M NOT A VERY FORMAL GUY, I GUESS.

DR. PIZZO: I JUST WONDER ABOUT THAT. I THINK WE HAVE A PROCESS, AND YOU SHOULD FOLLOW THE PROCESS.

CHAIRMAN THOMAS: WE WILL STIPULATE THAT THOSE LAST REMARKS WERE COMMENTS BY A BOARD MEMBER AS PART OF BOARD MEMBER DISCUSSION.

ANY FURTHER COMMENTS BY MEMBERS OF THE BOARD OR THE PUBLIC? HEARING NONE, QUESTION IS CALLED. MARIA, PLEASE CALL THE ROLL. MR. HARRISON, PLEASE RESTATE.

MR. HARRISON: THE MOTION IS TO REFER APPLICATION 5735 FOR ADDITIONAL REVIEW OF NEW INFORMATION BY THE PEER REVIEW GROUP WITH DIRECTION TO THE PRESIDENT AND CO-VICE CHAIR SHEEHY TO DETERMINE THE MAKEUP OF THE PEER REVIEW PANEL OR SUBSET OF THE PANEL AND REQUEST THAT THE PEER REVIEW RECOMMENDATION BE PRESENTED TO THE BOARD AT ITS NEXT MEETING.

MS. LANSING: SEPTEMBER 6TH ALONG WITH THE OTHER ONE.

MR. TORRES: SO THERE IS NO MEETING ON THE 5TH.

MS. BONNEVILLE: IT'S SCHEDULED FOR TWO DAYS, BUT IT WILL LIKELY BE A ONE-DAY MEETING.

MS. LANSING: SO ON SEPTEMBER 6TH.

CHAIRMAN THOMAS: AT OUR NEXT REGULARLY SCHEDULED BOARD MEETING, WHICH IS SCHEDULED FOR SEPTEMBER 6TH. MARIA, PLEASE CALL THE ROLL.

MS. BONNEVILLE: BOB PRICE.
DR. PRICE: YES.
MS. BONNEVILLE: DAVID BRENNER.
DR. BRENNER: YES.
MS. BONNEVILLE: JACOB LEVIN.
DR. LEVIN: YES.
MS. BONNEVILLE: CLAIRE POMEROY.
DR. POMEROY: YES.
MS. BONNEVILLE: MARCY FEIT.
MS. FEIT: YES.
MS. BONNEVILLE: TED KRONTIRIS.
DR. KRONTIRIS: YES.
MS. BONNEVILLE: LEEZA GIBBONS.
MS. GIBBONS: YES.
MS. BONNEVILLE: MICHAEL GOLDBERG.
MR. GOLDBERG: YES.
MS. BONNEVILLE: SAM HAWGOOD.
DR. HAWGOOD: YES.
MS. BONNEVILLE: STEVE JUELSGAARD.
MR. JUELSGAARD: YES.
MS. BONNEVILLE: SHERRY LANSING.
MS. LANSING: YES.
MS. BONNEVILLE: BERT LUBIN.
DR. LUBIN: YES.
MS. BONNEVILLE: MICHAEL MARLETTA. PHIL

PIZZO.

DR. PIZZO: YES.

MS. BONNEVILLE: FRANCISCO PRIETO.

DR. PRIETO: AYE.

MS. BONNEVILLE: CARMEN PULIAFITO. ROBERT QUINT.

DR. QUINT: YES.

MS. BONNEVILLE: DUANE ROTH.

MR. ROTH: YES.

MS. BONNEVILLE: JOAN SAMUELSON.

MS. SAMUELSON: YES.

MS. BONNEVILLE: DAVID SERRANO-SEWELL.

MR. SERRANO-SEWELL: YES.

MS. BONNEVILLE: JEFF SHEEHY.

MR. SHEEHY: YES.

MS. BONNEVILLE: JONATHAN SHESTACK.

MR. SHESTACK: YES.

MS. BONNEVILLE: OS STEWARD.

DR. STEWARD: YES.

MS. BONNEVILLE: JONATHAN THOMAS.

CHAIRMAN THOMAS: YES.

MS. BONNEVILLE: ART TORRES.

MR. TORRES: AYE.

MS. BONNEVILLE: KRISTINA VUORI.

DR. VUORI: YES.

MS. BONNEVILLE: JAMES ECONOMOU.

CHAIRMAN THOMAS: HE'S OUT. HE WAS CONFLICTED HERE. I DON'T KNOW IF HE'S CONFLICTED, BUT HE DID WALK OUT THINKING HE WAS CONFLICTED.

THE MOTION CARRIES, MR. HARRISON?

MR. HARRISON: YES.

CHAIRMAN THOMAS: OKAY. SO THAT'S THE DISCUSSION ON THE TWO PROPOSALS IDENTIFIED BY MR. SHEEHY. WOULD NOW LIKE TO ASK MEMBERS OF THE BOARD IF THERE ARE OTHER APPLICATIONS YOU WOULD LIKE TO RAISE FOR DISCUSSION.

MS. GIBBONS: THANK YOU. YES. I'D BE INTERESTED IN HEARING FROM THE STAFF PRESENTATION, PLEASE, ON APPLICATION NO. 05416.

MR. TORRES: SECOND.

CHAIRMAN THOMAS: IT'S BEEN MOVED AND SECONDED THAT WE HEAR STAFF PRESENTATION AND INITIATE DISCUSSION ON ITEM 5416. COULD WE PLEASE, DR. TROUNSON, HAVE PRESENTATION?

DR. FEIGAL: DR. KAREN BERRY, THE SCIENCE OFFICER, WILL PROVIDE THAT UPDATE.

CHAIRMAN THOMAS: ALL CONFLICTED PARTIES PLEASE LEAVE FOR THE PURPOSES OF THIS DISCUSSION. THANK YOU.

MS. SAMUELSON: TO MAKE IT A LITTLE

CLEARER TO FOLLOW, COULD WE ADD THE DESCRIPTION OF THE TITLE?

CHAIRMAN THOMAS: YES. KAREN, WOULD YOU PLEASE GIVE THE TITLE AND FULL DESCRIPTION AND THEN PROCEED TO A BRIEF REPORT?

DR. BERRY: YES, SIR. MR. CHAIRMAN, ARE YOU READY?

CHAIRMAN THOMAS: PLEASE PROCEED.

DR. BERRY: THE TITLE OF THIS APPLICATION IS "RESTORATION OF MEMORY IN ALZHEIMER'S DISEASE, A NEW PARADIGM USING NEURAL STEM CELL THERAPY." AND THIS IS APPLICATION 5416.

THE GOAL OF THIS PROPOSAL IS TO DEVELOP A HUMAN NEURAL STEM CELL AS A POTENTIAL THERAPY FOR ALZHEIMER'S DISEASE. AS WE KNOW, ALZHEIMER'S DISEASE AFFECTS OVER FIVE MILLION INDIVIDUALS IN THE U.S. AND IS THE SIXTH LEADING CAUSE OF DEATH. THE RATIONALE FOR THIS PROPOSED THERAPY IS THAT THE HUMAN NEURAL STEM CELLS WILL BE TRANSPLANTED INTO THE HIPPOCAMPUS AND WILL EXPRESS PROTEINS THAT PROMOTE SURVIVAL OF HOST NEURONS, THEREBY SLOWING OR PREVENTING LOSS OF MEMORY AND COGNITIVE FUNCTIONS.

THE APPLICANTS PROPOSE TO CONDUCT A CLINICAL MANUFACTURING OF THE HUMAN NEURAL STEM CELLS, TO COMPLETE THE PRECLINICAL SAFETY AND

EFFICACY STUDIES, AND CULMINATING WITH THE FILING OF AN IND APPLICATION TO THE FDA, AND INITIATE PHASE I -- FOR INITIATION OF PHASE I CLINICAL TRIALS.

LET ME POINT OUT THAT REVIEWERS CERTAINLY AGREED THAT THIS IS A SIGNIFICANT AND UNMET MEDICAL NEED AND MORE EFFICACIOUS AND SAFE THERAPIES ARE NEEDED. ONE OF THE MAJOR WEAKNESSES OF THIS PROPOSAL WAS THE LACK OF RATIONALE FOR HOW A LOCALIZED INJECTION OF HUMAN NEURAL STEM CELLS COULD TREAT THIS DIFFUSE NEUROLOGICAL DISEASE. THE PRELIMINARY DATA FROM THE ALZHEIMER'S ANIMAL MODELS THE REVIEWERS DID NOT FEEL WAS COMPELLING. THEY WERE NOT CONVINCED WITH THE LEVEL OF FORMATION OF THE FUNCTIONAL CIRCUITS AND REPAIR AND THAT THAT WOULD BE PREDICTIVE OF A THERAPEUTIC EFFECT IN THE HUMAN POPULATION.

ADDITIONALLY, THERE WAS, HOWEVER, ONE EFFICACY EXPERIMENT USING THE HUMAN NEURAL STEM CELLS THAT WERE TRANSPLANTED IN THE PRECLINICAL MODEL THAT DID RESULT IN IMPROVEMENTS IN CONTEXT AND PLACE RECOGNITION AT ONE MONTH OF TREATMENT AFTER TREATMENT.

THIS APPLICATION HAS VERY GOOD NONCLINICAL TOXICOLOGY WORK IN RELEVANT ANIMAL MODELS INCLUDING TUMORIGENICITY STUDIES. ADDITIONALLY, THE OPTIMAL

LOCATION FOR THE TRANSPLANT OF THE HUMAN NEURAL STEM CELLS IS NOT NECESSARILY ESTABLISHED WELL, AND EXPERIMENTS WERE DONE IN THE HIPPOCAMPUS, BUT THERE WERE NO ALTERNATIVES TO A DIFFERENT LOCATION.

THE PI AND THE TEAM ARE VERY EXPERIENCED IN NEUROLOGICAL DISEASES AND HAVE HAD PREVIOUS SUCCESSFUL IND FILINGS AND CLINICAL TRIAL EXPERIENCE WITH THIS PRODUCT.

THE BUDGET PROPOSED FOR THE PRECLINICAL SAFETY WAS CONSIDERED EXCESSIVE, AND THE REVIEWERS SUGGESTED PERHAPS THE TEAM COULD LEVERAGE SOME OF THE PRIOR SAFETY DATA FROM THE PREVIOUS IND STUDIES WITH THIS PROPOSED CELL LINE. THERE WAS AN EXTRAORDINARY PETITION FILED.

CHAIRMAN THOMAS: OKAY. JUST AS A MATTER OF COURSE HERE PROCEDURALLY, WITH ANY OF THESE THAT ARE GOING TO BE BROUGHT UP IN THIS MANNER AS OPPOSED TO THE FIRST TWO THAT WERE DISCUSSED, I THINK WE'RE LIKELY TO WANT TO DISCUSS THESE IN CLOSED SESSION. BUT PRECEDING THAT, LIKE TO HAVE COMMENTS FROM MEMBERS OF THE BOARD AND THEN PROCEED TO PUBLIC COMMENT. SO ARE THERE COMMENTS BY MEMBERS OF THE BOARD AT THIS STAGE?

MS. SAMUELSON: QUESTION, MR. CHAIRMAN. IF THERE'S AN EXTRAORDINARY PETITION, CAN WE HAVE --

IF THERE'S ANYONE WHO FILED THE EXTRAORDINARY PETITION HERE AND WANTS TO SPEAK, COULD THAT BE DONE FIRST?

CHAIRMAN THOMAS: THAT'S WHAT I MEANT BY MEMBERS OF THE PUBLIC. WE COULD DO THAT.

MR. SHESTACK: YOU WERE JUST ASSUMING THAT THEY WILL BE DISCUSSED IN CLOSED SESSION BECAUSE THERE MIGHT BE PROPRIETARY INFORMATION, BUT THERE'S NO MANDATE THAT ANYTHING -- IT MIGHT NOT COME UP IN CLOSED SESSION AT ALL; IS THAT CORRECT?

CHAIRMAN THOMAS: THAT'S CORRECT.

MR. ROTH: A QUESTION FOR THE STAFF, I GUESS, OR JEFF OR WHOMEVER MIGHT BE APPROPRIATE. IS THERE ANY MATERIAL NEW INFORMATION OR ANY MATERIAL ERROR THAT WE'VE IDENTIFIED FROM EITHER THE EXTRAORDINARY PETITION OR THE REVIEW INTERNALLY?

DR. BERRY: THERE WAS NO NEW INFORMATION ADDED TO THE EXTRAORDINARY PETITION.

MS. GIBBONS: IF I MAY, AND PERHAPS YOU CAN HELP PROVIDE SOME CONTEXT FOR ME ON THIS. IT SEEMS THAT IN THE EXTRAORDINARY PETITION AND IN THE DOCUMENTS THAT ARE A MATTER OF THE PUBLIC RECORD NOW, NOT FOR CLOSED SESSION, I BELIEVE, AND PLEASE TELL ME IF I MISSTEP HERE, BUT IT SEEMS TO ME THAT THEY DID AN EXTRAORDINARY JOB OF ANSWERING ALL OF

THE CHALLENGES AND THE CONCERNS THAT WERE BROUGHT UP BY THE TEAM HERE. ESPECIALLY YOU HAD MENTIONED THE EFFICACY OF THIS APPROACH, AND IT SEEMS THAT WE HAVE SUPPORTED THIS, CIRM HAS SUPPORTED THIS APPROACH TWICE IN THE PAST.

SO I FOUND THAT A LITTLE BIT CONFUSING ABOUT THE RATIONALE, THAT CIRM HAD, IN FACT, IN THE PLANNING GROUP SAID THAT THIS WAS, AND I DON'T THINK ANYTHING CHANGED FROM PLANNING GROUP TO THIS, THAT THIS WAS A REASONABLE APPROACH, AND WE'VE EVEN FUNDED THE TRANSLATIONAL GRANT WITH THIS APPROACH BEFORE. SO I FOUND THAT TO BE A LITTLE BIT CONFUSING.

JUST IN THE BROADER TEXT, THIS IS OUR SHOT WITH THIS DISEASE. I KNOW WE ALL HAVE AT OUR HEART AND OUR DESIRE IS TO REPRESENT THE PORTFOLIO WELL WITH THE BEST SCIENCE GIVING US THE BEST SHOTS TO MAKE THE MOST CHANGE WITH EVERY DISEASE THAT WE APPROACH. WE'RE ON A TRACK RECORD WITH THIS ONE. WE HAVE THE SUPERSTAR TEAM THAT HAS ALREADY HAD A HIGHLY REVIEWED SUCCESS RATE. CALIFORNIA IS THE EPICENTER OF ALZHEIMER'S DISEASE. IF YOU LOOK AROUND THIS ROOM, IN CALIFORNIA ONE IN SIX OF US WILL HAVE DEMENTIA.

WE KNOW THE ECONOMIC DEVASTATION, AND IT

JUST SEEMS THAT WE ARE QUEUED UP WITH THIS PARTICULAR GRANT APPLICATION TO REALLY TAKE ADVANTAGE OF A LOT OF THINGS THAT ARE ALREADY IN PLACE, INCLUDING THIS MODEL CALLS FOR -- IT'S A DISEASE OF AGING. AND THE COLONIES OF MICE HAVE BEEN AGED SO THAT THEY CAN BE USED IN THIS RESEARCH. IF WE DON'T FUND THIS GRANT, THEN IT'S LIKELY THOSE MICE WILL BE DESTROYED, THE PROJECT WILL BE UP-ENDED, AND IT WILL BE TOO EXPENSIVE FOR ANYONE ELSE TO REALLY TAKE THIS ON.

SO TO ME IT JUST SEEMS LIKE A HUGE OPPORTUNITY MISSED UNLESS THERE'S SOMETHING THAT I'M NOT SEEING THAT'S A BIGGER CONCERN IN THIS APPLICATION.

CHAIRMAN THOMAS: YES, DEAN POMEROY.

DR. POMEROY: I AGREE WITH LEEZA THAT THIS DISEASE AFFECTS SO MANY PEOPLE. AND I JUST WANT TO SAY THAT MY FATHER-IN-LAW DIED OVER THIS WEEKEND, AND MY HUSBAND WILL BE LEAVING TOMORROW TO ATTEND THE FUNERAL. MY FATHER-IN-LAW DIED WITH DEMENTIA, SO I UNDERSTAND THE IMPORTANCE OF THIS DISEASE. HOWEVER, I DO THINK THAT WE AS A BOARD HAVE A RESPONSIBILITY TO SPEND OUR MONEY ON THINGS THAT WILL ACTUALLY HAVE A SCIENTIFIC CHANCE OF FEASIBILITY. AND EVERYTHING I'VE READ FROM THIS

REVIEW IS THAT THE RATIONALE FOR HOW THESE INJECTIONS CAN TREAT THIS DIFFUSE NEUROLOGICAL DISEASE WAS NOT ESTABLISHED TO THE SATISFACTION OF EXCELLENT REVIEWERS. AND I HOPE THAT IN THE FUTURE THEY CAN GET TO THAT POINT, AND THAT SOME OF OUR EARLIER GRANTS WILL ALLOW THEM TO GET TO THAT POINT, BUT FROM WHAT I'VE READ, I DON'T SEE IT'S THERE. SO RIGHT NOW I CAN'T SUPPORT MOVING FORWARD WITH THIS ONE.

CHAIRMAN THOMAS: MR. JUELSGAARD.

DR. JUELSGAARD: I'D LIKE TO ASK A QUESTION ABOUT PROCESS. SO ONE OF THE THINGS, AND THAT IS A LITTLE BIT TO SOMETHING LEEZA SAID, THAT I NOTICED IN THE APPEAL IS A SEEMING, THIS IS AT LEAST WHAT THE APPELLANT SAID, A SEEMING INCONSISTENCY BETWEEN PRIOR GUIDANCE AND CURRENT DECISION. AND IT'S PARTICULARLY TRUE IN COMMENT LITTLE I, PART B.

SO COULD YOU SPEAK TO THAT POTENTIAL INCONSISTENCY?

DR. BERRY: CAN YOU JUST -- I DON'T HAVE IT RIGHT IN FRONT OF ME AT THE MOMENT. CAN YOU JUST REMIND ME WHAT PART 1 B IS?

MR. JUELSGAARD: SURE. THE GRANTS WORKING GROUP OBJECTED TO A CLINICAL APPROACH THAT WAS ALREADY SUPPORTED BY CIRM IN A SUCCESSFUL EARLY

TRANSLATIONAL RESEARCH GRANT AND THE PLANNING GRANT. AND IN PARTICULAR, THE THIRD PARAGRAPH, WHICH I CAN READ, BUT IT'S SOMEWHAT LONG, REALLY KIND OF SPEAKS TO THAT POINT. THE NOTION IS THAT THEY GOT DIFFERENT GUIDANCE EARLIER ON IN THIS PROCESS THAT THEY FOLLOWED. AT LEAST THAT'S WHAT I READ IN HERE. WHETHER THAT'S TRUE OR NOT I DON'T KNOW. AND NOW HAVING FOLLOWED THAT GUIDANCE, IT'S NOT ACCEPTABLE KIND OF WHERE WE STAND TODAY.

DR. FEIGAL: LET ME JUST ANSWER A QUESTION GENERICALLY ABOUT ADVICE THAT'S GIVEN IN A PLANNING AWARD VERSUS COMMENTS THAT ARE MADE IN A RESEARCH AWARD. AS WE MENTIONED EARLIER, TWO VERY DIFFERENT KINDS OF CONTENT ARE PROVIDED IN THOSE SEPARATE TYPES OF PROPOSALS. AND ALSO SCIENTIFIC REVIEW, AS WE KNOW, HAS DIFFERENCES OF OPINION.

SO I'M JUST SAYING THAT, ONE, THERE'S A VERY DIFFERENT AMOUNT OF INFORMATION THAT'S IN A PLANNING AWARD AND WHAT MIGHT BE ACCEPTABLE TO ALLOW SOMEBODY TO BE ELIGIBLE TO PROVIDE A PROPOSAL FOR A RESEARCH AWARD. THAT'S ONE THING.

AND THEN WHEN YOU ACTUALLY GET THE PROPOSAL AND ALL THE DETAILS IN IT, IT'S A DIFFERENT TYPE OF REVIEW.

THE OTHER ISSUE IS THAT IN TERMS OF THE

EARLIER STAGE OF PRODUCTS, THERE'S DIFFERENT TYPES OF ACTIVITIES, DIFFERENT PROJECTS THAT ARE ACTUALLY COMPOSED IN THOSE EARLIER STAGE PRODUCTS. AND THOSE MIGHT BE RELEVANT FOR THE STAGE AT WHICH THEY'RE WORKING, BUT THERE IS ADDITIONAL LEVEL OF COMPLEXITY, ADDITIONAL RIGOR THAT'S REQUIRED FOR SOME OF THESE LATER STAGE, MORE COMPLICATED, MORE EXPENSIVE-TYPE PROJECTS.

DR. BERRY CAN PERHAPS ADDRESS THE SPECIFIC ISSUES, BUT I JUST WANTED TO GIVE YOU SOME OF THOSE GENERAL DIFFERENCES.

DR. BERRY: JUST TO ADD ON TO WHAT DR. FEIGAL SAID, IN THE DISEASE TEAM PLANNING AWARD, WHICH IS ONE OF THE THINGS THAT THEY REFERRED TO, THAT APPLICATION DID NOT HAVE ANY DATA. SO THERE WERE NO FIGURES, NO TABLES, NO THINGS LIKE THIS. SO IT WAS A VERY RELATIVELY SHORT APPLICATION AND NO HARD DATA. SO THERE WAS NO DATA TO LOOK AT.

AND IN THE EARLY TRANSLATION, I TOTALLY AGREE WITH DR. FEIGAL IS THAT THAT'S AN EARLIER PART OF THE PROGRAM. AND SO THEY MIGHT NOT AT THAT POINT HAVE DATA THAT WAS RELEVANT TO THIS LATER APPLICATION.

MS. GIBBONS: I APPRECIATE ALL THAT, AND I'M TRYING TO UNDERSTAND THE DIFFERENCES BETWEEN

THOSE PROCESSES. THANK YOU SO MUCH FOR THAT. BUT DOES THAT MEAN THAT THE RATIONALE AND THE APPROACH FROM THE EARLIER TRANSLATIONAL GRANT AND FROM THE PLANNING GROUP TO NOW CHANGED? I DO UNDERSTAND THE SCOPE AND THE BUDGETING AND ALL THE OTHER THINGS THAT YOU MENTIONED, BUT THE BIG CRITICISM WAS THE RATIONALE. IT SEEMS THAT THAT STAYED CONSISTENT, DID IT NOT?

DR. FEIGAL: LET ME JUST ANSWER. I THINK THAT THERE'S A DIFFERENT LEVEL OF EVIDENCE THAT YOU WANT AT DIFFERENT STAGES OF DEVELOPMENT. I THINK WE ALL KNOW THERE'S ATTRITION BETWEEN WHAT MIGHT LOOK VERY EXCITING AND INTERESTING AT AN EARLY STAGE, AND IT MAY OR MAY NOT PROGRESS TO A LATER STAGE DEPENDING ON EVIDENCE. AND SO, YOU KNOW, PRODUCT DEVELOPMENT, AS WE ALL KNOW, IS VERY COMPLICATED. AND DATA THAT YOU HAVE AT ONE STAGE MAY BE SUFFICIENT FOR WHAT YOU NEED TO DO AT THAT EARLY STAGE, BUT IT MAY NOT HAVE PROGRESSED ENOUGH TO ALLOW ONE TO WANT TO INVEST IN THAT LATER STAGE.

CHAIRMAN THOMAS: WERE THERE PROTOCOLS APPROVED IN THE PLANNING GRANT THAT WERE IMPLEMENTED AS THEY MOVED FORWARD HERE THAT NOW ARE BEING QUESTIONED AS NOT THE CORRECT PROTOCOLS?

DR. FEIGAL: CAN I JUST ANSWER THE

QUESTION? THE PLANNING AWARDS FOR THIS WHOLE GROUP OF INITIATIVES WERE SIMPLY YOU CAN HAVE MEETINGS, YOU CAN TRY AND GET YOUR TEAM TOGETHER TO HAVE DISCUSSIONS. IT'S A MODESTLY SMALL AWARD, $100,000. SO THERE'S REALLY NO DOLLARS FOR RESEARCH IN A PLANNING AWARD.

DR. BERRY: AND TO ADD TO THAT, IN THE PLANNING AWARD WE DID INSTITUTE, AND MR. SHEEHY IS NOT HERE, BUT WE DID INSTITUTE A CONDITIONS CRITERIA WHERE IF THERE WAS A PIECE OF NECESSARY MISSING DATA, THAT THEY COULD COME BACK WITH A CONDITION AND PUT THAT INTO THEIR FULL APPLICATION. THIS PARTICULAR GRANT APPLICATION DID NOT HAVE A CONDITION.

CHAIRMAN THOMAS: DR. PRIETO.

DR. PRIETO: I THINK I JUST WANT TO POINT OUT THAT THIS IS A SEPARATE REVIEW FROM THE PLANNING AWARD, AND THAT THIS IS ONE OF THE APPLICATIONS -- I'M SPEAKING FOR SOMEONE WHO I THINK WILL PROBABLY SUPPORT MOVING THIS UP, BUT THAT THIS IS AN APPLICATION THAT HAD A FAIRLY SUBSTANTIAL DIFFERENCE OF OPINION. THERE'S A LARGE STANDARD DEVIATION IN THE SCORES. THERE WAS AT LEAST ONE REVIEWER WHO QUESTIONED WHETHER FOR A DIFFUSE DISEASE LIKE ALZHEIMER'S, THE TARGETING OF THE HIPPOCAMPUS.

I HAVE A NUMBER OF CONCERNS. ONE IS ARE WE TREATING INDUSTRY APPLICATIONS APPROPRIATELY? I DON'T THINK WE'RE BEING UNFAIR. I DON'T THINK THERE'S ANYTHING UNFAIR ABOUT OUR PROCESS, BUT THIS IS AN APPLICATION FROM INDUSTRY, AN APPLICATION FROM A COMPANY THAT HAS SOME EXPERIENCE THAT I THINK IS RELEVANT. I THINK THAT'S PERTINENT TO CONSIDER.

DR. FEIGAL: I DO WANT TO CLARIFY THE REVIEWERS -- WE DO PROVIDE THE PLANNING AWARD SUMMARY TO THE REVIEWERS OF THE RESEARCH AWARD. SO AT LEAST THEY HAD THAT IN HAND. EVEN THOUGH THE REVIEWERS ARE DIFFERENT, THEY DID HAVE THE INFORMATION FROM THE PLANNING AWARD.

MS. GIBBONS: I DO BELIEVE THAT IT IS THE COMPANY THAT HAS THE UNIQUE EXPERIENCE AT USING STEM CELLS WITH BRAIN. SO TO ME THAT'S ANOTHER REASON WHY I THINK THIS IS REALLY OUR TIME TO TAKE ADVANTAGE OF THIS OPPORTUNITY. AS YOU SAY, THERE WAS A STANDARD DEVIATION OF 12, WHICH IS PRETTY HIGH, AND THE SCORES WERE ALL OVER THE PLACE HERE. YOU HAD A HIGH OF 75 AND YOU HAD A LOW OF 30, WHICH KIND OF ALWAYS MAKES ME WANT TO LOOK AT THOSE A LITTLE MORE CLOSELY REGARDLESS JUST TO KIND OF BREAK THAT DOWN AND SEE WHAT IT IS.

YOU HAD ALSO MENTIONED, OTHER THAN THE

COMPANY, WHAT ELSE DID YOU JUST SAY?

CHAIRMAN THOMAS: TALKING ABOUT ISSUE OF LOCALIZED INJECTION AND THE MIGRATION ISSUE.

MS. GIBBONS: CORRECT. AS I UNDERSTAND IT, AND I HOPE THERE'S SOMEONE IN THE ROOM THAT PERHAPS CAN SPEAK TO THIS, BUT THERE IS PRECLINICAL DATA WITH THIS GROUP SHOWING THAT INJECTING INTO THE HIPPOCAMPUS, WHICH IS THE MEMORY CENTER, THAT IT DID SHOW DRAMATIC IMPROVEMENT IN COGNITION. AND SO I THOUGHT THAT WAS VERY COMPELLING. AND WHILE THERE ARE OTHER ASPECTS OF THE DISEASE, WHAT IF WE COULD JUST CURE MEMORY? WHAT IF WE COULD JUST RESTORE MEMORY? WOULDN'T THAT BE AN AMAZING SLAM DUNK?

DR. PRIETO: I THINK PART OF THIS SPEAKS TO OUR -- IT IS A LARGE AWARD, BUT TO OUR RISK TOLERANCE. ONE OF THE THINGS THAT COMES UP IN GRANT REVIEWS THAT LEADS TO SOMETIMES THE DISPROPORTIONATELY LOW SCORES IS HAVING A REVIEWER WHO SIMPLY DOESN'T FEEL THAT THERE'S A GOOD LIKELIHOOD OF SUCCESS AND WHETHER WE'RE WILLING TO GAMBLE. I THINK ONE OF THE ISSUES, LEEZA ALLUDED TO THIS RIGHT NOW, THAT WE HAVE A DISEASE WITH A HUGE, TREMENDOUS IMPACT AND A GROWING IMPACT WITH NO TREATMENTS CURRENTLY THAT IN ANY WAY IMPROVE MEMORY.

SO IF THERE'S A TREATMENT THAT POTENTIALLY

IMPROVES MEMORY, THE IMPACT OF THAT WOULD BE JUST OVERWHELMING. SO IT IS A HIGH RISK, BUT A HIGH REWARD.

CHAIRMAN THOMAS: OTHER COMMENTS BY MEMBERS OF THE BOARD?

DR. LUBIN: SO I UNDERSTAND ALL THE DISCUSSIONS WE'RE HAVING HERE, BUT I KNOW THE BOARD, YOUR COMMITTEES HAVE CHOSEN REVIEWERS WHO KNOW THESE FIELDS. DO WE KNOW THESE FIELDS AS WELL? AND CAN WE ANSWER THESE QUESTIONS AS WELL AS THE REVIEWERS?

THERE'S ALWAYS A SPECTRUM OF SCORES ON GRANTS. SOMEBODY FEELS THIS IS A CONDITION WHERE THERE'S NO TREATMENT AND WE SHOULD DO SOMETHING. AND SOMEONE ELSE FEELS AND FOR THAT REASON, I'M GOING TO GIVE IT REALLY A GOOD SCORE. AND SOMEONE ELSE SAYS I AGREE WITH YOU. YOU CAN MAKE THAT AS A CASE FOR ALMOST ANY OF THE DISEASES WE SEE HERE, BUT THE DATA THAT YOU PRESENTED ISN'T COMPELLING ENOUGH FOR US TO GIVE IT THAT KIND OF SCORE.

SO I JUST GET CONCERNED WHEN WE DECIDE TO OVERRIDE THE EXPERTS THAT WE'VE CHOSEN AND THE REVIEW PROCESS THAT THEY'VE DONE. I'M NOT SAYING THAT SHOULDN'T BE DONE IN CERTAIN CIRCUMSTANCES. BUT WHEN IT COMES DOWN IS THIS DISEASE IMPORTANT? OF COURSE, IT IS. AND DO WE HAVE A THERAPY? NO.

AND SHOULD WE HAVE A THERAPY? YES. BUT DOES THAT MEAN THAT ANYONE THAT PROPOSES A THERAPY, AND IT'S A GOOD PROPOSAL, I'M NOT SAYING IT'S NOT GOOD AND I'M NOT SAYING IT DOESN'T WARRANT FUNDING, BUT I JUST GET CONCERNED THAT I DIDN'T SEE THE WHOLE APPLICATION AND I'M NOT AN EXPERT IN THIS FIELD. SO I'M SAYING THE EXPERT DIDN'T REALLY APPRECIATE ALL THAT WE APPRECIATE.

AND I JUST THINK THAT'S MAKES IT REALLY DIFFICULT BECAUSE WE COULD GO THROUGH EVERY APPLICATION AND COME UP WITH SOME ARGUMENTS LIKE THAT.

DR. PRIETO: I'LL JUST SPEAK TO THAT AS A MEMBER OF THE WORKING GROUP. THERE ARE CERTAINLY SOME APPLICATIONS FOR WHICH FOLLOWING DISCUSSION THERE IS A HIGH DEGREE OF CONSENSUS AND THE SCORES ARE VERY UNIFORM, AND WE SEE THAT IN THE SMALL STANDARD DEVIATION. IN THIS REVIEW FOR THIS PARTICULAR APPLICATION, EVEN AFTER DISCUSSION, THERE WAS STILL A WIDE RANGE OF OPINIONS AMONG THE EXPERT REVIEWERS.

MS. GIBBONS: AND NOT TO BELABOR THIS BECAUSE I DO REALIZE WE COULD GO ON FOREVER WITH THIS. I REALLY APPRECIATE YOUR POINT. I DON'T SEE OUR JOB HERE, AND CERTAINLY SPEAKING FOR MYSELF, MY

ROLE HERE TO CHALLENGE THE SCIENCE TEAM AT ALL EVER. I JUST SEE MY JOB HERE AS A PATIENT ADVOCATE TO PUSH FOR WHAT I SEE TO BE AN UNDERREPRESENTED FIELD FOR WHICH I THINK WE CAN EMERGE IF WE JUST STICK TO OUR GUNS. AND WHAT CIRM HAS DONE IN THE PAST, WE'VE QUEUED THIS UP. WE'RE LIKE ON THIRD BASE. WE CAN BRING IT HOME. AND IF WE DON'T, I THINK, IN MY OPINION, WITH THIS ONE, NOT TO CHALLENGE THE SCIENCE, BUT JUST TO SAY SHAME ON US IF WE DON'T TAKE ADVANTAGE OF THIS UNIQUE OPPORTUNITY WITH THE COMPANY THAT HAS THE TRACK RECORD AND THE EXPERIENCE IN THIS AREA WITH THE TEAM THAT WE HAVE ALREADY FUNDED THAT HAS HAD VERY HIGH MARKS AND EXCEEDED EXPECTATIONS IN THE PAST FOR A DISEASE THAT IS JUST BECOMING MORE AND MORE DEVASTATING EVERY DAY THAT WE FAIL TO GO FURTHER. SO YOU ALL KNOW WHERE I STAND ON IT, AND I SHALL REST.

CHAIRMAN THOMAS: WHY DON'T WE PROCEED, IF THERE ARE NO COMMENTS BY BOARD MEMBERS ON THE PHONE, PROCEED TO PUBLIC COMMENT. AND I WOULD BE PARTICULARLY INTERESTED IF THERE ARE ANY COMMENTS DEALING WITH THE ISSUE OF WHAT YOU PERCEIVE AS NEW DATA, NEW INFORMATION, A NEW WAY OF LOOKING AT THE PROPOSAL OR WHATEVER.

DR. HUHN: THANK YOU. MY NAME IS DR.

STEPHEN HUHN, AND I'M A BOARD CERTIFIED NEUROSURGEON AND VICE PRESIDENT OF THE CNS PROGRAM AT STEM CELLS, INCORPORATED, WHICH IS THE SPONSOR OF THE DISEASE TEAM APPLICATION WE'RE DISCUSSING TODAY.

I COME FROM ACADEMICS AND I'M NOW IN INDUSTRY, AND I'VE STARTED TO UNDERSTAND THE WORLD OF TRANSLATION VERY WELL IN THE LAST FEW YEARS. ON BEHALF OF MY COLLEAGUES AND COLLABORATORS, I WISH TO EXPRESS OUR DEEP APPRECIATION TO CIRM AND ITS GOVERNING BOARD FOR REVIEWING OUR DISEASE TEAM PROPOSAL AND FOR CONSIDERING OUR EXTRAORDINARY PETITION TODAY. I'M GRATEFUL FOR THE CHANCE TO SPEAK, AND I'D LIKE TO ADDRESS SOME OF THE KEY ASPECTS OF THE APPLICATION.

GIVEN THE FAILURE OF CONVENTIONAL APPROACHES, THE URGENCY TO EXPLORE NEW AVENUES OF RESEARCH FOR ALZHEIMER'S DISEASE SEEMS CLEAR. NEURAL STEM CELLS REPRESENTS AN INNOVATIVE AND PROMISING STRATEGY, AND WE PROPOSE TO DEVELOP THIS APPROACH AS A POTENTIAL TREATMENT FOR ALZHEIMER'S, IF YOU WILL, ONE OF THE NEW AVENUES.

WE'D LIKE TO MAKE CLEAR THAT OUR PROPOSAL IS INTENDED TO RESTORE MEMORY FUNCTION BY TRANSPLANTING NEURAL STEM CELLS INTO THE HIPPOCAMPUS, WHICH IS A MAIN PART OF THE BRAIN

RESPONSIBLE FOR MEMORY, BUT IS ALSO UNIQUELY AFFECTED IN ALZHEIMER'S DISEASE. IF YOU HAD TO PICK ONE TARGET IN THE BRAIN FOR ALZHEIMER'S, THAT'S WHERE YOU WOULD PLACE TO PUT YOURSELVES.

THIS STRATEGY HAS THE POTENTIAL TO ADDRESS ONE OF THE MOST CRIPPLING ASPECTS OF THE DISEASE, AND WE ALL RECOGNIZE HOW IMPORTANT MEMORY FUNCTION IS TO OUR EVERYDAY LIFE. THE APPROACH HAS BEEN SHOWN TO BE SUCCESSFUL IN ANIMAL WORK DONE UNDER CIRM FUNDING WITH DR. LAFERLA, AND THE OUTCOME OF HIS RESEARCH HAS POINTED THE WAY TOWARD AN INNOVATIVE HUMAN TRIAL.

HIS STUDY DEMONSTRATED THAT TRANSPLANTATION OF HUMAN NEURAL STEM CELLS INTO THE HIPPOCAMPUS ALONE IN TWO DIFFERENT ANIMAL MODELS OF ALZHEIMER'S IMPROVED MEMORY ALONG SEVERAL MEMORY TASKS, INDICATING THAT A SIMILAR APPROACH OF DOSING A SELECT ANATOMIC REGION WITHIN THE BRAIN COULD HAVE THE SAME RESULT.

IN ESSENCE, THE ANIMAL EXPERIMENTS HAVE SHOWN THAT IF WE TRANSPLANT SPECIFIC REGIONS OF THE BRAIN SUFFERING FROM A DIFFUSE DISORDER, WE CAN STILL PRODUCE A MEANINGFUL BENEFIT. THE APPROACH TAKES ADVANTAGE OF THE FACT THAT NOT ALL REGIONS OF THE BRAIN IN ALZHEIMER'S ARE AFFECTED EQUALLY, AND

THE HIPPOCAMPUS IS ONE THAT'S PARTICULARLY VULNERABLE TO THE PATHOLOGY.

WE CERTAINLY WILL WORK WITH CIRM FURTHER TO ADDRESS THIS ASPECT WITHIN OUR EXPERIMENTAL PLANS AND TRANSLATIONAL STRATEGY.

IN ADDITION TO THIS IMPORTANT ANIMAL DATA, WE HUMBLY STRESS THAT THE COMPANY I WORK FOR IS THE ONLY ONE TO HAVE COMPLETED TWO PHASE I TRIALS INVOLVING THE USE OF NEURAL STEM CELLS. BOTH TRIALS HAVE CLEARLY SHOWN THAT IT'S SAFE AND TOLERATED BY PATIENTS WITH NEURODEGENERATIVE DISORDERS THAT ARE SIMILAR IN SEVERITY AND COMPLEXITY TO THAT OF ALZHEIMER'S.

IN ADDITION, THE TRIALS HAVE FURTHER DEMONSTRATED EVIDENCE THAT THE CELLS SURVIVE, THAT THEY MIGRATE WITHIN THE BRAIN, AND OUR MOST RECENT STUDY HAS SHOWN SIGNS OF PRELIMINARY EFFICACY, WHICH IS PROOF OF CONCEPT CLINICALLY OF OUR GENERAL APPROACH.

THIS UNPARALLELED CLINICAL EXPERIENCE WITH CELL THERAPY IN THE BRAIN, WHICH NOW EXTENDS TO MORE THAN FIVE YEARS IN SOME PATIENTS, PERFECTLY POSITIONS OUR TEAM TO MOVE FORWARD WITH ALL GREATEST SPEED AND EXPERIENCE. GIVEN THE CLINICAL NEED, WE RESPECTFULLY REQUEST THAT THE ICOC CONSIDER FUNDING

OUR PROJECT AND ALLOW US TO CONTINUE OUR RESEARCH WITH OUR CURRENT TRAJECTORY AND COMPLETE THE STEPS NECESSARY TO TRANSLATE THIS APPROACH INTO THE FIRST HUMAN TRIAL WITH NEURAL STEM CELLS FOR ALZHEIMER'S. THANK YOU.

DR. LAFERLA: MY NAME IS FRANK LAFERLA. I'M A CHANCELLOR'S PROFESSOR AT UC IRVINE, AND I'M ALSO THE DIRECTOR OF THE ALZHEIMER'S DISEASE RESEARCH CENTER THERE AND CO-PI ON THIS PARTICULAR GRANT. AND I REALLY APPRECIATE A LOT OF THE COMMENTS THAT HAVE BEEN MADE, AND I WOULD LIKE TO ADDRESS SOME OF THEM VERY SPECIFICALLY HERE.

THE FIRST IS TO REALLY TALK ABOUT THE NEED. RIGHT NOW THERE'S A NEW CASE OF ALZHEIMER'S DISEASE DEVELOPING EVERY 68 SECONDS IN THE UNITED STATES ALONE. I ALSO HAPPEN TO BE SOMEONE WHO IS IMPACTED BY THIS BECAUSE, IN ADDITION TO MY CREDENTIALS, I ALSO HAPPEN TO BE THE SON OF A PARENT WHO SUFFERED FROM ALZHEIMER'S DISEASE, AND MY MOTHER DIED OF DEMENTIA AT THE AGE OF 60. SO I KNOW FIRSTHAND HOW DEVASTATING THIS DISEASE CAN BE.

I WANT TO ADDRESS SOME OF THE KEY POINTS THAT I HOPE WILL IMPACT YOUR DECISION HERE. AND THE FIRST IS THAT, AS STEPHEN POINTED OUT, THE HIPPOCAMPUS IS THE HUB, IT IS THE EPICENTER OF

ALZHEIMER'S DISEASE PATHOLOGY. AND SO FROM A LOGICAL POINT OF VIEW, ANY EXPERIMENTS THAT ONE WOULD DO, YOU WOULD START OFF IN THE HIPPOCAMPUS.

IN ADDITION, THE CRITICISM IS WHETHER OR NOT TARGETING THE HIPPOCAMPUS WILL BE SUFFICIENT TO AFFECT AREAS OF THE BRAIN. AND WE HAVE TWO PIECES OF REALLY CRITICAL DATA THAT SHOW THAT THAT IS INDEED THE CASE. THE FIRST AND THE MOST SIGNIFICANT IS THAT THESE CELLS MIGRATE OUT OF THE HIPPOCAMPUS. THE SECOND RELATES TO THE OTHER CONCERN THAT THE REVIEWERS RAISED ABOUT WHETHER OR NOT YOU'RE GOING TO GET FUNCTIONAL INTEGRATION OF THESE CELLS THAT WE TRANSPLANTED. AND THE ANSWER TO THAT QUESTION IS A RESOUNDING YES BECAUSE IF YOU LOOK AT THE BEHAVIORAL DATA, WE ARE ABLE TO TAKE MICE THAT ARE COGNITIVELY IMPAIRED AND NOT ONLY IMPROVE THEIR MEMORY, BUT ACTUALLY HAVE THEIR MEMORY BE RESTORED TO WHAT AGED WILD-TYPE MICE MEMORY IS LIKE. AND THAT TO ME IS A VERY REMARKABLE FINDING THAT SPEAKS TO THE TWO MAIN CRITICISMS THAT WERE ADDRESSED DURING THIS REVIEW.

THE OTHER POINT THAT I WANT TO MENTION IS ABOUT THE ANIMAL MODELS. AND THE DATA THAT WE HAVE, THE EFFICACY DATA THAT WE HAVE, HAS BEEN OBTAINED FROM TWO IMPORTANT ANIMAL MODELS THAT WERE DEVELOPED AT UC IRVINE, INCLUDING ONE MODEL THAT IS TO DATE

THE ONLY MODEL THAT RECAPITULATES THE TWO MOST IMPORTANT HALLMARKS OF ALZHEIMER'S DISEASE, WHICH ARE PLAQUES AND TANGLES.

AND TO SHOW YOU HOW TRANSFORMATIVE THAT MODEL HAS BEEN, WE HAVE GIVEN OUT THAT MODEL TO OVER A HUNDRED FIFTY INVESTIGATORS IN OVER 20 COUNTRIES. AND DESPITE THE FACT THAT MODEL HAS SUCH SIGNIFICANT ALZHEIMER'S PATHOLOGY, LOADS OF PLAQUES AND TANGLES, WE'RE ABLE TO RESTORE THE MEMORY OF THOSE MICE THROUGH A MECHANISM THAT DOES NOT INVOLVE REDUCING THE PLAQUES OR TANGLES IN THAT MICE. SO IT REALLY DOES SPEAK TO THE FUNCTIONAL INTEGRATION OF THOSE CELLS, WHICH I THINK WAS AT THE HEART OF THE CRITICISM.

AND I JUST WOULD LIKE TO POINT OUT AGAIN WHAT LEEZA MENTIONED EARLY ON, WHICH WAS THE FACT THAT WE HAVE PROBABLY THE WIDEST RANGE IN TERMS OF STANDARD DEVIATION, SO I THINK THERE IS SOME CONTROVERSY AS TO WHETHER OR NOT STEM CELLS COULD BE USEFUL FOR TREATING ALZHEIMER'S DISEASE. I HAVE TO TELL YOU AS A LONG-STANDING ALZHEIMER'S RESEARCHER, I ALSO HAVE MY DOUBTS, BUT I LET THE EXPERIMENTS DO THE TALKING FOR ME. THANK YOU.

DR. DICK-MUEHLKE: GOOD AFTERNOON. I'M DR. CORDULA DICK-MUEHLKE AND HAVE WORKED IN THE

FIELD OF ALZHEIMER'S DISEASE FOR NEARLY 30 YEARS, PRIMARILY IN THE PROVISION OF CARE AND SUPPORT TO PEOPLE LIVING WITH ALZHEIMER'S AND THEIR FAMILIES.

IN JANUARY OF THIS YEAR, I JOINED UC MIND AS ITS DIRECTOR OF EDUCATION, AND DR. LAFERLA INVITED ME TO SERVE AS PATIENT ADVOCATE ON OUR DISEASE TEAM GRANT GIVEN MY EXTENSIVE EXPOSURE TO THE HUMAN COST OF ALZHEIMER'S AND EXPERIENCE IN ADVOCACY TO IMPROVE THE LIVES OF PATIENTS AND THEIR FAMILIES.

TODAY OVER 5.4 MILLION AMERICANS ARE LIVING WITH ALZHEIMER'S. AND AS DR. LAFERLA SAID, A NEW CASE EMERGES EVERY 68 SECONDS. IN THE ABSENCE OF EFFECTIVE TREATMENTS AND PREVENTION STRATEGIES, BY 2050 UP TO 16 MILLION AMERICANS WILL BE AFFECTED AND A NEW CASE WILL DEVELOP EVERY 33 SECONDS. CURRENTLY OVER 588,000 CALIFORNIANS ARE LIVING WITH ALZHEIMER'S. BY 2030 THIS FIGURE WILL DOUBLE TO 1.1 MILLION.

OVER THE PAST 30 YEARS, I HAVE WATCHED THOUSANDS OF INDIVIDUALS WITH ALZHEIMER'S STRUGGLE WITH THE DEMORALIZING AND DEHUMANIZING EXPERIENCE OF LOSING COGNITIVE AND EVERYDAY ABILITIES, SUFFER EMOTIONALLY LEFT ONLY TO EXPRESS THEIR PAIN THROUGH BEHAVIOR SUCH AS AGITATION, AGGRESSION, AND

WANDERING, AND ULTIMATELY SUCCUMB TO COMPLETE DEPENDENCE ON OTHERS. ALONGSIDE EACH ONE OF THESE INDIVIDUALS WERE THE FAMILY MEMBERS AND FRIENDS WHO GAVE THEIR ALL TO ENSURE THE BEST LIFE THEY COULD FOR LOVED ONES.

TODAY 15.3 MILLION CAREGIVERS, THAT'S ESSENTIALLY THREE FOR EVERY ONE PERSON WITH ALZHEIMER'S, ARE PROVIDING 17.3 BILLION HOURS OF CARE ANNUALLY VALUED AT OVER $210 BILLION. THAT'S ON TOP OF THE $200 BILLION ANNUALLY IN DIRECT CARE COSTS COVERED BY MEDICARE, MEDICAID, AND OTHER SOURCES, INCLUDING THE FAMILIES THEMSELVES.

ALZHEIMER'S IS BANKRUPTING FAMILIES EMOTIONALLY, PHYSICALLY, AND FINANCIALLY. RESEARCH HAS CLEARLY SHOWN THAT THE STRAIN OF CAREGIVING INCREASES VULNERABILITY FOR MENTAL AND PHYSICAL HEALTH PROBLEMS AND EVEN PREMATURE DEATH. IN ONE SEMINAL STUDY RESEARCHERS FOUND THAT CAREGIVERS UNDER STRAIN ARE 63 PERCENT GREATER RISK FOR MORTALITY.

MEDICAL SCIENCE HAS SUCCESSFULLY ELONGATED LIFE INTO THE PERIOD OF YEARS 65 PLUS WHEN RISK FOR ALZHEIMER'S INCREASES DRAMATICALLY. IN 1940 I WOULD HAVE HOPED TO LIVE TO AN AVERAGE AGE OF 46. TODAY AS A CAUCASIAN WOMAN I CAN EXPECT TO LIVE TO 81. IN

A SENSE WE HAVE CREATED THE SUFFERING OF ALZHEIMER'S BY EXTENDING LIFE. WE NOW HAVE A MORAL AND ETHICAL RESPONSIBILITY TO ENSURE THAT THE ADDITIONAL YEARS ARE NOT FULL OF DECLINE AND DISABILITY.

WHEN WE DO NOT TAKE THE OPPORTUNITY TO EXPLORE INNOVATIVE APPROACHES TO TREATMENT WITH PROMISING DATA AS REPRESENTED IN OUR DISEASE TEAM GRANT, WE FAIL PEOPLE WITH ALZHEIMER'S AND WE FAIL FUTURE GENERATIONS. WE DO THIS EVERY DAY, FAIL PEOPLE WITH ALZHEIMER'S IN A MYRIAD OF WAYS; FOR EXAMPLE, WHEN WE PROVIDE INADEQUATE CARE, WHEN OUR FEDERAL GOVERNMENT UNDERSPENDS --

MR. HARRISON: EXCUSE ME. I'M SORRY. YOUR THREE MINUTES ARE UP, SO IF YOU COULD TRY TO CONCLUDE.

DR. DICK-MUEHLKE: I'M ALMOST DONE. -- ON RESEARCH FOR THIS DISEASE RELATIVE TO OTHERS AND WHEN WE DELAY TESTING DIVERSE AND INNOVATIVE APPROACHES THAT GIVE FAMILIES AND FUTURE GENERATIONS HOPE THAT SOMEDAY WE WILL LIVE IN A WORLD FREE OF ALZHEIMER'S DISEASE. AS A PATIENT ADVOCATE, I URGE CIRM AND ICOC NOT TO FAIL PEOPLE WITH ALZHEIMER'S AND FUTURE GENERATIONS AGAIN, BUT TO SUPPORT AND GUIDE ADVANCEMENT OF PROMISING REGENERATIVE STRATEGIES INTO HUMAN TESTING FOR THE MOST PREVALENT

FORM OF DEMENTIA IN THE MODERN ERA. THANK YOU SO MUCH.

CHAIRMAN THOMAS: MR. KLEIN.

MR. KLEIN: BOB KLEIN. AS THE BOARD KNOWS, I'VE NEVER ADDRESSED ANY GRANT FROM THE FLOOR. IT IS CRITICAL HERE TO UNDERSTAND THAT WE HAVE HERE STEM CELLS, INC., WHICH IS THE ONLY COMPANY IN NORTH AMERICA AND, FOR THAT MATTER, MAYBE IN THE WORLD, THAT HAS HAD TWO STEM CELL THERAPIES IN THE BRAIN WITH THESE SPECIFIC NEURAL STEM CELLS. THEY HAVE A HUGE BODY OF EXPERIENCE HERE.

SECONDLY, ONE OF THE FUNDAMENTAL ISSUES HERE THAT IT WAS DOWNGRADED ON WAS THE ISSUE OF THE FUNDAMENTAL CONCEPT, THE PLATFORM CONCEPT, OF INJECTING TWO FOCAL INJECTIONS IN THE BRAIN, IN THE HIPPOCAMPUS OF THE BRAIN. IT'S IMPORTANT TO NOTE THAT I'VE SAT ON THREE PEER REVIEWS WHERE THE SCIENTISTS REALLY AFFIRMED THIS SPECIFIC APPROACH WITH EXTREMELY HIGH SCORES, THREE DIFFERENT VIEWS. ALL RIGHT.

SO IT'S VERY IMPORTANT TO REALIZE WE HAVE A STANDARD DEVIATION HERE OF 12. THESE SCIENTISTS WERE COMPLETELY SPLIT. WITH SOME RECUSALS ON THAT PANEL, IF YOU HAVE 12 OR 13 THAT CAN REALLY VOTE, THREE OR FOUR VERY LOW SCORES CAN BRING IT OUT OF

THE FUNDING CATEGORY ALL THE WAY DOWN. IT IS IN THE REGION WHERE THIS BOARD IS LOOKING WHERE THE OTHER THREE PEER REVIEWS, RIGHT, EARLY TRANSLATION, THE ONE BEFORE THAT WAS THE PLANNING GRANT REVIEW, THAT THE HIPPOCAMPUS WAS A GOOD PLATFORM.

THEN THEY SAID THE KEY WEAKNESS WAS YOU CAN'T SHOW MIGRATION. DR. LAFERLA HAS TOLD ME THAT TODAY THE *JOURNAL OF NEUROSCIENCE* ACCEPTED THE PUBLICATION OF THE DATA DEMONSTRATING MIGRATION. IT WAS STATED PREVIOUSLY IN THE APPLICATION, BUT IT WASN'T ACCEPTED FOR PUBLICATION. IT NOW IS. THAT IS THE FUNDAMENTAL WEAKNESS THAT THEY IDENTIFIED IN THIS APPROACH.

SO WE HAVE A REAFFIRMED APPROACH TO THE HIPPOCAMPUS BY THREE DIFFERENT PEER REVIEW GROUPS AND A SUBSTANTIAL PORTION OF THESE REVIEWERS ALONG WITH DATA DEALING WITH THE WEAK POINT. I'M SORRY IT HAPPENED TODAY. THE DATA WAS OUT THERE, ACCEPTED FOR PUBLICATION TODAY, MEANS THAT IT SHOULD DEFINITELY FALL INTO THIS CATEGORY. AND, OF COURSE, DR. TROUNSON WOULDN'T HAVE BEEN ABLE TO REVIEW THAT IN PROCESS BECAUSE HE WAS RECUSED FROM THIS GRANT BY HIS OWN VOLUNTARY RECUSAL. SO THE PROGRESS OF THIS DATA BEING ACCEPTED FOR PUBLICATION IS NEW INFORMATION TODAY.

IF I LOOK AT THE ENTIRE HISTORY OF CIRM, AS LEEZA SAYS, BUILDING UP TO THIS POINT, WE HAVE REAFFIRMED THIS APPROACH FROM THE VERY BEGINNING WITH DR. LAFERLA, WITH MULTIPLE SCIENTIFIC APPROVALS, AND BOARD APPROVAL, AND WE HAVE THE BEST COMPANY IN NORTH AMERICA WITH THE GREATEST EXPERIENCE WITH THESE NEURAL STEM CELLS, WITH THE BEST RESEARCHER WE HAVE FOR THE POTENTIAL TO ADDRESS THIS DISEASE, AND WE HAVE BRAND-NEW DATA THAT DEMONSTRATES AND TOTALLY CONTRADICTS THE KEY WEAKNESS ON WHICH IT WAS DOWNGRADED. THANK YOU.

MR. REED: YOU ALL KNOW THE REASON FOR MY ADVOCACY IS SITTING BEHIND ME, BUT I THINK THIS PARTICULAR PROJECT COULD BE THE MOST IMPORTANT SINGLE PROJECT THAT CIRM DOES. I WANT TO TELL YOU WHY.

I DID AN ARTICLE FOR *HUFFINGTON POST* CALLED "RESCUING COGNITION," AND I WAS ASKED TO DO THIS BY SOMEBODY WHOSE FAMILY HAS ALZHEIMER'S. I DID AN OVERVIEW OF THE WHOLE FIELD. AND I FOUND NOTHING BUT DISCOURAGEMENT, DESPAIR, DISAPPOINTMENT, FAILURE. IT CAN'T BE DONE EXCEPT ONE PROJECT AND THAT'S THIS ONE, THE EARLY STAGES.

I'M A DIVER. I WORKED IN MARINE WORLD 17 YEARS. AND TO BE IN THE WATER AND BE LOST IS

TERRIFYING. HOW THEY TESTED THIS WAS THEY PUT MICE IN THE WATER WITH A WATER MAZE, AND THEY TAUGHT THEM HOW TO NAVIGATE THIS WATER MAZE SO THAT WHEN THEY WERE EXHAUSTED THEY COULD FIND A WAY TO LIVE. AND THEN THEY TOOK AWAY THAT MEMORY, AND THEY COULDN'T DO IT EVEN IF THEY DIED, AND THEN THEY GOT IT BACK. THEY GOT BACK THEIR MEMORY. NOWHERE ELSE ON EARTH ARE THEY GETTING BACK MEMORY FOR THIS CONDITION EXCEPT WITH THESE PEOPLE. I URGE YOU TO SUPPORT IT. THANK YOU.

CHAIRMAN THOMAS: FURTHER PUBLIC COMMENT EITHER HERE OR AT ANY OF OUR OTHER LOCATIONS? OKAY. WE'VE NOW HEARD PUBLIC COMMENT. LET'S GO BACK TO FURTHER BOARD DISCUSSION.

MS. SAMUELSON: I'M INCLINED TO SUPPORT THIS GRANT, AND I WANT TO TELL YOU WHY BECAUSE IT PERTAINS TO PROBABLY MOST OF THE GRANTS THAT WE'RE GOING TO BE REVIEWING. I SEE A BLEND IN OUR DECISION-MAKING OF THE SCIENCE AND THE PROGRAMMATIC ISSUES, AND I DON'T THINK WE ANY LONGER CAN SEPARATE THEM SUCH THAT WE WOULD SAY THAT WE'RE NOT GOING TO REREVIEW THE SCIENCE IN PROGRAMMATIC REVIEW OR THAT IT'S GOT GOOD SCIENCE OR BAD SCIENCE AS PER THE SCIENTISTS DOING THEIR SCORING, PARTICULARLY IN THIS GRANT CYCLE, BUT I THINK IT'S GOING TO PERTAIN TO

MANY OTHERS.

AND THAT IS WHERE THE APPLICANTS ARE ASKED TO DEMONSTRATE WHY THEY CAN TAKE THE GRANT TO AN IND WITHIN FOUR YEARS. AND I'M WATCHING THE PARKINSON'S GRANTS GETTING HAMSTRUNG BY THAT EVERY TIME AND THEN HUNG OUT TO DRY IN THE SCIENTIFIC REVIEW BECAUSE THEY'RE TOLD YOU HAVEN'T PROVEN TO OUR SATISFACTION THAT IT CAN GET TO AN IND IN FOUR YEARS OR THEY'RE TOLD YOU'RE UNREALISTIC IN DOING THAT. AND BY DEFINITION, TO APPLY FOR THE FUNDS, THEY HAVE TO SHOW THAT. AND IT'S AMBITIOUS PROBABLY IN EVERY CASE AND FOR OBVIOUS REASONS. THESE ARE DISEASES FOR WHICH THERE'S BEEN NO KNOWN CURE FOREVER, AND VERY LITTLE HAS BEEN KNOWN ABOUT THE SCIENCE, AND SUDDENLY WE HAVE THIS EXPLOSION OF KNOWLEDGE AND THE POTENTIAL OF REGENERATIVE SOLUTIONS.

AND WE'RE ASKING RESEARCHERS IN THESE AREAS TO TAKE QUANTUM LEAPS AND TO USE THE PEOPLE'S FUNDING FOR IT, AND THAT'S WHY THE PEOPLE OF CALIFORNIA SAID THEY WANTED TO SPEND THE MONEY, BECAUSE THEY WANTED TO SOLVE THESE PROBLEMS NOW AND NOT SUFFER ANY LONGER. SO THEY WANT US TO BE AGGRESSIVE. AND IT'S A TERRIBLE DILEMMA, BUT I THINK WE CAN SOLVE IT IF THERE IS SOME SIGNIFICANT ADVANCE THAT CAN BE MADE IN A GIVEN GRANT. IT

DOESN'T NEED TO BE ABLE TO ACHIEVE AN IND IN FOUR YEARS TO BE SUCCESSFUL. MAYBE IT WILL TAKE FIVE. OH, MY GOODNESS. THAT COULD BE A TREMENDOUS STEP FORWARD NOTWITHSTANDING IT DOESN'T MEET THAT DEADLINE.

SO I THINK WE'RE GOING TO FACE THESE VARIOUS ISSUES IN MANY, IF NOT MOST, OF OUR DECISIONS IN THE FUTURE, AND I WOULD URGE US TO THINK ABOUT MORE FLEXIBLE STANDARDS. AND DOING IT WITHIN THE CONTEXT OF THE GRANTS WE HAVE, MAYBE IT'S A PROBLEM WITH THE RFA. BUT MAYBE WE HAVE TO TRY TO SOLVE IT WITHIN THE DECISION-MAKING WE'RE DOING NOW BECAUSE WE JUST SHOULDN'T WAIT FOR ANOTHER RFA DOWNSTREAM. THANK YOU.

DR. KRONTIRIS: MR. CHAIRMAN, A REQUEST FOR INFORMATION. IS THERE A MOTION ON THE FLOOR TO MOVE THIS UP?

CHAIRMAN THOMAS: NOT YET. WE'RE STILL DISCUSSING.

DR. KRONTIRIS: THEN I JUST WOULD PUT FORWARD I'M JUST WONDERING WHY THIS GRANT WOULD BE, SINCE THERE'S EVIDENTLY NEW INFORMATION PRESENTED AND PUBLICATION ON A CRITICAL ISSUE, WHY THIS WOULDN'T BE TREATED LIKE THE TWO PREVIOUS GRANTS AND GO BACK FOR STAFF AND PEER REVIEW.

CHAIRMAN THOMAS: WELL, WOULD YOU LIKE TO MAKE A MOTION TO THAT EFFECT?

DR. KRONTIRIS: YES, I WOULD.

MR. TORRES: I SECOND THE MOTION.

CHAIRMAN THOMAS: SO THERE'S NOW A MOTION ON THE FLOOR. IS THERE FURTHER DISCUSSION ON THIS MOTION?

DR. PRICE: POINT OF INFORMATION. FIRST IS IT'S TRUE THE PUBLICATION JUST CAME OUT, BUT THE QUESTION I HAVE IS WHETHER THE WORKING GROUP HAD ACCESS TO THE DRAFT OF THAT PAPER OR THE DATA THAT'S IN THAT PAPER. THE FACT THAT THE PAPER JUST CAME OUT DOES NOT MEAN THAT THE WORKING GROUP DIDN'T HAVE ACCESS TO THE DATA UPON WHICH THE PAPER WAS BASED.

MR. TORRES: AS A MEMBER OF THAT WORKING GROUP, MR. CHAIRMAN, I NEVER SAW THAT, NOR WAS IT MENTIONED.

CHAIRMAN THOMAS: I WOULD, IN RESPONSE TO THAT QUESTION, SAY THAT IF, WHICH WE TAKE FROM MR. KLEIN, THAT IS WHAT THE PUBLICATION SAYS, I DON'T THINK THEY WOULD HAVE HAD THE MIGRATION ISSUE AS SORT OF ONE OF THEIR STRONGEST OBJECTIONS TO THE --

DR. PRICE: SCIENTIFIC STAFF SHOULD BE ABLE TO TELL US WHETHER OR WE SHOULD BE ABLE TO SEE WHETHER THAT DATA WAS IN. THE PAPER MAY HAVE JUST

COME OUT, BUT THE DATA AND THE PAPER IS DRAFTED LONG BEFORE THE PUBLICATION ACTUALLY COMES OUT.

DR. FEIGAL: WELL, I CAN ANSWER THE QUESTION. AND, NO, THERE WAS NOT A PREPRINT OF THE PAPER THAT WAS PROVIDED. THERE WAS NOT A DRAFT OF THE PAPER THAT WAS PROVIDED.

DR. PRICE: WHAT ABOUT THE DATA IN THE PAPER? WAS THAT PART OF IT?

DR. FEIGAL: WITHOUT HAVING THE PUBLISHED PAPER IN HAND THAT WAS JUST PUBLISHED TODAY, I DON'T THINK I CAN ANSWER THE QUESTION UNTIL I SEE THE DATA THAT'S IN THAT PAPER.

CHAIRMAN THOMAS: WE HAVE OUR DOCTORS HERE TO RESPOND PERHAPS.

DR. HUHN: IS IT POSSIBLE FOR ME TO SPEAK AGAIN? SO WITH REGARD TO THE DISCUSSION MATTER CONCERNING SPECIFICALLY MIGRATION AND THE MIGRATION PROPERTIES OF THE HUMAN NEURAL STEM CELL, PERHAPS WE ARE NOT CLEAR ENOUGH ON THIS IN OUR THREE MINUTES. BUT THE MIGRATORY CAPABILITIES OF THE CELL HAVE BEEN PUBLISHED IN THE DATA FROM STEM CELLS. WE'VE ALSO PUT IN THE GRANT THAT WE FOUND EVIDENCE OF MIGRATION IN TWO PATIENTS WHO WERE AVAILABLE FOR POSTMORTEM ANALYSIS IN ONE OF OUR PHASE I TRIALS.

SO THE PROPERTY CONCERNING MIGRATION IS

WELL ESTABLISHED. IT WAS IN THE GRANT. AND IT'S ONE OF THE ELEMENTS WE THINK WOULD HELP US ADDRESS A DIFFUSE DISORDER. THE PAPER THAT'S BEING REFERRED TO NOW IS SIMPLY, IN ESSENCE, CONFIRMATORY EVIDENCE, ADDITIONAL CONFIRMATORY EVIDENCE, THAT THE MIGRATORY PROPERTIES OF THE NEURAL STEM CELLS ARE SEEN ACROSS MULTIPLE DIFFERENT CELLS.

DR. FEIGAL: SO I THINK THE ANSWER TO THE QUESTION, THEN, IS, YES, THERE WAS DATA. AND IF WHAT YOU'RE SAYING ABOUT THE NEW PUBLICATION IS CORRECT, THEN WE WOULD HAVE SEEN IT IN THE APPLICATION.

CHAIRMAN THOMAS: OKAY. HAVING SAID THAT, JUST FOR THE RECORD, FOR THE BOARD'S KNOWLEDGE, THE GRANTS WORKING GROUP STILL CITED THAT AS ONE OF THE PRINCIPAL ISSUES, SAYING THERE WAS NO EVIDENCE OF MIGRATION. SO THAT WAS -- I CAN SEE WHY THERE'S SOME CONFUSION ON THIS ISSUE.

DR. LAFERLA: JUST TO BE CLEAR ON THIS, THE PAPER WAS ACCEPTED TODAY. IT WASN'T PUBLISHED TODAY. SO IT WILL BE PUBLISHED IN A FUTURE DATE. AND THE ASSERTION THAT THESE DATA WERE INCLUDED WAS NOT TRUE. SO THESE ARE BRAND-NEW DATA THAT THEY WOULD NOT HAVE SEEN, BUT IT SPEAKS TO TWO IMPORTANT ISSUES, THAT MULTIPLE CELLS DO MIGRATE, AND,

IMPORTANTLY, THAT THEY MIGRATE OUT OF THE HIPPOCAMPUS IN THE DISEASED BRAIN.

SO DESPITE THE FACT THAT THESE ANIMALS HAVE SUCH EXTENSIVE PLAQUES AND TANGLES AND SEVERE MEMORY IMPAIRMENTS, THESE CELLS GET OUT OF THE SITE OF INJECTION. SO I THINK THAT'S THE CRITICAL POINT HERE.

CHAIRMAN THOMAS: THANK YOU.

DR. FEIGAL: I STAND CORRECTED THEN. APPARENTLY WE HAVE NOT SEEN IT.

DR. POMEROY: J.T., I HAVE A PROCESS QUESTION. SO I'M VERY SUPPORTIVE OF THIS PROCESS BY WHICH WE ARE ALLOWED TO ACCEPT NEW INFORMATION AND SEND IT BACK FOR REREVIEW. IT'S THE PROCESS I'M TALKING ABOUT. BUT THE QUESTION IS WHAT IS THE PROCESS WITHIN THAT PROCESS FOR SUBMITTING THE EVIDENCE OF NEW DATA BECAUSE MOST PEOPLE SUBMITTED THEIR NEW DATA, AT LEAST ON THE FIRST TWO ONES WE SAW, THROUGH AN EXTRAORDINARY PETITION, SOMETHING IN WRITING. AND DOES OUR PROCESS ALLOW THE NEW INFORMATION TO BE PRESENTED IN PUBLIC SESSION?

CHAIRMAN THOMAS: MY RESPONSE -- VERY GOOD QUESTION, DEAN POMEROY. MY RESPONSE IS IF THERE IS NEW DATA BEFORE THE BOARD THAT CAN FURTHER ILLUMINATE WHETHER WE SHOULD RECONSIDER THIS FOR

FUNDING, THAT EVEN THOUGH IT CAME UP SUBSEQUENT TO THE FILING OF THE EXTRAORDINARY PETITION, THAT IT SHOULD BE ALLOWED AS PART OF OUR PROCESS GOING FORWARD.

ARE THERE OTHER THOUGHTS ON THAT BY MEMBERS OF THE BOARD?

DR. POMEROY: THANK YOU FOR THAT CLARIFICATION.

DR. SAMBRANO: I JUST WANT TO CLARIFY, IN TERMS OF PROCESS, THAT INFORMATION ALSO NEEDS TO BE AVAILABLE SO THAT WE CAN THEN PROVIDE IT TO REVIEWERS TO ASSESS. SO IN SOME WAY IT DOES NEED TO BE MADE AVAILABLE.

CHAIRMAN THOMAS: ABSOLUTELY. THAT GOES WITHOUT SAYING. THANK YOU.

MR. TORRES: SO I THINK 41 DAYS WOULD ALLOW US TO HAVE THAT INFORMATION TO REVIEW, CORRECT? THANK YOU.

CHAIRMAN THOMAS: I THINK WE HAVE A GOOD HANDLE ON THIS ISSUE AS TO WHETHER OR NOT WE SHOULD REFER THIS. AND PENDING FURTHER DISCUSSION, I'D LIKE TO CALL THE QUESTION HERE.

MS. SAMUELSON: JUST --

DR. POMEROY: CAN YOU REPEAT THE MOTION THAT WE'RE CALLING THE QUESTION ON?

MR. HARRISON: THE MOTION IS TO REFER APPLICATION 5416 FOR ADDITIONAL REVIEW OF NEW INFORMATION BY THE PEER REVIEW GROUP WITH DIRECTION TO THE PRESIDENT -- I'VE OMITTED VICE CHAIR SHEEHY SINCE HE HAS A CONFLICT -- TO DETERMINE THE MAKEUP OF THE PEER REVIEW PANEL OR SUBSET OF THE PANEL AND REQUEST THAT THE PEER REVIEW RECOMMENDATION BE PRESENTED TO THE BOARD AT ITS NEXT REGULARLY SCHEDULED MEETING, WHICH IS CURRENTLY SEPTEMBER 6TH.

CHAIRMAN THOMAS: MARIA, PLEASE CALL THE ROLL.

MS. BONNEVILLE: ROBERT PRICE.

DR. PRICE: AYE.

MS. BONNEVILLE: TED KRONTIRIS.

DR. KRONTIRIS: YES.

MS. BONNEVILLE: LEEZA GIBBONS.

MS. GIBBONS: YES.

MS. BONNEVILLE: STEPHEN JUELSGAARD.

DR. JUELSGAARD: YES.

MS. BONNEVILLE: SHLOMO MELMED.

DR. MELMED: YES.

MS. BONNEVILLE: FRANCISCO PRIETO.

DR. PRIETO: AYE.

MS. BONNEVILLE: ROBERT QUINT.

DR. QUINT: YES.

MS. BONNEVILLE: DUANE ROTH.
MR. ROTH: YES.
MS. BONNEVILLE: JOAN SAMUELSON.
MS. SAMUELSON: YES.
MS. BONNEVILLE: DAVID SERRANO-SEWELL.
MR. SERRANO-SEWELL: YES.
MS. BONNEVILLE: JONATHAN SHESTACK.
MR. SHESTACK: YES.
MS. BONNEVILLE: JONATHAN THOMAS.
CHAIRMAN THOMAS: YES.
MS. BONNEVILLE: ART TORRES.
MR. TORRES: AYE.
MS. BONNEVILLE: KRISTINA VUORI.
DR. VUORI: YES.
CHAIRMAN THOMAS: OKAY. THAT MOTION CARRIES. IT WILL BE REFERRED FOR FURTHER REVIEW UNDER THE ADDITIONAL ANALYSIS PROTOCOL.
MS. SAMUELSON: MR. CHAIRMAN, WAS THE PATIENT ADVOCATE INPUT IN THE EVALUATION OF IT WITH STAFF? I THINK THERE SHOULD BE.
CHAIRMAN THOMAS: YES. I THINK MR. SHEEHY AND DR. TROUNSON ARE GOING TO WORK THAT OUT.
DR. FEIGAL: WHAT I'D LIKE TO COMMENT IS SINCE MR. SHEEHY AND DR. TROUNSON ARE CONFLICTED, IT WILL BE DELEGATED TO ME TO WORK THIS OUT.

CHAIRMAN THOMAS: GOOD POINT. CAN I ASK A LOGISTICAL QUESTION?

MS. BONNEVILLE: LUNCH. IT'S A WORKING LUNCH, SO THERE'S BOX LUNCH WHERE WE HAD BREAKFAST. SO IF EVERYONE COULD GRAB THEIR LUNCH AND COME BACK. FIFTEEN MINUTES OR SO.

CHAIRMAN THOMAS: WE HAVE QUITE A BIT MORE TO GO.

MR. SHESTACK: CAN I ASK A PROCEDURAL QUESTION? TRADITIONALLY MY RECOLLECTION IS THAT IN THE PAST WHEN WE'VE DONE THIS PROCESS, WE WILL GO THROUGH ALL OF THE GRANTS THAT PEOPLE MIGHT WANT TO RECONSIDER WHICH TIER THEY'RE PLACED IN; AND THEN HAVING GONE THROUGH ALL OF IT, SO THERE'S SOMEWHAT OF A COMPARISON IN A WAY, MAKE MOTIONS ONE AFTER THE OTHER. BUT NOW IT SEEMS LIKE WE'RE GOING -- WITH EACH GRANT WE MAKE A DISCRETE DECISION. IS THAT HOW YOU HAD ANTICIPATED IT BEING BECAUSE REALLY, IN GENERAL, WITH THIS PROCESS IT'S NOT SO MUCH DECIDING WHETHER THERE'S NEW INFORMATION, BUT DECIDING AS A GROUP WHETHER YOU WANT TO CHANGE THE PAYLINE.

YOU MIGHT JUST SAY THIS GRANT WORKING GROUP WAS VERY, VERY CONSERVATIVE AND WE WANT TO BE MORE EXPANSIVE. BUT THAT KIND OF GLOBAL DISCUSSION DOESN'T HAPPEN WHEN WE DO FULL CONSIDERATION PROJECT

BY PROJECT.

CHAIRMAN THOMAS: I THINK, MR. SHESTACK, THAT'S AN EXCELLENT QUESTION. MY VIEW ON THAT IS THAT THERE'S SUCH EXTENSIVE DISCUSSION IN CONNECTION WITH EACH, THAT IF WE POSTPONE MAKING MOTIONS TILL AFTER THEY'VE ALL BEEN LAID ON THE TABLE, THAT WE WILL NOT BE ABLE TO KEEP A LOT OF THE FACTS STRAIGHT, WILL NOT BE ABLE TO MAKE AN INFORMED DECISION. SO I PERSONALLY THINK THAT WE SHOULD CONTINUE AS WE'RE DOING IN TAKING EACH ONE ON ITS INDIVIDUAL BASIS.

SO, MEMBERS OF THE BOARD, PLEASE GO GET YOUR LUNCH AND PLEASE COME BACK AS SOON AS POSSIBLE SO WE CAN RESUME. THANK YOU.

(A RECESS WAS TAKEN.)

CHAIRMAN THOMAS: EVERYBODY, PLEASE TAKE YOUR SEATS. WE WANT TO RESUME. WE'VE GOT SOME PEOPLE WHO HAVE BEEN VERY PATIENT WAITING OUT HERE. OKAY.

MR. SERRANO-SEWELL, I KNOW YOU HAD A PROJECT YOU WANTED TO BRING BEFORE THE BOARD.

MR. SERRANO-SEWELL: THANK YOU, CHAIRMAN. I'D LIKE TO BRING UP THE NEXT ITEM FOR DISCUSSION, APPLICATION 5320. HAS A SCORE OF 64. THIS IS WITH REGARDS TO TREATMENT FOR ALS.

CHAIRMAN THOMAS: THE NUMBER, AGAIN, WAS 5320?

MR. SERRANO-SEWELL: YES.

CHAIRMAN THOMAS: SO WE HAVE A REQUEST TO HAVE A STAFF REPORT ON ITEM 5320, WHICH IS THE ALS PROJECT PROPOSED BY CEDARS-SINAI.

DR. FEIGAL: KAREN BERRY.

DR. BERRY: THANK YOU, MR. CHAIRMAN. THIS IS APPLICATION 5320. THIS APPLICANT PROPOSES TO DEVELOP AND TEST A GLIAL CELL-DERIVED NEUROTROPHIC FACTOR LABELED GDNF, FROM NOW ON VEG-F. AND THAT'S AN EXPRESSION IN A HUMAN NEURAL PROGENITOR CELL AS A THERAPY FOR ALS. AND AS WE ALL KNOW, ALS IS A LETHAL DISEASE AND CHARACTERIZED BY SEVERE LOSS OF BRAIN AND SPINAL CORD MOTOR NEURONS AND THEIR ASSOCIATED SUPPORT CELLS CALLED ASTROCYTES. THIS CELL LOSS LEADS TO MUSCLE WEAKNESS, PARALYSIS, RESPIRATORY FAILURE, AND DEATH USUALLY WITHIN ABOUT FOUR YEARS.

THE RATIONALE BEHIND THIS COMBINATION THERAPY IS THAT THE HUMAN NEURAL PROGENITOR CELLS WILL DIFFERENTIATE TO REPLACE DEGENERATING ASTROCYTES WHILE THE EXPRESSION OF THE GROWTH FACTOR, THE GDNF, WILL HAVE A NEUROPROTECTIVE EFFECT.

THE GOALS OF THIS PROPOSAL ARE TO PERFORM PRECLINICAL SAFETY AND EFFICACY STUDIES IN RELEVANT ANIMAL MODELS AND TO CARRY OUT A PHASE I CLINICAL TRIAL IN ALS PATIENTS TO ESTABLISH SAFETY.

AS PART OF THE REVIEW, I'LL AGREE THAT THIS CERTAINLY IS A DEVASTATING DISEASE AND IS A SIGNIFICANT UNMET MEDICAL NEED AND FOR BETTER THERAPIES TO BE FOUND. REVIEWERS QUESTIONED THE RATIONALE OF WHETHER THIS FOCAL THERAPY WOULD HAVE IMPACT ON THIS DIFFUSE DISEASE. ONE OF THE MAJOR CONCERNS WAS THE LACK OF CONVINCING PRECLINICAL DATA. AND IN A FIGURE MEASURING A FUNCTIONAL ENDPOINT, THE EFFICACY DATA FOR THE STEM CELL GDNF TREATED-GROUP WAS CONSIDERED MINIMALLY DIFFERENT COMPARED TO THE NON-GDNF GROUP.

THERE WAS ALSO CONCERN REGARDING THE POTENTIAL EFFICACY OF GDNF REFERRING TO PREVIOUS CLINICAL TRIAL DATA USING GDNF AND THAT GDNF APPEARS ONLY IMPORTANT IN EARLY STAGES OF THE DISEASE ONSET.

THE PI HAS CONDUCTED TWO PREMEETINGS WITH THE FDA AND HAS RECEIVED DETAILED SUGGESTIONS FOR THE PIVOTAL IND-ENABLING STUDIES. THE PI AND THE TEAM ARE EXCELLENT AND HAVE EXPERIENCE IN TRANSLATIONAL NEUROSCIENCE AND CLINICAL TRIALS IN ALS.

THE BUDGET COMMENTS WERE RELATED TO THERE WAS AN APPROXIMATE $300,000 PER PATIENT FOR THE CLINIC SITES, AND THE REVIEWERS THOUGHT THAT WAS HIGH AND SHOULD BE CLOSER TO 50 TO $80,000 PER PATIENT, AND THERE WAS AN EXTRAORDINARY PETITION FILED.

CHAIRMAN THOMAS: THANK YOU, DR. BERRY. COMMENTS BY MEMBERS OF THE BOARD. MR. SERRANO-SEWELL.

MR. SERRANO-SEWELL: THANK YOU, CHAIRMAN. I THINK WE HAVE THIS NOW THIRD WAY OF REFERRING BACK FOR FURTHER REVIEW OF ADDITIONAL INFORMATION. CERTAINLY THIS, IN MY VIEW, QUALIFIES. THERE IS SOME NEW ADDITIONAL INFORMATION THAT WE HAVE. AND YOU CAN SPEAK TO IT. I KNOW GIL HAS THE LETTER, WHICH IS VERY PERTINENT. OR WE CAN SORT OF, AS SENATOR TORRES MENTIONED EARLIER AT OUR MEETING, WE HAVE THIS OPTION AS WE ALWAYS HAVE HAD. THAT IS TO LOOK AT WHERE THAT LINE IS AND SORT OF LOOK AT OTHER GRANTS AND, IF THEY'RE WORTHY, FUND THEM.

AND I WOULD SAY TO YOU THAT THIS IS SUCH A GRANT, SUCH AN APPLICATION. AS NOTED BY THE DOCTOR, THE HEAD RESEARCHER IS ONE OF THE BEST, AND HE'S HERE IN CALIFORNIA BECAUSE OF PROP 71. HE WAS RECRUITED AND HE'S DOING MAGNIFICENT WORK IN

SOUTHERN CALIFORNIA.

TWO, BECAUSE IT IS SUCH A STRONG TEAM AND THE REGULATORY EXPERTS THOUGHT VERY HIGHLY OF THIS, THEY THOUGHT IT CAN GET OUT THERE. AND IF WE'RE GOING TO TAKE A GAMBLE ON ANYTHING, WHICH IS WHAT WE DO HERE, GAMBLE MIGHT BE TOO STRONG OF A WORD, IF WE'RE GOING TO GET BEHIND ANY SORT OF APPLICATION, IT'S THIS ONE. THE BEST SCIENTIST, A VERY CHALLENGING AND DIFFICULT DISEASE, ONE IN WHICH OUR PORTFOLIO IS ON THE SMALLER END. AND AS A PROGRAMMATIC CONSIDERATION, I WOULD SUGGEST, WHEN WE GET THE TESTIMONY, THAT WE OUGHT TO FUND IT, THAT WE OUGHT TO PURSUE THAT OPTION.

CHAIRMAN THOMAS: OTHER COMMENTS?

MS. SAMUELSON: YES. I'M WONDERING IF WE COULD HEAR FROM THE EXTRAORDINARY PETITION WRITERS BEFORE WE PROCEED WITH FURTHER COMMENT FROM THE BOARD?

CHAIRMAN THOMAS: I THINK THAT'S PERFECTLY OKAY. MR. SHESTACK, DO YOU WANT TO COMMENT BEFORE WE DO THAT?

MR. SHESTACK: I JUST WANTED TO SAY THAT I ACTUALLY I AGREE WITH DAVID, THAT WHAT SEEMS APPROPRIATE ON THIS WE SHOULD HEAR THE EXTRAORDINARY PETITION, BUT IS NOT SO MUCH A REMANDING FOR

SCRUTINY AGAIN, BUT IT IS IN OUR PURVIEW TO MOVE SOMETHING UP. AND I THINK THAT THE APPROPRIATE THING IS TO DO WHAT WE'VE ALWAYS DONE, TO MAKE A DECISION ON MOVING IT UP OR NOT, SO I AGREE WITH THAT POSITION.

MS. GIBBONS: CAN WE LOOK AT WHERE WE ARE WITH REGARD TO THE BUDGET IF WE MOVE, FOR EXAMPLE, THIS OR ANY OTHER ONE UP, HOW MUCH WE BUDGETED AND HOW MUCH WAS RECOMMENDED FOR FUNDING. WHERE ARE WE WITH THAT LEVEL? AND THEN WE'VE GOT THESE OTHER THREE RIGHT NOW JUST KIND OF IN LIMBO THAT POTENTIALLY WOULD COME OUT OF THAT BUDGET AS WELL, CORRECT?

CHAIRMAN THOMAS: THE BUDGETED AMOUNT DISCUSSED BY THE BOARD FOR THIS ROUND WAS 240 MILLION. THE SIX APPROVED AWARDS TOTAL 113 MILLION. WE DON'T KNOW THE ULTIMATE FATE OF THE THREE PROPOSALS NOW BACK FOR RECONSIDERATION. I WOULD NOTE THAT WE SHOULD NOT FEEL LIKE WE HAVE TO GET TO 240. WE SHOULD BE APPROVING WHAT WE FEEL TO BE THE MOST PRUDENT PROPOSALS THAT ARE BEFORE US.

SO AS MUCH AS WE HAVE THAT AS A TARGET, AND IT MAY BE WE ULTIMATELY DECIDE THAT WE GET TO THAT TARGET, BUT DON'T FEEL THAT THAT'S NECESSARY.

DR. TROUNSON: I THINK THAT -- I HAVEN'T

ACTUALLY READ THE LETTER, BUT I UNDERSTAND THAT THERE'S NO REAL NEW INFORMATION, NO EXPERIMENTAL INFORMATION IN THAT LETTER. SO I'M NOT SO SURE NECESSARILY REVIEWING IT BACK IS THE BEST CHOICE AT THIS POINT IN TIME. I THINK MAYBE YOU SHOULD MAKE A DECISION, BOARD, WITH RESPECT -- I'M BEING SUPPORTIVE OF WHAT JON SHESTACK JUST SAID.

CHAIRMAN THOMAS: OKAY. I'M SURE THERE WILL BE SOME COMMENTS ON THAT PARTICULAR STATEMENT THERE. COULD WE PLEASE HAVE MEMBERS OF THE PUBLIC WHO WOULD LIKE TO PRESENT TESTIMONY?

DR. STEWARD: DO WE HAVE A MOTION ON THE FLOOR?

CHAIRMAN THOMAS: NO, WE DON'T. WE DON'T HAVE A MOTION YET.

DR. STEWARD: I'M LOOKING AT DAVID ACTUALLY.

MR. SERRANO-SEWELL: I WAS GOING TO SEE HOW LONG WE CAN GO BEFORE SOMEBODY NOTICED. AS A MOTION, WE'VE HAD DISCUSSION WITHOUT A FORMAL --

CHAIRMAN THOMAS: THE PREVIOUS TOPICS WE HAVE HAD TESTIMONY IN SOME INSTANCES BEFORE FORMULATING A MOTION. IT WOULD BE THE LAST ONE, FOR EXAMPLE. SO YOU CAN EITHER FEEL FREE TO MAKE A MOTION NOW, OR YOU AN WAIT TO HEAR THE PUBLIC

COMMENT AND THEN MAKE THE MOTION.

MR. SERRANO-SEWELL: I'D LIKE TO HEAR PUBLIC COMMENT, AND THEN I WILL MAKE A MOTION.

CHAIRMAN THOMAS: THANK YOU. MEMBERS OF THE PUBLIC WHO WOULD LIKE TO PRESENT TESTIMONY, PLEASE.

DR. SVENDSEN: THANK YOU VERY MUCH. I'M CLIVE SVENDSEN FROM CEDARS-SINAI. I'M THE PI ON THIS GRANT. I'VE BEEN WORKING IN THE FIELD OF ALS FOR TEN YEARS NOW.

FIRST, I'D LIKE TO THANK CIRM AND THE REVIEW PANEL FOR THEIR COMMENTS. WE'RE VERY ENCOURAGED THAT THE SCORE IS 64 OUT OF A HUNDRED THAT I'VE BEEN LOOKING AT WAS RIGHT -- THE RECOMMENDED FUNDING GROUP RIGHT ON THE EDGE. REVIEWERS STATED THAT OUR TRIAL COULD HAVE GROUNDBREAKING IMPACT ON THE TREATMENT OF ALS, AND WE COULDN'T AGREE MORE. THAT'S WHY WE PUT IN THE EXTRAORDINARY PETITION WITH ONE NEW PIECE OF INFORMATION THAT JUST CAME IN THIS MORNING, WHICH I THINK IS VERY RELEVANT.

ALS IS CAUSED BY THE DEATH OF MOTOR NEURONS CONNECTED TO THE MUSCLE, LEADING TO PARALYSIS AND DEATH WITHIN FOUR YEARS. THERE'S NO TREATMENT OR CURE. OUR GRANT'S BASED ON

TRANSPLANTING CLINICAL GRADE NEUROPROGENITOR CELLS MODIFIED TO SECRETE A POWERFUL GROWTH FACTOR, GDNF, INTO THE SPINAL CORD OF ALS PATIENTS.

THE MAJOR CRITICISM OF OUR GRANT WAS WHILE OUR PRECLINICAL ANIMAL STUDIES SHOWED INCREASED MOTOR NEURON SURVIVAL FOLLOWING TRANSPLANTATION, WE DID NOT SEE FULL FUNCTIONAL RECOVERY; I.E., A REDUCTION IN PARALYSIS. NOW, WE HAVE TO STRESS HERE THAT THE ONLY RELIABLE MODEL OF ALS IN THE RAT OR ANY RODENT INVOLVES MASSIVE EXPRESSION OF MUTATED PROTEIN ONLY FOUND IN VERY RARE POPULATIONS OF ALS CALLED SOD1. SO THIS IS AN ARTIFICIAL MODEL. IN FACT, THIS IS REQUIRED TO KILL THE MOTOR NEURONS AND PRODUCE DISEASE IN THE RODENT. HOWEVER, IT'S NOT A MODEL OF SPORADIC ALS THAT AFFECTS 90 PERCENT OF PATIENTS, INCLUDING THOSE WHO WOULD BE INCLUDED IN OUR TRIAL.

WHY DIDN'T WE USE A SPORADIC MODEL? UNFORTUNATELY, THERE IS NO ANIMAL SPORADIC MODEL OF SPORADIC ALS, AND WE DON'T KNOW ITS CAUSE. THE LIMITATION OF ANY OF THESE PRECLINICAL STUDIES TESTING ANIMALS IS TIMING. THE HUMAN CELLS WE USE TAKE AT LEAST FOUR MONTHS TO MATURE INTO ASTROCYTES THAT MAY BE CAPABLE OF DETOXIFYING THE AREA AROUND THE MOTOR NEURONS. HOWEVER, THE ANIMALS AND, AGAIN,

THE MODEL WE USE HAVE TO BE EUTHANIZED WITHIN TWO MONTHS OF TRANSPLANTATION DUE TO MASSIVE PARALYSIS. THERE'S SIMPLY NOT LONG ENOUGH FOR THE CELLS TO MATURE FOR US TO SEE IF THEY THEN HAVE EFFECTS ON PARALYSIS.

AS HIGHLIGHTED BY THE FDA RECENTLY, THESE TWO PROBLEMS, POOR ANIMAL MODELS OF DISEASE AND RAPID ONSET IN THE FACE OF SLOWLY DEVELOPING HUMAN STEM CELLS, ARE MAJOR PROBLEMS FOR PRECLINICAL STUDIES. HOWEVER, WE SUGGEST THAT OUR 90-PERCENT PROTECTION OF MOTOR NEURONS THAT WE DESCRIBE IN THE GRANT, EVEN IN THIS SEVERE ANIMAL MODEL, SO THE MOTOR NEURONS SURVIVE, IS A REASON FOR TAKING THE TRIAL FORWARD. AND THEY SHOW THAT THE CELLS ARE WORKING.

FURTHERMORE, THE CELLS DON'T FORM TUMORS. THEY SURVIVE UNTIL DISEASE ENDPOINT AND CONTINUALLY DELIVER THE GDNF, AND THAT'S THE NEW DATA THAT WE HAVE THAT WAS QUESTIONED IN THE GRANT AS WELL.

SO COMBINED WITH THE KNOWN PROTECTIVE EFFECTS OF ASTROCYTES IN ALS, THIS WOULD SEEM TO BE A VERY CONVINCING EVIDENCE AND RATIONALE FOR MOVING THIS NOVEL COMBINED GENE AND STEM CELL THERAPY FORWARD INTO PATIENTS.

ANOTHER CRITICISM THAT WASN'T MENTIONED

THAT I THINK WAS PART OF THE REVIEW WAS THAT WE DON'T HAVE A COMMERCIAL PARTNER OR HAVE DEALT WITH PATENT ISSUES WITH GDNF. I'M HAPPY TO ANNOUNCE THAT JUST THIS MORNING, AGAIN, COINCIDENTALLY WE RECEIVED SOME EXTRAORDINARY NEWS. THE COMPANY UNICURE, WHO HOLDS THE EXCLUSIVE LICENSE TO THE GDNF GENE FROM AMGEN, HAVE AGREED TO ENTER INTO A PARTNERSHIP WITH US TO TAKE THE PROJECT FORWARD TO THE NEXT STAGE. THE REASON FOR THE DELAY IN OBTAINING THIS IMPORTANT DOCUMENT IS THAT UNICARE WAS BUSY. THEY JUST ANNOUNCED THAT AFTER THREE DECADES OF DEVELOPMENT, EUROPEAN REGULATORS HAVE RECOMMENDED APPROVAL FOR THEIR GENE THERAPY PRODUCT GLIBERIA. THIS IS THE FIRST APPROVED GENE THERAPY PRODUCT IN THE WESTERN WORLD, AND WE'RE OBVIOUSLY VERY EXCITED ABOUT PARTNERING WITH SUCH A POWERFUL AND SUCCESSFUL COMPANY WHO ALSO HOLD ALL THE LICENSING RIGHTS FOR GDNF.

SO IN CLOSING, I'D LIKE TO THANK ALL OF THE PATIENTS WHO MADE IT HERE TODAY TO SUPPORT THE PROPOSAL. WE CAN'T EMPHASIZE ENOUGH HOW A POSITIVE RESULT IN SLOWING DISEASE PROGRESSION IN JUST A SINGLE LIMB, WE'VE HEARD THIS AGAIN AND AGAIN, WE'VE GOT TO CURE THE WHOLE BRAIN. IF ONE PATIENT COULD MOVE A FINGER CONTINUALLY OVER TIME IN ONE SINGLE

LIMB, THAT WOULD MAKE AN ENORMOUS IMPACT ON THE ALS COMMUNITY. I FEEL WE'RE IN GOOD SHAPE WITH THIS PARTICULAR PROPOSAL TO MAKE THAT HAPPEN AFTER TEN YEARS OF WORK. THUS, I'D LIKE TO FORMALLY APPEAL TO THE BOARD THAT, GIVEN THESE EXTRAORDINARY CIRCUMSTANCES, CIRM LIFT OUR DISEASE TEAM AWARD ONE NOTCH UP INTO THE FUNDING ZONE AND GIVE A NEW HOPE TO ALS PATIENTS IN CALIFORNIA AND AROUND THE WORLD.

CHAIRMAN THOMAS: THANK YOU, DR. SVENDSEN.

MS. POLISO: HI. MY NAME IS NANCY POLISO (PHONETIC). I WAS DIAGNOSED WITH ALS IN MAY OF 2009. SO THREE YEARS LATER, THREE YEARS, TWO MONTHS, AND SIX DAYS, I'M STILL HERE. I AM PARTICIPATING IN A STUDY RIGHT NOW FOR ALS. I'M A 45-YEAR-OLD MOTHER OF FIVE. I DON'T KNOW IF I'M MORE LUCKY TODAY THAN YOU GUYS ARE BECAUSE I WOULD NOT WANT TO BE MAKING DECISIONS FOR PEOPLE LIKE YOU DO.

WE DON'T HAVE ANY CURE. ALL WE HAVE IS HOPE. I'M FIGHTING. I NEED YOU TO HELP ME FIGHT. I WOULD LIKE TO SEE MY YOUNGEST SON GRADUATE, AND MY PARENTS TOO DO NOT WANT TO BURY A CHILD. AND I DON'T WANT TO LEAVE FIVE KIDS WITH MY POOR HUSBAND. BUT THANK YOU FOR BEING HERE TODAY. I THANK MY TEAM AND DR. MILLER. AND THEY TAKE GOOD CARE OF US, BUT

NOBODY KNOWS ANYTHING ABOUT THIS DISEASE. THEY'LL SAY WHAT DO YOU HAVE? ALS. WHAT'S THAT? OH, LOU GEHRIG'S DISEASE. OH, YEAH, I'VE HEARD OF THAT.

WE NEED YOU PEOPLE. WE NEED THE FUNDING AND WE NEED THE EXPOSURE. I AM DOING MY PART. I HAVE KIDS RAISING MONEY RUNNING TRIATHLONS AND RAISING BIG MONEY FOR RESEARCH. PLEASE RECONSIDER FUNDING THIS. WE NEED THE HOPE. THANK YOU.

CHAIRMAN THOMAS: THANK YOU. IS THERE ADDITIONAL PUBLIC COMMENT?

MR. BARBER: THERE ARE. CAN YOU HEAR ME? MR. CHAIRMAN, BOARD MEMBERS, THANKS FOR LETTING ME SPEAK. I'M JIM BARBER. I HAVE ALS LIKE MY FELLOW PATIENTS HERE. I NOTICED ON YOUR SCOREBOARD THAT ALS, YOU ONLY HAVE ONE ALS PROPOSAL ON YOUR BOARD.

SINCE MY DIAGNOSIS, I HAVE BEEN INVOLVED IN ALS ADVOCACY IN SACRAMENTO. I'M CO-CHAIR OF THE CALIFORNIA ALS ADVOCACY COMMITTEE. ONE OF THE BEST THINGS WE'VE DONE HAS BEEN KIND OF A BY-PRODUCT OF OUR WORK UP THERE; NAMELY, THE FORMATION OF THE CALIFORNIA ALS RESEARCH NETWORK. DR. SVENDSEN WAS ANOTHER FOUNDING MEMBER OF THAT GROUP. HE IS NOW THE CHAIR OF THAT GROUP.

BUT AS YOU CAN APPRECIATE, WE'RE A SMALL COMMUNITY WITH VERY HIGH TURNOVER. AS A RESULT, WE

HAVE A SMALL SUPPORT GROUP. WE'RE HIGHLY DEPENDENT ON PUBLIC FUNDING FOR RESEARCH. ALS IS A COMPLEX DISEASE, AS YOU WELL KNOW. WE NEED HELP.

THERE'S BEEN RECENT PROGRESS IN THE DISEASE IN RESEARCH, BUT THERE'S NOTHING YET THAT LOOKS, SOUNDS, OR SMELLS LIKE AN EFFECTIVE TREATMENT, LET ALONE A CURE. THE ALS RESEARCHERS WE HAVE BEEN BLESSED WITH THAT WORK ON OUR BEHALF ARE GIFTED AND DEDICATED, AS YOU'VE ALREADY NOTED WITH RESPECT TO DR. SVENDSEN AND CEDARS-SINAI.

PREVIOUS SPEAKER TALKED ABOUT US HAVING HOPE. WE ALL HAVE HOPE, BUT HOPE IS NOT A STRATEGY. WORKING WITH PEOPLE LIKE DR. SVENDSEN IS A STRATEGY. BLUNTLY, HE'S THE BEST THING WE'VE GOT GOING FOR US RIGHT NOW. HIS SUBMISSION IS THE BEST THING HE'S GOT GOING RIGHT NOW. IT'S PRECISELY THE THING THAT SOME OF YOUR SPEAKERS -- I WOULD RECOGNIZE MR. SHEEHY BRINGING UP THE POINT AND THE LATEST SPEAKER. IT'S A TOUGH DISEASE, VERY COMPLICATED. IT CRIES OUT FOR A SOLUTION. PROGRESS IS TOUGH IN THE SCIENTIFIC COMMUNITIES, AND A THERE MAY BE SOME RISK HERE, BUT THIS IS THE DISEASE THAT DESERVES A LITTLE RISK TAKING IN MY VIEW.

YOU'VE HAD QUESTIONS ABOUT HIS PROPOSAL. FAIR ENOUGH. TO THE EXTENT HE HAS NOT ANSWERED

THOSE TO YOUR SATISFACTION, I RESPECTFULLY REQUEST THAT YOU PUT THOSE QUESTIONS AND CONCERNS AGAIN TODAY TO DR. SVENDSEN, LET HIM RESPOND, GET A DISCUSSION GOING, FIGURE OUT A WAY FORWARD SO WE CAN GET THIS PROPOSAL FUNDED.

ON BEHALF OF A GRATEFUL ALS COMMUNITY, URGE AN AYE VOTE ON HIS PROPOSAL. AND THANK YOU FOR YOUR TIME AND ATTENTION.

CHAIRMAN THOMAS: THANK YOU, SIR.

MS. KOZAK: EVERYONE BETTER BE CAREFUL. I HAVE A NEW WHEELCHAIR, SO I'M NOT QUITE SURE WHETHER I ROLL OVER TOES OR NOT. MY NAME IS LEANNE KOZAK. I HAVE ALS. AND I HAVE MY NOTES, SO I STAY ON TRACK.

I HAVE A VERY HARD TIME UNDERSTANDING WHY AFTER ALL OF THESE YEARS, AND WE'VE KNOWN ABOUT ALS, WE'VE IDENTIFIED ALS IN 1869, ACCORDING TO MY RESEARCH, AND WE STILL DON'T KNOW WHAT CAUSES IT. WE HAVE NO CURE. WE HAVE NO TREATMENT. AND MANY OF US DON'T HAVE HOPE. I THINK THAT'S A REALISTIC POINT OF VIEW GIVEN WHAT WE KNOW ABOUT WHAT'S AVAILABLE AND WHAT THE PROSPECTS ARE.

YOU ALL KNOW WHAT A REALLY UGLY DISEASE IT IS, I'M SURE. AND SO I WOULD SUGGEST TO YOU THAT IT IS ABSOLUTELY UNCONSCIONABLE TO DELAY ANY TRIALS

THAT HAVE A REASONABLE CHANCE OF SUCCESS. AND I THINK WHAT IS BEFORE YOU NOW IS FAR BEYOND JUST A REASONABLE CHANCE OF SUCCESS.

YOU HAVE SAID, MR. SHEEHY, THAT YOU WANT TO TAKE RISKS, ANYTHING THAT CAN MAKE A DRAMATIC DIFFERENCE FOR PATIENTS. FOR ALS ANYTHING WOULD MAKE A DRAMATIC DIFFERENCE. AS DR. SVENDSEN SAID, BEING ABLE TO WIGGLE YOUR FINGER, THAT'S DRAMATIC. TODAY I BELIEVE OUR BEST BET FOR MAKING PROGRESS WITH THIS HORRIBLE DISEASE IS THE HIGHLY COMPETENT PROFESSIONALS THAT WE HAVE AT FORBES NORRIS IN SAN FRANCISCO, THE SURGICAL SKILLS AT EMORY, AND THE GENIUS OF DR. SVENDSEN. THE TEAM IS RIGHT, THE TIME IS RIGHT. PLEASE GRANT THIS FUNDING.

CHAIRMAN THOMAS: THANK YOU. FURTHER PUBLIC COMMENT?

DR. TROUNSON, I'D JUST BE CURIOUS. DR. SVENDSEN MADE SOME COMMENTS ABOUT IN ADDITION TO THIS LETTER EVIDENCING NEW CORPORATE RELATIONSHIP, MADE SOME COMMENTS ABOUT NEW DATA, TO GET YOUR THOUGHTS ON WHAT HE HAS SAID. I NOTICE THERE'S SOME REFERENCE TO THAT IN THE EXTRAORDINARY PETITION ITSELF AS WELL.

DR. TROUNSON: WELL, I THINK IT'S A BRIEF LETTER, AND IT'S FAIRLY CLEAR THAT THE, AS CLIVE

SAID, THAT THE COMPANY'S WILLING TO PROVIDE THEM WITH ACCESS TO USE THIS. AND, OF COURSE, THIS WAS QUERIED BY THE GRANTS WORKING GROUP AS SOMETHING THAT WAS OF SOME IMPORTANCE TO KNOW THAT YOU HAD FREEDOM TO OPERATE. SO I THINK AT THIS POINT IN TIME, THERE'S AN INDICATION THAT THE COMPANY WILL PROVIDE AN OPPORTUNITY TO OPERATE.

I DON'T THINK IT ADDRESSES THE OTHER ISSUES SO SPECIFICALLY. SO, AGAIN, I'M NOT SURE THAT THAT RISES TO THIS LEVEL. I THINK YOU CAN DECIDE WHETHER THAT -- IT'S NOT -- I DON'T THINK IT RISES TO THE LEVEL OF REQUIRING A REREVIEW IN MY MIND. I THINK YOU NEED TO DECIDE YOURSELVES WHETHER THIS IS APPROPRIATE. WE'VE GOT A -- THOSE PROCESSES THAT JEFF AND I HAVE GOT TO GET THROUGH, WE WOULD PREFER NOT TO HAVE A HUGE NUMBER; BUT IF YOU SEND US A HUGE NUMBER, IT WILL TAKE US MORE TIME AND WE'LL DO IT. BUT I THINK YOU CAN ACTUALLY MAKE UP YOUR MIND ABOUT THIS IN MY VIEW.

THE COMPANY HAS SAID THAT THEY WILL PROVIDE THIS, AND THAT WAS AN ISSUE. I DON'T THINK IT WAS THE PRIMARY ISSUE, BUT IT WAS ONE OF THE ISSUES WITH THE GRANT. AND I THINK IT'S OVER TO YOU NOW TO MAKE UP YOUR MINDS.

I THINK ELONA BAUM WANTS TO MAKE SOME

COMMENT ON MY COMMENT.

MS. BAUM: I APOLOGIZE. I JUST FEEL THAT IT'S INCUMBENT UPON ME TO JUST MAKE A CORRECTION, THAT THAT LETTER DOES NOT NECESSARILY ESTABLISH FREEDOM TO OPERATE. IT ADDRESSES A VECTOR. IT DOESN'T ADDRESS THE NEURAL STEM CELL AND RIGHTS THERETO SINCE IT'S NOW PUBLIC.

CHAIRMAN THOMAS: WE HAVE A LITTLE BIT OF A HARD TIME HEARING YOU, ELONA. WOULD YOU REPEAT ALL THAT, PLEASE?

MS. BAUM: I'LL RESTART WHAT I JUST SAID. I CAN'T SAY THAT THE LETTER THAT WE HAVE JUST RECEIVED AND THAT IS NOW PUBLIC, SO I'M COMFORTABLE SPEAKING TO IT, NECESSARILY ESTABLISHES FREEDOM TO OPERATE. IT TALKS ABOUT HAVING FREEDOM TO OPERATE AND HAVING ACCESS TO THE VECTOR, BUT THERE IS ANOTHER ASPECT, AND THAT IS THE NEURAL STEM CELL. AND I'M NOT SO SURE AT THIS TIME THAT THERE'S NECESSARILY FREEDOM TO OPERATE VIS-A-VIS THE NEURAL STEM CELL, WHICH IS THE DELIVERY MECHANISM AND PART OF THE THERAPEUTIC. SO IT'S A QUESTION. I JUST DON'T KNOW IF IT'S PUBLIC. CERTAINLY IN CLOSED SESSION I FEEL COMFORTABLE DISCLOSING THAT.

CHAIRMAN THOMAS: OKAY. SO LET'S SEE. I'VE GOT MR. JUELSGAARD, I'VE GOT SHERRY, AND I'VE

GOT MR. SERRANO-SEWELL.

DR. JUELSGAARD: SO LET ME JUST RESPOND TO THE INTELLECTUAL PROPERTY ISSUE. SO THERE'S A REALLY OPEN QUESTION WITH RESPECT TO USING MATERIALS IN PREPARATION FOR AN FDA SUBMISSION. THAT'S 271(E)(1) OF THE PATENT STATUTES, AND IT ALLOWS -- AND IN MERCK V. INTEGRA, THE SUPREME COURT DECIDED THAT RESEARCH WORK WAS IN FURTHERANCE OF A POTENTIAL SUBMISSION TO THE FDA. SO MANY COMPANIES TAKE THE POSITION THAT THEY'RE FREE TO ENGAGE IN THAT RESEARCH WITHOUT HAVING A LICENSE AT ALL AND WON'T NECESSARILY INFRINGE ANOTHER'S PATENT.

SO I DON'T PLACE A LOT OF EMPHASIS EITHER ON THE PRESENCE OF THIS LETTER OR THE ABSENCE OF THIS LETTER WITHOUT KNOWING A LITTLE BIT MORE ABOUT WHAT THE PROJECT INTENDS TO DO VIS-A-VIS POTENTIAL FDA SUBMISSION.

BUT BEYOND THAT, I WOULD LIKE TO MOVE THAT WE CHANGE THE STATUS OF THIS APPLICATION FROM TIER III TO TIER I. TIER II TO TIER I.

CHAIRMAN THOMAS: IS THERE A SECOND?

MR. SERRANO-SEWELL: SECOND.

MS. SAMUELSON: I'D LIKE TO JOIN IN THE SECOND.

CHAIRMAN THOMAS: FURTHER DISCUSSION BY

THE BOARD? SHERRY, I'M SORRY.

MS. LANSING: I'M CONFUSED. YOU WANT US TO --

DR. JUELSGAARD: YES. I'M MOVING THAT WE CHANGE IT, NOT THAT IT BE SENT BACK FOR REVIEW, BUT THAT WE ACTUALLY PUT IT IN TIER I. THAT WAS MY MOTION. FUND IT. THAT WE FUND IT, THAT'S MY MOTION.

MS. LANSING: WHY WOULD WE DO THAT?

CHAIRMAN THOMAS: WHICH IS AN OPTION.

MR. SHEEHY: I JUST WANTED TO SPEAK IN FAVOR OF THE MOTION. AND I WOULD NOTE THAT ONE OF THE STRENGTHS OF THE APPLICATION WAS ITS REGULATORY PACKET. AND I THINK THAT THIS IS ONE OF THE TIMES WHEN IT'S GOOD FOR US PROGRAMMATICALLY TO STRETCH OURSELVES.

I REMIND PEOPLE THAT THESE ARE MILESTONE-DRIVEN GRANTS. AND SO THE PRICE OF FAILURE IS THAT WE GET OUR MONEY BACK. AND I JUST THINK ABOUT THIS. SOME OF THE QUESTIONS THAT WERE ASKED IN THE GRANT ARE NOT GOING TO BE ANSWERABLE OTHER THAN GOING INTO A PATIENT. WILL THIS MAKE A DIFFERENCE? WE DON'T KNOW. BECAUSE OF THE WAY IN WHICH THE REGULATORY PACKAGE WAS PUT TOGETHER AND THE STRENGTH OF IT, WHICH THE REGULATORY SPECIALIST

MENTIONED IN THE REVIEW, IT HAS A HIGH PROBABILITY OF GETTING INTO PATIENTS AND FINDING OUT THE ANSWERS TO THESE QUESTIONS.

I KNOW IF I WERE AN ALS PATIENT, AND I'M SO DELIGHTED TO HEAR FROM THE PATIENTS, I WOULD SAY IF NOT CLIVE, WHO? AND IF NOT NOW, WHEN? AND IF NOT CIRM, HOW ELSE? I THINK THAT'S WHY WE EXIST.

(APPLAUSE.)

CHAIRMAN THOMAS: ANY FURTHER COMMENT, OR WE CAN PROCEED -- YES, JOAN.

MS. SAMUELSON: I FEEL STRONGLY THAT WE SHOULD MOVE THIS INTO THE FUNDING CATEGORY. DR. SVENDSEN IS THE RIGHT PERSON. HE IS SHARING HIS TIME FROM A CAREER WITH PARKINSON'S, DISTINGUISHED CAREER. AND I'M HAPPY THAT HE IS WORKING SO HARD ON ALS NOW BECAUSE THE PARKINSON'S FIELD WILL GAIN FROM HIS INVESTMENT THERE. AND -- WELL, EVERY REASON I HAVE FOR THIS HAS BEEN STATED BY SOMEBODY ELSE, WHICH IS THRILLING.

THE COMMENT I LIKE BEST WAS FROM ONE OF THE MEMBERS OF THE PUBLIC WHO SAID, "IT'S UNCONSCIONABLE TO DELAY ANY TRIALS WITH A REASONABLE CHANCE OF SUCCESS." IMAGINE THAT WE HAVE DONE SO WELL BY OUR HARD WORK COMBINED WITH OTHER SCIENTISTS IN FUNDING ENTERPRISES AROUND THE WORLD, THAT SOME

OF THE CRITICISMS OF THE GRANT MIGHT BE THAT IT DOESN'T HAVE THE IP PROPOSAL SUFFICIENTLY TOGETHER.

WHEN I FIRST THOUGHT ABOUT PLANNING FOR TODAY, I THOUGHT THAT I WOULD BE SILENT UNTIL THE PARKINSON'S PROPOSALS. AND THERE ARE A COUPLE SIGNIFICANT ONES IN THIS ROUND AND A LATER ONE. BUT I CAN'T DO THAT BECAUSE IF THERE'S A CHANCE OF SUCCESS FOR OTHER PATIENT GROUPS, IT'S MY JOB TO PROMOTE IT. AND THAT IS SUCH A GREAT THING. IF WE HAVE IN JUST FIVE OR SIX YEARS REACHED THE POINT WHERE WE HAVE TOUGH CHOICES FOR WHAT WE'RE GOING TO ADVANCE FORWARD, OR WE THINK WE MIGHT RUN OUT OF MONEY BECAUSE WE HAVE SO MANY OPTIONS, THAT'S A GREAT PROBLEM TO HAVE. AND I THINK WE SHOULD REACH FOR THOSE OPPORTUNITIES, JUST AS DR. SVENDSEN HAS REACHED FOR SUCCESS WITH ALS. THANK YOU.

CHAIRMAN THOMAS: THANK YOU, JOAN. SEEING NO FURTHER COMMENTS, WOULD LIKE TO CALL THE QUESTION.

MS. BONNEVILLE: WE HAVE SOMEONE ELSE WHO WOULD LIKE TO MAKE PUBLIC COMMENT ON THIS GRANT.

CHAIRMAN THOMAS: ONE MORE MEMBER OF THE PUBLIC. PLEASE STATE YOUR NAME.

MS. WINOKER: DIANE WINOKER, AND I'M AN ALS ADVOCATE. I'D LIKE TO SPEAK IN FAVOR OF THIS

PROPOSAL. I HAVE KNOWN DR. CLIVE SVENDSEN FOR MORE THAN TEN YEARS, AND I'VE BEEN AWARE OF THE RESEARCH HE'S BEEN DOING THAT HAS LED UP TO THIS PROJECT FOR ABOUT TEN YEARS.

THERE IS NO ONE WHO IS MORE HIGHLY REGARDED IN THE ALS RESEARCH WORLD THAN DR. SVENDSEN. AND WE WERE FORTUNATE, AND I THINK IT WAS DUE TO PROPOSITION 71, AT LEAST PARTLY, THAT WE GOT HIM TO MOVE FROM WISCONSIN TO CALIFORNIA. HE HAS A SUPERB TEAM, AND THEY HAVE VERY MUCH EXPERIENCE.

AS YOU KNOW, ALS IS A VERY CRUEL DISEASE. AND IN THE HUNDRED AND FIFTY OR SO YEARS SINCE IT'S BEEN KNOWN, THERE HAS NEVER BEEN ANYTHING DEVELOPED TO HELP IT. THERE'S ONE DRUG THAT WAS APPROVED ABOUT TEN OR TWELVE YEARS AGO BY THE FDA, AND IT WILL IN SOME CASES PROLONG LIFE FOR TWO MONTHS. AND THAT'S THE EXTENT OF WHAT'S AVAILABLE. SO THIS IS A VERY VALUABLE PROJECT.

THE SCORE, AS YOU KNOW, FOR THIS PROPOSAL WAS WITHIN A FEW, MAYBE TWO DEGREES FROM THOSE THAT WERE RECOMMENDED FOR FUNDING. AND WITH THE NEW INFORMATION THAT DR. SVENDSEN HAS PROVIDED THAT JUST CAME YESTERDAY, THAT ELIMINATES ONE OF THE OBJECTIONS THAT WERE RAISED SO THAT THAT WOULD RAISE IT WELL INTO THE APPROVAL RATING.

MY EXPERIENCE WITH ALS IS THAT I HAVE LOST TWO SONS TO THE ILLNESS. AND AS FAR BACK AS MY HUSBAND'S FAMILY AND MINE CAN TRACE, WHICH IS ABOUT THREE OR FOUR GENERATIONS, THERE HAS NEVER BEEN ANY ALS. SO THAT WE ARE IN THE RARE POSITION OF HAVING TWO FAMILY MEMBERS WITH THE ILLNESS AND IT IS NOT THE FAMILIAL FORM. I RECOMMEND HIGHLY TO YOU THAT YOU RECONSIDER THIS PROPOSAL AND ACCEPT IT FAVORABLY. THANK YOU VERY MUCH.

CHAIRMAN THOMAS: THANK YOU, MS. WINOKER. SENATOR TORRES.

MR. TORRES: YES. MS. WINOKER, I JUST WANT TO THANK YOU FOR YOUR TIRELESS ADVOCACY. I'VE KNOWN YOU FOR MANY YEARS, AND I KNOW WHAT YOU HAVE GONE THROUGH PERSONALLY, AND THAT YOU CONTINUE WHAT YOU DO IS REMARKABLE AND AN INSPIRATION.

MS. WINOKER: THANK YOU FOR SAYING THAT.

(APPLAUSE.)

DR. PRICE: POINT OF INFORMATION, MR. CHAIRMAN. CAN YOU TELL US WHAT THE FUNDING LEVEL WE HAVE STILL LEFT? AND THE REASON I'M SAYING THIS IS BECAUSE I'M CONCERNED, AS WE GO THROUGH THIS AND START TO RAISE ITEMS UP INTO THE FUNDING CATEGORY, WE MAY OBVIATE THE NEED TO DO THE REVIEW WHICH WE'VE ALREADY RECOMMENDED SINCE THERE MIGHT NOT BE ANY

MONEY LEFT TO DO THOSE.

CHAIRMAN THOMAS: I THINK, AGAIN, WE HAD BUDGETED 240. WE ARE AT 113 SHOULD WE APPROVE THE SIX RECOMMENDED PROPOSALS. AND THIS WOULD ACTUALLY BE THE FIRST ADDITIONAL AMOUNT ACTUALLY APPROVED. THE OTHER THREE ARE SUBMITTED FOR RECONSIDERATION.

MS. SAMUELSON: MR. CHAIRMAN, ARE WE GOING TO GO INTO CLOSED SESSION ON THESE TO TALK ABOUT --

CHAIRMAN THOMAS: I DON'T THINK WE NEED TO ON THIS. OKAY. SO LET'S MOVE FORWARD. MARIA, CALL THE ROLL.

MS. BONNEVILLE: ROBERT PRICE.

DR. PRICE: YES.

MS. BONNEVILLE: DAVID BRENNER.

DR. BRENNER: YES.

MS. BONNEVILLE: JACOB LEVIN.

DR. LEVIN: YES.

MS. BONNEVILLE: CLAIRE POMEROY.

DR. POMEROY: YES.

MS. BONNEVILLE: MARCY FEIT. LEEZA GIBBONS.

MS. GIBBONS: WITH THANKS TO ALL THE FAMILIES AND THE PATIENTS HERE TODAY, YES.

MS. BONNEVILLE: MICHAEL GOLDBERG.

MR. GOLDBERG: YES.

MS. BONNEVILLE: SAM HAWGOOD.
DR. HAWGOOD: YES.
MS. BONNEVILLE: STEPHEN JUELSGAARD.
DR. JUELSGAARD: YES.
MS. BONNEVILLE: SHERRY LANSING.
MS. LANSING: YES.
MS. BONNEVILLE: BERT LUBIN.
DR. LUBIN: YES.
MS. BONNEVILLE: PHIL PIZZO.
DR. PIZZO: YES.
MS. BONNEVILLE: FRANCISCO PRIETO.
DR. PRIETO: AYE.
MS. BONNEVILLE: DUANE ROTH.
MR. ROTH: YES.
MS. BONNEVILLE: JOAN SAMUELSON.
MS. SAMUELSON: YES.
MS. BONNEVILLE: DAVID SERRANO-SEWELL.
MR. SERRANO-SEWELL: YES.
MS. BONNEVILLE: JEFF SHEEHY.
MR. SHEEHY: YES.
MS. BONNEVILLE: JONATHAN SHESTACK.
MR. SHESTACK: I'VE WAITED A LONG TIME TO BE ABLE TO SAY YES TO THIS.
MS. BONNEVILLE: OSWALD STEWARD.
DR. STEWARD: YES.

MS. BONNEVILLE: JONATHAN THOMAS.
CHAIRMAN THOMAS: YES.
MS. BONNEVILLE: ART TORRES.
MR. TORRES: AYE.
MS. BONNEVILLE: KRISTINA VUORI.
DR. VUORI: YES.
CHAIRMAN THOMAS: DR. SVENDSEN, CONGRATULATIONS.
(APPLAUSE.)
CHAIRMAN THOMAS: THANK YOU ALL WHO HAVE WEATHERED THROUGH THE MORNING AND EARLY AFTERNOON TO BE HERE FOR THIS MOMENT. WE LOOK FORWARD WITH GREAT ANTICIPATION TO GREAT WORK BEING DONE ON THIS PROJECT.
WE'D LIKE --
JOAN, WE'RE NOW CALLING FOR ADDITIONAL PROPOSALS TO DISCUSS.
MS. SAMUELSON: 5272.
CHAIRMAN THOMAS: WE HAVE A REQUEST FOR STAFF PRESENTATION ON PROPOSAL 5272, DR. WHITTLESEA.
DR. WHITTLESEA: THANK YOU, MR. CHAIRMAN, MEMBERS OF THE BOARD. IT'S MY PLEASURE TO DESCRIBE TO YOU APPLICATION 5272. THE TITLE IS "HESC-DERIVED NPC'S PROGRAMMED WITH MEF2C FOR CELL TRANSPLANTATION IN PARKINSON'S DISEASE."

THIS PROJECT PROPOSES TO DEVELOP A CELL THERAPY TO TREAT PARKINSON'S DISEASE FOR PATIENTS WHO NO LONGER RESPOND TO DOPAMINE REPLACEMENT THERAPY. THE PROPOSED APPROACH WILL BE HESC'S OR HUMAN EMBRYONIC STEM CELLS GENETICALLY MODIFIED TO EXPRESS AN ACTIVE FORM OF A TRANSCRIPTION FACTOR, A PROTEIN KNOWN AS MEF2C, AND THEN DIFFERENTIATE TO NEURAL PROGENITOR CELLS FOR CELL TRANSPLANTATION.

THE APPLICANT ASSERTS THAT THE OVEREXPRESSION OF THIS TRANSCRIPTION FACTOR WILL SPECIFICALLY DRIVE DIFFERENTIATION OF DOPAMINE PRODUCING NEURONS, WHICH ARE THE CELLS THAT ARE LOST IN PARKINSON'S DISEASE.

PROJECT OBJECTIVE IS TO COMPLETE MANUFACTURING, PRECLINICAL, AND REGULATORY ACTIVITIES AND FILE AN APPLICATION FOR AN INVESTIGATIONAL NEW DRUG APPLICATION OR IND WITH THE FDA WITHIN THE FOUR-YEAR AWARD PERIOD.

I WILL HIGHLIGHT A FEW OF THE POINTS THAT THE GRANTS REVIEW GROUP MADE. SO WITHIN THE CONTEXT OF SIGNIFICANCE AND IMPACT, REVIEWERS ACKNOWLEDGE THAT THE APPLICATION ADDRESSES A HIGHLY UNMET MEDICAL NEED. HOWEVER, THE POTENTIAL IMPACT OF THIS APPROACH OVER ALTERNATIVES CURRENTLY IN DEVELOPMENT WAS CALLED INTO QUESTION. REVIEWERS ALSO WERE NOT

ABLE TO DETERMINE WHETHER THE PROPOSED THERAPY WOULD AVOID KEY ADVERSE EVENTS THAT HAVE BEEN SEEN IN OTHER TRANSPLANTATION APPROACHES FOR PARKINSON'S DISEASE.

RATIONALE, THE RATIONALE FOR CELL THERAPY AS A MEANS OF DELIVERING DOPAMINE FOR PARKINSON'S DISEASE IS WELL ESTABLISHED. HOWEVER, NO CONVINCING DATA WERE PROVIDED TO DEMONSTRATE WHY THIS MEF2C EXPRESSION STRATEGY WOULD BE A BETTER APPROACH THAN ALTERNATIVES CURRENTLY UNDER DEVELOPMENT. PRELIMINARY DATA PROVIDED FOR IN VIVO EFFICACY WERE NOT CONVINCING. DATA WERE NOT SHOWN FOR ALL THE BEHAVIORAL STUDIES CONDUCTED, WHICH IS REALLY THE FUNCTIONAL OUTCOME, AND ONLY MODEST IMPROVEMENTS WERE SEEN, WHICH BARELY REACHED STATISTICAL SIGNIFICANCE OVER CONTROLS.

MORE IMPORTANTLY, RECENT PUBLICATIONS HAVE DEMONSTRATED A ROLE FOR SEROTONIN IN CELL TRANSPLANTATION APPROACHES FOR PARKINSON'S DISEASE, AND THIS POSSIBILITY IS NOT ADDRESSED BY THE APPLICANTS.

THERAPEUTIC DEVELOPMENTAL READINESS WAS A KEY ISSUE WITH THE REVIEWERS. REVIEWERS FELT THE PROJECT WAS AT AN EARLY STAGE OF DEVELOPMENT. APPLICANT DID NOT SHOW CLEAR PROOF OF CONCEPT

LINKING DOPAMINE PRODUCTION BY THE THERAPEUTIC CELLS TO BENEFITS SEEN IN VIVO. THERE WAS CONCERN ABOUT THE PURITY OF THE PROPOSED CELL PRODUCT, AND POOR CHARACTERIZATION OF OTHER CELL TYPES THAT MIGHT BE PRESENT WITHIN THE CELL POPULATION PROPOSED TO BE USED AS THE THERAPEUTIC.

FEASIBILITY OF THE PROJECT PLAN WAS QUESTIONED IN RELATIONSHIP TO ONE OF THE PREVIOUS COMMENTS IN THE SENSE THAT THERE WAS LIMITED CHARACTERIZATION OF THE PRODUCT, AND THERE WAS NO DISCUSSION OF PRODUCT HETEROGENEITY, TRANSGENE COPY NUMBER, AND OTHER IMPORTANT ASPECTS OF THE CELL POPULATION. NO DATA WERE PROVIDED SHOWING DURATION OF THE MEF2C TRANSGENE EXPRESSION IN VIVO, AND THE PROPOSAL DID NOT CONSIDER AN IMPORTANT POINT, WHICH IS THE POSSIBILITY OF GENE SILENCING IN VIVO WHICH WILL RESULT IN LOSS OF EFFICACY OF THE THERAPEUTIC PRODUCT.

THE PI WAS PRAISED AND ACKNOWLEDGED AS BEING A QUALIFIED RESEARCHER IN NEURODEGENERATIVE DISEASE; HOWEVER, THERE WAS CONCERN EXPRESSED THAT HE HAS NO TRACK RECORD IN BRINGING A CELL THERAPY FOR A NEURODEGENERATIVE DISEASE TO A CLINIC.

THERE WAS A BUDGET -- THERE WAS A CONCERN EXPRESSED OVER THE BUDGET OF SOME OF THE PRECLINICAL

STUDIES. I WANTED TO NOTE THIS IS THE FIRST ONE THAT WE'VE SEEN RELATIVE TO -- DR. TALIB MENTIONED THIS MORNING IN HIS INTRODUCTORY COMMENTS THAT THE PLANNING AWARD REVIEW COMMITTEE DID HAVE THE OPTION OF APPLYING A CONDITION TO AN AWARD. THIS WAS ONE SUCH CASE THAT HAD A CONDITION APPLIED TO THE PLANNING AWARD. THERE WAS A VERY SPECIFIC PIECE OF DATA THEY WERE LOOKING TO SEE, WHICH I CAN DESCRIBE IF THERE'S INTEREST. IT'S ALSO IN THE SUMMARY WHICH IS PROVIDED IN YOUR BINDERS.

REVIEWERS WERE NOT CONVINCED BY THE DATA PROVIDED THAT THE CONDITION WAS FULLY MET AS APPLIED BY THE PLANNING AWARD COMMITTEE.

THERE WAS ROBUST PROGRAMMATIC DISCUSSION IN TERMS OF THIS PROJECT. REVIEWERS REITERATED SOME OF THE PRIMARY CONCERNS, WHICH WAS THE LOW PERCENTAGE OF THE THERAPEUTIC CELL, POORLY CHARACTERIZED CELL POPULATION, UNCONVINCING PRELIMINARY DATA. IT WAS NOTED THAT THE SCORES ACROSS THE REVIEWERS WERE CONSISTENT AND IN A RANGE THAT IS TYPICALLY NOT CONSIDERED TO BE A FUNDABLE SCORE, AND WAS VIEWED AS PREMATURE FOR A TRANSLATIONAL AWARD AND NOT WORTHY OF SUCH A LARGE INVESTMENT. THAT MOTION FAILED.

AN EXTRAORDINARY PETITION HAS BEEN

SUBMITTED FOR THIS PROJECT.

CHAIRMAN THOMAS: THANK YOU, DR. WHITTLESEA. COMMENTS BY MEMBERS OF THE BOARD?

MS. SAMUELSON: MR. CHAIRMAN, I'D LIKE US TO HEAR FROM THE EXTRAORDINARY PETITION AUTHOR. BUT ALSO IN REFERENCE TO SOME COMMENTS ABOUT THE SCORE AND DISCUSSION IN THE GRANTS GROUP, I THINK WE'RE GOING TO NEED A CLOSED SESSION ON THIS ONE. I DON'T THINK IT CAN BE COMPLETELY RESOLVED BEFORE THAT. I THINK IT SHOULDN'T BE.

CHAIRMAN THOMAS: I THINK THAT IS LIKELY THE CASE BECAUSE THIS, MORE THAN I THINK ANY OF THE EXTRAORDINARY PETITIONS, HAS SORT OF THE LONGEST LIST OF ISSUES ON SCIENTIFIC-RELATED MATTERS. SO IT'S SOMETHING THAT COULD WELL MERIT DISCUSSION IN CLOSED SESSION TO ADDRESS.

MS. SAMUELSON: I THINK IT'S A GOOD IDEA FOR A VARIETY OF REASONS, BUT I ALSO THINK THAT THE EXTRAORDINARY PETITION RESPONDS EXTREMELY WELL TO THOSE COMMENTS. SO I'M EAGER TO HEAR FROM HIM. AND I HAVE MORE COMMENTS, BUT I'D PREFER TO MAKE THEM LATER.

CHAIRMAN THOMAS: MR. HARRISON.

MR. HARRISON: COULD I SUGGEST THAT IF WE ARE READY, WE COULD HEAR FROM THE APPLICANT. AND

THEN TO THE EXTENT THAT THE PRESENTATION OR QUESTIONS FROM THE BOARD IDENTIFY PROPRIETARY INFORMATION, WE CAN NOTE THAT AND RESERVE THAT FOR CLOSED SESSION, IF NECESSARY.

CHAIRMAN THOMAS: OKAY. WE PROCEED TO MEMBERS OF THE PUBLIC.

DR. LIPTON: YES. DR. STUART LIPTON, M.D. PH.D. NEUROLOGIST IN SOUTHERN CALIFORNIA, AND I'M THE PI OF THE STUDY.

THIS IS THE ONLY PARKINSON'S DISEASE TEAM THAT YOU'VE SEEN. THIS IS THE ONLY ONE. YOU HAVE NONE. I TAKE CARE OF MANY OF THESE PATIENTS. AFTER ABOUT TEN YEARS, THE DRUGS DON'T WORK, SINEMET. THE OTHER DRUGS DO NOT WORK. THEY BECOME WHEELCHAIR BOUND AND THEY CAN'T BREATHE.

SO WHY DID I FILE THIS EXTRAORDINARY PETITION? WELL, I'VE HAD SUCCESS WITH THE FDA. AS MANY OF YOU KNOW, I DEVELOPED THE LATEST NEURODEGENERATIVE DISEASE DRUG. THAT'S A PROOF FOR ALZHEIMER'S DISEASE AND IN EUROPE LEWYBODY DEMENTIA, WHICH IS ASSOCIATED WITH PARKINSON'S DISEASE. I LED THE CLINICAL DEVELOPMENT AND THE PRECLINICAL DEVELOPMENT OF THAT DRUG. SO SOME OF THE STATEMENTS ARE ALREADY BY FACT WRONG IN YOUR REVIEW, WHICH SAID I HAVE NO FDA EXPERIENCE.

BUT LET ME MAKE A MORE IMPORTANT POINT TO YOU. OUR DISEASE TEAM IS SANFORD BURNHAM, UC SAN DIEGO, UCSF, STANFORD, THE SALK, THE PARKINSON'S INSTITUTE. VIRTUALLY EVERY PARKINSON'S DISEASE EXPERT IN CALIFORNIA HAS VETTED THIS PROPOSAL.

THIS IS THE MOST PREVALENT MOVEMENT DISORDER IN THE UNITED STATES. THERE'S OVER A MILLION CASES. MANY OF THEM ARE HERE IN CALIFORNIA. SOME OF THEM ARE IN THIS ROOM. THERE ARE PATIENTS OF MINE IN THIS ROOM. HIPAA DOESN'T LET ME TELL YOU WHO THEY ARE.

WE ALSO HAVE ONGOING SUPPORT FROM THE NIH, VALENTHIA THAT YOU HEARD OF EARLIER, AND OTHER EUROPEAN TRIALS, INCLUDING THAT IN SWEDEN. WHY DID WE PICK THIS CELL TYPE? FIRST OF ALL, LET ME SAY THAT THE PLANNING COMMITTEE COMMENTED THAT THE STRENGTH OF OUR PROPOSAL IN USING A STABLE CELL LINE, BY DEFINITION A STABLE CELL LINE IS A HUNDRED PERCENT PURE, WAS THE FACT THAT WE HAD A STABLE CELL LINE EXPRESSING THIS TRANSCRIPTION FACTOR. I WAS INCREDULOUS THAT A MEMBER OF YOUR REVIEW WOULD ASK ABOUT THE PURITY OF A STABLE CELL LINE PUBLISHED IN THE *JOURNAL OF NEUROSCIENCE*, *PLOS*, AND *PNAS*. I DON'T UNDERSTAND THE COMMENT. THAT'S WHAT JOAN WAS REFERRING TO. SO THIS IS A PURE CELL LINE. IT'S

THE ONLY ONE THAT'S COMING TO YOU TODAY. IT'S THE ONLY PURE CELL LINE, AND YET A COMMENT WAS MADE ABOUT THE PURITY. I DON'T UNDERSTAND THAT.

WE ALSO CAN GENERATE 85 PERCENT DOPAMINERGIC NEURONS. IT'S DOCUMENTED IN THE PROPOSAL, PUBLISHED IN THE *JOURNAL OF NEUROSCIENCE*. WE'RE THE ONLY ONE TO DO THAT. THE NEXT, I GUESS RUNNER UP IS A CLOSE COLLEAGUE OF MINE, LAWRENCE STUDER IN NEW YORK, WHO HAS GENERATED 70 PERCENT NEURONS FROM HUMAN EMBRYONIC STEM CELLS.

SO I THINK ON THOSE SCORES WE'RE VERY GOOD. WE VETTED THE MODEL IN BOTH RODENTS AND EARLY MONKEY STUDIES. AND I IMPLORE YOU TO LOOK AT FIGURE 4 WHERE THERE ARE MULTIPLE BEHAVIORAL STUDIES, ALTHOUGH CIRM JUST SAID THERE WAS ONE BEHAVIORAL STUDY. LOOK AT FIGURE 4. THERE ARE TWO SHOWN THERE. THERE ARE FOUR OTHERS PUBLISHED IN *JOURNAL OF NEUROSCIENCE*. SO THAT'S JUST A MISCOMMENT.

THE REVIEW ASKED WHY WE HAD SO MANY CONSULTANTS. I WANT TO SPEAK TO THAT. WHAT WE TRIED TO DO WAS GO TO EVERYONE RUNNING A CLINICAL TRIAL IN THE WORLD SO THAT WE WOULD COME UP WITH THE BEST CLINICAL TRIAL. SO WE HAVE ANDERS BJORKLUND, WE HAVE RUSTY GAGE, WE HAVE MULTIPLE PEOPLE WHO CAN TELL US THAT ARE RUNNING OTHER TRIALS.

SO WHAT I'M TELLING YOU IS I THINK WE HAVE A VERY GOOD CHANCE OF SUCCESS; BUT IN A LARGER SENSE, I'M ASKING YOU TO GIVE THAT CHANCE TO OUR PARKINSON'S PATIENTS. I THINK THIS IS VERY IMPORTANT. IT'S THE MOST PREVALENT MOVEMENT DISORDER IN THE WORLD. THANK YOU VERY MUCH.

CHAIRMAN THOMAS: THANK YOU, DR. LIPTON. ADDITIONAL PUBLIC COMMENT? OKAY. JAMES, HOW SHOULD WE PROCEED HERE BECAUSE THERE ARE DATA ISSUES AND A VARIETY OF SCIENTIFIC QUESTIONS?

MR. HARRISON: TO THE EXTENT THAT THERE ARE QUESTIONS THAT BOARD MEMBERS HAVE THAT CAN BE ADDRESSED IN OPEN SESSION, WE SHOULD HAVE THAT DISCUSSION NOW. TO THE EXTENT THAT WE IDENTIFY PROPRIETARY INFORMATION THAT WOULD REQUIRE A CLOSED SESSION, WE COULD RESERVE THOSE QUESTIONS AND CONVENE IN CLOSED SESSION AFTER WE COMPLETE THE REVIEW OF THE OTHER APPLICATIONS.

DR. MELMED: PROCEDURALLY CAN WE HAVE A CLOSED SESSION?

CHAIRMAN THOMAS: THIS IS A MR. HARRISON QUESTION.

DR. PRICE: CAN WE HAVE A CLOSED SESSION?

CHAIRMAN THOMAS: HE SAID PROCEDURALLY CAN WE HAVE A CLOSED SESSION.

MR. HARRISON: YES. IF YOU WANT TO REVIEW SOME OF THE PROPRIETARY INFORMATION IN THE APPLICATION, WE CAN DO THAT IN CLOSED SESSION.

DR. MELMED: YES.

CHAIRMAN THOMAS: OKAY. SO I THINK WE'VE NOW HAD A REQUEST. WE WILL HAVE A CLOSED SESSION. I THINK BECAUSE WE HAVEN'T REALLY GOTTEN INTO ANY SORT OF FULL-BLOWN DISCUSSION, THIS COULD BE A CLOSED SESSION THAT COMES AT THE END OF THE DISCUSSION OF THE EXTRAORDINARY PETITIONS SO THAT WE DON'T BREAK UP THE CONTINUITY HERE.

SO LET'S TABLE THIS PENDING CLOSED SESSION DISCUSSION AND NOW ASK THE BOARD IF THERE ARE ADDITIONAL PETITIONS THAT YOU WOULD LIKE FURTHER INFORMATION ON.

MR. TORRES: YES, MR. CHAIRMAN AND MEMBERS. DR2A-05365.

CHAIRMAN THOMAS: CAN YOU TELL US WHAT THAT IS IN PLAIN ENGLISH, PLEASE, MR. R2D2?

MR. TORRES: THANK YOU. IT IS TO PROVIDE A CHEMOTHERAPY FREE STEM CELL TRANSPLANT PROCEDURE.

CHAIRMAN THOMAS: SO THIS IS THE STANFORD PROPOSAL. WE'VE HAD A REQUEST FOR A BRIEF STAFF PRESENTATION. SOHIL.

DR. TALIB: MR. CHAIRMAN, LET ME DESCRIBE

TO YOU THE OBJECTIVES OF THIS GRANT AND THE WEAKNESS OF THIS PARTICULAR PROPOSAL.

THE OBJECTIVE OF THIS PROPOSAL IS TO DEVELOP A NOVEL APPROACH FOR THE TREATMENT OF SEVERE COMBINED IMMUNODEFICIENCY OR SCID. THE CANDIDATE THERAPY IS A MONOCLONAL ANTIBODY THAT RECOGNIZES AND DEPLETES ENDOGENOUS STEM CELLS, MAKING A SPACE FOR INCOMING ALLOGENEIC STEM CELLS TO ENGRAFT.

PROPOSED ACTIVITIES FOR THIS PARTICULAR PROJECT INCLUDES PRECLINICAL AND IND-ENABLING STUDIES AS WELL AS PHASE I, PHASE II CLINICAL TRIALS.

THE STRENGTH OF THIS PARTICULAR APPLICATION IS THIS IS AN UNMET MEDICAL NEED. THERE'S A POTENTIAL OF REDUCING THE RISK OF REGIMEN-RELATED TOXICITY. SO THE GRANTS WORKING GROUP WERE APPRECIATIVE OF THE SIGNIFICANCE OF THIS PARTICULAR APPLICATION. HOWEVER, THERE WERE MAJOR CONCERNS OVERALL ON THE FEASIBILITY OF THE PROJECT, AND THERE WERE THREE MAIN CONCERNS.

ONE RELATES TO THAT THE EXISTING SUPPLY OF THE CANDIDATE ANTIBODY IS SET TO EXPIRE PRIOR TO THE COMPLETION OF THE PROPOSED CLINICAL TRIAL. AND THE REVIEW WAS NOT CONVINCED THAT THE ALTERNATE PLAN WHICH IS PROPOSED IN THE APPLICATION IS CONVINCING.

THE SECOND CONCERN WAS RELATED TO THE SUPPORTING ANTIBODIES AND THE METHODOLOGY THAT WILL BE USED FOR THE SELECTION OF THE STEM CELLS, WHICH IS AN INTEGRAL PART OF THIS PARTICULAR PROPOSAL. AND THEY THOUGHT THAT IT IS AT EARLY STAGE OF DEVELOPMENT AND WILL REQUIRE A LOT OF EFFORT, TIME, AND MONEY TO DEVELOP THOSE ANTIBODIES FOR THIS PARTICULAR PURPOSE.

THERE WERE ALSO SOME CONCERNS ABOUT THE REGULATORY STRATEGY. THEY THOUGHT THAT THIS WOULD REQUIRE TWO SEPARATE IND'S AND POSSIBLY AN IDE. SO OVERALL, THE GRANTS WORKING GROUP WAS APPRECIATIVE OF THE SIGNIFICANCE OF THIS PARTICULAR TECHNOLOGY AND ITS IMPORTANCE FOR THIS UNMET MEDICAL NEED, BUT THE MAIN CONCERNS WERE RELATED TO THE FEASIBILITY OF COMPLETING THIS PROJECT BECAUSE OF NOT HAVING ACCESS TO THE ANTIBODY WHICH IS CRITICAL FOR THE COMPLETION OF THE CLINICAL TRIALS WHICH THE INVESTIGATORS ARE PROPOSING.

PI HAS FILED EXTRAORDINARY PETITION FOR THIS APPLICATION.

CHAIRMAN THOMAS: THANK YOU. COMMENTS BY MEMBERS OF THE BOARD? SENATOR TORRES.

MR. TORRES: NO COMMENTS. I'D LIKE TO MOVE TO THE PUBLIC COMMENT.

CHAIRMAN THOMAS: ARE THERE OTHER COMMENTS OR ARE THERE ANY COMMENTS BY THE BOARD BEFORE MOVING TO HEAR FROM THE PUBLIC? LET'S HEAR FROM THE PUBLIC. THEN WE'LL COME BACK FOR BOARD DISCUSSION. PLEASE STATE YOUR NAME, AND, AGAIN, PLEASE KEEP YOUR TESTIMONY TO THREE MINUTES.

DR. SHIZURU: MY NAME IS JUDY SHIZURU. I AM A BLOOD AND MARROW TRANSPLANT DOCTOR, AND I'M THE PI OF THIS PROPOSAL. AND I WANT TO START BY THANKING THE BOARD FOR CONSIDERING OUR EXTERNAL PETITION. I ALSO WANT TO ACKNOWLEDGE THE WORK THAT THE REVIEWERS HAVE DONE TO DELIVER AS COMPLETE AND FAIR A REVIEW AS POSSIBLE. HOWEVER, WE ARE SUBMITTING THIS EXTRAORDINARY PETITION BECAUSE WE BELIEVE THAT THERE WERE SUBSTANTIAL MISUNDERSTANDINGS AND, IN FACT, FACTUAL ERRORS IN OUR REVIEW.

SO JUST BEFORE I TALK ABOUT THE REVIEW SPECIFICALLY, I JUST WANT TO PUT A CONTEXT INTO WHAT THIS MONOCLONAL ANTIBODY WILL DO. THIS MONOCLONAL ANTIBODY WILL RECOGNIZE HUMAN BLOOD STEM CELLS AND WILL BE THE FIRST AGENT OF ITS KIND THAT WILL BE TESTED TO SEE IF IT CAN DEPLETE BLOOD STEM CELLS SO THAT WE CAN DO STEM CELL REPLACEMENT THERAPY SAFELY. CURRENTLY THE ONLY WAY TO DEPLETE STEM CELLS, BLOOD

STEM CELLS, IS WITH CHEMOTHERAPY AND RADIATION.

ALTHOUGH WE FOCUS ON THE DISEASE SCID, WHICH IS A GRIEVOUS ILLNESS IN CHILDREN, BUT A RELATIVELY RARE ONE, WE KNOW THAT IF WE PROVE THAT THIS ANTIBODY CAN WORK TO DEPLETE STEM CELLS, THAT IT WILL OPEN UP THE FIELD OF BLOOD STEM CELL TRANSPLANTATION FOR A NUMBER OF DISEASES, INCLUDING AUTOIMMUNE DISEASES LIKE DIABETES AND MULTIPLE SCLEROSIS, FOR GENE THERAPY, AND FOR TOLERANCE INDUCTION TO TISSUES AND ORGANS.

SO WHAT I WANTED TO DO IS TO GIVE YOU A BRIEF HISTORY OF THE RELATIONSHIP OF OUR TEAM WITH THE COMPANY THAT'S PROVIDING THE ANTIBODY. WE HAD DETERMINED IN 2007 THAT THE CD117 MOLECULE WOULD BE APPROPRIATE FOR TARGETING TO DEPLETE STEM CELLS. AND THAT WAS BASED UPON STUDIES THAT WERE DONE IN MICE WHERE MICE TREATED WITH THE ANTIBODY HAD ROBUST ENGRAFTMENT OF PURE STEM CELLS. SUBSEQUENTLY WE DECIDED WE WERE GOING TO MAKE THE ANTIBODY, BUT THEN LEARNED THAT A MULTINATIONAL BIOTECHNOLOGY COMPANY THAT HAS GENERATED PROJECTS FOR MILLIONS OF PEOPLE AND IS HEADQUARTERED IN CALIFORNIA HAD ACTUALLY ALREADY MADE AN ANTIBODY. AND THAT ANTIBODY THEY MADE FOR A DIFFERENT INDICATION THAN OURS.

SO WE BEGAN COLLABORATING WITH THEM IN

2010, AND THAT COLLABORATION HAS BEEN VERY INTERACTIVE AND OPEN. AFTER WE RECEIVED THE PLANNING GRANT, WE LEARNED FROM THE COMPANY IN A FACE-TO-FACE MEETING THAT THEY WERE NO LONGER INTERESTED IN PURSUING THIS MONOCLONAL ANTIBODY FOR THEIR PURPOSES AND THAT THEY WERE NOT GOING TO MAKE THE ANTIBODY ANYMORE. HOWEVER, THEY WERE SUPPORTIVE OF OUR EFFORTS, PROVIDED US WITH THE PRECLINICAL AND CLINICAL DATA, SO THE FIRST-IN-HUMAN STUDIES FOR APPLICATION AND THE MANUFACTURING TABLE, AND ALSO INDICATED TO US THAT THEY WOULD, IN FACT, GIVE US THE ANTIBODY THAT THEY ALREADY HAD IN THEIR CLINICAL STOCK, SO A GMP GRADE ANTIBODY.

I THINK NOW WHEN WE LOOK AT OUR REVIEW, THERE WAS NO CONCERN ABOUT THE IMPACT, THE SIGNIFICANCE, OR THE THERAPEUTIC READINESS, BUT REALLY THE REAL CONCERNS WERE WITH REGARD TO FEASIBILITY. THERE WERE THREE, BUT TWO IS ALL I HAVE TIME TO ADDRESS. SO THE --

MR. HARRISON: I'M SORRY. JUST TO LET KNOW, YOUR THREE MINUTES ARE UP, SO IF YOU COULD TRY TO MAKE THE LAST TWO POINTS QUICKLY.

DR. SHIZURU: SO IN APRIL OF 2012, WE PROVIDED TO CIRM OUR PLAN TO ENSURE ACCESS TO THE ANTIBODY. SUBSEQUENTLY IN OUR PETITION WE'VE DONE

THAT AS WELL. AND FROM THE COMPANY WE HAVE RECEIVED A NEW LETTER DATED JULY 16, 2012, WHICH REAFFIRMS THEIR COMMITMENT TO ENSURE THAT WE'RE GOING TO HAVE ANTIBODIES IN THE PIPELINE -- I'M SORRY -- THAT WE'RE GOING TO HAVE ANTIBODIES FOR OUR USE FOR THE CLINICAL TRIAL AND FOR THE LONG TERM. SO THAT'S VERY EXPLICITLY LAID OUT IN OUR PETITION.

THE SECOND CONCERN WAS IN REGARD TO THE SUPPORTING ANTIBODIES WHERE THE REVIEWERS THOUGHT THIS WAS IN A PRIMITIVE STATE. I KNOW DR. WEISSMAN WILL BE SPEAKING AFTER WE, AND HE WAS THE DEVELOPER 20 YEARS AGO, AND WE DID CLINICAL TRIALS WITH THESE ANTIBODIES. AND SO THE ANTIBODY PRODUCTION IS NOT IN A PRIMITIVE STATE. IT'S ACTUALLY IN AN ADVANCED STATE. AND WE'RE SCHEDULED TO HAVE THESE ANTIBODIES PRODUCED AND THE PROCEDURE VETTED IN APRIL 2013.

CHAIRMAN THOMAS: THANK YOU. I'M SORRY. THANK YOU VERY MUCH, DOCTOR. THANK YOU FOR -- I KNOW IT'S RUSHING, BUT WE'RE TRYING TO KEEP EVERYBODY TO EQUAL TIME HERE. SO DR. WEISSMAN.

DR. WEISSMAN: SO I'M IRV WEISSMAN FROM STANFORD UNIVERSITY. IN 1988 WE ISOLATED THE MOUSE BLOOD-FORMING STEM CELL, '92 THE HUMAN BLOOD-FORMING STEM CELL AT A COMPANY CALLED SYSTEMIX. SYSTEMIX IS OUT OF BUSINESS. I'VE NEGOTIATED BACK THE

ANTIBODIES. I HAVE NO STOCK IN THE COMPANY FROM WHICH I NEGOTIATED BACK THE ANTIBODY. STANFORD UNIVERSITY AND STANFORD HOSPITAL HAVE THE RIGHT TO THE ANTIBODIES. THEY HAVE THE HYBRIDOMAS THAT MAKE THE ANTIBODIES IN QUESTION WHICH SORT THE STEM CELLS. THEY WERE KEPT UNDER MASTER CELL BANK CONDITIONS, AND THEY ARE BEING PUT INTO A MASTER CELL BANK.

AS HEAD OF THE LUDWIG CENTER AT STANFORD, WE HAVE FUNDED THAT ALREADY. THAT WILL NOT BE PART OF THE APPLICATION.

SO ANTIBODIES SUFFICIENT FOR ALL THE PRECLINICAL TESTING AND MOVING UP TO AND THROUGH THE CLINICAL TRIAL WILL BE AVAILABLE FROM THIS MASTER CELL BANK THAT IS BEING ESTABLISHED.

I WANT TO GIVE YOU A LITTLE BIT BIGGER PICTURE. WHEN WE ISOLATED STEM CELLS BACK AT SYSTEMIX, THEY WERE ONE IN 20,000 CELLS IN THE BLOOD-FORMING ORGAN, WHETHER BONE MARROW OR WHAT'S CALLED MOBILIZED BLOOD. WHEN WE PURIFIED THE STEM CELLS, THERE'S NOTHING BUT STEM CELLS IN THE TUBE. WOMEN WITH METASTATIC BREAST CANCER HAD FOR THE FIRST TIME CANCER-FREE STEM CELLS TO RESCUE THEIR BLOOD-FORMING SYSTEM AFTER MYELOABLATIVE. THAT IS LETHAL CHEMOTHERAPY. FIFTEEN YEARS LATER ONE-THIRD

OF THOSE WOMEN ARE ALIVE. OTHER THERAPIES WITH MOBILIZED PERIPHERAL BLOOD ALONE OR ANY OTHER THERAPY IS NO BETTER THAN 7 PERCENT. YET THE COMPANY THAT BOUGHT MY COMPANY, SYSTEMIX, SHUT IT DOWN FOR A BUSINESS REASON IN 2000 BEFORE THE CLINICAL TRIALS CAME OUT. THAT'S WHY WE ARE DOING THESE TRIALS AT STANFORD UNIVERSITY, NOT AT A COMPANY.

WE MADE THE ANTIBODY. WE WERE FIRST TO SHOW THAT AN ANTIBODY TO C-KIT DEPLETES STEM CELLS. WE ALWAYS DO MOUSE TO MOUSE FIRST, MOUSE TO HUMANIZED MOUSE SECOND, AND THEN HUMAN TRIAL. WE CURED MOUSE SEVERE COMBINED IMMUNODEFICIENCY WITH T-CELL-FREE AND CANCER-FREE STEM CELLS. IF YOU DON'T PURIFY THE STEM CELLS AWAY, THE T-CELLS THAT ARE PRESENT IN THE BLOOD OR THE BONE MARROW CAUSE A DISEASE THAT'S WORSE THAN THE DISEASE WE'RE GOING TO TREAT. IT'S CALLED GRAFT VERSUS HOST DISEASE. WE'VE PROVEN ABSOLUTELY THAT PURE STEM CELLS NOT ONLY DON'T CAUSE GRAFT VERSUS HOST DISEASE. THEY ENGRAFT FOR LIFE BECAUSE THEY SELF-RENEW. THEY REPLACE A DEFECTIVE GENETIC SYSTEM. THIS TIME SCID, BUT YOU JUST FOLLOW DOWN THE LINE. IT WILL BE SICKLE CELL, BETA THAL, TYPE 1 DIABETES. I'M ALMOST THERE.

SO WE HAVE FOR THE FIRST TIME A CHANCE, FIRST IN MAN, PURE STEM CELLS IN HUMANS. WE HAVE A SIGNED LETTER FROM AMGEN GUARANTEEING NOT ONLY THE WHOLE LOT OF THEIR ANTIBODY PROVEN, BUT THE GENES TO MAKE THE NEXT ANTIBODY. NO INTERFERENCE. SO THE BIG PICTURE IS THIS IS THE PLATFORM FOR STEM CELLS. IF BLOOD-FORMING STEM CELLS PERFORM AS WE EXPECT AND INDUCE TOLERANCE OF ANY OTHER TISSUE, TODAY IT'S A DONOR LIKE ANY OF YOU IN THE ROOM, BUT TOMORROW IT WILL BE EMBRYONIC STEM CELL-DERIVED OR IPS-DERIVED HEMATOPOIETIC STEM CELLS, NEURAL STEM CELLS CO-TRANSPLANTED FOR TOLERANCE. THANK YOU.

CHAIRMAN THOMAS: THANK YOU, DR. WEISSMAN. MR. KLEIN.

MR. KLEIN: THIS IS THE ONLY OTHER DISEASE TEAM GRANT I WILL ADDRESS. VERY SPECIFICALLY, THIS WAS A DISEASE TEAM GRANT THAT I WAS ON THE PEER REVIEW IN THE PLANNING GRANT STAGE. THERE ARE SOME FUNDAMENTAL ISSUES HERE. IS THE INTERNATIONAL COMPANY ON WHICH THE ONE ANTIBODY THAT'S NOT COMING FROM STANFORD, THE TWO FOR SORTING ARE COMING FROM STANFORD, IS THE OTHER ANTIBODY COMING FROM THIS INTERNATIONAL COMPANY A COMMITMENT THAT YOU CAN RELY ON?

THE REVIEWERS SAID THIS WAS A SHOWSTOPPER.

THAT'S THE WORD THEY USED. THEY MADE A DECISION THIS WAS A SHOWSTOPPER BECAUSE THEY DID NOT BELIEVE THE COMPANY BECAUSE THEY THOUGHT THAT THE DOCUMENTATION WAS INADEQUATE. YOU NOW HAVE A LETTER THAT GOES INTO GREAT PROPRIETARY DEPTH ABOUT THE DEPTH OF THIS COMPANY'S COMMITMENTS WRITTEN BY THE HEAD OF DEVELOPMENT AND TRANSLATION INTERNATIONALLY FOR THE COMPANY.

IF WE CANNOT DEPEND ON COMPANY COMMITMENTS OF THIS TYPE, AND YOU WILL REVIEW THE LETTER IN EXECUTIVE SESSION, IF YOU HAVE ONE, I WILL NOT UNDERSTAND HOW WE'LL BE ABLE TO COLLABORATE WITH COMPANIES WITH PROPRIETARY PRODUCTS AND PROCESSES WHERE THEY'RE MAKING COMMITMENTS TO ACADEMIC INSTITUTIONS OF THE HIGHEST STANDARD. I BELIEVE THIS COMPANY IS GOING TO PERFORM. I WAS ON AN HOUR CALL TO CONFIRM WITH EIGHT MEMBERS OF THAT COMPANY THEIR LEVEL OF COMMITMENT, AND I AM COMPLETELY CONVINCED BY THAT POINT.

THE REVIEW IS COMPLETELY FACTUALLY WRONG ON THIS ISSUE ABOUT THE OTHER TWO ANTIBODIES FOR SORTING THIS. DR. WEISSMAN HAS JUST SAID THEY HAVE NOT ONLY BEEN DEVELOPED, THEY HAVE BEEN USED IN CLINICAL TRIALS. THERE'S DATA ON THEM. AND THEY ARE, IN FACT, BEING THAWED UNDER FDA DIRECTION TO

REUSE IN THIS TRIAL.

SO I BELIEVE THERE'S A MAJOR FACTUAL DIFFERENCE. REMEMBER WITH KAREN ABOODY THERE WAS A MAJOR FACTUAL ERROR THAT WAS PIVOTAL IN ELEVATING THAT, AND WE FOUND TREMENDOUS PERFORMANCE ON THAT GRANT BY KAREN ABOODY OF CITY OF HOPE.

SO YOU HAVE A DECISION TO MAKE. AS A RISK ISSUE, DO WE BELIEVE THIS COMPANY?

FINALLY, THIS IS BROADER THAN SCID. DONALD KOHN HAS WRITTEN A LETTER THAT'S IN THE PUBLIC DOMAIN THAT I SUGGEST YOU READ. IT MAKES IT VERY CLEAR THAT OPENING THE NICHE FOR REPOPULATING THE IMMUNE SYSTEM WITHOUT CHEMOTHERAPY AND RADIATION IS A KEY CONTRIBUTION TO EVERY FORM OF GENETICALLY MODIFIED STEM CELLS FOR AN ENTIRE RANGE OF CHILDHOOD DISEASES AND OTHER GENETIC DISEASES IN ADDITION TO THERAPIES LIKE SICKLE CELL OR AIDS.

I SUGGEST THAT THAT PROFOUND CONTRIBUTION THAT CAN BE MADE TO THE FIELD IS A RISK THAT IS WORTH TAKING EARLY ON BECAUSE OF HIS CONTRIBUTION TO SO MANY OTHER AREAS. YOU HAVE 12 OTHER LETTERS FROM NORTH AMERICA'S LEADING PEDIATRIC GENETICISTS THAT FUNDAMENTALLY PROVIDE EXTRAORDINARY SUPPORT FOR THIS POSITION AND THIS APPROACH. THANK YOU.

CHAIRMAN THOMAS: THANK YOU, MR. KLEIN.

MR. REED.

MR. REED: THE REVIEWERS HAVE TOO MUCH ON THEIR PLATE. I'VE SAT IN A COUPLE REVIEW SESSIONS, NOT OF THESE, BUT IN MY ROMAN REED ACT, AND EXHAUSTION IS A SERIOUS PROBLEM. I WONDER IF THIS JUST MAY HAVE HAPPENED HERE BECAUSE THERE SEEM TO BE SOME ERRORS. IS THERE -- ONE OBJECTION WAS IS THERE A GUARANTEED ACCESS TO NEEDED MATERIAL? THE REVIEWER SAID NO. THERE APPEARS TO BE GUARANTEED ACCESS. THE PROCEDURE WAS PROVIDED AS PRIMITIVE OR SOMETHING AND IS ACTUALLY ESTABLISHED AND GOT SOME GREAT PEOPLE THERE. YOU DON'T COME MORE EXPERIENCED THAN IRV WEISSMAN.

THERE WAS SUPPOSED TO BE NO BACKUP PLAN, BUT THERE IS A BACKUP PLAN. IT'S A BOOST INFUSION. THEY SUGGEST THEY MEET WITH THE FDA. THEY HAD DONE SO. I THINK THIS IS AN ERROR. I THINK THAT THIS IS A WORTHWHILE PROJECT, AND I THINK IT DESERVES YOUR SUPPORT. THANK YOU.

CHAIRMAN THOMAS: THANK YOU, MR. REED. ANY FURTHER PUBLIC COMMENT? BECAUSE OF THE PROPRIETARY NATURE OF THE LETTER THAT WE NEED TO DISCUSS AND THE FACT THAT THE POINTS RAISED THEREIN ARE PIVOTAL TO RECONSIDERING THIS APPLICATION, I AM GOING TO PUT THIS OVER INTO OUR CLOSED SESSION

DISCUSSION AS WELL. AND WE'LL TAKE IT UP AT THAT POINT UNLESS THERE ARE ANY OTHER PRELIMINARY COMMENTS ANYBODY WOULD LIKE TO MAKE.

HEARING NONE, MR. ROTH, YOU HAVE A PROPOSAL YOU'D LIKE TO BRING UP?

MR. ROTH: YES. GRANT 5352. AND MY REASON FOR WANTING --

CHAIRMAN THOMAS: WHICH IS THAT, MR. ROTH?

MR. ROTH: 5352 IS THE NEW THERAPEUTIC TO REDUCE CSC FREQUENCY IN BREAST CANCER. SO I'D LIKE JUST TO MAKE A COMMENT HERE. THIS IN THE PRELIMINARY REVIEW OR WHATEVER WE CALL IT, THE CONCEPT PROPOSAL, I THINK, RATED NO. 1. AND IN THE REVIEW ITSELF, I'VE HEARD SEVERAL TIMES TODAY THAT THESE ARE NOT CONNECTED, BUT IN MY MIND THEY SHOULD BE BECAUSE IF A PREPROPOSAL SCORES THAT HIGHLY ON THE MERITS AND THEN RANKS WAY DOWN, SOMETHING DIDN'T QUITE CLICK THERE.

I'M INTERESTED IN -- AT LEAST HEARING FROM THE PUBLIC COMMENT THIS WAS AN EXTRAORDINARY PETITION AS WELL, I BELIEVE. YOU CAN BRIEF US SO WE CAN GET TO THIS.

DR. FEIGAL: SO THIS IS DR. ARI ABO, WHO'S THE SCIENCE OFFICER AT CIRM.

DR. ABO: THIS PROPOSAL IS PROPOSING TO

TARGET CANCER STEM CELLS. IT COMES FROM A COMPANY THAT IS PIONEER IN THIS SPACE, ONCOMED. AND POINTS THAT THEY'RE TAKING, THEY IDENTIFIED A SIGNALING PATHWAY, THE NOTCH SIGNALING PATHWAY, THAT IS IMPLICATED IN BREAST CANCER.

THEY ARE PROPOSING TO CONDUCT IND-ENABLING STUDIES AND FOUR CLINICAL TRIALS. THE TWO FIRST CLINICAL TRIAL PHASE I-A AND PHASE I-B, THEY'RE PROPOSING TO STUDY ALL NEWCOMERS, UNSELECTED SOLID CANCER PATIENTS MOSTLY FOR TOXICOLOGY AND PHARMACOKINETICS AND TO ESTABLISH A BIOMARKER DISCOVERY METHOD THAT IT COULD USE LATER ON THE BREAST CANCER PATIENTS.

THE SECOND TWO CLINICAL TRIALS ARE PHASE II CLINICAL TRIALS. AND THEY'RE TARGETING THE TARGETED DISEASE OF BREAST CANCER WHERE THE FIRST PHASE II CLINICAL TRIALS WERE IN NEOADJUVANT BREAST CANCER, AND THE SECOND PHASE CLINICAL TRIAL IS DESIGNED TO IDENTIFY THE SUBSET OF REFRACTORY BREAST CANCER PATIENTS WITH ACTIVATION OF THE NOTCH SIGNALING PATHWAYS.

SO THIS IS A STELLAR TEAM, THE RIGHT TEAM AND THE RIGHT SPACE AND EXPERTISE. THE MAJOR THREE CONCERNS THAT THE REVIEWERS RAISED ARE ABOUT THE FREQUENCY AND THE PREVALENCE OF THE DISEASE IN

BREAST CANCER AND THE ABILITY TO HAVE A BIOMARKER ASSAY TO SUBSET AND TO IDENTIFY THE PATIENT THAT THEY ARE TARGETING.

SO BRIEFLY I WILL JUST GO THROUGH THESE THREE POINTS. SO REVIEWERS AGREE THAT THE SIGNALING PATHWAY, THE NOTCH SIGNALING PATHWAY, IS IMPORTANT IN CANCER STEM CELLS, BUT THEY FELT THAT THERE WAS LIMITED DATA THAT WAS PROVIDED ON THE ACTIVATION OF THE TARGETING PATHWAY IN BREAST CANCER. THERE ARE SOME DATA IN THE PRELIMINARY PROPOSAL THAT'S SHOWING ONLY ONE CELL LINE OUT OF 20 CANCER STEM CELLS FROM BREAST CANCER PATIENTS THAT HAVE SHOWN TO HAVE ANTICANCER ACTIVITY WITH THE LEAD MONOCLONAL ANTIBODIES. SO THEY WERE CONCERNED ABOUT JUST WHY ONLY ONE CELL LINE FROM THESE PATIENTS.

THE SECOND THING, NO SUFFICIENT DATA TO SUPPORT THE FREQUENCY AND THE PREVALENCE OF THE ACTIVATION OF THE NOTCH PATHWAY IN STEM CELLS IN BREAST CANCER. REVIEWERS WOULD LIKE TO SEE DATA ON A WIDER NUMBER OF PRIMARY BREAST TUMOR ISOLATES.

AND THE LAST POINT THAT THE REVIEWERS WERE CONCERNED IS REVIEWERS WERE QUESTIONING THE FEASIBILITY OF THE NEOADJUVANT REFRACTORY BREAST CANCER PHASE II CLINICAL TRIAL WITHOUT A BIOMARKER ASSAY TO SCREEN AND IDENTIFY A SUBSET OF PATIENTS

WITH ACTIVATION IN THE NOTCH SIGNALING PATHWAY. THANK YOU.

CHAIRMAN THOMAS: COMMENTS FROM MEMBERS OF THE BOARD. LET US HEAR FROM MEMBERS OF THE PUBLIC WHO WISH TO SPEAK ON THIS.

MR. HASTINGS: GOOD AFTERNOON. I'M PAUL HASTINGS. I'M CEO OF ONCOMED PHARMACEUTICALS. WE HAD OUR CO-PI WITH US HERE THIS MORNING, DR. LAURA ESSERMAN, FROM UCSF. SHE LEFT AFTER THREE HOURS. I APOLOGIZE THAT SHE CAN'T BE HERE TO ADDRESS YOU. I'M HOPING THAT MAYBE YOU'LL ALLOW MY COLLEAGUE DR. HOEY TO READ HER STATEMENT TO PROVIDE SOME NEW INFORMATION AND OVERCOME SOME OF THE QUESTIONS THAT WERE RAISED BY THE REVIEWERS.

I'M A FORMER PRESIDENT OF GENZYME THERAPEUTICS. WE DEVELOP DRUGS FOR HUNDREDS OF PATIENTS, THOUSANDS OF PATIENTS PER DISEASE ENTITY. SO A DISEASE LIKE TRIPLE NEGATIVE NOTCH OVEREXPRESSING, CHEMO RESISTANT BREAST CANCER, WHICH HAS AN INCIDENCE OF PROBABLY ABOUT 2500 NEW PATIENTS DIAGNOSED PER YEAR IN THE U.S. AND THE SAME IN EUROPE, IS ONE THAT WARRANTS ATTENTION. IT IS NOT A SMALL MARKET. IT IS NOT A SMALL PATIENT POPULATION, AND IT IS AN EXTREMELY HIGH UNMET MEDICAL NEED. AND OUR CO-INVESTIGATOR, DR. LAURA ESSERMAN, HAS A

CLINICAL TRIAL NETWORK IN PLACE CALLED I-SPY WHERE THESE PATIENTS ARE COMING THROUGH EVERY SINGLE DAY IN HUNDREDS OF CENTERS THAT SHE COLLABORATES WITH.

LET ME ALSO ADDRESS ONE RECENT DEVELOPMENT IN OUR ANTICANCER STEM CELL COLLABORATION WITH GLAXOSMITHKLINE. IN OUR DISCUSSIONS WITH CIRM STAFF, IT WAS BROUGHT UP OVER AND OVER AGAIN THAT ONE OF THE CONCERNS WAS THAT BECAUSE THIS NOTCH 1 ANTIBODY IS THE FIFTH ANTIBODY THAT THIS SMALL START-UP COMPANY HAS PUT INTO THE CLINIC, THAT IT MUST BE A LOWER PRIORITY THAN THE OTHER ANTIBODIES IN OUR PIPELINE.

IND'S ARE THE LIFEBLOOD OF SMALL BIOTECHNOLOGY COMPANIES. WE HAVE FILED FOUR. EACH ONE HAS BEEN APPROVED WITHIN 30 DAYS. EACH ONE HAS ENROLLED PATIENTS 30 DAYS AFTER THAT. ALL OF THEM ARE ANTICANCER STEM CELL MONOCLONAL ANTIBODIES. THE NOTCH 1 ANTIBODY IS NO EXCEPTION. IT IS ACTUALLY THE SUBJECT OF A RENEGOTIATION OF OUR AGREEMENT WITH GSK WHERE THEY ACTUALLY MOVED UP MILESTONE PAYMENTS IN ORDER TO MOVE THIS DRUG INTO THE CLINIC RAPIDLY AND TO PAY FOR THE CO-FUNDING OF THIS DEVELOPMENT, NOT ONLY WITH HEMATOLOGIC MALIGNANCIES, BUT ALSO WITH THIS INDICATION, TRIPLE NEGATIVE CHEMO RESISTANT NOTCH 1 OVEREXPRESSING PATIENTS WITH

BREAST CANCER.

SO I THINK OUR TRACK RECORD IS PRETTY GOOD. I ALSO HAVE TO SAY THAT WE'RE GOING TO KEEP COMING BACK. WE FILED -- WE HAVE APPLIED FOR NINE GRANTS FROM CIRM, BUT WE RECEIVED ZERO. AND WE'RE JUST GOING TO KEEP COMING BACK TILL WE GET ONE, AND WE HAVE ANOTHER COMING SOON.

SO I DO WANT YOU TO KNOW THAT THIS IS A HIGH PRIORITY, NOT ONLY WITH US, BUT WITH GSK. THERE WAS A LETTER FROM GSK THAT APPARENTLY CAUSED SOME CONFUSION ABOUT WHETHER OR NOT THIS WAS AN APPROVED INDICATION IN OUR ALLIANCE. I'M HERE TO INFORM YOU THAT IT ABSOLUTELY IS. THE WAY THAT OUR ALLIANCE WORKS IS THAT WE DEVELOP THESE DRUGS THROUGH PHASE II AND GSK THEN OPTIONS THEM IN. THEIR LETTER CLEARLY STATED THAT IF WE SHOULD FIND PROOF OF CONCEPT IN OUR PHASE I AND PHASE II CLINICAL TRIALS, THAT THEY WOULD FUND THE PHASE III DEVELOPMENT.

THE OTHER THING I WANTED TO MENTION WAS WE COULD START ENROLLING PATIENTS IN THIS TRIAL THIS SUMMER. IN ORDER TO FULFILL OUR JOINT MISSION WITH CIRM, RAPID CLINICAL PROOF OF CONCEPT WITH AN ANTICANCER STEM CELL NOVEL TARGETED AGENT USING EASILY DEVELOPED BIOMARKER AS EARLY AS IN THE

EXPANSION COHORT OF OUR FIRST PHASE I CLINICAL TRIAL. THANK YOU VERY MUCH.

CHAIRMAN THOMAS: THANK YOU. NEXT SPEAKER, PLEASE.

DR. HOEY: I'M TIM HOEY. I'M THE PI FOR THIS APPLICATION. SO I'D LIKE TO BRING TO YOUR ATTENTION NEW INFORMATION FROM DATA GENERATED IN OUR LABS OVER THE PAST SIX MONTHS THAT ADDRESS EACH OF THE POINTS RAISED BY THE REVIEWERS AND SPECIFICALLY THE POINTS RAISED BY DR. ABO.

SO WE'VE MADE SIGNIFICANT PROGRESS IN DEVELOPING A BIOMARKER TEST THAT WE CAN USE TO IDENTIFY PATIENTS WHO WOULD SPECIFICALLY BENEFIT FROM THIS THERAPY. SO THAT WAS ONE OF THE POINTS RAISED. THE FEASIBILITY OF DEVELOPING SUCH A TEST WAS RAISED BY THE REVIEWERS, AND I'M HERE TO TELL YOU THAT WE'VE DONE IT. IT USES A STRAIGHTFORWARD FORMAT THAT'S STANDARD FOR DIAGNOSTICS, WHICH IS AN IMMUNOHISTO CHEMISTRY TEST USING TUMOR BIOPSIES WHICH ARE READILY AVAILABLE IN BREAST CANCER.

AND OUR PLAN IS TO USE THIS TEST EARLY IN CLINICAL DEVELOPMENT TO SELECT PATIENTS IN THE EXPANSION PHASE OF THE PHASE I-A. AND WE BELIEVE THAT WE CAN SHOW CLINICAL BENEFIT IN THIS PHASE I-A SETTING AND OBTAIN PROOF OF CONCEPT EARLY WITH A

STEM CELL-DIRECTED AGENT WHICH WOULD FULFILL CIRM'S MISSION AND ALSO WOULD BE VERY EXCITING FOR US OBVIOUSLY.

USING THIS TEST, WE'VE ALREADY SCREENED THOUSANDS OF SAMPLES, PRIMARY HUMAN TUMOR SAMPLES, AND SHOWN A SIGNIFICANT NUMBER HAVE ACTIVATION IN THE NOTCH PATHWAY, PARTICULARLY IN CHEMOREFRACTORY BREAST CANCER PATIENTS. AND THIS SPEAKS TO ANOTHER CRITICISM RAISED BY THE REVIEWERS ABOUT THE FEASIBILITY OF CONDUCTING A CLINICAL TRIAL. SO WE KNOW WE CAN FIND THESE PATIENTS THROUGH THE I-SPY NETWORK HEADED BY DR. ESSERMAN, WHICH ALSO PROVIDES ADDITIONAL RATIONALE FOR THIS PROGRAM IN BREAST CANCER.

SO WE FEEL LIKE WE'VE REALLY ADDRESSED EACH OF THE CRITICISMS RAISED BY THE REVIEW COMMITTEE. AND TO REITERATE WHAT PAUL JUST SAID, THIS COMPOUND IS GOING INTO THE CLINIC. WE'RE GOING TO FILE AN IND NEXT MONTH. WE HAVE A PLAN TO SELECT PATIENTS EARLY IN CLINICAL TRIALS. THROUGH OUR LONG-STANDING COLLABORATION WITH DR. ESSERMAN, WE'VE ASSEMBLED AN IDEAL TEAM TO BRING THIS AGENT FORWARD THROUGH CLINICAL TESTING AND TO PROOF OF CONCEPT. AND THE I-SPY CLINICAL TRIAL NETWORK HAS OVER 20 SITES WITH HUNDREDS OF PATIENTS PER YEAR THAT WOULD

BENEFIT FROM THIS THERAPY THAT ARE IN THIS I-SPY CLINICAL TRIAL NETWORK.

DR. ESSERMAN TOGETHER WITH DR. WOODFOLK AT THE FDA HAS ESTABLISHED A PATH FORWARD WHERE THE NEOADJUVANT SETTING CAN BE USED AS A PATH TO ACCELERATED REGULATORY APPROVAL. WE HAVE PARTNERSHIP WITH A LARGE PHARMACEUTICAL COMPANY. AND SO THIS CANCER STEM CELL-DIRECTED ANTIBODY IS READY FOR THE CLINIC AND IDEALLY POSITIONED TO OBTAIN CLINICAL PROOF OF CONCEPT EARLY AND REGULATORY APPROVAL. THANK YOU.

CHAIRMAN THOMAS: THANK YOU. ADDITIONAL COMMENTS FROM THE PUBLIC? HEARING NONE, COMMENTS FROM THE BOARD.

DR. JUELSGAARD: SO THIS IS A QUESTION, I GUESS, FOR STAFF RIGHT NOW, ALTHOUGH PERHAPS FOR THE COMPANY. SO IN READING THE APPEAL, IT SAYS THIS IS A HIGH PRIORITY PROGRAM AT ONCOMED SUPPORTED BY OUR COLLABORATION WITH GSK, AND WE ARE FILING AN IND FOR OMP52M51 NEXT MONTH. IS THE STUDY THAT'S GOING TO BE CONDUCTED ASSUMING THAT THE IND GOES FORWARD? IS THAT IN TRIPLE NEGATIVE BREAST CANCER, OR IS THAT IN SOME OTHER INDICATION?

DR. ABO: THE FIRST INDICATION IS ALL COMERS SOLID CANCER. IT'S NOT A BREAST CANCER.

DR. JUELSGAARD: SO THE ANTIBODY IS TO BE DEVELOPED MORE WIDELY FOR OTHER CANCERS, BUT THE ASK HERE FROM ONCOMED IS FOR FUNDING FOR TRIPLE NEGATIVE BREAST CANCER; IS THAT RIGHT?

DR. FEIGAL: LET ME JUST ANSWER THE QUESTION. THERE ARE FOUR CLINICAL TRIALS THAT ARE PART OF THE PROPOSAL. THE FIRST TWO ARE IN UNSELECTED SOLID CANCER PATIENTS. AND THEN THE NEXT TWO ARE IN BREAST CANCER PATIENTS. AND ONE IS THE NEOADJUVANT SETTING AND ONE ARE THOSE PATIENTS WHO HAVE RESIDUAL TUMOR AFTER NEOADJUVANT THERAPIES. SO THERE ARE FOUR.

DR. JUELSGAARD: SO OUR FUNDING WOULD GO TO ALL OF THOSE PROGRAMS; IS THAT RIGHT? AND IF ANY ONE OF THEM WERE SUCCESSFUL, THEY WOULD BE PART OF WHAT WE MIGHT EXPECT A FINANCIAL RETURN ON?

DR. HOEY: TO BE CLEAR, WE ASKED FOR FUNDING FOR PART OF THE PHASE I CLINICAL DEVELOPMENT, SPECIFICALLY FOR DEVELOPMENT IN BREAST CANCER. WE FEEL THIS IS A HIGH PRIORITY INDICATION THAT HAS ABILITY TO GENERATE EARLY PROOF OF CONCEPT. AND WE PLAN SELECT PATIENTS EARLY IN CLINICAL DEVELOPMENT IN PHASE I-A, AND THE PHASE I-B WOULD ALSO BE IN BREAST CANCER PATIENTS IN COMBINATION WITH CHEMOTHERAPY. SO THIS IS A STANDARD WAY THAT

ONE DEVELOPS ONCOLOGY DRUGS AND BASICALLY A WAY TO GET TO AN EFFICACIOUS DOSE AS QUICKLY AS POSSIBLE AND THEN EXPAND IN THE INTENDED TO TREAT POPULATION. SO WE FEEL LIKE WE CAN DELIVER QUICK PROOF OF CONCEPT.

DR. JUELSGAARD: JUST SO I'M CLEAR, SO THE FUNDING THAT YOU'RE ASKING FOR IS IN BREAST CANCER?

DR. HOEY: CORRECT.

DR. JUELSGAARD: BUT CONCURRENTLY WITH THAT, YOU'RE ALSO GOING TO BE STUDYING OTHER CANCERS, OTHER SOLID TUMOR CANCERS; IS THAT RIGHT?

DR. HOEY: CORRECT. AND ALSO HEMATOLOGICAL CANCERS.

MR. JUELSGAARD: RIGHT. BUT THE ONLY FOCUS HERE IS ON BREAST CANCER. SO THOSE OTHER CANCERS ARE SORT OF OUTSIDE THE PURVIEW OF THIS REQUEST.

DR. HOEY: CORRECT.

DR. STEWARD: I'D LIKE TO UNDERSTAND EXACTLY WHAT'S IN THE PROPOSAL BECAUSE THAT'S WHAT WE HAVE TO REVIEW. COULD YOU CLARIFY THAT, DR. FEIGAL?

DR. FEIGAL: WELL, WHAT'S IN THE PROPOSAL ARE TWO PHASE I CLINICAL TRIALS, A PHASE I-A AND PHASE I-B. THE PHASE I -- WHAT HE'S SAYING IS

ABSOLUTELY CORRECT. ONCOLOGY DEVELOPMENT, TYPICALLY YOU WILL START WITH AN UNSELECTED PATIENT POPULATION TO GET SAFETY INFORMATION. AND THEN AFTER THE SAFETY IS ESTABLISHED, YOU CAN GO INTO THE THERAPEUTIC AREA WHERE YOU THINK YOU MIGHT HAVE THE BEST BETS.

THE FIRST TWO TRIALS, AT LEAST WHAT I'VE SEEN IN THE PROPOSAL, ARE UNSELECTED SOLID CANCER PATIENTS. THE I-A IS MONOTHERAPY. THE I-B IS A COMBINED THERAPY WITH WEEKLY PACLITAXEL. THE THIRD AND FOURTH TRIALS ARE PHASE II TRIALS IN BREAST CANCER.

DR. HASTINGS: MAY WE RESPOND TO THAT BECAUSE IT DOESN'T LINE UP. FIRST OF ALL, WE'RE ASKING FOR ONE-THIRD OF THE FUNDING OF THE PHASE I-A TRIAL. WE EXPECT THAT ONE-THIRD OF THE PATIENTS IN THAT TRIAL WILL PROBABLY BE PATIENTS WITH THIS INDICATION. IF WE WANT TO DISCUSS OTHER WAYS OF FINANCING, I'M HAPPY TO DO THAT. WE DIDN'T GO INTO THIS THING THINKING THAT WE'RE GOING TO GET CAUGHT UP ON A FINANCING QUESTION. SO ONE-THIRD OF THE PATIENTS WOULD BE THIS POPULATION. AND IT IS NOT TRUE THAT WE WOULD NOT USE THE PREDICTIVE BIOMARKER IN THE PHASE I-A. ONCE WE DOSE ESCALATE AND WE FIND AN ACCEPTABLE DOSE THAT IS NOT -- THAT'S THERAPEUTIC

AND NOT TOXIC, WE WILL DO PREDICTIVE BIOMARKER SELECTION USING LAURA ESSERMAN'S SITE TO ENROLL BREAST CANCER PATIENTS IN THE EXPANSION COHORT. I BELIEVE THAT'S IN THE PROPOSAL. IF IT'S NOT, THEN THAT'S OUR MISTAKE, BUT THAT'S EXACTLY WHAT WE'LL BE DOING.

AND IN PHASE I-B IN COMBINATION WITH TAXOL AS WELL. SO THERE ARE NO TRIALS IN THIS PROPOSAL THAT WILL NOT BE USING THIS VERY SIMPLE TO DEVELOP BIOMARKER FOR NOTCH ICD. WE'RE ASKING FOR A PORTION OF THE TRIAL THAT WOULD BE APPORTIONED TO THAT INDICATION WHEN IT BECOMES COMMERCIALIZED. WHAT WE'VE AGREED TO WITH THE CIRM STAFF IS THAT WE WOULD BE HAPPY TO LOOK AT, IF YOU WANT TO WORK ON THE FUNDING AND WHAT YOU THINK YOU SHOULD FUND VERSUS WHAT WE'VE ASKED FOR, WE'D BE HAPPY TO TALK ABOUT THAT, BUT THIS, WE THINK, IS A VERY FAIR PROPOSAL.

DR. JUELSGAARD: CAN I HAVE ONE FOLLOW-UP QUESTION BEFORE YOU LEAVE? SO AS YOU INDICATED, GSK, GLAXOSMITHKLINE, HAS AN OPTION TO OPT IN ON THESE ANTIBODIES FOR LATE STAGE DEVELOPMENT; IS THAT RIGHT?

DR. HASTINGS: YES.

MR. JUELSGAARD: SO WITH RESPECT TO THIS PARTICULAR ANTIBODY, YOU'VE GOT MORE THAN ONE

INDICATION THAT YOU ARE STARTING DOWN THE ROAD. IF GSK OPTS IN, DO THEY OPT IN FOR THE ANTIBODY FOR ALL INDICATIONS OR ONLY FOR SPECIFIC INDICATIONS?

DR. HASTINGS: SO GSK WILL OPT IN FOR THE ANTIBODY IN THOSE INDICATIONS THAT THEY WILL MOVE INTO PHASE III.

MR. JUELSGAARD: SO IT'S ON AN INDICATION-BY-INDICATION BASIS?

DR. HASTINGS: IT'S ON AN INDICATION BY INDICATION. BY THE WAY, THE MORASS OF GOING THROUGH A LARGE PHARMA COMPANY TO GET THEM TO AGREE FOR US TO PUT A GRANT IN HERE WAS AMAZING, BUT THEY ACTUALLY WROTE A LETTER AND SUPPORTED IT. SO I GIVE THEM A LOT OF CREDIT. THEY ACTUALLY HAVE A STEM CELL UNIT INSIDE GSK. THEY'RE REALLY INTERESTED IN THIS SPACE. FOR THEM TO HAVE CARVED UP OUR AGREEMENT THIS WAY TO ALLOW US TO DO THIS SO THAT WE COULD HAVE ANOTHER SHOT ON GOAL THAT IF THEY COMMERCIALIZE IT, THEY WOULD PAY FOR, WHICH THEY WROTE IN THE LETTER, WAS A PRETTY AMAZING THING. AS YOU KNOW FROM YOUR EXPERIENCE IN THE INDUSTRY, THAT THAT'S HARD TO DO ONCE YOU DO A DEAL SINCE YOU'RE A DEAL MAKER YOURSELF.

DR. ABO: JUST TO CLARIFY THIS POINT ON INDICATIONS, SPECIFICALLY THERE IS A CONFUSION HERE

BECAUSE IN THE APPLICATION IT SAID PHASE I-A SPECIFICALLY TO STUDY THE ENROLLMENT OF 40 ADVANCED SOLID TUMOR PATIENTS. I UNDERSTAND THAT THIS COULD BE MODIFIED AND SOME OF THESE PATIENTS WOULD BE BREAST CANCER, BUT THE PHASE I-A AND PHASE I-B STUDY, THAT'S WHERE THE REVIEWER CONCERN WAS NOT FOCUSED ON BREAST CANCER PATIENTS. SO...

DR. STEWARD: SO, AGAIN, I JUST WANT TO TRY TO CLARIFY EXACTLY WHERE THERE IS A CONVERGENCE HERE. AND AS I HEAR IT, THAT THE PROPOSAL ITSELF DOES NOT COMPLETELY MATCH WHAT IS BEING SAID NOW; IS THAT CORRECT, DR. FEIGAL?

DR. FEIGAL: I'M JUST SAYING THE INFORMATION IN THE PROPOSAL, AT LEAST TO THE REVIEWERS WHO REVIEWED IT, IT APPEARED TO BE THE FIRST TWO PHASE I CLINICAL TRIALS WERE IN AN UNSELECTED SOLID CANCER POPULATION. AND THAT WHAT THE REVIEWERS, AT LEAST, THOUGHT WAS THAT IT WAS AN EXPLORATORY EVALUATION OF A BIOMARKER, THAT THEY DID NOT HAVE A BIOMARKER. SO I THINK IF THERE IS DIFFERENT DATA OR A DIFFERENT INTERPRETATION, THAT IS WHAT THE REVIEWERS THOUGHT.

DR. STEWARD: I JUST WANT TO MAKE SURE THAT WE ARE ALL TALKING ABOUT REVIEWING A PROPOSAL HERE. THAT IS REALLY WHAT WE NEED TO DO AND WE

CAN'T REWRITE THE PROPOSAL IN AN AD HOC WAY. THAT WOULD BE, I THINK, A DISADVANTAGE TO EVERYONE ELSE WHO ISN'T HERE TO REWRITE PROPOSALS.

DR. HASTINGS: ONE POINT OF CLARIFICATION. DR. ESSERMAN'S SITE IS IN THE PHASE I-A CLINICAL TRIAL. SO IT WOULD BE IMPOSSIBLE NOT TO ENROLL BREAST CANCER PATIENTS.

DR. FEIGAL: I DON'T THINK ANYBODY IS SAYING THAT BREAST CANCER PATIENTS MIGHT BE A SIGNIFICANT PORTION OF THE PHASE I CLINICAL TRIAL. SO I COMPLETELY UNDERSTAND. I TOO AM AN ONCOLOGIST, SO I COMPLETELY UNDERSTAND THAT.

PERHAPS IT MIGHT BE HELPFUL IF YOU GO INTO CONFIDENTIAL SESSION. IT WOULD BE SOMETHING WE COULD SHOW YOU AS PART OF THE PROPOSAL.

CHAIRMAN THOMAS: FAIR ENOUGH. THAT SOUNDS LIKE THE ORDER OF THE DAY. WE ADD THIS TO THE CLOSED SESSION LIST. THANK YOU, DR. ABO.

ARE THERE ANY OTHER PROPOSALS THAT MEMBERS OF THE BOARD WOULD LIKE TO ASK QUESTIONS ABOUT? YES, THERE ARE. HEARING NONE, MR. HARRISON, I BELIEVE THE NEXT ORDER WOULD BE TO HAVE PUBLIC COMMENT ON ANY OF THOSE EXTRAORDINARY PETITIONS THAT WE HAVE NOT DISCUSSED.

MR. HARRISON: PUBLIC COMMENT ON ANY OF

THE APPLICATIONS THAT WE HAVEN'T DISCUSSED, WHETHER THEY ARE ACCOMPANIED BY AN EXTRAORDINARY PETITION OR NOT.

CHAIRMAN THOMAS: DO WE HAVE PUBLIC COMMENT ON ANY OF THE OTHER APPLICATIONS? AGAIN, I'D LIKE TO ASK THAT YOU KEEP ANY COMMENTS TO THREE MINUTES PER PERSON.

DR. GAZIT: GOOD EVENING. MY NAME IS DON GAZIT. I'M THE PI OF THE PROPOSAL DR2A-05288. IT'S TREATMENT OF VERTEBRAL COMPRESSION FRACTURES WITH GENETICALLY MODIFIED MESENCHYMAL STEM CELLS.

CHAIRMAN THOMAS: PLEASE PROCEED.

DR. GAZIT: SO I'M THE SCIENTIST DIRECTING THIS PROGRAM AT CEDARS-SINAI AND THE PI ON THIS GRANT. SO JUST AS A BRIEF INTRODUCTION, OVER THE 20 YEARS MY GROUP HAS SHOWN IN ABOUT 16 PUBLICATIONS THAT MESENCHYMAL STEM CELLS GENETICALLY ENGINEERED TO OVEREXPRESS BMP GENE ARE EXTREMELY EFFICIENT IN BONE REGENERATION AND FRACTURE REPAIR. SPECIFICALLY RELATED TO THIS PROPOSAL, TREATING THE VERTEBRAL COMPRESSION FACTORS, WE HAVE SHOWN THAT BMP6 ENGINEERED MESENCHYMAL STEM CELL ACCELERATED BONE REGENERATION AND INDUCED COMPLETE BONE DEFECT REPAIR IN RAT AND PIG MODELS.

OUR RAT STUDY WAS PUBLISHED IN THE JOURNAL

OF *MOLECULAR PHARMACEUTICS*, AND THE RESULT OF THE PIG STUDY WERE INCLUDED IN A GRANT PROPOSAL. FROM FIGURE 1, THIS IS QUITE CLEAR THAT RESTORATION OF THE NORMAL VERTEBRAL ARCHITECTURE WAS INDEED ACHIEVED BY THE IMPLANTATION OF BMP6-MSC IN THE FRACTURE SITE.

THE REVIEWERS ACKNOWLEDGED THAT THE RATIONALE THAT MSC MODIFIED TO OVEREXPRESS BMP6 WILL INDUCE BONE FORMATION IS VALID, AND THAT UTILIZING MSC'S TO PRODUCE BMP6 IS A GOOD APPROACH AND OVERCOME THE MANUFACTURING CHALLENGES PRODUCING RECOMBINANT PROTEIN.

BMP AS A THERAPEUTIC, THE REVIEWERS INDICATED THE THERAPEUTIC CANDIDATE WOULD BETTER ADDRESS THE HEALING OF NON-UNION FRACTURES. WE WOULD LIKE TO KNOW THAT, IF SUCCESSFUL, IN THE TREATMENT OF VCF, THE USE OF BMP6 AND MSC'S COULD BE FURTHER DEVELOPED FOR USE OF OTHER BONE LOSS CONDITIONS AS PROPOSED BY THE REVIEWERS. WE BELIEVE THAT THE UNMET MEDICAL NEED IS GREATEST FOR PATIENTS WITH SYMPTOMATIC OSTEOPOROTIC COMPRESSION FRACTURES.

FURTHERMORE, THE REVIEW STATED THAT VERY LIMITED DATA IN APPLICATION SUPPORT THE BMP6 IS SUPERIOR TO BMP2; HOWEVER, WE PROVIDED SUBSTANTIAL EXPERIMENTAL DATA SHOWING THAT THE OVEREXPRESSION OF

BMP6 IN MSC'S YIELDED SIGNIFICANTLY MORE BONE FORMATION IN A SHORTER TIME FRAME, AND THE NEW DATA IS THAT IT WAS PUBLISHED RECENTLY IN THE *JOURNAL OF GENE THERAPY*.

OUR GRANT TARGETS THE USE OF GENETICALLY MODIFIED STEM CELLS WITH A GROWTH FACTOR TO STIMULATE HEALING OF VERTEBRAL COMPRESSION FRACTURE. WE HAVE NOW DEMONSTRATED OUR ABILITY SUCCESSFULLY IN TWO ANIMAL MODELS. WE HAVE A CIRM EARLY TRANSLATIONAL GRANT WHICH AIDED TO DEVELOP THIS SYSTEM. WE WERE TOLD THAT --

MR. HARRISON: EXCUSE ME. THAT'S THREE MINUTES, SO IF YOU COULD WRAP UP YOUR COMMENTS, WE'D APPRECIATE IT.

DR. GAZIT: SO IN ORDER TO ADDRESS THE ISSUE OF THE VCF AND THE IMPORTANCE OF DEVELOPING STEM CELL THERAPY, I WOULD LIKE TO INVITE MY CO-PI DR. HYUN BAE, WHO IS A SPINE SURGEON, TO CONTINUE TO ADDRESS THIS ISSUE. THANK YOU.

DR. BAE: SO GOOD MORNING. MY NAME IS HYUN BAE. I'M A SPINAL SURGEON, ORTHOPEDIC SPINAL SURGEON AT CEDARS-SINAI. I'VE BEEN PRACTICING FOR 14 YEARS AND REALLY INVOLVED IN BASIC SCIENCE AND TRANSLATIONAL RESEARCH FOR MOST OF THOSE YEARS.

I'M TALKING TO YOU ABOUT THIS PROPOSAL

ABOUT VERTEBRAL COMPRESSION FACTORS. I THINK ONE OF THE REVIEWERS FELT THAT THIS WAS POSSIBLY NOT AN UNMET NEED. I WANT TO TELL YOU THAT IT'S AN ABSOLUTE MISCONCEPTION THAT ALL SPINAL COMPRESSION FRACTURES HEAL. IT'S A VERY DISABLING DISEASE. WE'RE TALKING ABOUT THE SKELETAL SPINE, WHAT MAKES US UPRIGHT, WHAT MAKES US HUMAN. AND HAVING A FRACTURE IN THE BACKBONE DOES HURT INCREDIBLY.

I SENT YOU A LETTER FROM BETTY MARRIOTT, ONE OF MY PATIENTS. SHE ACTUALLY WAS A TEACHER. SHE ENDURED TWO CANCERS, ENDURED CHEMOTHERAPY FOR SEVEN MONTHS, HAD A LUNG RESECTION, AND AFTERWARDS WAS STILL ABLE TO TEACH UNTIL ABOUT THREE YEARS LATER WHERE SHE FELL, SUFFERED TWO COMPRESSION FRACTURES, AND REALLY THAT CHANGED HER LIFE. STORIES LIKE THAT ARE NOT UNCOMMON. SHE'S NOW IN A WHEELCHAIR, BENT OVER, AND REALLY UNABLE TO FUNCTION.

VCF'S OCCUR AT A RATE OF 750,000 PER YEAR, AND APPROXIMATELY 150,000 OF THESE DO NOT HEAL. THEY REQUIRE HOSPITALIZATION AND THEN LONG-TERM NURSING CARE. WHAT'S MOST NOTABLE IS IS THAT THE PROBLEM IS THAT THESE PATIENTS ARE ELDERLY, THEY'RE OSTEOPOROTIC, AND THEY'RE NOT THEIR BEST PATIENT ADVOCATE. THEY GET NEGLECTED. THEY GET NEGLECTED

FOR TWO REASONS. THEY CHERISH THEIR INDEPENDENCE, AND THEY DON'T WANT TO ASK FOR HELP. NO. 2, PHYSICIANS NEGLECT THEM BECAUSE WE HAVE NO GOOD, EFFECTIVE TREATMENT FOR THEM.

THE AMERICAN ACADEMY OF ORTHOPEDIC SURGERY PUT OUT A GUIDELINE OF HOW TO TREAT SYMPTOMATIC COMPRESSION FRACTURES, AND THEY COULD NOT RECOMMEND ONE SINGLE THERAPY. SO IT IS AN INCREDIBLE UNMET CLINICAL NEED.

I THINK THAT OUR PROPOSAL WAS VERY WELL WRITTEN. THE REVIEWERS SUGGESTED THAT WE ACTUALLY WERE ABLE TO MEET THE GUIDELINES AND APPROACH CLINICAL IND IN FOUR YEARS. I THINK OUR BIGGEST PROBLEM WAS MAYBE THEY DIDN'T REALLY REALIZE THE UNMET NEED OF VERTEBRAL COMPRESSION FRACTURES. I THINK THAT TREATING SKELETAL FRACTURES IN GENERAL IS SOMETHING THAT WE'LL ALWAYS HAVE. IN TEN YEARS OUR POPULATION OVER 65 WILL DOUBLE, AND WITH THAT THE INSTANCE OF VERTEBRAL COMPRESSION FRACTURES IS EXPECTED TO GO UP 50 PERCENT.

CURRENTLY IN 2005 THE ECONOMIC BURDEN OF TREATING PATIENTS WITH VERTEBRAL COMPRESSION FRACTURES WAS ABOUT $17 BILLION. SO WITH THAT, I ASK YOU TO PLEASE LOOK AT OUR EXTRAORDINARY PETITION AND CONSIDER THAT FOR REVIEW. THANK YOU.

CHAIRMAN THOMAS: MR. HARRISON, SHOULD WE PROCEED TO GET A BRIEF STAFF BRIEFING, OR HOW DO WE GO HERE SINCE THIS IS SOMETHING THAT WAS NOT BROUGHT UP BY THE BOARD?

MR. HARRISON: IF ANY MEMBER OF THE BOARD WOULD LIKE TO HEAR MORE ABOUT THIS APPLICATION, YOU CAN MAKE THAT REQUEST OF STAFF NOW. IF NOT, WE SHOULD MOVE ON TO THE NEXT PUBLIC COMMENT.

CHAIRMAN THOMAS: DEAN PIZZO REQUESTS THAT WE HEAR IT, SO COULD WE HAVE STAFF GIVE A BRIEF PRESENTATION ON THIS APPLICATION?

DR. STEFFEN: VERY BRIEFLY, THIS PROPOSAL IS FOCUSED ON THE PRECLINICAL DEVELOPMENT OF THE ALLOGENEIC MESENCHYMAL STEM CELLS, MSC'S, TO TREAT VERTEBRAL COMPRESSION FRACTURES. YOU CAN READ IN THE SUMMARY THE BACKGROUND ON WHAT'S BEEN GOING ON IN THE FIELD IN THE LAST FEW YEARS.

THE CANDIDATE MSC'S WILL BE GENETICALLY MODIFIED USING A NONVIRAL TECHNIQUE TO OVEREXPRESS A BONE-FORMING GENE, BONE MORPHOGENIC PROTEIN 6, WHICH IS BMP6. AND THE CONCEPT IS BASED ON THE APPLICANT'S PRECLINICAL OBSERVATIONS WHICH HE ARTICULATED THAT MSC'S SECRETE BMP PROTEIN AND PROMOTE BONE FORMATION IN SEVERAL MODELS OF BONE LOSS.

THE KEY STRENGTHS OF THE APPLICATION THAT WERE HIGHLIGHTED BY THE GRANTS WORKING GROUP AT THE REVIEW INCLUDED THE RATIONALE THAT MSC'S THAT PRODUCE BMP6 WILL CAUSE BONE FORMATION IS VALID. THE MSC'S, THE STRATEGY TO USE MSC'S TO PRODUCE THE GROWTH FACTOR OVERCOME SOME TECHNICAL CHALLENGES OF MANUFACTURING AND DELIVERING A RECOMBINANT GROWTH FACTOR. AND THE PI HAS A LONG HISTORY IN THIS AREA AND HAS ASSEMBLED A GOOD TEAM, GOOD COLLABORATORS, AND THERE'S SOME INDUSTRY PARTICIPATION.

THE WEAKNESSES THAT THEY HIGHLIGHTED WERE THAT THEY JUST FELT THE INDICATION OF WORKING NEAR THE SPINE WAS TOO HIGH RISK. THE MAJOR RISK OF THIS THERAPY WOULD BE BONY OVERGROWTH. AND IN THE CLOSE SPACE NEXT TO THE SPINAL CORD, THEY JUDGE THAT THAT COULD BE CATASTROPHIC.

THEY DID SUGGEST THAT IT WOULD BE MORE TOLERABLE IN OTHER INDICATIONS, SUCH AS A FRACTURE NONUNION IN ONE OF THE LONG BONES WHERE THERE WOULDN'T BE NEUROLOGIC INJURY. THE PROJECT WAS JUDGED NOT READY TO BEGIN THE PRECLINICAL DEVELOPMENT. THE DATA WAS NOT PRESENTED TO SHOW RESTORATION OF THE ARCHITECTURE, AND I THINK THERE'S MAYBE A DIFFERENCE OF INTERPRETATION WHAT WAS MEANT BY THE RESTORATION OF THE ARCHITECTURE.

THERE WAS A DISCUSSION BY THE REVIEW GROUP THAT WHAT HAPPENS WHEN THE VERTEBRAES COLLAPSE IS THEY COLLAPSE DOWN INTO A WEDGE SHAPE. AND THE ANIMAL MODELS IN THE APPLICATION WERE USING A DRILL, A HOLE WHERE THEY DRILL A HOLE INTO THE VERTEBRA AND THEN REPAIR THAT. SO THOSE WERE A DISCONNECT BETWEEN THE GRANTS WORKING GROUP AND THE DATA PRESENTED.

THE TARGET PRODUCT PROFILE, NOW, THIS IS A TOOL IN DRUG DEVELOPMENT THAT IS USED TO ARTICULATE WHERE ARE WE GOING WITH THIS PRODUCT, WHAT IS THE GOAL. AND THAT WAS JUDGED TO BE VAGUE ON MANY IMPORTANT DETAILS, SUCH AS THE SPECIFIC CLINICAL INDICATIONS, SYMPTOMATIC OR ASYMPTOMATIC, ACUTE VERSUS CHRONIC, OSTEOPOROTIC VERSUS TRAUMATIC PATIENTS. AND YOU CAN READ THOSE IN THE FIRST SECTION OF THE REVIEW SUMMARY. THERE ARE ABOUT SIX COMMENTS.

THE PLAN, THE PRECLINICAL TOXICITY WITH THE ACTUAL -- PRECLINICAL TOXICITY WOULD HAVE TO BE CONDUCTED WITH THE ACTUAL INTENDED PRODUCT. THE APPLICANT MAKES REFERENCE THAT THEY'RE GOING TO REFERENCE A DRUG MASTER FILE OF THE CELL SOURCE; HOWEVER, THE ACTUAL CLINICAL PRODUCT IS GENE MODIFIED. SO YOU HAVE TO DO CLINICAL TOXICITY WITH

THAT. THAT WAS THOUGHT TO BE A GAP THE PLAN.

THERE WAS PROGRAMMATIC DISCUSSION TO MOVE THIS APPLICATION FROM TIER II TO TIER III. THEY FELT THE COMPLICATED THERAPY WAS NOT STRONG COMPARED TO PREVENTIVE MEASURES THAT ARE IN DEVELOPMENT OR ON THE MARKET RIGHT NOW. AND THE CHANCE OF A MEANINGFUL CLINICAL BENEFIT WAS LOW, AND THERE WAS NO MODEL ARTICULATED IN THE APPLICATION TO ADDRESS AN OUTCOME THAT WOULD BE SUGGESTIVE OF A CLINICAL BENEFIT.

DR. BAE: CAN I COMMENT ON THAT?

CHAIRMAN THOMAS: BRIEFLY.

DR. BAE: I'M INVOLVED IN FIVE CLINICAL TRIALS CURRENTLY USING BMP OR STEM CELLS FOR DIRECT INJECTION INTO THE SPINAL COLUMN IN PATIENTS FOR CONDITIONS OF DEGENERATIVE DISK DISEASE, WHICH IS JUST LOW BACK PAIN. SO IF THAT'S REALLY WHAT KILLED THIS GRANT, THEN I HAVE TO SAY THAT THAT PROBABLY SHOULD BE REVIEWED AGAIN BECAUSE CURRENTLY THERE ARE FIVE CLINICAL TRIALS INVOLVING EITHER STEM CELLS OR DIRECT BMP INJECTIONS INTO THE SPINAL COLUMN, USE IN THE CERVICAL SPINE AROUND THE SPINAL CORD AS WELL AS THE LUMBAR SPINE. THAT'S NO. 1.

I THINK IF THAT'S THE MAIN CONCERN, I WOULD LIKE TO ADDRESS THAT. I THINK THAT THE

OTHERS, AS FAR AS THE MASTER FILE WITH THE FDA, WE BASICALLY PUT THAT IN THERE BECAUSE WE DO HAVE A GRAY CORPORATE PARTNER WHO HAS A GREAT STEM CELL SOURCE. THEY'RE ALREADY IN CLINICAL TRIALS. THEY DO HAVE A MASTER FILE, AND WE BASICALLY WANTED TO USE THAT DATA KNOWING THAT WE COULD USE THAT DATA AND ALSO PROVIDE OUR OWN TOXICITY SCREEN TO BASICALLY GET INTO IND. I THINK THAT'S ALL. THANK YOU.

CHAIRMAN THOMAS: THANK YOU, DOCTOR. BETTINA OR ALAN OR ELLEN, WERE THERE ANY OTHER ELEMENTS OF THIS EXTRAORDINARY PETITION THAT PRESENTED NEW DATA?

DR. TROUNSON: NO, CHAIR. IN MY MIND, NO SIGNIFICANT MATTER OF SIGNIFICANCE. NO NEW MATTER OF SIGNIFICANCE.

DR. STEFFEN: I CONCUR. THERE WERE NO NEW DATA, AND THERE WERE SOME DIFFERENCES IN SCIENTIFIC OPINION.

CHAIRMAN THOMAS: OKAY. IS THERE ANY COMMENT BY MEMBERS OF THE BOARD? ANYBODY HAVE ANY MOTION TO PRESENT? HEARING NONE, THEN I BELIEVE THAT THIS EXTRAORDINARY PETITION IS DENIED, CORRECT, MR. HARRISON?

MR. HARRISON: NO. WE'LL JUST TAKE UP

THIS APPLICATION ALONG WITH ALL THE OTHER APPLICATIONS WHEN WE COMPLETE.

CHAIRMAN THOMAS: WE VOTE. OKAY. ALL RIGHT. THANK YOU.

IS THERE ANY PUBLIC COMMENT ON ANY OF THE OTHER APPLICATIONS? THREE MINUTES OR LESS, PLEASE.

MR. BRESGI: I AM HERE TO TALK ABOUT DR. KLASSEN'S PETITION REGARDING RETINITIS PIGMENTOSA. MY NAME IS PAUL BRESGI (PHONETIC), AND I'M HERE FOR MY DAUGHTER. HER NAME IS TAMAR.

TAMAR IS 17 YEARS OLD AND I'M VERY FRIGHTENED FOR HER FUTURE. TWO YEARS AGO TO THIS DAY, TODAY, A PEDIATRIC OPHTHALMOLOGIST TOLD TAMAR THAT SHE'S GOING BLIND. SHE HAS HUGE BLIND SPOTS ABOVE AND BELOW HER CENTRAL VISION, AND HER DARKNESS IS GROWING RAPIDLY. THE DOCTOR OFFERED NO OPTIMISM AND NO POTENTIAL CURE. YOU CAN IMAGINE OUR DEVASTATION. WE HAD NEVER HEARD OF RETINITIS PIGMENTOSA, AND SUDDENLY IT CONSUMED OUR LIVES.

I PROMISED TAMAR THAT DAY THAT I WOULD DEDICATE MY LIFE TO FINDING HER A CURE, AND I'VE KEPT MY PROMISE. I SPENT MY FIRST YEAR LEARNING EVERYTHING THERE WAS TO KNOW ABOUT RP. I VISITED AND HELD CONVERSATIONS WITH EXPERTS IN NORTH AMERICA AND EUROPE AND AUSTRALIA. BUT I REALIZED VERY EARLY

ON THAT OUR ONLY HOPE IS WITH DR. KLASSEN WITH STEM CELLS.

I WAS VERY FORTUNATE TO GET TO KNOW DR. KLASSEN. WE PUT TOGETHER A STRONG TEAM OF HIGHLY RECOGNIZED SCIENTISTS, DOCTORS, AND BUSINESS ADVISORS TO TAKE HIS WORK OUT OF THE LAB. IT GIVES HOPE FOR TAMAR AND FOR PEOPLE LIKE ROSIE WHO YOU WILL HEAR RIGHT AFTER ME.

WE'RE VERY THANKFUL FOR THE GREAT SUPPORT THAT CIRM HAS GIVEN OUR PROJECT TO DATE. IN LATE 2010 DR. KLASSEN WAS AWARDED WITH AN ET II GRANT, AND THAT FUNDING PROPELLED US VERY FAR AHEAD, BUT WE WERE VERY DISAPPOINTED TO LEARN THAT WE WERE NOT RECOMMENDED FOR THIS GRANT. WHEN WE READ THE REVIEWER'S REPORT, WE WERE PLEASED AS WE ARE ABLE TO SATISFY ALL OF THE CONCERNS AS YOU'VE SEEN IN DR. KLASSEN'S PETITION AND AS YOU WILL HEAR FROM DR. KLASSEN AS WELL.

I'D LIKE TO EMPHASIZE THAT WE HAVE NEW INFORMATION. MUCH HAS CHANGED SINCE OUR APPLICATION IN JANUARY. SINCE THAT TIME, WE HAVE MANUFACTURED GMP CELLS AT UC DAVIS. WE HAVE COMPLETED AND HAVE RESULTS ON AN OFFSHORE TRIAL, THREE PATIENTS, AND WE'VE HAD REMARKABLE SUCCESS. A COUPLE OF DAYS AGO WE GOT NEWS THAT WE HAD BEEN AWARDED WITH ORPHAN

DISEASE STATUS TO FAST-TRACK THE FDA PROCESS. THESE MILESTONES SHOULD PUT US INTO THE CATEGORY OF RECONSIDERATION OR FUNDING.

I TRAVELED 3,000 MILES HERE FOR MY THREE MINUTES. I BELIEVE WE HAVE A SAFE TREATMENT THAT CAN POTENTIALLY SAVE PEOPLE FROM GOING BLIND. WITH GMP PRODUCTS IN HAND AND CLINICAL TRIALS SET TO BEGIN IN 2013, WE NEED ADEQUATE CIRM MONEY URGENTLY TO BRING THIS TO FRUITION.

IN THE LAST TWO YEARS, I'VE SEEN TAMAR'S VISION DECLINE SIGNIFICANTLY. EVERY TIME THAT I SEE HER TRYING TO NAVIGATE HERSELF THROUGH DIM LIGHT OR TRIPPING OVER A TODDLER OR SHOES OR OUR DOG, IT'S LIKE SOMEBODY IS PUTTING A KNIFE THROUGH MY HEART. THEN I REMEMBER THE WORK THAT WE'RE DOING AND I DO HAVE HOPE. THIS PROJECT CAN BE A WIN FOR TAMAR, FOR DR. KLASSEN, FOR CIRM, AND FOR ALL OUR RP AND POTENTIALLY AMD PATIENTS. WITHOUT CIRM FUNDING, MY CHILD WILL GO BLIND. PLEASE RECONSIDER.

MS. BERRERO: HELLO. MY NAME IS ROSALINDA BERRERO, AND I WAS DIAGNOSED WITH RETINITIS PIGMENTOSA 15 YEARS AGO. AT THE TIME I WAS PREGNANT WITH TWINS, AND I WENT FROM THE HIGH OF KNOWING THAT I WAS GOING TO HAVE TWINS TO THE LOW OF FINDING OUT THAT I WOULD SOMEDAY BE BLIND. AND IT'S SO HARD FOR

ME TO SPEAK TO ALL OF YOU AND TELL YOU HOW IMPORTANT IT IS TO SAVE YOUR VISION. AND I TOLD MYSELF I WASN'T GOING TO CRY BECAUSE THERE'S SO MUCH HOPE. WE LIVE IN SUCH EXCITING TIMES.

RETINITIS PIGMENTOSA HAS BEEN AROUND SINCE THE 14TH OR 15TH CENTURY AS TOLD TO ME BY DR. HECKENLIVELY AT UCLA. I HOPE THAT TODAY IS THE DAY THAT YOU WOULD RECONSIDER DR. KLASSEN'S EXTRAORDINARY PETITION, AND I JUST PRAY THAT YOU WOULD JUST REALLY LOOK AT IT METICULOUSLY AS YOU HAVE EVERYTHING ELSE THAT'S HERE. AND I JUST THANK YOU FOR LISTENING.

MR. BERRERO: SHE'S GOING TO MAKE ME CRY. I'M ROSIE'S HUSBAND, HERMAN BERRERO. AND 18 YEARS AGO, RIGHT ABOUT WHEN YOU WERE TERMING OUT, MR. TORRES, FROM THE SENATE, I MET ROSIE JUST BY COINCIDENCE. IT WAS BECAUSE OF HER LACK OF VISION, NOT BEING ABLE TO SEE, THAT SHE TRIED TO GET INTO MY CAR. AND I WAS PARKING MY CAR IN OLD TOWN PASADENA, AND THIS BEAUTIFUL GIRL WAS TRYING TO GET INTO MY CAR AND CHANGED MY LIFE. I DON'T KNOW IF I WANT HER TO SEE. I'M TEASING. I'M TEASING. NO. REALLY IT'S BEEN AN INCREDIBLE JOURNEY.

IT'S FUNNY. IN MY COLLEGE DAYS I LIVED WITH A BLIND PERSON, AND I WOULD GO SKIING AND WE'D

WOULD DO THINGS THAT NORMALLY A BLIND PERSON DOESN'T DO. AND SO I THINK GOD SOMEHOW WAS PREPARING ME FOR THIS JOURNEY THAT WE'RE ON.

BUT THE IRONY OF ALL THIS IS THAT THIS IS THE FIRST TIME THAT MY WIFE IS ADVOCATING FOR HER VISION BECAUSE WE HAVE A 14-YEAR-OLD SON WITH AUTISM, AND I'M SURE YOU HAVE ALL SUPPORTED THE PEOPLE IN THE AUTISM WORLD. AND IT'S CHANGED OUR LIVES. AND I KNOW THERE'S GREAT PEOPLE IN THIS ROOM THAT HAVE SUPPORTED THAT.

AND SO HER VISION HAS BEEN ON THE BACK SEAT SORT OF FURTHER DOWN ON THE TOTEM POLE FOR OUR NEEDS, BUT I'M JUST HERE TO LET YOU KNOW THAT WHEN WE DID GET THE DIAGNOSIS, WE WERE TOLD THAT RETINITIS PIGMENTOSA HAS THE HIGHEST OR HAD THE HIGHEST HOPE OF THERE BEING A CURE. AND HERE WE ARE. WE ARE VERY HOPEFUL, AND WE ARE -- WE HEAR THAT THERE'S THINGS GOING AROUND AND WE'RE RIGHT ON THE VERGE OF FINDING THE CURE.

AND WE ARE PLEADING WITH YOU THAT YOU CONSIDER DR. KLASSEN'S WORK. THERE'S NOT A BIG COMPANY OR ADVOCATES OR PEOPLE THAT ARE HERE TO PUSH FOR DR. KLASSEN. WE'RE JUST AVERAGE PEOPLE THAT DROVE UP FROM SOUTHERN CALIFORNIA TO ADDRESS YOU TODAY, AND I APPRECIATE THE TIME THAT YOU'VE GIVEN

US.

MR. TORRES: HERMAN, I JUST WANT TO THANK YOU FOR YOUR ADVOCACY. AS I TOLD YOU EARLIER, THE MOTHER OF MY CHILDREN WENT BLIND FROM WAGONER'S DISEASE JUST THREE YEARS AGO. AND SO FOR THEM AS CAREGIVERS, FOR MYSELF AS A FATHER, IT IS A VERY, VERY DIFFICULT PATH. SO I APPRECIATE WHAT YOU'RE DOING. AND, ROSIE, I APPRECIATE WHAT YOU ARE DOING, AND YOU ARE A VERY EFFECTIVE ADVOCATE.

DR. KLASSEN: HELLO. I'M HENRY KLASSEN, ASSOCIATE PROFESSOR OF OPHTHALMOLOGY AT UC IRVINE. I'M ALSO DIRECTOR OF THE STEM CELL AND RETINAL REGENERATION PROGRAM THERE. I THANK YOU ALL FOR THE OPPORTUNITY TO SPEAK IF I CAN KEEP MY VOICE.

WE ARE DEVELOPING HUMAN RETINAL PROGENITOR CELLS AS A TREATMENT FOR RETINITIS PIGMENTOSA UNDER AN EARLY TRANSLATIONAL II AWARD. IT WAS BECAUSE OF OUR VERY RAPID PROGRESS ON ET II MILESTONES THAT WE WERE INVITED TO SUBMIT A DT II PROPOSAL.

THE REVIEWERS HAD GOOD THINGS TO SAY ABOUT OUR PROJECT, OUR TEAM, AND OUR SCIENCE, WHICH INCLUDES COLLABORATION WITH A NATIONAL EYE INSTITUTE. THE ONE MAJOR CRITICISM WAS THE TESTING OF CELLS MADE USING TWO DIFFERENT METHODS. THIS ONE ISSUE DID CRYSTALLIZE THEIR DOUBT AS TO OUR

READINESS TO ADVANCE TO DT STATUS. BUT WORK HAS PROGRESSED OVER THE LAST SIX MONTHS, AS YOU'VE HEARD FROM MANY GROUPS. IN OUR CASE WE BELIEVE IT'S FULLY SATISFIED THE CONCERNS OF THE REVIEWERS AS NOTED IN OUR PETITION.

AS YOU'VE HEARD, WE'VE MANUFACTURED THREE GMP CELL BANKS USING A SINGLE SOP. AND THAT BASICALLY PUTS THAT ONE MAJOR CRITICISM BEHIND US COMPLETELY. IN DOING SO, WE'VE DEFINITIVELY MOVED FROM AN EARLY TRANSLATIONAL SCOPE INTO THE PRECLINICAL PHASE OF OUR PROJECT.

YESTERDAY WE GOT TOX DATA SHOWING THAT THERE WERE NO TUMORS AT NINE MONTHS AND THAT THE CELLS DO NOT LEAVE THE EYE. YESTERDAY WE WERE GRANTED ORPHAN DRUG DESIGNATION BY THE FDA. AND FOR THOSE WHO DON'T REALIZE, THAT WILL GREATLY HASTEN OUR PROGRESS WITH THE REGULATORY COMMITTEES THERE.

WE ARE NOW HALF A YEAR INTO OUR DT MILESTONES WITH CLINICAL TRIALS. OUR MILESTONE IS ON TRACK FOR 2013. SO OUR ONLY PROBLEM IS DOING OUR DT WORK ON AN ET BUDGET. WE, THEREFORE, APPEAL TO CIRM AND TO THE ICOC FOR A SOLUTION THAT WILL ALLOW US TO MAINTAIN THIS EXTRAORDINARY PROGRESS.

I WOULD ALSO LIKE TO TELL YOU WHY WE'RE WORKING SO HARD. IT'S BECAUSE WE'VE SEEN WHAT RP

DOES TO PEOPLE, BUT IT'S ALSO BECAUSE WE'VE SEEN WHAT OURSELVES CAN DO FOR THEM. THERE'S THREE PATIENTS, HUMANS, WITH END-STAGE RP. THAT MEANS THEY'RE BLIND. THEY HAVE BEEN TREATED WITH SIMPLE INJECTIONS OF HUMAN RPC'S WITHOUT IMMUNE SUPPRESSION, ANOTHER CRITICISM, BUT THEY DID NOT GET IMMUNE SUPPRESSION AND ALL THREE SHOWED IMPROVEMENTS IN VISION.

ONE OF THEM, WHO'S BASICALLY STARTED OUT WHERE ROSIE IS NOW, HAD SIX LINES OF IMPROVEMENT IN BEST CORRECTED VISUAL ACUITY ON THE SNELLEN CHART, SIX LINES. THAT'S GOING FROM LEGALLY BLIND TO PASSING YOUR DRIVER'S LICENSE TEST. NOW, I'M NOT RECOMMENDING THEY DRIVE.

MR. HARRISON: JUST TO LET YOU KNOW, YOUR THREE MINUTES ARE UP, SO IF YOU COULD WRAP UP YOUR COMMENTS, PLEASE.

DR. KLASSEN: SO THAT'S HARD TO CONVEY. THE OTHER PATIENTS BENEFITED AS WELL. ONE POINTED OUT THAT I'M GETTING GRAY, WHICH IS FAIR ENOUGH. AND THE THIRD TOOK MY HAND BECAUSE SHE COULD NOW LEAVE HER HOME AND GET TO THE CORNER STORE ON HER OWN, AND SHE SAID, "YOU WON'T FORGET ABOUT US, WILL YOU?" SO I SAY WE DO HAVE THE HUMAN DATA, WE HAVE THE GMP CELLS, AND WE ARE READY. THANK YOU.

CHAIRMAN THOMAS: THANK YOU. ANY OTHER PUBLIC COMMENT ON THAT PARTICULAR APPLICATION? I BELIEVE, JUST TO BE IN KEEPING WITH WHAT WE JUST DID, WE SHOULD HAVE --

MR. HARRISON: I WOULD JUST ASK WHETHER ANY BOARD MEMBERS WOULD LIKE TO HEAR THE STAFF PRESENTATION. IF NOT, WE SHOULD MOVE FORWARD.

MR. TORRES: I WOULD LIKE TO HAVE STAFF.

CHAIRMAN THOMAS: SENATOR TORRES WOULD LIKE TO HAVE A STAFF PRESENTATION.

DR. JUELSGAARD: ACTUALLY I'D LIKE TO MAKE A MOTION THAT WE REFER THIS PARTICULAR APPLICATION IN THE SAME PROCESS THAT WE'VE NOW DONE FOR SEVERAL OTHERS FOR ANOTHER REVIEW.

DR. VUORI: I WOULD LIKE TO SECOND THAT.

CHAIRMAN THOMAS: IT'S MOVED AND SECONDED. MR. SHESTACK ASKED WHAT THE RATIONALE FOR THAT IS.

MR. SHESTACK: WAS THERE INFORMATION?

MR. JUELSGAARD: YES. WHEN I LOOKED AT THE RESPONSE, THE WRITTEN RESPONSE, IT SEEMS TO ME THAT A LOT OF THE -- A NUMBER OF THE ISSUES THAT THE REVIEWERS RAISED AS CONCERNS WERE ADDRESSED. SO I DO BELIEVE THAT OVER THESE LAST SIX MONTHS PROGRESS HAS BEEN MADE ON SEVERAL OF THESE; FOR EXAMPLE, THE MASTER CELL BANKS, JUST AT THE END THEY TALKED

ABOUT. SO I THINK THE DECISION THAT WAS MADE WAS BASED ON THE BEST AVAILABLE DATA AT THE TIME, BUT NEW DATA, IMPORTANT NEW DATA, HAS COME TO THE FORE, AND I THINK IT'S WORTHY OF REVIEW.

CHAIRMAN THOMAS: DR. TROUNSON.

DR. TROUNSON: CHAIR, I WONDER IF WE COULD REFER THIS TO THE CONFIDENTIAL SESSION TO HAVE A DISCUSSION WITH MEMBERS OF THE ICOC ON THIS MATTER.

MR. TORRES: I'M NOT OPPOSED TO THAT, BUT I JUST WANT TO BE SUPPORTIVE OF STEVE'S MOTION SIMPLY BECAUSE OF THE WIDE VARIANCE OF THE NUMBERS IN THE WORKING GROUP. WE HAD A 45, WE HAD AN 85, WE HAD A 77, AND THEN 55. I THINK IT MERITS A LITTLE FURTHER DISCUSSION.

CHAIRMAN THOMAS: SO WE WILL TABLE THIS MOTION, WHICH I BELIEVE IS WHAT DR. TROUNSON IS ASKING. THAT IS WHAT HE'S ASKING. MR. HARRISON, YOU'RE LOOK DISAPPROVINGLY.

MR. HARRISON: NO, NOT DISAPPROVINGLY, BUT JUST, AS THE PERSON WHO TRIES TO KEEP TRACK OF PROCEDURE HERE, SINCE WE DO HAVE A MOTION THAT IS ON THE TABLE, ORDINARILY WE WOULD MOVE TO A VOTE ON THAT. IF THE MAKER OF THE MOTION AND THE SECOND ARE WILLING TO POSTPONE THAT TO TAKE IT OFF THE TABLE UNTIL WE RETURN FROM CLOSED SESSION, THEN THAT'S

FINE.

MR. ROTH: I'LL MOVE TO TABLE THE MOTION.

DR. JUELSGAARD: I SECOND THAT MOTION.

CHAIRMAN THOMAS: MR. JUELSGAARD AS MAKER OF THE ORIGINAL AGREES TO THAT. WE DON'T EVEN NEED A VOTE FOR THAT, I DON'T BELIEVE.

MR. HARRISON: NO, BUT THE MOTION MADE, WE SHOULD JUST TAKE A VOICE VOTE.

CHAIRMAN THOMAS: ALL IN FAVOR PLEASE SAY AYE. OPPOSED? DONE, TABLED, AND WILL BE TAKEN UP FOR FURTHER REVIEW AFTER CLOSED SESSION.

DR. SAMBRANO: CAN I JUST MAKE A CLARIFICATION JUST FOR THE RECORD IN TERMS OF THE RANGE OF SCORES? THE RANGE OF SCORES WERE FROM 40 TO A 65. SO I HEARD 85 AND OTHER SCORES, SO I DON'T THINK THAT'S POSSIBLE.

MR. TORRES: WELL, WAS THIS 5739?

DR. SAMBRANO: THAT'S CORRECT.

MR. TORRES: WELL, THAT'S WHAT I WAS GIVEN IN TERMS OF MY FOLDER, MR. SAMBRANO. AND YOU'RE MORE THAN WELCOME TO SUBPOENA IT.

DR. SAMBRANO: THE RANGE OF SCORES THAT WE HAVE RECORDED FROM THE REVIEWERS IS 40 TO 65.

MR. TORRES: THESE MUST BE THE ORIGINAL SCORES THEN.

DR. SAMBRANO: IF THEY WERE PRELIMINARY SCORES FROM THE GRANTS WORKING GROUP, IT COULD BE THAT, BUT THE FINAL SCORES RANGE FROM 40 TO 65.

CHAIRMAN THOMAS: OKAY.

MR. TORRES: IT STILL DEMANDS A REVIEW.

CHAIRMAN THOMAS: OKAY. PUBLIC COMMENT ON OTHER APPLICATIONS?

MS. ROBERSON: I'M JUDY ROBERSON FROM SACRAMENTO. I'M A FAMILY ADVOCATE FOR HUNTINGTON'S DISEASE. I LOST MY HUSBAND, HIS BROTHER, HIS MOTHER, THEIR MOTHER, AND THEIR GRANDFATHER TO HUNTINGTON'S. I HAVE CHILDREN, GRANDCHILDREN, NIECES AND NEPHEWS AT RISK.

HUNDRED FIFTY YEARS AGO HUNTINGTON'S DISEASE WAS IDENTIFIED BY DR. GEORGE HUNTINGTON. NEARLY 20 YEARS AGO A GENE FOR HUNTINGTON'S WAS FOUND, BUT PRESENTLY THERE'S NOT ONE TREATMENT FOR HUNTINGTON'S. IT'S ALWAYS FATAL. IT'S SUGGESTED TO EAT BLUEBERRIES. THAT'S IT. THE WORLD'S WATCHING AND WAITING FOR A TREATMENT FOR HUNTINGTON'S.

WE CAME HERE TOGETHER TODAY BECAUSE WE WANT TO THANK YOU FOR YOUR HARD WORK, YOUR DEDICATION, COURAGE, AND FORTITUDE. WE KNOW THIS IS GROUNDBREAKING WORK, AND WE APPRECIATE IT. WE'RE SO PROUD OF UC DAVIS FOR SCORING, WITH DR. WHEELOCK AND

NOLTA, FOR SCORING FIRST PLACE FOR THIS FIRST EVER CLINICAL TRIAL GRANT FOR HUNTINGTON'S.

BECAUSE OF THE LENGTHY AGENDA, OUR FRIEND KEVIN ASKED US TO CHOOSE THREE SPEAKERS. AND SO WE HAVE ONE CHOSEN WHO IS AFFECTED WITH HUNTINGTON'S DISEASE. THE OTHER ONE IS A WIFE AND HER HUSBAND HAS HD, AND SHE HAS THREE SMALL CHILDREN AT RISK. OUR LAST SPEAKER IS GENE POSITIVE FOR HUNTINGTON'S DISEASE.

THERE'S A HUNTINGTON'S DISEASE DOCUMENTARY TEAM HERE TODAY. IT'S CALLED "A RIDE WITH MATT." THEY'RE RAISING MONEY TO HELP FUND JAN NOLTA'S RESEARCH AND VICKI WHEELOCK'S CLINIC AT UC DAVIS.

SO, AGAIN, THANK YOU. AND CIRM, WHAT CIRM IS DOING TODAY AND THE ICOC, YOU'RE FULFILLING THE AIM OF THE CALIFORNIA VOTERS WHO VOTED FOR AND PASSED PROPOSITION 71. THANK YOU. NOW HEAR OUR THREE SPEAKERS.

MS. JACKSON: BEHAVIORAL DISTURBANCE, HALLUCINATION, IRRITABILITY, PARANOIA, DISORIENTATION, LOSS OF MEMORY, PERSONALITY CHANGES, ANXIETY, DIFFICULTY SWALLOWING, DEMENTIA, LOSS OF ABILITY TO CARE FOR ONESELF, INFECTION, DEPRESSION, SUICIDAL THOUGHTS, CHOREA, DYSTONIA, DEATH, THESE ARE JUST SOME OF SO MANY SYMPTOMS ASSOCIATED WITH

HUNTINGTON'S DISEASE.

MY HUSBAND WAS ONLY 27 YEARS OLD WHEN HE WAS DIAGNOSED HD POSITIVE. I DON'T KNOW WHAT TERRIFIED ME MORE. KNOWING ALL THESE SYMPTOMS, IF THEY HAVEN'T ALREADY, WERE GOING TO HAPPEN TO MY HUSBAND, KNOWING I HAVE THREE YOUNG CHILDREN AT RISK OF HUNTINGTON'S DISEASE, KNOWING THAT MY CHILDREN ARE GOING TO WATCH THEIR DADDY, THEIR HERO, FIGHT AND STRUGGLE THROUGH THIS ILLNESS AND IN THE END DIE, ME HAVING TO POSSIBLY TAKE CARE OF ONE OF MY BABIES IF THEY INHERIT THIS DISEASE, OR THE FUTURE WITHOUT MY HUSBAND. MY HUSBAND NOT BEING THERE TO WALK OUR DAUGHTERS DOWN THE AISLE. MY HUSBAND NOT BEING THERE TO EXPERIENCE AND CELEBRATE OUR CHILDREN'S ACCOMPLISHMENTS OR THE THOUGHT YOU HAVE NO HOPE. I THINK THAT'S THE WORST PART, NO HOPE.

WHEN MIKE WAS FIRST DIAGNOSED, I COULDN'T BELIEVE THERE WAS NOTHING THEY COULD DO FOR HIM, NO TREATMENT, NO THERAPY, NO MEDICINE, NOTHING. HAVING NO HOPE IS SO HARD ON THE HUMAN SPIRIT. THAT ALL CHANGED WHEN MIKE AND I ATTENDED A CONFERENCE YEARS AGO WHEN WE GOT TO HEAR AN AMAZING SPEAKER, DR. NOLTA. I COULDN'T BELIEVE WHAT I WAS HEARING. POSSIBLY, JUST POSSIBLY, THERE COULD BE HOPE.

WHEN I WAS THINKING ABOUT WHAT I WAS GOING

TO SAY TODAY, I THOUGHT OF THE INDIVIDUALS WITH HUNTINGTON'S DISEASE, BUT I SOON REALIZED IT'S SO MUCH MORE THAN THAT. THERE ARE MILLIONS OF PEOPLE AFFECTED BY HUNTINGTON'S DISEASE. THE HD POSITIVE WHO SUFFER THE PAIN AND TERROR OF THIS DISEASE, BUT ALSO THE FAMILY AND FRIENDS THAT HAVE TO SIT BACK AND WATCH THEIR LOVED ONES FIGHT THIS UNWINNING BATTLE.

CIRM IS SO AMAZING, AND TODAY YOU GUYS HAVE THE POSSIBILITY OF GIVING OUR HD COMMUNITY THE OPPORTUNITY TO SAVE A MOTHER FROM HAVING TO BURY HER BABY, TO SAVE CHILDREN FROM HAVING TO WATCH THEIR PARENT DIE OF THIS LONG, TERRIFYING DEATH, OR TO SAVE A WOMAN LIKE ME TO HAVE TO BE ALONE IN THIS WORLD AFTER THEIR PARTNER PASSES AND RAISE THE CHILDREN ON THEIR OWN. AND WE NEED HELP. WE NEED HOPE MORE THAN WORDS CAN EXPLAIN TODAY.

I'M GOING TO LEAVE YOU WITH A REALLY QUICK STORY. MY NINE-YEAR-OLD DAUGHTER CAME TO ME AND MY HUSBAND THE OTHER NIGHT AND ASKED MY HUSBAND, "DID YOUR DAD DIE OF HUNTINGTON'S DISEASE?" WHEN MY HUSBAND SAID YES, HER LITTLE EYES FILLED WITH TEARS AND SHE SAID, "DADDY, ARE YOU GOING TO DIE FROM HUNTINGTON'S DISEASE?" I CAN'T WAIT FOR THE DAY I CAN WIPE HER TEARS AWAY AND TELL HER, "YOUR DADDY IS

GOING TO BE FINE." HOPEFULLY THAT DAY STARTS TODAY. PLEASE CONSIDER FUNDING DR. JAN NOLTA'S PROJECTS. THANK YOU.

MR. HINSHAW: HI. MY NAME IS MICHAEL HINSHAW. I HAVE THREE BEAUTIFUL CHILDREN AND A LOVING WIFE, AND I TOOK THE OATH EIGHT YEARS AGO TO SERVE SACRAMENTO COUNTY AS A DEPUTY SHERIFF. MY OLD DREAM WAS TO HELP PEOPLE. ALL MY LIFE THAT'S ALL I'VE EVER WANTED TO DO IS HELP PEOPLE. AND I NEVER THOUGHT I'D BE ASKING FOR YOUR HELP TODAY.

I WAS 27 WHEN I WAS DIAGNOSED WITH THE HORRIFIC DISEASE. AND THE PRESSURE I FELT EVERY DAY THINKING ABOUT HOW IS MY FAMILY GOING TO SURVIVE WITHOUT ME. I'M THINKING OF DOCTOR'S BILLS, I'M THINKING OF LONG-TERM DISABILITY, AND I'M TRYING TO -- I'M TRYING TO FIGURE OUT HOW MY FAMILY IS GOING TO SURVIVE.

I'M 32 YEARS OLD NOW. I SHOULD BE THINKING ABOUT MY KIDS' SOCCER, FOOTBALL, AND HOMEWORK. I'M DYING. IT'S HARD. I FEEL SO MUCH PAIN AND SEEING MY KIDS, KNOWING THEY HAVE A CHANCE TO GO THROUGH WHAT I'M GOING THROUGH. I'M SORRY.

IN THE FUTURE IT SCARES ME ALL FOR HUNTINGTON'S. IT'S VERY SCARY KNOWING THAT, LIKE I SAID, THERE'S NOTHING THEY CAN DO, NO CURES, NO

NOTHING. THE ONLY HOPE IS THAT YOU ALL FUND DR. NOLTA. THANK YOU.

MS. BROOKHYSER: GOOD AFTERNOON. MY NAME STACY BROOKHYSER, AND I DROVE UP HERE FROM ORANGE COUNTY TO HAVE AN OPPORTUNITY TO SPEAK WITH YOU TODAY. MY INTEREST HERE HAS TO DO WITH THE GRANT PROPOSAL FOR HUNTINGTON'S DISEASE.

FIRST, THANK YOU FOR PROVIDING RESEARCH OPPORTUNITIES TO COMBAT SIGNIFICANT DISEASE ISSUES. YOUR WORK IS HOPE FOR THOSE OF US AND OUR FAMILIES AFFECTED BY DISEASES SUCH AS HUNTINGTON'S. A LITTLE ABOUT ME. I'VE TESTED POSITIVE FOR HUNTINGTON'S DISEASE. AND ALTHOUGH I DON'T YET HAVE SYMPTOMS, I'M WATCHING MY DEAR MOTHER SUFFER A LONG, SLOW PROGRESSION OF SYMPTOMS TOWARD DEATH FROM HUNTINGTON'S. WATCHING MY MOTHER SUFFER IS SO, SO DIFFICULT, BUT IT FEELS SUBSTANTIALLY WORSE FOR ME BECAUSE I KNOW THAT MY DNA ALSO HAS THE EXPANDED HD GENE. WITHOUT TREATMENT BREAKTHROUGHS THROUGH RESEARCH, I STAND TO FOLLOW HER IN ENDURING THE SYMPTOMS OF THIS DISEASE.

I CHOSE TO TEST FOR HD BECAUSE MY HUSBAND AND I WANTED TO HAVE CHILDREN, BUT WE DIDN'T WANT TO PASS ON THE HD GENE TO OUR DESCENDANTS. WE KNEW OUR CHILDREN WOULD EACH BE AT A 50-PERCENT RISK TO

RECEIVE THE GENE FROM ME. WE WEREN'T WILLING TO ROLL THE DICE WITH THEIR HEALTH. THE OPPORTUNITY TO USE PREIMPLANTATION GENETIC DIAGNOSIS, PGD, OFFERED US A WAY TO CHOOSE HEALTHY, UNAFFECTED EMBRYOS TO IMPLANT THROUGH IN VITRO FERTILIZATION. THE WONDERFUL RESULT IS THAT MY 5-YEAR-OLD TWIN DAUGHTERS WILL NEVER HAVE HD.

BUT WHAT HAPPENED TO MY HD-AFFECTED EMBRYOS? THEY WERE SENT TO UC IRVINE UNDER THE CARE OF DR. LESLIE THOMPSON. SHE WAS AWARDED A CIRM GRANT IN 2008, AND YOUR FINANCIAL SUPPORT, ALONG WITH MY EMBRYOS, LED TO A VALUABLE NEW STEM CELL LINE.

STEM CELL RESEARCH, ALL KINDS OF STEM CELL RESEARCH, OFFER GREAT PROMISE FOR TREATMENT OF HD. I'M A PART OF THE HUNTINGTON'S DISEASE COMMUNITY WHICH IS COMPOSED OF MANY, MANY DEDICATED INDIVIDUALS. AND THROUGH OUR TEAM EFFORTS, WE ACCOMPLISH MUCH. HD RESEARCHERS ARE CLOSELY CONNECTED TO OUR COMMUNITY, ATTENDING OUR EVENTS, PARTICIPATING IN OUR FUND RAISERS, OFFERING ENCOURAGEMENT TO OUR AFFECTED FAMILIES, AND, IN TURN, WE ARE HERE TO SUPPORT THEM.

TODAY I'M HERE TO STAND WITH DR. NOLTA AND DR. WHEELOCK AND THEIR PROPOSAL. THEY'VE ALREADY

DEMONSTRATED SUCCESS WITH THIS PROJECT AND IT'S READY MOVE ON TO HUMAN CLINICAL TRIALS. I BELIEVE IN THIS TEAM, AND I ASK YOU, PLEASE, APPROVE THEIR REQUEST. IT COULD MAKE A HUGE DIFFERENCE FOR MY HEALTH, THE HEALTH OF MY MOTHER, MY SISTER, AND HER CHILDREN, MY AUNT, MY COUSINS, AND SO MANY OTHER AFFECTED FAMILIES. THANK YOU FOR YOUR CONTINUED SUPPORT.

(APPLAUSE.)

CHAIRMAN THOMAS: THANK YOU ALL FOR YOUR MOVING PUBLIC COMMENTS, THOUGH THE FORMAL VOTE WON'T BE TAKEN FOR A BIT BECAUSE WE HAVE CLOSED SESSION IN BETWEEN. I WANT TO TELL YOU, AS YOU ALREADY KNOW, THAT YOU'RE IN VERY GOOD SHAPE WITH RESPECT TO THIS GRANT, WHICH WE WILL FORMALIZE AT OUR LATER VOTE. SO IF YOU CAN HANG WITH US FOR A BIT LONGER. THANK YOU VERY MUCH FOR THOSE COMMENTS.

ANY OTHER COMMENTS ON ANY OTHER PRESENTATION?

DR. POMEROY: I JUST WANT TO THANK ALL OF THE PEOPLE WITH HUNTINGTON'S WHO CAME HERE TODAY AND TO REITERATE THAT THEY HAVE BEEN FANTASTIC PARTNERS WITH UC DAVIS IN THIS FIGHT. AND I THINK IT IS THE EPITOME OF WHAT PROPOSITION 71 HOPED, WHICH WAS SCIENTISTS AND PATIENTS COMING TOGETHER TO FIND

HOPE. SO THANK YOU FOR A GREAT PARTNERSHIP. AND AS I HAVE TOLD THEM, I LOOK FORWARD TO THE DAY WHEN WE GET TO STAND OUT IN FRONT OF THE UC DAVIS INSTITUTE FOR REGENERATIVE CURES AND ANNOUNCE THE CURE FOR HUNTINGTON'S. THANK YOU.

(APPLAUSE.)

MS. SAMUELSON: MR. CHAIRMAN, I WANT TO ADD A QUICK NOTE TO THAT IF I MAY. YOU ARE GREAT WITNESSES FOR OUR JOINT MISSION THAT DR. POMEROY WAS JUST TALKING ABOUT. AND I'LL NEVER FORGET THE FIRST TIME WE HAD A MEETING AT UC IRVINE AND I FIRST LEARNED ABOUT HUNTINGTON'S FROM SOME OF YOU. WE'RE GOING TO NEED YOU IN THE FUTURE, AND HERE IS MY VISION OF IT, THAT WE HAVE AN AGGRESSIVE, EXPANDING PORTFOLIO THAT EVENTUALLY WE CAN'T AFFORD BECAUSE WE HAVE SO MANY POTENTIAL CURES AND THERAPIES, THAT THERE'S NOT ENOUGH MONEY IN THE $3 BILLION THAT CALIFORNIA GAVE US. AND THEN WE'RE GOING TO NEED WITNESSES LIKE YOU WHO CAN TESTIFY TO THE IMPORTANCE OF MARRYING MONEY, ENOUGH MONEY, WITH GOOD SCIENCE AND THAT IT CAN CURE PEOPLE AND STOP THIS TERRIBLE SUFFERING. AND I AM CERTAIN THAT WE CAN GET A BIG POT OF MONEY FROM AROUND THE WORLD THAT WOULD CONTINUE US IN BUSINESS OR WHOEVER WANTS TO DO THIS WORK IN THAT AGGRESSIVE WAY. THANK YOU AND STAY IN

TOUCH WITH US.

CHAIRMAN THOMAS: THANK YOU. ANY OTHER COMMENTS ON ANY OTHER APPLICATIONS? SEEING NONE, HERE'S WHAT I WOULD PROPOSE. WE HAVE THREE MATTERS ON THE AGENDA THAT WE NEED TO GET THROUGH IN ADDITION TO THIS, CORRECT? THE REST WE CAN TABLE. OKAY. ONE OF THOSE IS THE RESEARCH LEADERSHIP AWARDS, WHICH ITSELF IS GOING TO REQUIRE A CLOSED SESSION. WHAT I WOULD PROPOSE, MR. HARRISON, IS THAT WE TAKE UP, BEFORE GOING TO CLOSED SESSION, THE TWO RESEARCH LEADERSHIP AWARDS AND THEN FACTOR THAT IN AT THE END OF CLOSED SESSION SO THAT WE DON'T HAVE TO KEEP COMING BACK AND FORTH. AND THEN WE NEED TO COME BACK, WE HAVE TO ADDRESS THE IP REGS AND THE EARLY TRANSLATION IV -- HOW MANY ARE WE LOSING?

MS. FEIT: I'M STILL ON THE PHONE.

MS. BONNEVILLE: I COUNTED THAT THERE WOULD BE FIVE BY THE END THAT WE WOULD LOSE ROUGHLY, WHICH WOULD LEAVE US STILL AT 20. I DON'T KNOW IF I JUST DIDN'T TAKE A GOOD HEAD COUNT.

CHAIRMAN THOMAS: THE ONLY THING WE CAN VOTE ON AT THIS POINT, SHERRY, WHICH IS SUBSTANTIAL, IS THE SIX RECOMMENDED PLUS THE ALS, BUT WE HAVE TWO REFERRED, I BELIEVE, AND FOUR IN CLOSED SESSION, ONE

OF WHICH HAS A MOTION TO REFER. SO, MR. HARRISON, COULD WE VOTE ON THE SIX THAT WERE MOVED FOR APPROVAL PLUS THE ALS, OR WHAT PROCEDURE WOULD YOU RECOMMEND HERE?

MR. HARRISON: WHAT I WOULD RECOMMEND IS IF WE CAN GO TO CLOSED SESSION QUICKLY AND RESOLVE THE ISSUES THAT HAVE BEEN RAISED WITH RESPECT TO THOSE APPLICATIONS, THAT WAY WE CAN DETERMINE THE TOTAL AMOUNT OF AWARDS THAT WILL BE FUNDED TODAY IN ADDITION TO THOSE THAT ARE REFERRED FOR ADDITIONAL CONSIDERATION.

THE OTHER OPTION THE BOARD HAS TO CONSIDER IS THE POSSIBILITY OF TRYING TO SCHEDULE A TELEPHONIC MEETING TO TAKE UP THE ISSUES WE'RE UNABLE TO RESOLVE TODAY.

CHAIRMAN THOMAS: OKAY. SO CAN WE -- SHERRY, IS THAT OKAY? SO CAN WE PROCEED NOW TO THE PRESENTATION OF THE RESEARCH LEADERSHIP AWARDS. DR. YAFFE.

DR. YAFFE: MR. CHAIRMAN, MEMBERS OF THE BOARD, MEMBERS OF THE PUBLIC, I BRING TO YOU FOR YOUR CONSIDERATION THE RECOMMENDATIONS FROM THE GRANTS WORKING GROUP FOR THE RESEARCH LEADERSHIP AWARDS. THIS IS ITEM NO. 14.

JUST TO BRIEFLY REMIND YOU THAT THE GOALS

OF THIS PROGRAM ARE TO FACILITATE RECRUITMENT TO CALIFORNIA OF THE MOST PRODUCTIVE AND PROMISING EARLY TO MIDCAREER SCIENTISTS IN STEM CELL BIOLOGY AND REGENERATIVE MEDICINE. AND ONCE RECRUITING THEM HERE TO OUR STATE, TO SUPPORT THE ROBUST AND INNOVATIVE RESEARCH PROGRAMS FOCUSED ON FUNDAMENTAL STUDIES OF PLURIPOTENT AND PROGENITOR STEM CELLS AND TRANSLATIONAL STUDIES LEADING TO INNOVATIVE STEM CELL-BASED THERAPIES FOR DISEASE AND INJURY.

THE PROGRAM ELIGIBILITY AND SCOPE INCLUDES THE PROGRAM BEING OPEN TO NONPROFIT CALIFORNIA INSTITUTIONS. THE CANDIDATE PI MUST HOLD AT THE TIME OF APPLICATION A POSITION OUTSIDE CALIFORNIA AND HAVE BEEN INDEPENDENT FOR AT LEAST THREE YEARS. INDIVIDUAL INSTITUTIONS MAY RECEIVE ONLY ONE OF THESE AWARDS. AND THE ICOC, YOU, AUTHORIZED UP TO EIGHT AWARDS. THREE AWARDS HAVE BEEN MADE TO DATE, ONE TO ROBERT WECHSLER REYA AT SANFORD BURNHAM INSTITUTE, A SECOND TO PETER COFFEY AND THE UNIVERSITY OF CALIFORNIA SANTA BARBARA, AND A THIRD TO DR. ZHIGANG HE AND THE UNIVERSITY OF CALIFORNIA AT BERKELEY.

THE AWARDS ARE FIVE MILLION DIRECT FUNDS, AND THE TOTAL VARIES WITH THE INDIRECT, AND FACILITIES RATES COULD BE UP TO 6.5 MILLION.

THE AWARDS FEATURE RESEARCH SUPPORTED FOR UP TO SIX YEARS. THE AWARDEES MUST COMMIT AT LEAST 75 PERCENT OF THEIR TIME TO STEM CELL AND REGENERATIVE MEDICINE RESEARCH. AND ELIGIBLE COSTS INCLUDE THE PI'S SALARY, LAB OPERATIONS, LAB RELOCATION TO CALIFORNIA, EQUIPMENT WHICH MUST BE MATCHED BY THE INSTITUTION, FACILITIES, AND APPROPRIATE INDIRECT COSTS.

THE REVIEW CRITERIA THAT THE GRANTS WORKING GROUP HAS USED TO REVIEW THESE APPLICATIONS ARE IN THREE AREAS. FIRST, RESEARCH VISION AND PLANS. HERE THEY CONSIDER SIGNIFICANCE AND INNOVATION IN PARTICULAR. THE PI'S ACCOMPLISHMENTS AND POTENTIAL. HERE CONSIDERING RESEARCH ACHIEVEMENT. THE IMPACT OF THE PROPOSED RESEARCH AND OF WORK ALREADY DONE. THE LEADERSHIP BOTH DEMONSTRATED AND POTENTIAL. AND THE ASSESSMENT OF THE ACCOMPLISHMENTS OF THE CANDIDATES BY LEADERS IN THE FIELD. AND THIS IS ELICITED IN THE FORM OF LETTERS. AND FINALLY, THE INSTITUTIONAL COMMITMENT AND ENVIRONMENT. AND HERE WE'RE INTERESTED BOTH IN WHAT KIND OF RESEARCH ENVIRONMENT THE INSTITUTION WILL PROVIDE FOR THE CANDIDATE AND WHAT KIND OF LEADERSHIP THE CANDIDATE WILL BRING TO THE INSTITUTION.

IN OUR LATEST ROUND -- THIS IS RECURRING ROUNDS OF APPLICATION AND REVIEW. IN OUR LATEST ROUND, THE APPLICATION DEADLINE WAS IN MID-MAY. THE GRANTS WORKING GROUP REVIEW WAS JUNE 20TH. TWO APPLICATIONS WERE CONSIDERED. THEY'RE LISTED HERE.

THE FIRST APPLICATION, THE TITLE IS "REPAIR AND REGENERATION OF THE NEPHRON" WITH REQUESTED FUNDS 5.6 MILLION. THE REVIEW SCORE WAS 90, AND THE GRANTS WORKING GROUP RECOMMENDED THIS APPLICATION FOR FUNDING.

THE SECOND APPLICATION HAS THE TITLE "STEM CELL PATHOLOGIES IN PARKINSON'S DISEASE AS A KEY TO REGENERATIVE STRATEGIES." THE REQUESTED FUNDS ARE 6.7 MILLION. THE SCIENTIFIC SCORE IS 57. THE GRANTS WORKING GROUP ALSO RECOMMENDED THIS APPLICATION FOR FUNDING.

AT THIS POINT I COULD EITHER ANSWER QUESTIONS OR TURN IT TO THE REVIEW CO-CHAIR, MR. SHEEHY, OR WHATEVER YOUR PLEASURE IS.

MR. TORRES: WHERE IS THE RESEARCH TAKING PLACE IN EACH PROPOSAL?

DR. YAFFE: WE HAVE NOT GENERALLY REVEALED THE APPLICANT INSTITUTION PUBLICLY PRIOR TO THE AWARD. WE COULD DISCUSS THAT.

MR. TORRES: FINE.

CHAIRMAN THOMAS: I WOULD RECOMMEND TURNING IT OVER TO MR. SHEEHY FOR COMMENT.

MR. SHEEHY: WELL, I'M NOT SURE WHAT COMMENTS ARE APPROPRIATE BECAUSE WE CAN'T REALLY DISCLOSE ANY INFORMATION ABOUT THE INSTITUTIONS. I DON'T KNOW TO WHAT DEGREE. PERSONALLY I WOULD JUST MOVE THAT BOTH OF THESE BE APPROVED. THE WORKING GROUP APPROVED THEM, AND I WOULD MAKE THAT MOTION THAT THEY BOTH BE APPROVED.

MR. SERRANO-SEWELL: SECOND.

CHAIRMAN THOMAS: IT'S BEEN MOVED AND SECONDED. I KNOW THAT WITH RESPECT TO AT LEAST ONE THERE'S GOING TO BE SOME CLOSED SESSION DISCUSSION.

MR. SHEEHY: NOT UNLESS THE BOARD IS SUPPORTIVE OF MOVING THEM FORWARD.

CHAIRMAN THOMAS: OKAY. THAT'S CORRECT. IS THERE ANYBODY -- YES, MR. JUELSGAARD.

DR. JUELSGAARD: I'D LIKE TO MOVE TO AMEND THAT MOTION TO VOTE SEPARATELY ON THE TWO CANDIDATES.

CHAIRMAN THOMAS: MR. SHEEHY, DO YOU ACCEPT THAT?

MR. SHEEHY: THAT'S FINE. I FIGURED THAT WE'D DO THAT ANYWAY, TO BE HONEST, BASED ON OUR PRIOR EXAMPLE FROM THE MORNING. WE GENERALLY DO

THESE SEPARATELY. BUT MY POINT WAS RATHER THAN DISCUSS THE PROCESS, TO KIND OF GO STRAIGHT INTO WHAT ARE WE GOING TO DO WITH THESE APPLICATIONS. AND THEN, IF WE HAVE TO GET INTO THE WEEDS, I THINK WE'LL HAVE TO GO INTO CLOSED SESSION BECAUSE WE CAN'T DISCLOSE -- I THINK IT'S INAPPROPRIATE TO TALK TOO DEEPLY ABOUT THE CANDIDATE OR THE INSTITUTION.

CHAIRMAN THOMAS: WE CAN'T, THAT'S CORRECT. MR. HARRISON.

MR. SHEEHY: SHOULD WE TAKE UP THE FIRST ONE, I THINK. SO I WOULD MAKE MY MOTION ON 6536 FOR APPROVAL. AND I THINK THE SECOND IS OKAY WITH THAT?

MR. SERRANO-SEWELL: SECOND.

CHAIRMAN THOMAS: IS THE SECOND OKAY WITH THAT AMENDED PROPOSAL?

MR. SERRANO-SEWELL: YES.

CHAIRMAN THOMAS: OKAY. HOW DO WE HAVE DISCUSSION WHEN WE CAN'T DISCLOSE WHO WE'RE TALKING ABOUT OR WHAT INSTITUTION? MR. HARRISON.

MR. HARRISON: YOU CAN TALK ABOUT THE QUALITIES OF THE APPLICANT AS DESCRIBED IN THE SUMMARY. YOU CAN ASK ANY QUESTIONS ABOUT THE SUMMARY, OR YOU CAN MOVE TO A VOTE IF THERE ARE NO PUBLIC OR BOARD COMMENTS.

DR. POMEROY: IN REVIEWING THE REVIEWS OF

THIS APPLICATION, IT SEEMED LIKE THERE WAS ABSOLUTE CONSENSUS FOR THIS ONE OF HOW STRONG THIS PERSON WAS AND HOW STRONG THE APPLICATION WAS WITH A VERY SMALL STANDARD DEVIATION. SO I WOULD SUPPORT PROCEEDING WITH A VOTE AT THIS POINT.

CHAIRMAN THOMAS: JUST THE COMMENT ON THE FIRST APPLICANT.

MS. LANSING: I SECOND THAT.

CHAIRMAN THOMAS: OKAY. SO I THINK WE CAN GO RIGHT TO THE QUESTION ON THIS ONE, IF THAT'S OKAY WITH EVERYBODY. MARIA, PLEASE CALL THE ROLL.

MR. SHEEHY: I THINK PUBLIC COMMENT.

CHAIRMAN THOMAS: I'M SORRY. PUBLIC COMMENT WITHOUT KNOWING WHO IT IS WE'RE DISCUSSING HERE.

MS. SAMUELSON: THIS IS AT SOME POINT GOING TO BE CONFUSING BECAUSE THERE IS PUBLIC COMMENT ON THE SECOND ONE, AND PEOPLE NEED TO KNOW THAT IT'S THE RIGHT TIME FOR THEM TO MAKE THEIR COMMENT.

DR. POMEROY: I WANT TO MAKE IT VERY CLEAR TO EVERYONE THAT THE MOTION WAS JUST ABOUT THE FIRST ONE.

MS. SAMUELSON: THE FIRST ONE MAY NOT BE CLEAR ENOUGH INFORMATION.

DR. POMEROY: JUST NO. 536.

CHAIRMAN THOMAS: EVERYBODY HAS THE INFORMATION ON THE APPLICANT IN THEIR PACKET. IF ANYBODY WOULD LIKE TO SPEAK, WE'D BE HAPPY TO HEAR YOU. BUT IF NOT, SEEING APPARENTLY NO PUBLIC COMMENT ON THIS, MARIA, CAN YOU PROCEED WITH THE ROLL?

MS. BONNEVILLE: ROBERT PRICE.

DR. PRICE: YES.

MS. BONNEVILLE: DAVID BRENNER.

DR. BRENNER: YES.

MS. BONNEVILLE: JACOB LEVIN.

DR. LEVIN: YES.

MS. BONNEVILLE: CLAIRE POMEROY.

DR. POMEROY: YES.

MS. BONNEVILLE: MARCY FEIT.

MS. FEIT: YES.

MS. BONNEVILLE: TED KRONTIRIS. LEEZA GIBBONS.

MS. GIBBONS: YES.

MS. BONNEVILLE: MICHAEL GOLDBERG.

MR. GOLDBERG: YES.

MS. BONNEVILLE: SAM HAWGOOD.

DR. HAWGOOD: YES.

MS. BONNEVILLE: STEPHEN JUELSGAARD.

DR. JUELSGAARD: YES.
MS. BONNEVILLE: SHERRY LANSING.
MS. LANSING: YES.
MS. BONNEVILLE: BERT LUBIN.
DR. LUBIN: YES.
MS. BONNEVILLE: SHLOMO MELMED.
DR. MELMED: YES.
MS. BONNEVILLE: PHIL PIZZO. FRANCISCO PRIETO.
DR. PRIETO: AYE.
MS. BONNEVILLE: DUANE ROTH.
MR. ROTH: YES.
MS. BONNEVILLE: JOAN SAMUELSON.
MS. SAMUELSON: YES.
MS. BONNEVILLE: DAVID SERRANO-SEWELL.
MR. SERRANO-SEWELL: YES.
MS. BONNEVILLE: JEFF SHEEHY.
MR. SHEEHY: YES.
MS. BONNEVILLE: JONATHAN SHESTACK.
MR. SHESTACK: YES.
MS. BONNEVILLE: OSWALD STEWARD.
DR. STEWARD: YES.
MS. BONNEVILLE: JONATHAN THOMAS.
CHAIRMAN THOMAS: YES.
MS. BONNEVILLE: ART TORRES.

MR. TORRES: AYE.

MS. BONNEVILLE: KRISTINA VUORI.

DR. VUORI: YES.

MS. BONNEVILLE: JAMES ECONOMOU.

DR. ECONOMOU: YES.

CHAIRMAN THOMAS: THE MOTION CARRIES. MR. HARRISON, I PRESUME THAT HAVING PASSED THE MOTION, WE CAN NOW DISCLOSE DETAILS. DR. YAFFE.

DR. YAFFE: THIS IS PROFESSOR ANDREW MCMAHON, AND THE INSTITUTION IS USC. DR. MCMAHON -- I MEAN WE HAVE MANAGED TO RECRUIT HIM FROM HARVARD UNIVERSITY WHERE HE WAS CO-DIRECTOR OF THE HARVARD STEM CELL INSTITUTE. HE HAS AN ILLUSTRIOUS PEDIGREE AND ACCOMPLISHMENTS, SOME OF WHICH ARE IN THE SUMMARY. HE HAS ALREADY -- IS READY TO RESUME HIS DUTIES AT USC.

CHAIRMAN THOMAS: THANK YOU, DR. YAFFE. NOW, DO WE HEAR A MOTION FOR THE SECOND CANDIDATE TO APPROVE?

MR. SHEEHY: SO MOVED.

CHAIRMAN THOMAS: MOVED BY MR. SHEEHY.

MR. SHESTACK: SECONDED.

CHAIRMAN THOMAS: SECONDED BY MR. SHESTACK. IN THIS INSTANCE DO WE HAVE A REQUEST TO -- I BELIEVE THERE'S INTEREST IN RETIRING TO

CLOSED SESSION TO DISCUSS. MR. JUELSGAARD.

DR. JUELSGAARD: YES. I WOULD MOVE THAT WE GO INTO CLOSED SESSION AND DISCUSS.

CHAIRMAN THOMAS: IS THAT SOMETHING WE NEED A VOTE ON, MR. HARRISON? NO. SO I'M ADVISED BY MR. HARRISON ON THIS THAT WE WILL GO INTO CLOSED SESSION RIGHT NOW. AND THAT WHEN WE COME OUT, WE WILL GET PUBLIC COMMENT ON THIS AT THAT TIME; IS THAT CORRECT, MR. HARRISON?

MR. HARRISON: YES.

CHAIRMAN THOMAS: OKAY. SO I WOULD ASK MEMBERS OF THE BOARD TO GO WHERE?

MS. BONNEVILLE: TO THE SAN RAMON ROOM WHERE YOU GRABBED LUNCH.

CHAIRMAN THOMAS: TO THE LUNCHROOM SO-CALLED. PLEASE PROCEED IMMEDIATELY OVER THERE. AND WE WILL GO -- MR. HARRISON, WHAT IS IT WE ARE ADDRESSING IN CLOSED SESSION?

MR. HARRISON: THANK YOU, CHAIR. THE BOARD WILL BE CONVENING IN CLOSED SESSION TO DISCUSS APPLICATIONS FOR DISEASE TEAM THERAPY DEVELOPMENT AWARDS AS WELL AS RESEARCH LEADERSHIP APPLICATION NO. 6535 PURSUANT TO HEALTH AND SAFETY CODE SECTION 125290.30(F)(3)(B) AND (C).

CHAIRMAN THOMAS: THANK YOU.

(THE BOARD THEN WENT INTO CLOSED SESSION, NOT REPORTED NOR HEREIN TRANSCRIBED. THE FOLLOWING WAS THEN HEARD IN OPEN SESSION:)

CHAIRMAN THOMAS: MEMBERS OF THE BOARD, PLEASE TAKE YOUR SEATS. ONCE THE BOARD MEMBERS HAVE TAKEN THEIR SEATS, WE'LL RESUME HERE. IT'S MY UNDERSTANDING THAT MARCY HAD TO STEP OUT OF THE ROOM FOR A MOMENT, MAY TAKE A COUPLE MINUTES TO GET BACK IN. SO, MR. HARRISON, WHILE MARCY STEPPED OUT AND IS GOING TO BE COMING BACK IN A COUPLE OF MINUTES, WE CAN STILL PROCEED TO DISCUSSION, CORRECT? WE JUST CAN'T VOTE ON ANYTHING BECAUSE SHE'S REQUIRED FOR THE QUORUM?

MR. HARRISON: CORRECT.

CHAIRMAN THOMAS: MARIA, HOW WE DOING?

MS. BONNEVILLE: WE ARE WAITING FOR JOAN AND OS TO GET BACK INTO THE ROOM.

CHAIRMAN THOMAS: JOAN AND OS. OKAY. SO LET'S JUST -- WE CAN START DISCUSSION THOUGH, CORRECT?

MR. HARRISON: YES.

CHAIRMAN THOMAS: OKAY. SO WE CAN'T VOTE ON ANYTHING TILL WE GET THE QUORUM BACK. THERE'S OS. WE NEED JOAN AND MARCY TO BE BACK. IS DAVID HERE? THE OTHER DAVID. OKAY.

SO I THINK WE CAN'T VOTE UNTIL WE GET OUR QUORUM BACK, SO WE CAN PROCEED TO DISCUSSION. MR. HARRISON, IF YOU COULD LAY OUT WHERE THINGS ARE GOING FROM HERE.

MR. HARRISON: I WILL TRY MY BEST. WE HAVE SEVEN APPLICATIONS WHICH ARE NOW IN TIER I. WE NEED TO APPROVE FUNDING FOR THOSE APPLICATIONS. WE HAVE ONE MOTION THAT HAS BEEN TABLED, AND THAT MOTION IS TO MOVE APPLICATION 57 -- TO REFER APPLICATION 5739 FOR ADDITIONAL REVIEW BY THE GRANTS WORKING GROUP OR SOME SUBSET OF IT. WE CAN BRING THAT MOTION BACK AND TAKE A VOTE ON IT.

MR. SHESTACK: OR IF WE WANT THE MOTION -- DOES THE PERSON WHO MADE THE MOTION STILL WANT IT?

MR. HARRISON: THAT'S WHAT I WAS SUGGESTING. WE'D TAKE A VOTE ON THAT MOTION.

CHAIRMAN THOMAS: WE CAN VOTE ON THAT?

MR. HARRISON: ONCE WE HAVE A QUORUM, WE CAN.

CHAIRMAN THOMAS: CORRECT.

MR. ROTH: MR. CHAIRMAN, THERE APPEAR TO BE A NUMBER OF GRANTS THAT MAY, IN FACT, BE REFERRED. AND WOULD THOSE NEED TO BE TAKEN INDIVIDUALLY, OR COULD THEY BE LUMPED TOGETHER IN ONE VOTE?

CHAIRMAN THOMAS: I'M NOT SURE. I'LL ASK MR. HARRISON IF THAT NEEDS A VOTE OR IF WE JUST --

MR. HARRISON: I WAS TALKING WITH PAT OLSON.

MR. ROTH: THE QUESTION WAS COULD A NUMBER OF THE GRANTS THAT ARE GOING TO BE RECOMMENDED FOR REFERRAL FOR FURTHER REVIEW BE DONE AS A GROUP, OR DO THEY HAVE TO BE DONE INDIVIDUALLY?

MR. HARRISON: WE SHOULD TAKE THEM UP INDIVIDUALLY. AT THIS TIME THERE'S JUST ONE THAT'S THE SUBJECT OF A MOTION. THERE ARE OTHERS THAT HAVE ALREADY BEEN REFERRED. SO IF YOU WOULD LIKE TO MAKE A MOTION WITH RESPECT TO AN ADDITIONAL ONE, WE COULD DO THAT AT THIS TIME.

MR. TORRES: SO TWO HAVE BEEN REFERRED, THE ALZHEIMER'S AND THE HEART, CORRECT?

CHAIRMAN THOMAS: YES.

MR. TORRES: THOSE ARE DONE.

CHAIRMAN THOMAS: YES.

MR. HARRISON: THREE APPLICATIONS HAVE ALREADY BEEN REFERRED FOR ADDITIONAL CONSIDERATION OF NEW INFORMATION. THEY ARE APPLICATIONS 5416, 5735, AND 5426.

DR. STEWARD: QUESTION. AS LONG AS WE CAN'T VOTE, IF WE DO NOT TAKE ACTION, IS IT POSSIBLE

FOR SCIENCE STAFF TO CONTINUE TO GATHER INFORMATION ALONG THE LINES THAT WE'VE DISCUSSED ON SOME OF THESE PROPOSALS?

MR. HARRISON: TO THE EXTENT THAT YOU WANT TO GIVE THAT DIRECTION TO SCIENCE STAFF, YOU CAN, AND THEN YOU CAN DEFER --

DR. STEWARD: WHAT I'M ASKING IS IF WE DID NOT HAVE TIME TO VOTE FULLY ON THOSE, COULD SCIENCE STAFF CONTINUE TO GATHER?

MR. HARRISON: YES. AND THEN WE WOULD JUST BRING THEM BACK TO THE BOARD AT ITS NEXT MEETING.

DR. STEWARD: JUST TO SAY THAT MIGHT BE AN APPROACH FOR SOME OF THESE THINGS THAT WE THINK ARE GOING TO NEED TO HAVE ADDITIONAL INFORMATION ANYWAY. IF WE DON'T GET TO THEM, THEY'LL BE IN CONTINUANCE BY DEFAULT? WHAT I'M ACTUALLY SAYING HERE IS THAT I WOULD SAY, AS SOON AS WE CAN, LET'S VOTE ON THE ONES THAT WE CAN VOTE ON. AND IF WE DON'T GET TO SOME, THAT'S FINE.

CHAIRMAN THOMAS: WELL, I THINK THE --

DR. TROUNSON: SO, CHAIR, WE WOULD NEED AS MUCH CLARITY AS POSSIBLE, I THINK. I KNOW STAFF ARE TAKING NOTES ON THIS, BUT I THINK WE NEED TO BE AS CLEAR AS POSSIBLE ABOUT THE GROUNDS AND WHAT THE

ICOC WANTS US TO DO SO THAT WE CAN ACTUALLY COME BACK WITH A FIRM RESPONSE THAT MEETS YOUR EXPECTATIONS. SO I DON'T THINK GOING OFF AND JUST DOING OUR OWN IS REALLY A GOOD WAY OF DOING IT. WE NEED TO BE VERY CLEAR WHAT WE SHOULD DO.

CHAIRMAN THOMAS: WITH RESPECT TO THE RECONSIDERATION?

DR. TROUNSON: YEAH.

CHAIRMAN THOMAS: I THINK WHAT WE'VE DISCUSSED WAS THAT WITH RESPECT TO THOSE THAT YOU AREN'T CONFLICTED OUT ON, THAT YOU AND MR. SHEEHY --

DR. TROUNSON: I GOT THAT, YEAH.

CHAIRMAN THOMAS: -- WOULD SIT DOWN AND DEVISE THE PROPER PROTOCOL FOR REVISITING WITH EITHER THE CHAIR OF THE GRANTS WORKING GROUP OR A SUBSET THEREOF AND WOULD CONVENE THEM IN A FASHION WITH MATERIALS IN ADVANCE THAT THEY CAN CONDUCT A RECONSIDERATION OF. WHAT BEYOND THAT DO YOU NEED?

DR. TROUNSON: I UNDERSTOOD THOSE ARE NEW MATERIALS, NEW MATERIALS, THAT'S WHAT WE'LL BE DOING. THERE WILL BE NEW MATERIALS. I'M NOT SURE THE ONE I WAS CONFLICTED ON. IT DOESN'T MATTER. WE'LL PICK THAT UP. BUT ANY OTHERS, I THINK THERE WAS A PUBLICATION INVOLVING ONE. SO WE WOULD NEED TO BE JUST CLEAR ABOUT WHAT IT WAS.

CHAIRMAN THOMAS: I BELIEVE STAFF WILL HAVE TAKEN NOTES TODAY ON EVERYTHING THAT WAS OFFERED THAT WAS NEW THAT THE BOARD FELT WARRANTED FURTHER REVIEW.

MS. BONNEVILLE: MARCY, ARE YOU THERE?

MS. FEIT: YES, I AM.

MR. TORRES: MR. CHAIRMAN, I MOVE THAT WE APPROVE THOSE ITEMS THAT ARE IN TIER NO. I FOR FUNDING IN TIER I.

MR. SHESTACK: I SECOND.

MR. HARRISON: LET ME JUST READ THE APPLICATION NUMBERS FOR THE RECORD. THAT WOULD INCLUDE APPLICATION 5415, 5309, 5302, 5423, 5736, 5394, AND THEN 5320, WHICH WAS MOVED INTO TIER I BY A VOTE OF THE BOARD.

MS. FEIT: JAMES, COULD YOU READ THOSE LAST THREE AGAIN, PLEASE?

MR. HARRISON: THE LAST THREE ARE 5736, 5394, AND 5320.

MS. FEIT: OKAY. THANK YOU.

MR. TORRES: CALL THE ROLL.

CHAIRMAN THOMAS: MARIA, WILL YOU PLEASE CALL THE ROLL. WHO WAS THE SECOND, BY THE WAY, AGAIN?

MR. TORRES: DR. HAWGOOD AND JON SHESTACK.

MR. HARRISON: WE NEED TO HAVE ANOTHER SECOND FOR THIS MOTION. WE NEED ANOTHER SECOND FOR THIS MOTION.

MR. ROTH: I WILL SECOND THAT.

CHAIRMAN THOMAS: OKAY. MAY WE PROCEED?

MR. HARRISON: WE CAN. JUST A REMINDER TO MEMBERS, BECAUSE THIS IS AN OMNIBUS MOTION, PLEASE YES OR NO EXCEPT AS TO THOSE WITH WHICH YOU HAVE A CONFLICT.

MS. BONNEVILLE: ROBERT PRICE.

DR. PRICE: YES, EXCEPT FOR THOSE WITH WHICH I HAVE A CONFLICT.

MS. BONNEVILLE: JACOB LEVIN.

DR. LEVIN: YES, EXCEPT FOR THOSE WITH WHICH I HAVE A CONFLICT.

MS. BONNEVILLE: CLAIRE POMEROY.

DR. POMEROY: YES, EXCEPT FOR THOSE WITH WHICH I HAVE A CONFLICT.

MS. BONNEVILLE: MARCY FEIT.

MS. FEIT: YES, EXCEPT FOR THOSE WITH WHICH I HAVE A CONFLICT.

MS. BONNEVILLE: LEEZA GIBBONS.

MS. GIBBONS: YES. I HAVE NO CONFLICTS.

MS. BONNEVILLE: MICHAEL GOLDBERG.

MR. GOLDBERG: YES, EXCEPT FOR THOSE WITH

WHICH I HAVE A CONFLICT.

MS. BONNEVILLE: SAM HAWGOOD.

DR. HAWGOOD: YES, EXCEPT FOR THOSE WITH WHICH I HAVE A CONFLICT.

MS. BONNEVILLE: STEPHEN JUELSGAARD.

DR. JUELSGAARD: YES.

MS. BONNEVILLE: BERT LUBIN.

DR. LUBIN: YES, EXCEPT FOR THOSE WITH WHICH I HAVE A CONFLICT.

MS. BONNEVILLE: FRANCISCO PRIETO.

DR. PRIETO: YES, EXCEPT FOR THOSE WITH WHICH I HAVE A CONFLICT.

MS. BONNEVILLE: DUANE ROTH.

MR. ROTH: YES.

MS. BONNEVILLE: JOAN SAMUELSON.

MS. SAMUELSON: YES.

MS. BONNEVILLE: DAVID SERRANO-SEWELL.

MR. SERRANO-SEWELL: YES.

MS. BONNEVILLE: JEFF SHEEHY.

MR. SHEEHY: YES, EXCEPT FOR THOSE WITH WHICH I HAVE A CONFLICT.

MS. BONNEVILLE: JONATHAN SHESTACK.

MR. SHESTACK: YES.

MS. BONNEVILLE: OSWALD STEWARD.

DR. STEWARD: YES, EXCEPT FOR THOSE WITH

WHICH I HAVE A CONFLICT.

MS. BONNEVILLE: JONATHAN THOMAS.

CHAIRMAN THOMAS: YES.

MS. BONNEVILLE: ART TORRES.

MR. TORRES: AYE.

MS. BONNEVILLE: KRISTINA VUORI.

DR. VUORI: YES.

MS. BONNEVILLE: MOTION CARRIES.

(APPLAUSE.)

CHAIRMAN THOMAS: CONGRATULATIONS TO EVERYBODY.

MR. HARRISON, COULD YOU PLEASE DESCRIBE OUR NEXT MOVE?

MR. HARRISON: CORRECT. WE HAVE A MOTION THAT WAS TABLED THAT I'D SUGGEST THE BOARD RETURN TO AT THIS POINT, WHICH IS THE MOTION MADE BY MR. JUELSGAARD AND SECONDED BY DR. VUORI TO REFER APPLICATION 5739 FOR ADDITIONAL REVIEW.

CHAIRMAN THOMAS: ANY FURTHER BOARD DISCUSSION ON THAT MOTION? MR. JUELSGAARD, WOULD YOU LIKE TO RESTATE YOUR RATIONALE?

MR. HARRISON: UNLESS SOMEONE WANTS TO MOVE IT OFF THE TABLE --

MR. JUELSGAARD: I SO MOVE TO TAKE THE MOTION OFF THE TABLE.

MR. ROTH: SECOND.

CHAIRMAN THOMAS: MOVED AND SECONDED. ALL THOSE IN FAVOR PLEASE SAY AYE. AYE. OPPOSED? ABSTENTIONS? MOTION CARRIES.

MOTION IS BACK ON THE TABLE. MR. JUELSGAARD, WOULD YOU LIKE TO FURTHER COMMENT?

DR. JUELSGAARD: NO.

DR. STEWARD: JAMES, I DID NOT VOTE.

CHAIRMAN THOMAS: THE MOTION IS BACK ON THE TABLE. IT'S UP FOR DISCUSSION. MR. HARRISON IS HOLDING HIS FACE. THIS IS NOT A GOOD SIGN. LET US PROCEED. IF THERE'S NO FURTHER -- WE'RE NOW CONSIDERING THE MOTION. SO IT'S TO REFER TO THE GROUP TO RECONSIDER.

MR. JUELSGAARD, THERE WAS AN ORIGINAL SECOND, WHICH PERHAPS MR. HARRISON COULD --

MR. HARRISON: DR. VUORI WAS THE SECOND.

CHAIRMAN THOMAS: OKAY. SO THE MOTION NOW FOR CONSIDERATION IS.

MR. HARRISON: THE MOTION FOR CONSIDERATION IS TO REFER APPLICATION 5739 FOR ADDITIONAL REVIEW OF NEW INFORMATION BY THE PEER REVIEW GROUP WITH DIRECTION TO THE PRESIDENT AND CO-VICE CHAIR SHEEHY TO DETERMINE THE MAKEUP OF THE PEER REVIEW PANEL OR SUBSET OF THE PANEL AND REQUEST

A RECOMMENDATION AT THE NEXT REGULARLY SCHEDULED BOARD MEETING.

MR. SHEEHY: I WOULD URGE MEMBERS TO VOTE AGAINST THIS MOTION. SORRY, MR. JUELSGAARD, BUT I HAVEN'T SEEN ANY NEW INFORMATION THAT WE WOULD HAVE TO CONSIDER. BUT IF WE ARE GOING TO CONSIDER IT, UNLESS THERE'S A WITHDRAWAL OF THE MOTION, PERHAPS, BUT STILL LOOKING FOR INFORMATION THAT WE WOULD SEND BACK TO BE REVIEWED.

MR. TORRES: SO AT THIS POINT THIS CURRENT GROUP HAS AN AWARD THEY ARE IMPLEMENTING AS WE SPEAK, CORRECT, A $4 MILLION AWARD?

DR. TROUNSON: THAT'S CORRECT. TRANSLATION, EARLY TRANSLATION AWARD, THAT'S CORRECT. ONE YEAR, SO THEY'RE IN THEIR SECOND YEAR NOW.

DR. HAWGOOD: JUST AS A POINT OF CLARIFICATION, IF WE ARE REFERRING BACK FOR FURTHER REVIEW, IT'S ON THE BASIS OF MATERIALS THAT YOU'VE ALREADY RECEIVED, NOT GOING BACK TO THEM TO GIVE YOU YET MORE MATERIALS; IS THAT CORRECT? IS THAT THE BASIS OF THE --

DR. TROUNSON: WELL, I DON'T KNOW WHAT WE'D REFER IT BACK TO IF YOU DON'T HAVE NEW INFORMATION. I'M NOT SURE THAT THE GRANTS WORKING

GROUP CAN REALLY NECESSARILY GIVE YOU --

DR. HAWGOOD: MY QUESTION IS IF ANY OF THEM, INCLUDING THE ONES WE'VE ALREADY REFERRED BACK, YOU'RE NOT GOING TO REACH OUT TO THE GRANTEES TO GIVE YOU YET MORE INFORMATION.

DR. TROUNSON: NO. NO. WE NEED TO GET THE INFORMATION FROM THEM VERY CLEARLY. I NEED TO TALK TO JEFF, BUT WE WOULD VERY CLEARLY NEED TO GET AS MUCH INFORMATION AS APPROPRIATE.

DR. PRICE: I THINK THERE'S A DIFFERENT QUESTION.

MR. SHESTACK: THEY KNOW WHAT INFORMATION THEY'RE ASKING FOR. MARBAN AND THE DMD, THERE'S SPECIFIC NEW INFORMATION THEY WANT SUBSTANTIATION OF. IT'S NOT JUST A GENERAL GIVE ME NEW INFORMATION IF YOU GOT IT.

MS. SAMUELSON: THERE ARE POLICY MATTERS THAT HAVE ARISEN TODAY I THINK WE WANT TO MAKE CERTAIN HAVE BEEN RESOLVED AND HOW.

CHAIRMAN THOMAS: SO, DR. TROUNSON, WHAT YOU'RE SAYING IS NO NEW INFORMATION THERE NOW. THERE COULD BE INFORMATION THAT YOU COULD SOLICIT THAT WOULD FURTHER ENLIGHTEN. IS THAT WHAT YOU ARE SAYING?

DR. TROUNSON: I THINK WE WANT AS FULL OF

INFORMATION AS IS POSSIBLE. SO YOU REMEMBER THAT IN ONE OF THE PROJECTS IT WAS A COMPANY NEWS RELEASE. WE WOULD WANT A LITTLE MORE INFORMATION THAN THAT, I'D SUGGEST. AND SO I THINK WE SHOULD SEEK THAT. SO I JUST WANT TO MAKE SURE THAT THE INFORMATION THAT WE SEE THAT WE CAN GET HOLD OF AND PROVIDE TO THE GRANTS WORKING GROUP WOULD BE SUFFICIENT FOR THEM TO MAKE IT WORTHWHILE FOR THEM TO DO A THOROUGH REVIEW. REMEMBER, YOU GOT TO DRAW IT FROM DOWN AROUND 40S TO MAKE IT APPLICABLE.

CHAIRMAN THOMAS: I'M ASKING WITH SPECIFIC PERTINENCE TO THIS APPLICATION. IS THERE ADDITIONAL INFORMATION YOU WOULD WANT TO HAVE?

DR. TROUNSON: IF YOU REFER IT TO US, WE WILL HAVE TO GO AND FIND SOME ADDITIONAL INFORMATION BECAUSE IT'S NOT BEEN PROVIDED. SO WE WILL HAVE TO SEEK ADDITIONAL INFORMATION. I THINK WHAT I HEARD JEFF SHEEHY SAY THAT HE DIDN'T THINK THAT THERE WAS. BUT IF YOU REFER IT TO US, WE WILL HAVE TO GO AND FIND OUT IF THERE IS, AND THEN WE'LL PUT THAT TO THE REVIEW GROUP. THAT WILL BE WHAT WE'LL NEED TO DO.

CHAIRMAN THOMAS: SO THIS IS DIFFERENT THAN THE OTHER THREE WHERE INFORMATION WAS --

DR. TROUNSON: I CAN'T ANSWER FOR ONE OF THEM, BUT THE OTHER TWO, YES.

DR. POMEROY: SO, J.T., IF I COULD, WHAT I'VE JUST HEARD EVERYBODY SAY IS TO SEND IT BACK FOR FURTHER REVIEW BECAUSE THERE'S NEW INFORMATION. WE HAVE TO HAVE SOME INDICATION THAT THERE IS FURTHER INFORMATION. AFTER THAT, THE SPECIFICS OF THAT FURTHER INFORMATION WOULD BE OBTAINED BY STAFF. BUT ON THIS PARTICULAR ONE, THE QUESTION IS DO WE HAVE ANY REASON TO REFER IT BACK? DO WE HAVE ANY EVIDENCE THAT THERE IS FURTHER INFORMATION? AND I THINK WHAT JEFF WAS SAYING IS HE HADN'T HEARD IT, AND I'M NOT SURE I HAVE. SO DID ANYONE HEAR ANY INDICATION THAT THERE'S FURTHER INFORMATION ON THIS?

MR. TORRES: THE ONLY INDICATION I'VE HEARD IS THAT THE INFORMATION THAT WAS PROVIDED IS INCOMPLETE. IT IS NOT A COMPLETE APPLICATION.

CHAIRMAN THOMAS: DR. TROUNSON.

DR. TROUNSON: I DID HEAR THEM SAY THAT THEY'VE MANUFACTURED A NEW BASE OF CELLS. NOW, WHETHER THAT'S SUFFICIENT TO WARRANT THE REVIEW; AND IF WE GO AND FIND THAT INFORMATION OUT, I SUSPECT WE CAN FIND THAT OUT, BUT WHETHER THAT WILL HELP THE PROJECT OR NOT, WE'LL HAVE TO WAIT AND SEE.

I THOUGHT THAT WAS THE ONLY THING THAT I GATHERED, THAT THERE WAS A NEW BATCH, THAT THEY'VE DONE THAT PRODUCTION RUN. AND SO THEY'VE

ANSWERED -- AT LEAST IT WOULD GO TO AT LEAST PARTLY ANSWER ONE OF THE ISSUES, RIGHT?

MR. TORRES: I'M JUST SENSITIVE TO THE TIME FACTOR THAT'S INVOLVED AND THE WORK THAT'S INVOLVED ON THE PART OF STAFF, THAT AT SOME POINT WE'RE GOING TO HAVE TO DRAW THE LINE. AND IF SOMEONE'S APPLICATION WAS NOT COMPLETE, THEN HOW MANY TIMES DO WE OPEN THE DOOR AGAIN? WE'RE TRYING TO BE TRANSPARENT, WE'RE TRYING TO BE FAIR. SO I THINK AT THIS POINT, LET'S FIND OUT WHAT THEY'VE GOT AND CONFIRM IT. AND IF THEY DON'T HAVE IT, THEN WE CAN'T CONFIRM IT.

DR. TROUNSON: AGREE. I THINK IF YOU PUT IT INTO THE PROCESS, WE WILL GO AND DO OUR BEST. BUT AS YOU QUITE RIGHTLY SAY, MAYBE YOU CAN SAY THAT FOR A LOT OF THE PROJECTS AND WE HAVEN'T DONE THAT. SO IN SOME RESPECTS, THAT'S A LITTLE NEW. BUT STILL, IF YOU WANT US TO DO THAT, WE WILL DO IT. BUT IF YOU FEEL THAT IT IS UNWARRANTED, YOU NEED TO MAKE THAT DECISION YOURSELVES.

CHAIRMAN THOMAS: MR. JUELSGAARD IS THE ORIGINAL MAKER OF THE MOTION.

DR. JUELSGAARD: SO MY UNDERSTANDING IS, AND I THINK WE SHOULD JUST TALK ABOUT IT FOR A MOMENT, IS THAT THERE'S -- MR. TORRES REFERRED TO

THIS -- THAT THERE'S ALREADY AN EARLY TRANSLATIONAL GRANT OF $4 MILLION THAT'S BEEN MADE, WHICH WAS A THREE-YEAR GRANT, AND THAT GRANT IS NOW ONLY ONE YEAR THROUGH THAT THREE-YEAR PROCESS. AND THAT MOVING THIS TO THE NEXT STAGE MAY BE PREMATURE GIVEN THAT THERE'S MORE EARLY TRANSLATIONAL WORK THAT MIGHT BE DONE, WHICH IS DIFFERENT THAN PERHAPS NEEDING MORE INFORMATION.

SO THAT FOR ME WAS A NEW FACT, SOMETHING THAT WASN'T DISCUSSED PREVIOUSLY. AND I THINK IT'S IMPORTANT THAT WE PUT THAT ON THE TABLE BECAUSE I THINK THAT'S A FACTOR IN CONSIDERING WHERE TO GO HERE.

CHAIRMAN THOMAS: ANY FURTHER COMMENT?

MR. TORRES: CALL FOR THE QUESTION.

DR. VUORI: I WOULD LIKE TO MAYBE ECHO WHAT STEPHEN JUST SAID. SO MY BASIS FOR THINKING OF REFERRING THIS BACK TO THE WORKING GROUP WAS THE NOTION THAT IN THE WRITTEN EDITION, OTHER THERAPEUTIC DEVELOPMENT READINESS, I INTERPRETED THAT THE FOUR POINTS THAT WERE ADDRESSED THERE, THAT RELATED TO HAVING GMP PRODUCT, HAVING CELL (UNINTELLIGIBLE) MANUFACTURED, THAT ALL THIS IS NEW INFORMATION AND NEW DATA. AND THAT (UNINTELLIGIBLE) PROGRESS CLOSE TO BEING READY FOR THERAPEUTIC

DEVELOPMENT. CERTAINLY FOR THOSE WHO ARE MORE FAMILIAR WITH THE APPLICATION AS TO WHAT IS NEW AND WHAT'S NOT.

CHAIRMAN THOMAS: SO, KRISTINA, ARE YOU SAYING YOU'RE IN FAVOR OF REFERRING IT FOR RECONSIDERATION OR NOT?

DR. VUORI: SO BASED ON INFORMATION THAT I HAVE IN FRONT OF ME, I HAVE INTERPRETED THAT THERE IS NEW INFORMATION SINCE THE ORIGINAL SUBMISSION AND REVIEW OF THIS APPLICATION. BUT I HAVE NOT SEEN THE ORIGINAL APPLICATION AND, HENCE, I DON'T KNOW THAT FOR A FACT. IF THERE IS NEW DATA, THEN I THINK WE SHOULD REFER IT BACK TO THE WORKING GROUP. BUT I'M NOW HEARING THE COMMENTS, ESPECIALLY FROM ALAN TROUNSON, I'M NOT SURE IF THIS IS ACTUALLY NEW DATA OR IF THEY ARE JUST REPEATING THE SAME INFORMATION THAT THEY ORIGINALLY HAD IN PLACE.

CHAIRMAN THOMAS: DR. TROUNSON, DO YOU WANT TO COMMENT ON THAT?

DR. TROUNSON: SORRY, CHAIR. I CAN'T UNDERSTAND WHAT SHE'S SAYING UNFORTUNATELY UNLESS YOU CAN HELP ME UNDERSTAND THE ACTUAL QUESTION.

CHAIRMAN THOMAS: SHE WAS SAYING, AS SHE SEES THE PETITION, THAT THERE WAS -- THERE WERE A NUMBER OF POINTS WHICH SUGGESTED THERE WAS NEW DATA

BEING MADE AVAILABLE, AND THAT HER THOUGHT ON WHY THIS SHOULD BE POTENTIALLY REFERRED FOR RECONSIDERATION IS BASED ON THAT SUGGESTION OF NEW DATA. IS THAT ACCURATE, KRISTINA?

DR. VUORI: THAT'S CORRECT.

DR. TROUNSON: WELL, I THINK IT'S A MATTER OF HOW MUCH IS NEW DATA, TO BE HONEST. IT DIDN'T PASS OUR STAFF HIGH BAR FOR NEW INFORMATION, AND SO WE DIDN'T FEEL THAT IT DID THAT. MAYBE THE ICOC FEELS DIFFERENTLY. BUT, YES, THERE IS SOME NEW INFORMATION, BUT I'M UNSURE WHETHER THAT'S REALLY PARTICULARLY SIGNIFICANT WITH RESPECT TO THE GRANT. BUT IF YOU REFER IT BACK, WE WILL TAKE WHAT INFORMATION WE CAN FIND AND GET IT INTO THE GRANTS REVIEW AND JUST SEE. BUT STAFF ARE -- I THINK WE'RE FAIRLY -- WE WERE FAIRLY COMFORTABLE THAT THERE WASN'T SIGNIFICANT NEW INFORMATION.

CHAIRMAN THOMAS: BRIEFLY, DOCTOR, IF YOU'D LIKE TO COMMENT ON THAT.

DR. KLASSEN: YES, THANK YOU. SO WE MADE THE NEW GMP BANK. THAT'S THE MAJOR NEW INFORMATION. THERE'S ADDITIONAL INFORMATION IN OUR EARLY TRANSLATIONAL TO FIRST-YEAR REPORT THAT THE REVIEWERS DIDN'T HAVE AVAILABLE TO THEM. AND THERE'S THE ORPHAN DRUG DESIGNATION APPROVAL. BUT

THE GMP PART IS CENTRAL TO THEIR CRITICISMS, AND THAT'S WHY I BRING IT UP. I THINK THAT WAS REALLY THEIR ONLY MAJOR CRITICISM. AND SO THEY SAID YOU'RE WORKING ON GTP CELLS AND YOU PLAN TO MAKE GMP. WELL, WE MADE GMP. SO NOW WE DON'T HAVE TO STRUGGLE WITH GTP, AND SO ALL THE MYRIAD CONCERNS RELATED TO THAT ARE BASICALLY IN THE REAR-VIEW MIRROR NOW. IT'S OVER WITH.

CHAIRMAN THOMAS: MR. JUELSGAARD, YOU HAVE A THOUGHT ON THAT POINT? DR. TROUNSON, IN YOUR OPINION, HOW CENTRAL TO THE SCORING WAS THAT PARTICULAR PERCEIVED FAILURE?

DR. TROUNSON: WELL, IT WAS CERTAINLY CONSIDERED A WEAKNESS IN THE PROJECT, AND I THINK IT'S IMPORTANT FOR US TO KNOW THAT. BUT AS I SAID, I DON'T WANT TO TRY AND MAKE YOUR DECISION FOR YOU, BUT I THINK IT IS A FACTOR. HOW MUCH OF A FACTOR, I THINK WE WOULD NEED TO -- IF YOU REFER IT BACK TO US, WE'LL HAVE TO GET THE GRANTS WORKING GROUP TO DECIDE ON IT.

CHAIRMAN THOMAS: OKAY. SO THERE IS A MOTION ON THE TABLE HERE TO REFER THIS FOR FURTHER CONSIDERATION BASED ON NEW DATA, THAT BEING THE PRINCIPAL ITEM. AND WE'RE NOT ENTIRELY CLEAR EXACTLY HOW THAT WOULD INFLUENCE THE PEER REVIEW

PROCESS, THOUGH IT DOES SOUND LIKE A MAJOR FACTOR. SO IS THERE ANY OTHER COMMENT ON THE SUBJECT? OKAY. MR. HARRISON, CAN YOU REPEAT THE MOTION, PLEASE?

MR. HARRISON: YES. THE MOTION IS TO REFER APPLICATION 5739 FOR ADDITIONAL REVIEW OF NEW INFORMATION BY THE PEER REVIEW GROUP WITH DIRECTION TO THE PRESIDENT AND CO-VICE CHAIR SHEEHY TO DETERMINE THE MAKEUP OF THE PEER REVIEW PANEL OR SUBSET OF THE PANEL AND REQUEST THAT THE PEER REVIEW RECOMMENDATION BE PRESENTED TO THE BOARD AT ITS NEXT REGULARLY SCHEDULED MEETING, WHICH IS CURRENTLY SEPTEMBER 6TH.

CHAIRMAN THOMAS: MARIA, WILL YOU CALL THE ROLL.

MS. BONNEVILLE: ROBERT PRICE.

DR. PRICE: NO.

MS. BONNEVILLE: LEEZA GIBBONS.

MS. GIBBONS: YES.

MS. BONNEVILLE: MICHAEL GOLDBERG.

MR. GOLDBERG: YES.

MS. BONNEVILLE: SAM HAWGOOD.

DR. HAWGOOD: NO.

MS. BONNEVILLE: STEPHEN JUELSGAARD.

DR. JUELSGAARD: YES.

MS. BONNEVILLE: BERT LUBIN.

DR. LUBIN: NO.
MS. BONNEVILLE: DUANE ROTH.
MR. ROTH: NO.
MS. BONNEVILLE: JOAN SAMUELSON.
MS. SAMUELSON: YES.
MS. BONNEVILLE: DAVID SERRANO-SEWELL.
MR. SERRANO-SEWELL: YES.
MS. BONNEVILLE: JEFF SHEEHY.
MR. SHEEHY: NO.
MS. BONNEVILLE: JONATHAN SHESTACK.
MR. SHESTACK: NO.
MS. BONNEVILLE: JONATHAN THOMAS.
CHAIRMAN THOMAS: YES.
MS. BONNEVILLE: ART TORRES.
MR. TORRES: AYE.
MS. BONNEVILLE: KRISTINA VUORI.
DR. VUORI: YES.
MR. HARRISON: THAT MOTION CARRIES.
CHAIRMAN THOMAS: OKAY. SO THIS WILL BE REFERRED BACK, DR. TROUNSON, FOR FURTHER CONSIDERATION.
MR. ROTH.
MR. ROTH: MR. CHAIRMAN, I'D LIKE TO MOVE 5352 FOR REVIEW. AND IF I GET A SECOND, I'LL SAY WHY.

MR. TORRES: SECOND.

CHAIRMAN THOMAS: BEEN MOVED AND SECONDED. 5352 WILL BE MOVED FOR REVIEW. THIS IS THE ONCOMED APPLICATION.

MR. ROTH: SO SPECIFICALLY, THE REQUEST WOULD BE TO LOOK AT THE BIOMARKER AND TO ASSESS WHETHER THE BIOMARKER CAN, IN FACT, SELECT PROPERLY FOR THE PHASE II STUDY.

SECOND PART OF THAT WOULD BE TO LOOK AT THE AGREEMENTS BETWEEN GSK -- TO LOOK AT AGREEMENTS BETWEEN GSK AND ONCOMED.

CHAIRMAN THOMAS: IS THERE DISCUSSION BY MEMBERS OF THE BOARD? HEARING NONE, CALL FOR THE QUESTION. CAN YOU RESTATE THE MOTION, MR. HARRISON?

MR. HARRISON: THE MOTION IS TO REFER APPLICATION 5352 FOR ADDITIONAL REVIEW OF NEW INFORMATION BY THE PEER REVIEW GROUP WITH DIRECTION TO THE PRESIDENT AND CO-VICE CHAIR SHEEHY TO DETERMINE THE MAKEUP OF THE PEER REVIEW PANEL OR THE SUBSET OF THE PANEL AND REQUEST THAT THE PEER REVIEW RECOMMENDATION BE PRESENTED TO THE BOARD AT ITS NEXT REGULARLY SCHEDULED MEETING.

THE ONLY CAVEAT I WOULD OFFER ON BEHALF OF STAFF IS THAT WE NOW HAVE A NUMBER OF APPLICATIONS AND A RELATIVELY SHORT PERIOD OF TIME IN WHICH FOR

THAT NEW REVIEW TO TAKE PLACE DURING WHAT IS LARGELY A SUMMER VACATION SEASON. SO THAT DEADLINE MAY BE SOMEWHAT DIFFICULT TO ACCOMPLISH. SO IF THE BOARD UNDERSTANDS THAT STAFF WILL DO THEIR BEST TO MEET THE TIMELINE. BUT IF WE CAN'T, WE CAN'T.

CHAIRMAN THOMAS: I THINK THAT'S A VERY REASONABLE OBSERVATION, WHICH MAY MEAN THAT SOME GET CARRIED OVER UNTIL THE OCTOBER BOARD MEETING, BUT WE NEED TO GIVE THESE THEIR FULL DUE, AND WE DON'T WANT TO RUSH IT, AND WE NEED TO DO IT WHEN PEOPLE ARE AVAILABLE, WHICH THEY MAY OR MAY NOT BE.

MARIA, WOULD YOU CALL THE ROLL, PLEASE?

MS. BONNEVILLE: ROBERT PRICE.

DR. PRICE: NO.

MS. BONNEVILLE: JACOB LEVIN.

DR. LEVIN: YES.

MS. BONNEVILLE: CLAIRE POMEROY.

DR. POMEROY: YES.

MS. BONNEVILLE: LEEZA GIBBONS.

MS. GIBBONS: YES.

MS. BONNEVILLE: MICHAEL GOLDBERG.

MR. GOLDBERG: YES.

MS. BONNEVILLE: STEPHEN JUELSGAARD.

DR. JUELSGAARD: YES.

MS. BONNEVILLE: FRANCISCO PRIETO.

DR. PRIETO: AYE.
MS. BONNEVILLE: DUANE ROTH.
MR. ROTH: YES.
MS. BONNEVILLE: JOAN SAMUELSON.
MS. SAMUELSON: YES.
MS. BONNEVILLE: JONATHAN SHESTACK.
MR. SHESTACK: ABSTAIN.
MS. BONNEVILLE: DAVID SERRANO-SEWELL.
MR. SERRANO-SEWELL: YES.
MS. BONNEVILLE: OSWALD STEWARD.
DR. STEWARD: NO.
MS. BONNEVILLE: JONATHAN THOMAS.
CHAIRMAN THOMAS: YES.
MS. BONNEVILLE: ART TORRES.
MR. TORRES: IN MEMORY OF JULIA TORRES, AYE.
MS. BONNEVILLE: KRISTINA VUORI.
DR. VUORI: YES.
MR. HARRISON: THAT MOTION PASSES.
CHAIRMAN THOMAS: THANK YOU, MR. HARRISON. I BELIEVE THAT LEAVES ONE. LET'S SEE, SENATOR TORRES.
MR. TORRES: YES. I MOVE TO APPROVE FOR FUNDING ITEM 05365.
CHAIRMAN THOMAS: WHICH IS THE?

MR. TORRES: CHEMOTHERAPY-FREE STEM CELL TRANSPLANTATION.

MR. SERRANO-SEWELL: SECOND.

CHAIRMAN THOMAS: OKAY. IT'S BEEN MOVED AND SECONDED. SO LET'S HAVE SOME BOARD DISCUSSION ON THIS ITEM. SENATOR, DO YOU HAVE SOME COMMENTS?

MR. TORRES: NO, I DON'T THINK THERE'S ANYTHING I CAN ADD TO WHAT WE HEARD DURING THE PUBLIC COMMENT PERIOD AS TO THE NECESSITY AND THE NEED.

CHAIRMAN THOMAS: I'LL MAKE A COMMENT HERE. THIS IS ONE THAT I FOUND TROUBLING, THAT WE HAVEN'T SORT OF FIGURED OUT A LOGISTICAL WAY TO ATTACK HERE BECAUSE THE PEER REVIEW GROUP WAS VERY FIRM ON APPROVING THE SCIENCE. THIS IS DIFFERENT THAN MANY OF THE APPLICATIONS WE'VE HEARD TODAY, WHICH WERE QUESTIONS ABOUT THE SCIENCE, IN SOME CASES MANY QUESTIONS ABOUT THE SCIENCE. HERE WE HAVE A PROCESS ISSUE WHICH RELIES ON THE AVAILABILITY OF A MONOCLONAL ANTIBODY CURRENTLY THE INTELLECTUAL PROPERTY OF A COMPANY THAT HAS INDICATED ITS WILLINGNESS TO DO WHAT IT TAKES TO PROVIDE INFORMATION TO MAKE A GOOD-FAITH EFFORT TO ENTER INTO AN MTA AND A LICENSING AGREEMENT TO FACILITATE THE WORK THAT NEEDS TO BE DONE HERE.

AND IT SEEMS TO ME -- AND, MR. HARRISON, I HAVE A QUESTION FOR YOU. ON SOMETHING LIKE THIS WHICH IS THERE HAVE TO BE CONTINGENT ACTS ACCOMPLISHED BEFORE AN AWARD CAN ACTUALLY BE IMPLEMENTED, IS THERE SOME WAY THAT -- ONE OTHER ISSUE AROSE, WHICH IS IT DOESN'T APPEAR IN THE GRANT APPLICATION NOR IN THE PETITION THAT THERE'S A MEANS TO PAY FOR THE MANUFACTURE OF THIS MONOCLONAL ANTIBODY GOING FORWARD IN WHATEVER FASHION THAT'S ACCOMPLISHED, AND THERE WERE THREE OR FOUR OPTIONS GIVEN THAT MAY BE THE CASE.

SO MY QUESTION FOR MR. HARRISON IS WERE WE TO CONSIDER THIS FOR APPROVAL, BECAUSE I THINK THE SCIENCE IS VERY INTERESTING HERE AND POTENTIALLY GROUNDBREAKING, IS THERE A WAY WE COULD DO IT SUBJECT TO THE REQUISITE OBTAINING OF EITHER THE ANTIBODY ITSELF, THE RIGHTS TO THE ANTIBODY, WORKING OUT ALL OF THE REQUISITE AGREEMENTS, AND SUBJECT TO STANFORD AGREEING TO PAY FOR ALL ASPECTS OF THAT SINCE THAT'S BEYOND THE BUDGET OF WHAT IS IN THE ORIGINAL APPLICATION?

MR. TORRES: WE WILL LOSE OUR QUORUM IN SIX MINUTES, MR. CHAIRMAN.

CHAIRMAN THOMAS: THANK YOU, MR. SENATOR.

MR. HARRISON: YES, YOU COULD IMPOSE

CONDITIONS PRECEDENT ON THE FUNDING OF THE AWARD, AND YOU COULD DIRECT STAFF IN THAT REGARD. SO IT WOULD EFFECTIVELY BE CONDITIONALLY APPROVED PROVIDED THAT CERTAIN STEPS ARE SATISFIED.

MR. TORRES: I WILL ADD THAT TO THE MOTION.

CHAIRMAN THOMAS: DR. SHIZURU.

DR. SHIZURU: JUST TO ADDRESS THE ISSUE OF THE MONEY TO PAY FOR THE EXTRA ANTIBODY. WE ACTUALLY DID BUDGET FOR THOSE CONTINGENCIES, SO THAT IS IN THE BUDGET.

CHAIRMAN THOMAS: AND HOW MUCH DID YOU BUDGET FOR THAT? DO YOU RECALL?

DR. SHIZURU: TWO MILLION.

CHAIRMAN THOMAS: AND GIVEN THAT THERE WERE SEVERAL DIFFERENT OPTIONS FOR HOW THAT WAS GOING TO HAPPEN, HOW DO WE REALLY KNOW HOW MUCH THAT'S GOING TO COST?

DR. SHIZURU: WELL, I THINK THAT, YOU KNOW, BASICALLY FOR THE GENERATION FROM THEIR OWN CELL LINE, THAT'S WHAT THE TWO MILLION IS BASED UPON.

CHAIRMAN THOMAS: HERE'S WHAT I WOULD SAY TO THAT. THANK YOU VERY MUCH. TO THE EXTENT THAT THE BOARD DID DECIDE TO CONDITIONALLY APPROVE AND IT

ENDED UP COSTING MORE THAN THAT, THE BALANCE WOULD BE STANFORD'S RESPONSIBILITY.

ARE THERE OTHER THOUGHTS FROM MEMBERS OF THE BOARD ON THIS?

MR. TORRES: CALL THE QUESTION.

CHAIRMAN THOMAS: LET'S SEE IF THERE ARE SOME OTHER THOUGHTS, MR. SENATOR.

MR. TORRES: I DON'T SEE ANY.

CHAIRMAN THOMAS: OKAY. SO, MR. HARRISON, PLEASE REPEAT THE QUESTION -- THE MOTION, RATHER.

MR. SHESTACK: I JUST WANTED TO REMIND THE BOARD THAT WE HAVE REFERRED BACK SIX PROJECTS. ON THE CHANCE THAT ALL SIX PROJECTS HAVE A HAPPY DAY, THAT'S ABOUT ANOTHER $120 MILLION, MAYBE $115 MILLION ON TOP OF THE 130 YOU'VE ALREADY COMMITTED TO. SO I BELIEVE THERE'S A TOTAL POTENTIAL OF 243 OR SOMETHING; IS THAT RIGHT?

CHAIRMAN THOMAS: POINT WELL TAKEN, BUT I THINK FOR THE PURPOSES OF THIS VOTE, WE HAVE TO TAKE THIS ON ITS OWN MERITS AT THIS TIME.

DR. STEWARD: YEAH. I'D ACTUALLY JUST LIKE TO REMIND EVERYBODY THAT THE ASPECT OF COMMERCIALIZATION AND PRACTICALITY OF MOVING THINGS FORWARD WAS A REVIEW CRITERIA -- WERE REVIEW CRITERIA FOR ALL THE REST OF THE GRANTS. IN KEEPING

WITH THE NEED TO KEEP A LEVEL PLAYING FIELD, I THINK THAT IT WOULD BE BETTER, GIVEN THAT WE'VE REFERRED SO MANY BACK FOR ADDITIONAL INFORMATION, THAT THIS ONE ALSO GO BACK FOR ADDITIONAL INFORMATION RATHER THAN BEING GIVEN A PASS WITH LOTS OF CONTINGENCY.

CHAIRMAN THOMAS: WHAT ADDITIONAL INFORMATION WOULD WE --

DR. STEWARD: EXACTLY WHAT YOU JUST SAID. THE ISSUES OF THE ANTIBODY, EVERYTHING THAT YOU LISTED AS A CONTINGENCY, TO MAKE THAT CLEAR.

CHAIRMAN THOMAS: SO IN THIS CASE THE ADDITIONAL INFORMATION WOULD BE THE ACTUAL ACCOMPLISHMENT OF WHAT I DESCRIBED AS OPPOSED TO SEEKING MORE DATA. IS THAT WHAT YOU'RE SUGGESTING?

DR. STEWARD: NOT ACCOMPLISHMENT OF WHAT YOU DESCRIBED, BUT JUST LAYING OUT EXACTLY WHAT ALL THESE ISSUES WERE AS FAR AS THE PRACTICALITY OF MOVING FORWARD. THAT SEEMS TO BE WHERE WE'RE STUCK WITHOUT KNOWING PRECISELY WHAT'S GOING ON HERE.

MR. SERRANO-SEWELL: QUICK POINT OF ORDER. WE HAVE CONDITIONED AWARDS ALL THE TIME. THAT IS NOT UNUSUAL FOR US. AND I UNDERSTAND THAT J.T.'S MOTION DOES JUST THAT, AND THERE ISN'T THE NEED, IN MY VIEW, FOR ADDITIONAL INFORMATION. SO I'M PREPARED TO VOTE ON THE MOTION AS IT STANDS RIGHT

NOW.

DR. POMEROY: WE HAVE RECEIVED SOME ADDITIONAL INFORMATION THAT INDICATES THAT THE COMMERCIALIZATION PERMISSION MAY NOT BE AS BIG AN ISSUE AS IT WAS BEFORE. BUT IN MY READING OF THIS REVIEW, THERE WERE OTHER QUESTIONS ABOUT HOW THIS WOULD ACTUALLY BE ACCOMPLISHED AND, IN FACT, I DON'T THINK THAT WE HAVE -- AND THERE'S NO WAY THAT THEY COULD HAVE PROVIDED YET THE SPECIFIC METHODOLOGIES THAT THEY WOULD USE.

SO IN MY OPINION, THERE ARE A LOT OF DETAILS HERE THAT I HAVEN'T SEEN, AND I DON'T THINK ANY REVIEWER HAS SEEN. SO IT WOULD MAKE MORE SENSE TO ME, IF WE WANT THIS TO HAVE FURTHER CONSIDERATION ON THE BASIS OF WHAT WE'VE LEARNED, TO HAVE THE REVIEWERS GET THE DETAILS OF WHAT IS BEING DISCUSSED HERE.

CHAIRMAN THOMAS: MR. JUELSGAARD.

DR. JUELSGAARD: MR. CHAIRMAN, WE EITHER NEED A MOTION TO AMEND THE MOTION THAT WAS ALREADY ON THE TABLE TO, INSTEAD, DO THIS REVIEW OR MOVE ON.

CHAIRMAN THOMAS: OKAY. JUST QUICKLY, HOW DO OTHER MEMBERS FEEL BECAUSE THERE ARE TWO DIFFERENT OPTIONS HERE. WHAT IS THE SENTIMENT OF OTHERS?

DR. LUBIN: SO IF THE SCIENCE WAS THAT STRONG AND WE'VE HAD CONDITIONAL ONES BEFORE THAT CAN EXPLORE THIS, AND THIS IS AN IMPORTANT AREA, I SEE NO REASON THAT WE CAN'T GO FORWARD, LET PEOPLE REVIEW THE CONDITIONS OF IT, AND RESOLVE THIS MATTER. I THINK IT SOUNDS RESOLVABLE. I DON'T SEE SENDING ANOTHER ONE BACK FOR COMPLETE REVIEW IN THE TIME THAT'S GOING TO BE INVOLVED MAKES A LOT OF SENSE WITH THE STRENGTH OF THE SCIENCE THAT'S BEEN REPORTED HERE.

CHAIRMAN THOMAS: OTHER COMMENTS?

MS. GIBBONS: I THINK THAT GIVEN THE CALIBER OF THE 12 LETTERS OF SUPPORT THAT CAME IN WAS VERY PERSUASIVE FOR ME AS WELL, AND SOME OF THE OTHER ARGUMENTS THAT HAVE BEEN MADE IN SUPPORT OF THIS, SO I'M READY TO VOTE ALSO.

MR. TORRES: CALL FOR THE QUESTION.

CHAIRMAN THOMAS: LET'S BE VERY CLEAR THAT IF THEY DON'T MEET THE CONDITIONS, THEY WON'T GET THE GRANT. SO I THINK THAT IT'S SORT OF THE SAME WAY OF GETTING TO IT, DEAN POMEROY. BUT IN MY OPINION, THIS IS ONE THAT MERITS A LITTLE BIT DIFFERENT APPROACH.

MS. BONNEVILLE: I THINK WE'RE GOING TO LOSE OUR QUORUM IN ABOUT 30 SECONDS.

CHAIRMAN THOMAS: CALLING THE QUESTION. MR. HARRISON, WOULD YOU LIKE TO REPEAT THE MOTION, PLEASE.

MR. HARRISON: YOU ARE GOING TO HAVE TO HELP ME SOME HERE, CHAIR, BECAUSE I UNDERSTAND ONE OF THE CONDITIONS; THAT IS, THAT IT'S SUBJECT TO STANFORD'S AGREEMENT THAT IT WOULD PAY FOR ANY COSTS IN EXCESS OF THE AMOUNT BUDGETED FOR THE PRODUCTION OF THE NECESSARY MONOCLONAL ANTIBODY, BUT I BELIEVE YOU HAD A SECOND CONDITION AS WELL.

CHAIRMAN THOMAS: YEAH. THE MAJOR CONDITION IS THAT THEY WORK OUT IN A MANNER SUITABLE TO OUR SATISFACTION THE ACTUAL METHOD FOR GENERATING THE MONOCLONAL ANTIBODY GOING FORWARD IN AN AMOUNT SUFFICIENT TO COVER THE CLINICAL TRIALS, WHICH WILL ENTAIL SIGNIFICANT AMOUNT OF WORK WITH THE COMPANY IN QUESTION AND NEGOTIATING RELEVANT DOCUMENTS, ETC.

MR. HARRISON: OKAY.

CHAIRMAN THOMAS: I'M NOT SURE HOW YOU'D LIKE TO PHRASE THAT. I THINK EVERYBODY UNDERSTANDS.

MR. HARRISON: JUST LIKE YOU DID.

MS. BONNEVILLE: ROBERT PRICE.

DR. PRICE: YES.

MS. BONNEVILLE: JACOB LEVIN.

DR. LEVIN: ABSTAIN.

MS. BONNEVILLE: CLAIRE POMEROY.
DR. POMEROY: NO.
MS. BONNEVILLE: LEEZA GIBBONS.
MS. GIBBONS: YES.
MS. BONNEVILLE: STEPHEN JUELSGAARD.
DR. JUELSGAARD: YES.
MS. BONNEVILLE: FRANCISCO PRIETO.
DR. PRIETO: AYE.
MS. BONNEVILLE: DUANE ROTH.
MR. ROTH: YES.
MS. BONNEVILLE: JOAN SAMUELSON.
MS. SAMUELSON: YES.
MS. BONNEVILLE: DAVID SERRANO-SEWELL.
MR. SERRANO-SEWELL: YES.
MS. BONNEVILLE: BERT LUBIN.
DR. LUBIN: YES.
MS. BONNEVILLE: JONATHAN SHESTACK.
MR. SHESTACK: ABSTAIN.
MS. BONNEVILLE: OSWALD STEWARD.
DR. STEWARD: NO.
MS. BONNEVILLE: JONATHAN THOMAS.
CHAIRMAN THOMAS: YES.
MS. BONNEVILLE: ART TORRES.
MR. TORRES: AYE.
MS. BONNEVILLE: KRISTINA VUORI.

DR. VUORI: YES.

MS. SAMUELSON: MR. CHAIRMAN, DID WE JUST LOSE A QUORUM?

MR. HARRISON: THE MOTION CARRIES. AND WE HAVE LOST A QUORUM.

CHAIRMAN THOMAS: OKAY. SO DR. SHIZURU AND DR. WEISSMAN, YOU'VE GOT YOUR MARCHING ORDERS.

(APPLAUSE.)

CHAIRMAN THOMAS: OKAY. I HAVE A QUESTION, MR. HARRISON. NOW THAT WE'VE LOST LEEZA, WHAT CAN WE DO ABOUT THE EARLY TRANSLATION CONCEPT APPROVAL? COULD YOU SPEAK -- YOU WANTED TO MAKE A COMMENT ON THE OTHER AWARDS.

MR. HARRISON: WE HAVE LOST OUR QUORUM, AND WHAT THAT MEANS IS THAT WITH RESPECT TO THE REMAINING DISEASE THERAPY TEAM APPLICATIONS, WE WILL TAKE A VOTE AT THE NEXT BOARD MEETING TO CLOSE OUT THE FUNDING AND HOPEFULLY TO ADDRESS THE RECOMMENDATIONS FROM THE PEER REVIEW GROUP AS TO THE OTHER APPLICATIONS.

WITH RESPECT TO THE SECOND RESEARCH LEADERSHIP AWARD APPLICATION, OBVIOUSLY WE HAVE NOT HAD THE OPPORTUNITY TO HAVE A FULL DISCUSSION OF THAT APPLICATION, AND WE DON'T HAVE A QUORUM. SO WE WILL HAVE TO DEFER THAT UNTIL THE NEXT MEETING AS

WELL.

WITH RESPECT TO THE EARLY TRANSLATION IV CONCEPT PROPOSAL, I WOULD DEFER TO PAT OLSON IF IT WOULD BE HELPFUL TO GET A SENSE OF THE BOARD WITH RESPECT TO THAT PROPOSAL. WE'RE NOT IN A POSITION TO TAKE A VOTE. SO WE CAN EITHER DEFER THAT UNTIL SEPTEMBER OR GET A SENSE OF THE BOARD NOW AND BRING IT BACK FORMALLY FOR A VOTE IN SEPTEMBER.

CHAIRMAN THOMAS: SO IF SHE GETS WHAT ONE MIGHT EXPECT TO BE A FULL BUY-OFF ON THE CONCEPT NOW, WHAT CAN SHE DO IN THE INTERIM?

MR. HARRISON: STAFF COULD BEGIN TO ACTUALLY DRAFT THE RFA SO THAT IT CAN BE IN PROCESS, AND THEN COME BACK TO THE BOARD FOR FORMAL APPROVAL IN SEPTEMBER.

CHAIRMAN THOMAS: HOPEFULLY THAT WOULDN'T IMPACT YOU. THAT'S ONLY SIX WEEKS.

DR. OLSON: IT WOULD BE IMPORTANT TO DO SO BECAUSE THIS RFA IS ACTUALLY SCHEDULED TO POST IN SEPTEMBER.

CHAIRMAN THOMAS: SO THIS WOULD WORK WITHIN YOUR TIME FRAME.

DR. OLSON: IT WOULD BE GREAT IF I COULD GET A SENSE OF THE BOARD.

CHAIRMAN THOMAS: PLEASE PROCEED.

DR. TROUNSON: MR. CHAIRMAN, IT WOULD ALSO BE WORTHWHILE CONSIDERING DOING A PHONE CALL TO APPROVE THAT IF IT'S AT ALL POSSIBLE, THAT ONE ITEM. AND SO YOU MIGHT CONSIDER THAT LATER ON.

CHAIRMAN THOMAS: OKAY. THANK YOU, DR. TROUNSON.

MR. SHEEHY: I JUST HAVE TO OBJECT TO THIS. I AGREE WITH DR. TROUNSON. WE HAVE TWO ITEMS THAT I THINK REALLY NEED TO BE PASSED BETWEEN THE BOARD, AND I THINK WE HAVE THE IP STUFF AS WELL. I THINK IT'S A TERRIBLE PRECEDENT TO APPROVE SOMETHING WITHOUT A QUORUM. I THINK WE SHOULD GIVE IT THE FULL PRESENTATION. WE CAN DO THIS TELEPHONICALLY, BUT IT'S LATE. WE'VE LOST QUORUM. AND I AM VERY UNCOMFORTABLE WITH HAVING A SENSE OF THE BOARD IN ANYTHING RELATED TO A FUNDING DECISION.

DR. PRIETO: COULD WE DO A PRESENTATION ON IT? IN ORDER TO SHORTEN THE MEETING, COULD WE DO A PRESENTATION ON THIS AS WELL AS ON THE NEW REVIEWERS?

DR. POMEROY: THE POINT --

DR. PRIETO: AND THEN HAVE A BRIEF TELEPHONIC MEETING TO CONFIRM.

DR. POMEROY: SO MY CONCERN ABOUT THAT, FRANCISCO, IS THAT THE POINT, IF ANYONE VOTES ON THE

TELEPHONIC MEETING, THEN THEY SHOULD HAVE HEARD THE PRESENTATION IN ORDER TO VOTE. AND, THEREFORE, WE'LL HAVE TO REPEAT THE PRESENTATION ON THE TELEPHONIC MEETING.

DR. PRIETO: OR READ THE MATERIAL.

DR. POMEROY: WELL, THEN, WE CAN ALL READ THE MATERIAL IF THAT'S SUFFICIENT. THERE'S NO POINT IN PRESENTING.

DR. PRIETO: I WOULD PROBABLY BE SATISFIED WITH THAT. I'D TRY TO READ MY MATERIAL.

MS. SAMUELSON: I'D MOVE FOR ADJOURNMENT.

CHAIRMAN THOMAS: IF THERE IS A SENSE OF THE BOARD THAT THEY WOULD RATHER DEFER THIS TO AN ACTUAL CALL, WHICH WE CAN TRY TO SET UP AS SOON AS POSSIBLE.

DR. OLSON: THAT WOULD BE HELPFUL.

CHAIRMAN THOMAS: SO, MR. SHEEHY, POINT WELL TAKEN. WE'LL DEFER, THEN, THOSE TWO ITEMS FOR A CALL TO BE SET UP IN THE IMMEDIATE FUTURE. AND I BELIEVE, MARIA, THAT OTHER ITEMS ON THE AGENDA CAN BE DEFERRED UNTIL SEPTEMBER; IS THAT CORRECT?

MS. BONNEVILLE: YES.

CHAIRMAN THOMAS: OKAY. SO TO SUMMARIZE, WE'VE TAKEN CARE OF ALL THE DISEASE TEAM AWARDS THAT WE CAN TODAY. WE'LL LOOK FORWARD TO THE REPORT-BACK

AT THE NEXT BOARD MEETING FOR AS MANY OF THOSE THAT CAN COME BACK AS POSSIBLE. WE WILL ALSO TAKE UP THE OTHER RESEARCH LEADERSHIP AWARD AND WILL FORTHWITH SET UP A CALL TO DISCUSS THE EARLY TRANSLATION IV CONCEPT APPROVAL AND THE IP REGS. AND WITH THAT, I'LL ENTERTAIN A MOTION TO ADJOURN.

DR. HAWGOOD: SO MOVED.

CHAIRMAN THOMAS: I THINK WE DON'T NEED TO VOTE. THANK YOU VERY MUCH, EVERYBODY. IT WAS A VERY SUBSTANTIVE MEETING. WE GOT THROUGH A LOT. THANK YOU.

(APPLAUSE.)

(THE MEETING WAS THEN CONCLUDED AT 5:35 P.M.)

REPORTER'S CERTIFICATE

I, BETH C. DRAIN, A CERTIFIED SHORTHAND REPORTER IN AND FOR THE STATE OF CALIFORNIA, HEREBY CERTIFY THAT THE FOREGOING TRANSCRIPT OF THE PROCEEDINGS BEFORE THE INDEPENDENT CITIZEN'S OVERSIGHT COMMITTEE OF THE CALIFORNIA INSTITUTE FOR REGENERATIVE MEDICINE IN THE MATTER OF ITS REGULAR MEETING HELD AT THE LOCATION INDICATED BELOW

MARRIOTT WATERFRONT SFO
1800 S. OLD BAYSHORE HIGHWAY
BURLINGAME, CALIFORNIA
ON
THURSDAY, JULY 26, 2012

WAS HELD AS HEREIN APPEARS AND THAT THIS IS THE ORIGINAL TRANSCRIPT THEREOF AND THAT THE STATEMENTS THAT APPEAR IN THIS TRANSCRIPT WERE REPORTED STENOGRAPHICALLY BY ME AND TRANSCRIBED BY ME. I ALSO CERTIFY THAT THIS TRANSCRIPT IS A TRUE AND ACCURATE RECORD OF THE PROCEEDING.

BETH C. DRAIN, CSR 7152
BARRISTER'S REPORTING SERVICE
160 S. OLD SPRINGS ROAD
SUITE 270
ANAHEIM, CALIFORNI-A
(714) 444-4100