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: CLAREMONT HOTEL
41 TUNNEL ROAD
BERKELEY, CALIFORNIA

DATE: WEDNESDAY, JANUARY 29, 2014

9 A.M.

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

BRS FILE NO.: 95374

I N D E X

I N D E X (CONT'D.)

BERKELEY, CALIFORNIA; WEDNESDAY, JANUARY 29, 2014

9 A.M.

CHAIRMAN THOMAS: WELCOME, EVERYBODY. AND A HAPPY NEW YEAR. LIKE TO WELCOME EVERYONE TO THE CLAREMONT HOTEL IN BERKELEY FOR THOSE ON THE AIR. WE ARE VERY HAPPY TO CONVENE THE FIRST MEETING OF 2014 FOR THE ICOC AND LOOK FORWARD TO A VERY INTERESTING AGENDA WITH A NUMBER OF, AS USUAL, VERY CRITICAL TOPICS TO COVER.

MARIA, CAN YOU PLEASE CALL -- NO. PLEASE CALL THE -- YOU DO THE PLEDGE FIRST. OKAY. DO THE PLEDGE OF ALLEGIANCE FIRST. THANK YOU.

(THE PLEDGE OF ALLEGIANCE.)

CHAIRMAN THOMAS: WE'RE GOING TO DO SOMETHING A LITTLE FUN HERE, A LITTLE OUT OF THE ORDINARY. WE HAVE TWO NEW MEMBERS. NORMALLY IN THE PAST WE HAVE SWORN THEM IN PRIOR TO MEETINGS, BUT WE THOUGHT IT WOULD BE KIND OF FUN TO ACTUALLY HAVE THEM SWORN IN AS PART OF THE OFFICIAL AGENDA. SO WE WANT TO WELCOME HERE LAUREN MILLER AND JOE PANETTA. FIRST, IF YOU TWO COULD STAND AND REPEAT AFTER ME.

(NEW BOARD MEMBERS WERE THEN DULY SWORN IN.)

CHAIRMAN THOMAS: CONGRATULATIONS.

WELCOME TO THE BOARD.

(APPLAUSE.)

CHAIRMAN THOMAS: TO THE TWO OF YOU, IT'S TRADITIONAL THAT NEW MEMBERS GIVE A LITTLE BRIEF STATEMENT ABOUT THEMSELVES SO THAT OTHER BOARD MEMBERS AND FOLKS IN THE ROOM CAN GET A FEEL FOR WHAT YOU'VE DONE. SO, LAUREN, IF YOU COULD JUST SAY A FEW WORDS TO START, PLEASE.

MS. MILLER: SURE. HI. I'M LAUREN MILLER. I FOUNDED AN ORGANIZATION CALLED HILARITY FOR CHARITY IN WHICH WE RAISE AWARENESS OF ALZHEIMER'S AMONG A YOUNG GENERATION. WE'VE BEEN AROUND JUST ABOUT TWO YEARS NOW AND HAVE RAISED CLOSE TO A MILLION DOLLARS. WE HAVE JUST STARTED A PROGRAM TO GET COLLEGE STUDENTS INVOLVED AND THROWING EVENTS TO RAISE AWARENESS AND FUNDS FOR ALZHEIMER'S.

AND PERSONALLY I'M A SCREEN WRITER, AND I'M JUST SO THRILLED TO BE HERE. THANK YOU.

CHAIRMAN THOMAS: THANK YOU. JOE.

MR. PANETTA: MORNING. I'M JOE PANETTA, AND I'M THE PRESIDENT AND CEO OF BIOCOM, AND I ALSO SERVE ON THE BOARDS OF TWO BIOTECH COMPANIES, GENWAY BIO AND GENE THERAPEUTICS. AND BIOCOM IS THE ORGANIZATION FOR THE SOUTHERN CALIFORNIA LIFE

SCIENCE COMMUNITY.

I'VE BEEN INVOLVED AND ENGAGED WITH CIRM ON THE SIDELINES FOR THE MOST PART FROM THE DAY THAT THE CONCEPT CAME UP WHEN WE SUPPORTED IT THROUGH BIOCOM AND ALSO TOOK A PART IN THE COMPETITION TO HAVE THE CIRM HEADQUARTERS IN SAN DIEGO. SO I'M THRILLED TO FINALLY HAVE THE OPPORTUNITY TO JOIN YOU, AND I THINK THIS IS A VERY, VERY SERIOUS JOB THAT WE HAVE HERE. AND I'M LOOKING FORWARD TO WORKING WITH YOU FOR THE NEXT THREE YEARS AND THEN HOPEFULLY INTO THE FUTURE AS WELL.

CHAIRMAN THOMAS: THANK YOU. WELCOME AGAIN.

MARIA, COULD YOU PLEASE CALL THE ROLL.

MS. BONNEVILLE: KEN BURTIS.

DR. BURTIS: HERE.

MS. BONNEVILLE: ANNE-MARIE DULIEGE.

DR. DULIEGE: HERE.

MS. BONNEVILLE: MARCY FEIT. LEON FINE.

DR. FINE: YES.

MS. BONNEVILLE: MICHAEL FRIEDMAN.

DR. FRIEDMAN: HERE.

MS. BONNEVILLE: JUDY GASSON.

DR. GASSON: HERE.

MS. BONNEVILLE: SAM HAWGOOD. DAVID

BRENNER. STEPHEN JUELSGAARD.

MR. JUELSGAARD: HERE.

MS. BONNEVILLE: SHERRY LANSING. JACOB LEVIN.

DR. LEVIN: HERE.

MS. BONNEVILLE: BERT LUBIN.

DR. LUBIN: HERE.

MS. BONNEVILLE: LAUREN MILLER.

MS. MILLER: HERE.

MS. BONNEVILLE: LLOYD MINOR.

DR. MINOR: HERE.

MS. BONNEVILLE: JOE PANETTA.

DR. PANETTA: HERE.

MS. BONNEVILLE: FRANCISCO PRIETO.

DR. PRIETO: HERE.

MS. BONNEVILLE: CARMEN PULIAFITO.

DR. PULIAFITO: PRESENT.

MS. BONNEVILLE: ROBERT QUINT.

DR. QUINT: HERE.

MS. BONNEVILLE: AL ROWLETT. JOAN SAMUELSON. JEFF SHEEHY.

MR. SHEEHY: HERE.

MS. BONNEVILLE: OSWALD STEWARD. JONATHAN THOMAS.

CHAIRMAN THOMAS: HERE.

MS. BONNEVILLE: ART TORRES.
MR. TORRES: HERE.
MS. BONNEVILLE: KRISTINA VUORI.
DR. VUORI: HERE.
MS. BONNEVILLE: DONNA WESTON.
DR. WESTON: HERE.
MS. BONNEVILLE: DIANE WINOKUR.
MS. WINOKUR: HERE.
CHAIRMAN THOMAS: THANK YOU. MOVE NOW TO THE CHAIRMAN'S REPORT. LAST WEEK WE HAD OUR ANNUAL VISIT WITH THE STATE CONTROLLER WHO RUNS THE CFAOC, WHICH IS AN OVERSIGHT BODY THAT CONVENES ONCE A YEAR TO HEAR ABOUT AND COMMENT ON VARIOUS ASPECTS OF CIRM.
WE TOOK, AS WE ALWAYS DO, A TEAM DOWN. THE MEETING WAS IN LOS ANGELES. UNFORTUNATELY THE CONTROLLER HAD INJURED HIS FOOT THAT MORNING AND SPENT THE DAY IN THE EMERGENCY ROOM. SO DEPUTY CONTROLLER RUTH HOLTON-HODSON RAN THE MEETING. AND WE WENT DOWN AND, AS WE ALWAYS DO, WE PRESENTED OUR AUDIT, WHICH WAS FLAWLESS, THANK YOU TO CHILA SILVA-MARTIN AND HER STAFF. THAT ALWAYS GOES OVER WELL WITH STATE OFFICIALS, AS WELL IT SHOULD.
WE PRESENTED LAST YEAR'S BUDGET AND THIS YEAR'S BUDGET WITH AN ANALYSIS OF EACH AND

COMMENTARY ON VARIOUS ASPECTS THEREIN. DR. FEIGAL PRESENTED ON THE STATUS OF THE SCIENCE PROGRAM, AND I SPOKE ON ISSUES CONNECTED TO THE TRANSITION IF WE DO HIT A TIME WHEN WE DO RUN OUT OF FUNDS.

SO WE HAD A SPIRITED DISCUSSION. I THINK THE GENERAL RESULT WAS VERY GOOD. ALL OF US WHO ATTENDED FELT IT WENT VERY WELL, WHICH IS IMPORTANT BECAUSE, AS THE ONE OVERSIGHT BODY FOR CIRM, WE WANT TO MAKE SURE WE ANSWER EVERYTHING, WE DEMONSTRATE COMPLETE TRANSPARENCY IN ALL WE DO. AND I THINK WE GOT, IN ADDITION, THE MESSAGE ACROSS THAT WE HAVE TREMENDOUSLY EXCITING WORK IN PROGRESS RIGHT NOW, AND I THINK OPENED SOME EYES WITH SPECIFICS ABOUT SOME OF THEM AND GENERATED A LOT OF EXCITEMENT. SO I THINK ALL IN ALL IT WAS A VERY SUCCESSFUL MEETING. WE WERE VERY PLEASED WITH THE OUTCOME.

THIS IS, AS YOU PROBABLY KNOW, THE LAST MEETING THAT WILL BE PRESIDED OVER EITHER BY CONTROLLER JOHN CHIANG OR HIS DEPUTY CONTROLLER. HE HAS TERMED OUT. HE IS RUNNING, SENATOR TORRES, CURRENTLY UNOPPOSED --

MR. TORRES: FOR TREASURER, YES.

CHAIRMAN THOMAS: -- FOR STATE TREASURER. TREASURER LOCKYEAR HAS TERMED OUT. SO THERE WILL BE SOME BIG MOVES THIS YEAR WITH RESPECT TO THOSE TWO

POSITIONS, WHICH ARE OBVIOUSLY CRITICAL TO US. WE WELCOME THE OPPORTUNITY TO WORK WITH CONTROLLER CHIANG WHEN HE -- IF AND WHEN, I SHOULD SAY, YOU NEVER KNOW WHO MIGHT GET IN THE RACE, BUT IF HE DOES END UP AS STATE TREASURER, WE WILL BE DELIGHTED TO CARRY ON WHAT IS A VERY GOOD WORKING RELATIONSHIP AND WILL OBVIOUSLY WORK VERY HARD TO CONTINUE OUR TRADITION WITH THE NEW STATE CONTROLLER. THAT IS A CONTESTED RACE AT THIS POINT, AND WE'LL SEE HOW THAT PLAYS OUT.

SECOND ITEM I WANTED TO RELAY TO YOU. AS YOU KNOW, WE ARE IN THE MIDST OF OUR PRESIDENTIAL SEARCH. AND WE HAVE RETAINED THE FIRM OF KORN FERRY TO ASSIST US IN THAT. WE HAVE WITH US HERE ATTENDING OUR MEETING WARREN ROSS WHO IS LEADING THE TEAM AT KORN FERRY. WE HAD A MEMBER -- I'M SORRY -- A MEETING LAST NIGHT OF THE PRESIDENTIAL SEARCH SUBCOMMITTEE IN WHICH, AMONG OTHER THINGS, WE CONSIDERED AND VOTED ON A SERIES OF CANDIDATE SPECIFICATIONS WHICH YOU WILL SEE AS ONE OF THE AGENDA TOPICS TODAY. AND WE'RE PROCEEDING APACE ON A TIMELINE THAT LOOKS TO HAVE A DECISION MADE BY MAY.

WARREN, IF YOU COULD STEP UP TO THE MIC BACK THERE AND SAY A FEW WORDS, INTRODUCE YOURSELF,

AND SAY A BIT ABOUT THE PROCESS, I THINK EVERYBODY WOULD BE MOST INTERESTED.

MR. ROSS: THANK YOU. CAN YOU HEAR ME OKAY? WELL, FIRST OF ALL, THANK YOU AND THANKS FOR THE OPPORTUNITY TO WORK WITH YOU ON THIS IMPORTANT SEARCH. AS I TOLD J.T. WHEN HE VERY FIRST CALLED ME ABOUT THIS POSSIBILITY, WE'D NOT ONLY BE PLEASED, BUT HONORED, FRANKLY. WE CONSIDER THIS TO BE AN EXTRAORDINARY EFFORT FOR A LOT OF DIFFERENT REASONS, AND WE'RE GLAD TO BE A PART OF IT.

THE FIRST STEP IN AN EXECUTIVE SEARCH PROCESS IS ALWAYS TO TRY TO UNDERSTAND THE ORGANIZATION AND TRY TO GET SOMETHING ON PAPER THAT CAPTURES THE ORGANIZATION, WHAT ITS ISSUES ARE, WHAT ITS ASPIRATIONS ARE, AND WHAT THE NEEDS ARE WITH RESPECT TO THE POSITION. AND THAT'S THE POSITION SPEC THAT YOU WILL SEE LATER. I BELIEVE IT'S AVAILABLE FOR EVERYBODY. IT'S A BIT LENGTHY, I MUST SAY, BUT I THINK WE CAPTURED EVERYTHING, AND ESPECIALLY THE RATHER COMPELLING PART ABOUT THE IMPORTANCE OF THIS AGENCY.

I KNOW PEOPLE LIKE TO FOCUS ON THE FACT THAT THE MONEY MIGHT RUN OUT, AND THERE MAY HAVE BEEN ISSUES IN THE PAST AND ONE THING OR ANOTHER; BUT AT THE END OF THE DAY, THIS IS ONE OF THE GREAT

SUCCESS STORIES IN THE FUNDING OF SCIENCE IN AMERICA. THE CITIZENS STOOD UP AND SAID WE WANT THIS.

AND WHAT'S HAPPENED IS IS THAT, IN SPITE OF WHATEVER OTHER ISSUES THERE MAY BE, THE STEM CELL WORLD THINKS THIS IS AN EXTRAORDINARILY IMPORTANT AGENCY. SO OUR PRELIMINARY CONVERSATIONS ARE ALREADY VERY POSITIVE, FOR EXAMPLE, IN THE STEM CELL WORLD. AND I'M VERY PLEASED ABOUT THAT.

I ENCOURAGE YOU TO LOOK AT THE SPEC, SEE IF IT CAPTURES THE NARRATIVE FOR YOUR SEARCH IN A WAY THAT YOU WISH BECAUSE THIS IS THE BEGINNING OF THE STORY. AND WE WANT IT TO BE COMPELLING FOR CANDIDATES.

THE TIMELINE IS SUCH THAT WE EXPECT TO PRESENT CANDIDATES IN LATE MARCH AND THEN GO THROUGH A SERIES OF VETTING AND REVIEW PROCESSES AND HAVE THE BOARD ABLE TO INTERVIEW FINALISTS IN APRIL, AND THEN HOPEFULLY NEGOTIATE TO A CONCLUSION IN MAY. IT'S A VERY AGGRESSIVE TIMELINE, BUT ONE WE THINK WE CAN MEET. AND I MUST SAY THAT THE EFFORTS ALREADY OF J.T. AND MARIA AND JAMES AND ALL THE OTHERS THAT WE WORK WITH IN THE AGENCY AND ON THE BOARD HAVE GIVEN ME ENCOURAGEMENT THAT WE CAN ACTUALLY MEET THIS TIMELINE.

CHAIRMAN THOMAS: THANK YOU VERY MUCH, WARREN. WE APPRECIATE YOUR COMMENTS AND ALL YOUR HELP. WARREN LEADS THE TEAM. THERE ARE A NUMBER OF OTHERS BOTH OUT IN CALIFORNIA AND IN NEW YORK AND WASHINGTON THAT ARE MEMBERS OF THAT TEAM. SO WE BELIEVE WE HAVE IN KORN FERRY A FIRM THAT WILL BRING GREAT EXPERTISE AND DIVERSITY OF THOUGHT TO THIS PROCESS, AND WE'LL END UP WITH A VERY GOOD RESULT.

FEW OTHER ITEMS I'D LIKE JUST TO RELAY. THE JP MORGAN CONFERENCE, IT WAS LAST WEEK. FOR THOSE OF YOU WHO HAVE NEVER GONE TO THAT, IT'S THE MOST INTERESTING AFFAIR WHERE THOUSANDS OF PEOPLE CONNECTED TO BIOTECH CONVERGE ON SAN FRANCISCO AND TAKE IT OVER BASICALLY. AND IT'S AN INTERESTING OPPORTUNITY FOR US TO MEET WITH SELECTED PEOPLE WHO ARE HERE ALL IN THE EFFORT TO SORT OF ADVANCE THE CAUSE OF DEVELOPING STRATEGIC ALLIANCES BETWEEN INDUSTRY AND OUR GRANTEES.

ELONA AND NEIL DID A GREAT JOB OF SETTING FULL CALENDARS FOR THE WEEK THAT A NUMBER OF US GOT TO ATTEND VARIOUS MEETINGS. AND YOU COULD SEE SORT OF, WHEN YOU LISTEN TO THE TENOR OF THE MEETING, IT'S INTERESTING. THEY ALWAYS START THE ALLIANCE FOR REGENERATIVE MEDICINE DOES THE STATE OF THE UNION MONDAY MORNING OF THE WEEK, AND YOU KIND OF

GET A SENSE FOR HOW THE FIELD IS DEVELOPING. AND THERE WAS SORT OF A PALATABLE INCREASE IN ENTHUSIASM. THERE'S ALWAYS BEEN ENTHUSIASM, BUT IN TERMS OF WHERE THINGS ARE HEADING AND THE INTEREST IN BIOTECH AND WHERE PRODUCTS ARE DEVELOPING, ETC., MOST INTERESTING SESSION. IN FACT, MARIA, CAN WE SEND THE DECK OUT TO THE BOARD ON THE ARM PRESENTATION? I THINK YOU WILL FIND IT VERY INTERESTING. IT GIVES A LOT OF SORT OF SALIENT STATS AND FACTS AND WHERE THINGS ARE RIGHT NOW IN THE INDUSTRY.

SO, ELONA, NEIL, AGAIN, GREAT JOB ON THAT. AND VERY, VERY INTERESTING SESSION AS ALWAYS.

I'D LIKE TO NOTE, YOU HAVE IN YOUR PACKAGE THERE, WE ARE TAKING A FRESH LOOK AT OUR VARIOUS SUBCOMMITTEES, AND YOU WILL SEE MATERIAL THERE WHICH LISTS VARIOUS SUBCOMMITTEES THAT YOU CURRENTLY ARE ON. I'D LIKE EVERYBODY TO TAKE A LOOK AT THAT TO SEE IF YOU WOULD LIKE TO CONTINUE. IF THERE ARE OTHER SUBCOMMITTEES THAT ARE OF PARTICULAR INTEREST, PLEASE LET MARIA KNOW AND WE'LL MAKE SURE THAT YOUR INTERESTS ARE FULLY TAKEN CARE OF.

LET'S SEE. SO I THINK THERE ARE A FEW OTHER THINGS THAT WE COULD MENTION, BUT I THINK WE'RE GOING, IN THE INTEREST OF TIME HERE, WE'RE

GOING TO NEXT PROCEED TO THE PRESIDENT'S REPORT. I THINK THAT BEFORE -- ALAN, WELCOME. LOOKING HALE AND FIT. BEFORE HE STARTS, SENATOR TORRES, YOU HAD A WORD.

MR. TORRES: YES. I WANT TO SAY THANK YOU AGAIN TO THE CHAIRMAN AND TO DR. FEIGAL. I WAS NOT ABLE TO BE AT THE CONTROLLER'S MEETING. I HAD A PREVIOUS COMMITMENT, BUT YOU BOTH DID VERY, VERY WELL. AND I JUST WANT TO THANK YOU FOR THAT.

SECONDLY, WE WANT TO -- I WANT TO THANK THE GOVERNOR, WHO I'VE KNOWN FOR ALMOST 40 YEARS, FOR HIS SPEECH AT THE STATE OF THE STATE WHERE HE SPECIFICALLY MENTIONED STEM CELL AS THE FUTURE FOR ECONOMIC RECOVERY FOR CALIFORNIA. I THINK THE GOVERNOR IS NOW REALLY PAYING CLOSE ATTENTION TO THE EFFORTS THAT WE'RE MAKING HERE. AND I WANT TO THANK HIM, AGAIN, FOR THE TREMENDOUS APPOINTMENTS HE GAVE US IN LAUREN AND JOE. I THINK THEY'RE GOING TO BE AN INCREDIBLE CONTRIBUTION TO THIS BOARD. AND I JUST WANTED TO THANK THE GOVERNOR FOR DOING THAT AS WELL. THANK YOU, MR. CHAIRMAN.

CHAIRMAN THOMAS: THANK YOU, MR. SENATOR. ON NOW TO THE PRESIDENT'S REPORT. DR. TROUNSON.

DR. TROUNSON: HI, BOARD. LITTLE DIFFERENT TO THE WEATHER OUT IN AUSTRALIA, I MUST

ADMIT. I'M PLEASED TO BE BACK HERE. AND IT WILL BE VERY GOOD TO GET TO KNOW YOU, LAUREN, IN THE TIME THAT I REMAIN HERE, AND A REAL PLEASURE TO WORK WITH JOE, WHO WE'VE WORKED TOGETHER IN THE PAST AND I THINK IS A TREMENDOUS ADDITION TO THE BOARD. WE REALLY NEED SOME OF THE BIOTECH CAPACITY HERE, AND IT'S GREAT TO HAVE YOU ON BOARD. SO LOOK FORWARD TO US GETTING TO KNOW YOU AND CONTINUING TO WORK WITH YOU. IT'S FANTASTIC.

I'VE HAD THE OPPORTUNITY TO SPEND A LITTLE BIT OF TIME WITH THE TWO LEADERS OF THE BILLION DOLLAR STEM CELL OR REGENERATIVE MEDICINE COMPANIES THAT ARE IN THE SPACE AND ACTUALLY WAS WITH THEM WHEN THEY MET TOGETHER. SO THERE IS SOME REAL SUCCESSES HAPPENING OUT THERE NOW, AND I THINK THINGS REALLY ARE TAKING OFF IN SOME PARTICULAR DIRECTIONS VERY EMPHATICALLY. SO I THINK THE ORGANIZATION IS WELL POSITIONED TO HELP MORE OF THAT TO EVOLVE. AND SO I LOOK FORWARD TO MANY MORE OF THESE BILLION-DOLLAR ENTERPRISES ACTUALLY GATHERING IN THIS SPACE AND BEING ASSOCIATED WITH CALIFORNIA.

AS USUAL, START OFF WITH SOME SCIENCE FOR EVERYBODY, AND IT'S NOT ALL THAT -- THAT'S NOT SUCH A CLEAR SLIDE. I'M SORRY ABOUT THAT. BUT LET ME TAKE YOU THROUGH WHAT I THINK ARE A COUPLE OF THE

REALLY IMPORTANT DEVELOPMENTS AGAIN THAT WE'VE SEEN IN THE LAST MONTH.

AND ONE OF THE AREAS WHERE WE HAVEN'T REALLY HAD REALLY EMPHATIC STEM CELL DEVELOPMENTS IS IN THE LUNG. AND HERE WE HAVE A PAPER FROM THE HANS SNOECK LAB IN COLUMBIA MEDICAL CENTER. IT WAS PUBLISHED IN *NATURE BIOTECHNOLOGY* IN DECEMBER. AND THEY'RE ABLE TO INDUCE DIFFERENTIATION OF BOTH HUMAN EMBRYONIC STEM CELLS AND IPS CELLS INTO ALL THE VARIETY OF CELL TYPES NEEDED FOR LUNG REPAIR. AND THIS IS A REALLY BIG DEVELOPMENT IN MY MIND.

I WORKED IN THE LUNG BEFORE I CAME TO CIRM. AND THESE WERE THE WORK THAT I WAS DOING AT THE TIME, AND I'M SO PLEASED TO SEE THAT IT'S ACTUALLY NOW COME TO PASS THAT WE CAN ACTUALLY DRIVE THESE CELLS INTO ALL OF THE CELLS OF THE LUNG BECAUSE IT'S A COMPLICATED TISSUE, THE LUNG. BUT AS ALL THE MEDICAL PEOPLE WILL KNOW, IT'S REALLY ONE OF THE CRITICAL ORGANS OF THE BODY. AND IF YOU DON'T KEEP THAT IN GOOD HEALTH, YOU'RE IN SERIOUS PROBLEM FOR YOUR OTHER ORGANS, BUT ALSO FOR YOUR VERY LIFE. UNFORTUNATELY MY MOTHER DIED OF LUNG DISEASE, SO I KNOW HOW DIFFICULT THIS CAN BE.

SO THEY WERE ABLE TO PRODUCE AIRWAY AND MUCUS CELL TYPES, CARTILAGE, SMOOTH MUSCLE, AND

SUBMUCOSAL GLANDS. SO ALL OF THE CRITICAL COMPONENTS OF THE LUNG.

THEY FORMED DEFINITIVE ENDODERM PROGENITORS, WHICH ARE THE PRELUNG CELLS, AND THEN MOVE THEM TO ANTERIOR FOREGUT ENDODERM, WHICH IS AN AREA OF DEVELOPMENT WHICH THE LUNG AND SOME OTHER CRITICAL TISSUES, ORGANS, DEVELOP FROM USING ACTIVIN A, A GROWTH FACTOR, AND INHIBITION OF THE TGF-BETA AND BONE MORPHOGENIC PROTEIN GENETIC PATHWAYS.

AND IF YOU EXPRESS A GENE CALLED NX 2.1 AND ACTUALLY PUT NX 2.1 BY HOMOLOGOUS RECOMBINATION IN STEM CELLS, AS WAS I LEAVING MONASH, AND FOX A2, YOU CAN GET 70 PERCENT OF YOUR DIFFERENTIATED CELLS UP, AND THEY'RE THE KEY MARKERS FOR LUNG LINEAGES. SO IF YOU CAN DO THAT, YOU KNOW YOU'RE IN THE LUNG. SO THEY'RE THE CRITICAL MARKERS. AND THESE CELLS CAN BE SELECTED AND FURTHER DIFFERENTIATED BOTH IN THE LAB AND IN IN VIVO IN MICE AS LUNG DERIVATIVES THAT INCLUDE ALL THE TYPES OF HUMAN LUNG CELLS THAT YOU NEED.

SO JUST FOR MAKING LUNG CELLS FROM PLURIPOTENTIAL STEM CELLS, THERE'S A PATHWAY THERE. DOWN THE BOTTOM IT SHOWS YOU THAT IF YOU USE A SPECIFIC SET OF DEVELOPMENT FACTORS, THESE ARE GROWTH FACTORS OR CYTOKINES, YOU CAN ACTUALLY GET A

HIGH PROPORTION OF EXPRESSION OF THOSE MARKERS. AND THAT LEADS YOU TO ALL OF THE CELLS OF THE LUNG, WHICH GIVES YOU CLARA CELLS, CILIATED CELLS, GOBLET CELLS, PSEUDOSTRATIFIED EPITHELIUM, SMOOTH MUSCLE, AND SUBMUCOSAL GLANDS. YOU CAN SEE THIS WHEN YOU ACTUALLY TRANSFER THESE CELLS INTO IMMUNE-SUPPRESSED MICE. SO WE CAN ACTUALLY FORM ALL THE LUNG TISSUE AND ALL THE COMPONENTS OF LUNG.

SO THIS IS A VERY STRONG ELEMENT. BUT ALSO YOU CAN ACTUALLY FORM WHAT IS REALLY CRITICAL IS THE SURFACTANTS, AND PARTICULARLY SURFACTANT C AND SURFACTANT B. SO THEY ARE VERY SPECIFIED FOR THE LUNG, AND YOU CLEARLY HAVE TO BE ABLE TO PRODUCE THOSE IF YOU'VE GOT LUNG TISSUE. BUT SHOWN HERE, WHICH IS DIFFICULT TO SEE, BUT IN THE RED AT THE BOTTOM YOU CAN SEE BOTH THESE RED CELLS TURNING UP FOR SURFACTANT C AND B.

SO WHAT THIS REALLY MEANS NOW, WE'VE GOT NEW CELLULAR WAYS TO REPAIR HUMAN LUNG DISEASE, PARTICULARLY IN CONDITIONS LIKE PULMONARY FIBROSIS OR COPD, WHICH IS CHRONIC OBSTRUCTIVE PULMONARY DISEASE, CHRONIC BRONCHITIS, EMPHYSEMA, CYSTIC FIBROSIS, ETC. SO THIS IS, I THINK, A REALLY BIG DEVELOPMENT, AND I THINK IT WILL MOVE US TOWARDS A LOT MORE LUNG REPAIR. WE HAVE SOME LUNG REPAIR WORK

GOING ON IN THE PORTFOLIO, BUT THIS WILL ACCELERATE THAT INTEREST IN THAT AREA.

AND THE SECOND PAPER, I WANT TO DRAW YOUR ATTENTION TO THE WAY THEY'RE WORKING NOW WITH CHONDROGENESIS, WHICH IS REALLY THE FORMATION OF CARTILAGE. AND CARTILAGE IS REALLY QUITE DIFFICULT TO PRODUCE, AT LEAST ARTICULAR CARTILAGE; THAT IS, THE CARTILAGE OF JOINTS. BECAUSE WHEN PEOPLE HAVE BEEN TRYING TO REPAIR CARTILAGE IN THE PAST, THEY'RE GETTING A SOFT CARTILAGE WHICH JUST DOESN'T DO IT. IT DOESN'T STAY THERE FOR LONG. SO YOU'VE GOT TO HAVE THE CRITICAL ARTICULAR CHONDROCYTES WHICH ARE REQUIRED FOR JOINTS.

SO NONE OF THE CURRENT CELL-BASED REPAIR STRATEGIES, INCLUDING EXPANDING THE ARTICULAR CHONDROCYTES OR MSC'S OR ADIPOSE TISSUES, THE FAT CELLS, SYNOVIUM, OR AMNIOTIC FLUID, HAVE GENERATED LASTING HYALINE ARTICULATED CARTILAGE. NONE OF THOSE HAVE DONE THAT, WHICH IS SURPRISING, BUT IT'S JUST NOT WORKING THAT WELL.

WHAT WE NEED TO DO IS RECAPITULATE HUMAN CARTILAGE DEVELOPMENT SO WE UNDERSTAND WHAT IT TAKES TO MAKE THAT PARTICULAR CARTILAGE. AND IF YOU DON'T UNDERSTAND THAT, I THINK IT IS HOPEFUL THAT THESE OTHER CELLS WILL MAKE IT.

SO STUDIES IN THIS PAPER, WHICH WAS PUBLISHED BY THE GROUP FROM UCLA, IT'S A VERY NICE PAPER IN *STEM CELL REPORTS* IN DECEMBER. THEY WERE ABLE TO DEFINE THE CANDIDATE CELL SURFACE MARKERS AND SIGNALING PATHWAYS OF PLURIPOTENTIAL CELLS GOING TO MSC'S TO ARTICULAR CARTILAGE BECAUSE THE MSC'S ARE IN THE PIPELINE, THEY'RE PART OF THE LINEAGE TO GET THERE; BUT IF YOU GO FROM THE PLURIPOTENTIAL CELLS THROUGH TO THAT, YOU CAN ACTUALLY SEE THE ACTUAL CELLS THAT YOU REALLY NEED. AND YOU NEED TO BE ABLE TO IDENTIFY THOSE CELLS USING PARTICULAR MARKERS.

WELL, THIS IS WHAT THESE RESEARCHERS DID, AND THEY USED LASER CAPTURE MICRODISSECTION FROM THE DEVELOPING EMBRYONIC LIMB, WHICH IS RIGHT AT THE TERMINAL PART OF THE LIMB, YOU WILL HAVE A REAL CONCENTRATION OF CARTILAGE COMMITTED MESENCHYME OR PRECHONDROCYTES. THEY'RE THE ONES THAT ARE GOING TO FORM THE CARTILAGE. SO THAT'S WHERE YOU GET A HIGH CONCENTRATION OF THE CELLS THAT YOU ARE LOOKING FOR. AND IF YOU DO THE DIFFERENTIATION, STARTING ON THE LEFT-HAND SIDE HERE, OF HUMAN PLURIPOTENTIAL STEM CELLS, YOU CAN INDUCE MESODERM INDUCTION AND THEN AGGREGATE THOSE CELLS AFTER YOU'VE SORTED FOR SOME SPECIFIC MARKERS, AND THEN YOU HAVE A CHOICE THERE

TO EITHER GO TO INDUCTION USING BONE MORPHOGENIC PROTEINS 4 AND 7 OR GO DOWN THE TGF-BETA ONE OR LIFT LINES.

AND ONE DIRECTION TAKES YOU INTO MAINTENANCE OF THESE PRECHONDROCYTES, THESE ONES THAT YOU ACTUALLY NEED FOR THIS WORK. AND THE OTHER TAKES YOU INTO CHONDROCYTE MATURATION AND HYPERTROPHY, WHICH IS WHERE MOST OF THE OTHER CELLS ARE TAKING YOU.

SO WHAT YOU WANT IS TO SORT OF DRIVE THEM INTO THE PRECHONDROCYTES IN CONCENTRATION SO YOU HAVE THE PRECHONDROCYTE FOR THIS PARTICULAR CARTILAGE IN A CONCENTRATED FORM. AND THAT'S WHAT THEY'RE ABLE TO SHOW. SO THE RIGHT-HAND SIDE JUST SHOWS YOU THE MESODERM INDUCTION PROTOCOL THAT THEY HAVE. HERE IT SHOWS THEY'RE ARRANGING DIFFERENT CELLS WITH DIFFERENT MARKERS ON THE CELL SURFACE, AND THEY PRODUCE DIFFERENT TYPES OF COLLAGEN, SOX9, ANOTHER MARKER, AND GDF 5. THEY'RE QUITE VARIABLE. SO THESE CELLS ARE QUITE DIFFERENT IN THE LIMB. SO YOU HAVE TO SELECT THE RIGHT CELLS.

SO THEY FOUND A UNIQUE COMBINATION OF SURFACE MARKERS WHICH WAS CD 166, THE NEGATIVE OR VERY LOW; CD 146, LOW TO NEGATIVE; CD 73 POSITIVE; CD 44 LOW; AND THE BMP RECEPTOR 1B POSITIVE. THAT

GROUP OF MARKERS DISTINGUISHES THE CELLS IN THE DEVELOPING LIMB THAT FORM THESE CHONDROCYTIC PROGENITORS. THAT'S THE SORT OF CELL TYPE THAT YOU NEED TO BE LOOKING FOR.

AND IF YOU DIFFERENTIATE PLURIPOTENTIAL STEM CELLS, THEY HAVE THESE CELLS IN THEIR CARTILAGE PROGENITORS, AND THEY FORM THE HYALINE ARTICULATED CARTILAGE. THEY'RE NOT FOUND IN MSC'S OR OTHER CELL TYPES. SO YOU DON'T FIND THESE AMONGST OTHER CELL TYPES, OR AT LEAST YOU CAN'T -- THE RESEARCHERS ARE UNABLE TO FIND THESE PARTICULAR CELLS THERE.

SO YOU HAVE TO START WITH A PLURIPOTENTIAL STEM CELL IF YOU WANT THIS ARTICULATED CARTILAGE. IT'S FIRM ARTICULATED CARTILAGE WHICH IS NEEDED FOR OSTEOARTHRITIS OR FOR REPAIR OF DAMAGED CARTILAGE. AND I THINK IT'S AN IMPORTANT DEVELOPMENT IN THE FIELD AND ONE THAT UNDERPINS US BETTER UNDERSTANDING OF WHAT WE NEED IN THE AREA.

IN THE NEXT STUDY THERE WAS A DIRECT PROGRAMMING. YOU'VE HEARD OF DIRECT PROGRAMMING IN THE HEART WHERE YOU CAN CHANGE FIBROBLASTS OR SCAR TISSUE IN THE HEART FROM A FIBROBLAST TYPE OF CELL INTO A MUSCLE, HEART MUSCLE CELL. WELL, IN THIS STUDY, THOUGH DOING THE DIRECT -- ATTEMPTING THE DIRECT REPROGRAMMING OF REACTIVE GLIAL CELLS IN THE

FUNCTIONAL NEURONS AFTER BRAIN INJURY OR ALZHEIMER'S DISEASE. AND THEY WERE PARTICULARLY SUCCESSFUL IN THIS. I THINK IT'S A VERY INTERESTING STUDY.

SO IN BRAIN INJURY, STROKES, SPINAL CORD INJURY, GLIOMA, ALZHEIMER'S DISEASE, ETC., YOU GET ACTIVATION AND PROLIFERATION OF GLIAL CELLS. SO THESE ARE THE ASTROCYTES AND NG 2 CELLS. THESE ARE ANOTHER SEPARATE TYPE OF BRAIN CELL, AND MICROGLIA WHICH ARE NOT ESSENTIALLY FORMED FROM THE NEUROCELLS, BUT FROM BLOOD CELLS AS A DEFENSE AGAINST MICROORGANISM AND CYTOTOXINS IN THE BRAIN. SO WHEN YOU'RE INJURED, THESE THINGS WILL ACTIVATE. AND THESE INHIBIT NEURON FORMATION AND GROWTH. SO THEY CAUSE WHAT IS KNOWN AS GLIAL SCARRING. SO IF YOU HAVE THIS INJURY, THE RESPONSE APPEARS TO BE THIS WAY.

THEY USED A RETROVIRAL EXPRESSION OF A SINGLE NEURAL TRANSCRIPTION FACTOR CALLED NEURO D1 IN THE CORTEX OF BRAIN TO CONVERT THESE NEWLY FORMED ASTROCYTES INTO GLUTAMATERGIC NEURONS AND NG 2 CELLS INTO GLUTAMATERGIC AND GABAERGIC NEURONS IN BRAINS OF DAMAGED MICE. AND SO THEY'RE ABLE TO USE THIS VIRUS WHICH HAD THIS NEURO D1 FACTOR ENCASED IN IT. AND THESE REACTIVE CELLS THAT TOOK UP THIS CONVERTED THESE CELLS INTO NEURONS WHICH BOTH HAD INHIBITORY

AND EXCITATORY CAPACITY.

AND THIS APPROACH IS A NONGRAFTING APPROACH FOR NEURONS WHICH BALANCE MAYBE EXCITATION INHIBITION IN THE CORTEX. AND YOU NEED THAT BALANCE IF YOU ARE GOING TO DO THIS. AND WE THINK AND THE AUTHORS THINK THAT THIS MAY BE A REPAIR THAT MIGHT AFFECT BEHAVIORAL AND COGNITIVE DEFECTS THAT HAPPEN WITH BRAIN DISEASE. SO I THINK IT'S A PRETTY IMPORTANT DEVELOPMENT. THIS IS A NONTRANSPLANTATION MECHANISM, SO USING A VIRUS TO CONVERT DIRECTLY THESE NEW CELLS INTO NEURONS THAT HAVE THESE BOTH EXCITATORY AND INHIBITORY CAPACITIES WHICH SHOULD RETURN, IF YOU LIKE, THE BEHAVIORAL AND COGNITIVE DEFECTS THAT ARE CAUSED IN THIS. THIS HAS TO BE PROVEN AS YET, BUT THE VIEW IS THAT THAT'S A STRONG POSSIBILITY.

AND THEN THE LAST ONE IS A SPECIAL POPULATION OF, AGAIN, IMMUNE CELLS FOR REGULATORY T-CELLS WHICH APPEAR TO POTENTIATE MUSCLE REPAIR. AND MUSCLE REPAIR IS REALLY IMPORTANT IN INJURY AND IN DISEASE. SO THESE REGULATORY T-CELLS OR T-REGS ACCUMULATE IN THE MUSCLE OF INJURED MICE AND, WHEN THEY'RE INVADING MYELOID CELLS, SWITCH FROM PRO-INFLAMMATORY STATE TO A PRO-REGENERATIVE STATE. SO THAT'S WHAT YOU WANT. YOU WANT THOSE CELLS WHEN

THEY'RE DOING THAT.

THE SAME THING HAPPENS IN DYSTROPHIC MICE. SO DEPLETION OF THESE T-REGS PROLONGS THE INFLAMMATORY STATE, WHICH IS NOT WHAT YOU WANT, AND IMPAIRS MUSCLE REPAIR. SO YOU NEED THESE T-REGS TO APPEAR IN THIS MUSCLE IF YOU WANT TO STOP INFLAMMATION AND GET ON WITH THE REPAIR PROCESS.

HOWEVER, IT APPEARS TO BE OPPOSITE IN THE DYSTROPHIC MICE. SO INCREASED T-REGS DIMINISHES MUSCLE REPAIR, AND DECREASED T-REGS ACTIVITY ENHANCES MUSCLE DAMAGE. SO THERE'S AN OPPOSITE BUILT IN WHERE YOU'VE GOT A LACK OF DYSTROPHIN. SO THE MUSCLE T-REG CELLS ARE EXPRESSING AMPHIREGULIN WHICH ACTS DIRECTLY ON MUSCLE STEM CELLS TO IMPROVE REPAIR. SO AT LEAST IN CONDITIONS OF WANTING TO REPAIR MUSCLE, THIS SEEMS TO BE A GOOD OPPORTUNITY TO USE T-REGS OR STIMULATE THESE T-REGS AND THEIR PRODUCTS FOR WOUND REPAIR. INTERESTING PAPER.

SO MOVING ON INTO OUR RFA PROGRAMS, THE BASIC BIOLOGY, THERE'S A DECISION IN THIS MEETING AND GENOMES IN THIS MEETING. THE STRATEGIC PARTNERSHIP III, THE GRANTS REVIEW OF APPLICATIONS THIS NEXT WEEK, I THINK, IN FEBRUARY, ONLY ABOUT FIVE DAYS, SIX DAYS AWAY. RESEARCH LEADERSHIP EXTENSION, THOSE WILL BE REVIEWED BY THE GRANTS

WORKING GROUP IN MARCH. ALPHA CLINICS, THE GRANTS WORKING GROUP WILL BE IN JUNE. AND THE TOOLS AND TECHNOLOGIES III, THE GRANTS WORKING GROUP REVIEW WILL BE IN SEPTEMBER. AND ACCELERATION PATHWAYS, THE GRANTS WORKING GROUP REVIEW WILL BE IN JUNE.

SO I'M GOING TO HAND OFF TO ELONA, IF I CAN. SHE WAS AT THE JP MORGAN CONFERENCE, AS YOU HEARD EARLIER, JUST TO GIVE THESE NEXT FEW SLIDES.

MS. BAUM: OKAY. THANK YOU, ALAN. WELCOME BACK. IT'S TERRIFIC HAVING YOU HERE AGAIN. AND, BOARD, THANK YOU FOR YOUR ATTENTION. IT WAS VERY EXCITING, AS J.T. MENTIONED, AT THE JP MORGAN CONFERENCE. WE'VE DONE THIS FOR A COUPLE YEARS NOW. WE'VE ACTUALLY RENTED A LITTLE HOTEL SO WE COULD HAVE SOME VERY CONFIDENTIAL MEETINGS. EVERYBODY DOES IT THAT WAY, AND IT'S BECOME SORT OF A WAY OF DOING BUSINESS. IT'S THE CONFERENCES AROUND THE CONFERENCE THAT REALLY MATTER. AND WE'VE GOTTEN A LOT OF GREAT RESPONSES.

NEIL AND I WERE DIVIDING AND CONQUERING THROUGHOUT THE WEEK. AND IT GOES FROM EARLY MORNING BREAKFAST TO DINNERS, AND A LOT GETS ACCOMPLISHED IN THAT TIME.

SO SUFFICE IT TO SAY WE HAD A NUMBER OF MEETINGS. THERE WAS THIS RENEWED ENERGY AROUND THE

FIELD, AND I LIKE TO THINK SOME OF IT HAS TO DO WITH THE FACT THAT IN THE FIRST WEEK OF JANUARY TWO OF OUR FUNDED PROGRAMS, CAPRICOR AND SANGAMO, WERE ACTUALLY PARTNERED. AND THAT'S A -- WE'VE BEEN WAITING FOR THIS FOR A LONG TIME. IT TAKES ABOUT A YEAR FROM THE START OF NEGOTIATIONS TO ACTUALLY SEEING THE FRUIT. AND NOW WE HAVE SOME FRUIT, AND IT'S CREATING A LOT OF EXCITEMENT, AND I THINK IT'S HELPING TO VALIDATE CIRM'S PROGRAMS, THE FIELD IN GENERAL.

I COULD GIVE YOU A LOT OF THE STATISTICS ABOUT WHAT THE FIELD LOOKS LIKE, BUT I THINK WHAT'S EVEN MORE IMPORTANT THAN THE SLIDES I HAVE UP AND PROVIDED TODAY IS WHAT I HEARD JUST TWO DAYS AGO AT FACILITATE BECAUSE THAT'S ANOTHER SEMINAL CONFERENCE. AND UP ON THE PODIUM OF SPEAKERS EVENTS WERE J & J, PFIZER, NOVARTIS, BIOGENETIC, AND THEY WERE ASKED TWO VERY POINTED QUESTIONS. ONE, HOW MANY OF YOU OUT OF A SCORE OR A RATING OF ONE TO TEN WILL BE INVESTING IN THIS FIELD THIS YEAR IN A PROGRAM? AND THEY ALL RAISED THEIR HAND EXCEPT FOR PFIZER WITH AN 8.7. EVERYONE WAS A NINE TO TEN. SO THEY'RE LOOKING TO INVEST IN COLLABORATION. SO I THINK THAT'S A VERY GOOD SIGN. AND NOT TOO MANY OF THEM, MAYBE ONE OR TWO APIECE, BUT I THINK IT SHOWS

THAT THIS FIELD IS MATURING AND ATTRACTING NOT ONLY PHARMA INVESTORS, BUT ALSO THE EQUITY MARKETS ARE OPENING UP AND HELPING IT AS WELL.

NOW, WE ALSO HEARD A LIST OF THE DIFFERENT PROGRAMS THAT WILL ACTUALLY HAVE CLINICAL READOUTS. THERE'S MANY OF THEM, PROBABLY AT LEAST HALF A DOZEN TO A DOZEN, THIS YEAR IN OUR FIELD. AND I THINK THAT WILL HAVE A LOT OF IMPACT ON THE WILLINGNESS AND THE EXCITEMENT OF PHARMA TO COME IN EARLY STAGE. SO WE'RE HOPING FOR A VERY GOOD RESULT IN THAT REGARD. AND HAPPY TO ANSWER ANY OTHER QUESTIONS AS THEY COME UP.

DR. TROUNSON: THANKS, ELONA. YOU KNOW, IN ALL OF THE DISCUSSIONS I'VE BEEN HAVING WITH INDUSTRY AS WELL IS THERE'S MORE AND MORE INTEREST IN CELL THERAPIES, BUT ALSO UNDERPINNING WORK THAT'S COMING FROM SMALL MOLECULES AS WELL AS MONOCLONAL ANTIBODIES, PARTICULARLY IN THE CANCER FIELD, THAT ARE REALLY BASED ON THE STEM CELL DEVELOPMENTS THAT ARE ARISING OUT OF HERE AND ELSEWHERE. SO A LOT OF POSITIVE FEELING IN THE AREA.

AND I THINK NOW IT'S QUITE POSSIBLE, I THINK, THAT SOME OF THE MAJOR PHARMA WILL END UP LINKING WITH US IN DIFFERENT WAYS, IN VERY DIFFERENT WAYS. SO I THINK THE PAYOLA WILL START TO COME,

ELONA, THIS YEAR AND NEXT YEAR, AND IT SHOULD BE A REALLY INTERESTING TIME. YEAH, I THINK IT'S GOING TO BE FANTASTIC.

SO THERE'S A FUTURE MEETING PROGRAMMED ON THE ETHICS WORKSHOP MARCH 5TH AND 6TH HERE IN BERKELEY. AND SO THE ORGANIZERS OF CIRM, NIH, AND THE CENTER FOR GENOMICS AND POLICY, MCGILL UNIVERSITY, AND THEY'RE GOING TO DISCUSS A PROJECT DERIVING INDUCED STEM CELLS USING STORED SPECIMENS, AND IT REALLY COMES FROM THE IOM RECOMMENDATIONS, THAT CIRM DRAW ON THE EXPERTISE OF OTHERS TO STRENGTHEN ITS ETHICAL STANDARDS FOR DONOR CONSENT. SO IT'S ONE OF THE IOM RECOMMENDATIONS THAT WE'RE REALLY ADDRESSING HERE.

A KEY ETHICS POLICY CONSIDERATION IS THE EXTENT TO WHICH THE DONOR INFORMED CONSENT ASSOCIATED WITH STORED SPECIMENS IS APPROPRIATE FOR THE DERIVATION AND BANKING OF NEW IPS CELL LINES. AND CIRM IS WORKING WITH DISCUSSING COLLABORATIONS TO DEVELOP POINTS TO CONSIDER FOR INFORMED CONSENT. SO IT WOULD BE AN INTERESTING MEETING FOR SOME OF THE MEMBERSHIP OF THE BOARD IF THEY'D LIKE TO VISIT WITH THAT WORKSHOP. IT MIGHT WELL BE OF INTEREST TO SOME OF YOU.

AND I THINK THE GROWTH IN THE IPS CELL

LINE BANKING IS REALLY QUITE EXTRAORDINARY, THE INTEREST. WORLDWIDE INTEREST IS GROWING VERY RAPIDLY. SO EVERYONE AROUND THE WORLD IS NOW VERY MUCH INTERESTED IN BANKING IPS CELLS, BUT THE DISEASE STUDIES, AS WE'VE DONE, ALSO IN GETTING THESE HAPLOTYPE IPS CELLS BANKED AS WELL.

DURING THE WORKSHOP, THIS PARTICULAR WORKSHOP, THERE WILL BE INFORMAL SESSIONS TO REVIEW RECENT DEVELOPMENTS AND TO DRIVE POINTS TO CONSIDER, AND COMMENTS TO DATE WILL BE REVIEWED BY WORKSHOP PARTICIPANTS WITH A GOAL OF BUILDING CONSENSUS REGARDING STANDARDS FOR DONOR INFORMED CONSENT. AND THE GOAL OF THE WORKSHOP IS TO PUBLISH THE FINAL POINTS TO CONSIDER, BASED ON THIS FINAL POINTS FOR CONSIDERATION BASED ON THE CONSENSUS BUILDING PROCESSES. SO WE SHOULD HAVE SOME REASONABLE DOCUMENT IN THIS AREA THAT WILL BE USEFUL FOR PEOPLE AROUND THE WORLD, I THINK. AND HOPEFULLY WE'LL REALLY HAVE THE CONSENSUS AGREEMENTS FROM ALL OF THE PARTICIPANTS.

SO NOW I WANT TO PASS ON TO THE COLLABORATIVE FUNDING PARTNER PROGRAM, WHICH IS BEING RUN BY IAN SWEEDLER AND MYSELF. AND WE'VE BEEN BUSY IN THIS AREA. SO NEW COLLABORATIVE FUNDING PARTNERS ARE CHILI AND THE STATE OF SAO

PAULO AND BRAZIL. SO WE'VE SIGNED AGREEMENTS WITH BOTH OF THOSE, THOSE NEW COLLABORATIVE FUNDING PARTNERS.

IN TOOLS AND TECHNOLOGIES III, THERE'S A GOOD FIT FOR COLLABORATIONS. SO PROJECTS OFTEN REQUIRE MULTIDISCIPLINARY APPROACHES THERE. AND TO RECEIVE PREAPPLICATIONS WITH PARTNERS FROM AUSTRALIA, CHILI, CHINA, GERMANY, NIH, AND SAO PAULO. SO HOPEFULLY SOME OF THOSE WILL END UP FOR YOU TO CONSIDER LATER ON, THE TOOLS AND TECHNOLOGIES PROGRAM. AND THAT COLLABORATIVE FUNDING PROGRAM, I THINK, I KNOW IS GOING TO PRESENT YOU WITH A SUMMARY OF THE PROGRAM AND HOW WELL IT'S WORKED SOMETIME IN THE NEAR FUTURE. BUT I THINK IT'S AN EXTREMELY USEFUL AND VERY EFFECTIVE PROGRAM FROM MY POINT OF VIEW, SO I'LL BE INTERESTED TO SEE WHAT THE ANALYSIS COMES UP AND TO PRESENT IT TO YOU IN A FORM THAT YOU CAN ASSESS AS WELL.

SO THE CFP'S IN THE DISEASE TEAM III, OF THE SIX DISEASE TEAM III AWARDS APPROVED THIS MONTH, FOUR WERE BASED ON SUCCESSFUL CIRM COLLABORATIVE FUNDING PARTNERED DISEASE TEAM I AWARDS. SO FOUR OF THOSE. SO THAT'S A VERY GOOD INDICATOR OF HOW WELL THOSE TEAMS HAVE PERFORMED OUT OF THE DISEASE TEAMS. AND ONE BUILDS ON WORK OF THE CFP-FUNDED

INVESTIGATOR. SO THESE THINGS ARE DOING REALLY WELL, AND THAT'S WHERE YOU GET THE BEST SCIENTISTS FROM AROUND THE WORLD WORKING WITH THE CALIFORNIANS. AND THAT REALLY DOES LIFT THE WHOLE PROGRAM YET AGAIN. SO NOT ONLY HAVE WE GOT SOME OF THE BEST SCIENTISTS, NO DOUBT, IN THE WORLD, MOST EFFECTIVE PROGRAMS, WE'RE GETTING INPUT FROM THE BEST SCIENTISTS AROUND THE WORLD. SO I THINK IT'S A WONDERFUL PROGRAM AND HAS WORKED VERY EFFECTIVELY.

CAN I ASK ELLEN TO PRESENT TO YOU THE ACCELERATED PATHWAY UPDATE?

DR. FEIGAL: HI. THANKS VERY MUCH AND WELCOME TO THE NEW MEMBERS. I'LL TRY TO ENCAPSULATE WHAT WE'RE DOING HERE SO IT CAN BRING YOU INTO THE LOOP AS TO WHAT WE'RE DOING. BUT LAST MONTH THE BOARD APPROVED A DECISION TO CREATE A PATHWAY CALLED THE ACCELERATED PATHWAY WITH THE INTENT BEING REALLY TO BRING OUR TOP-RATED SIX TO EIGHT PROJECTS THAT HAVE THE POTENTIAL TO REACH CLINICAL PROOF OF CONCEPT WITHIN THE NEXT SEVERAL YEARS TO GIVE THEM AN OPPORTUNITY TO ACCELERATE THEIR ABILITY TO REACH CLINICAL PROOF OF CONCEPT. AND THIS BOARD APPROVED A $200 MILLION SET ASIDE TO GO INTO THAT ACCELERATED PATHWAY.

WHAT I'M DOING TODAY IS JUST GIVING YOU AN

UPDATE, SO PART OF CIRM'S RAPID RESPONSE PROGRAM TO YOUR DECISION. WE WANTED TO RAPIDLY GET BACK TO YOU WITH HOW WE'RE IMPLEMENTING YOUR DECISION. SO THE INTENT REALLY IS TO ACCELERATE THE TIME IT TAKES TO ACHIEVE CLINICAL PROOF OF CONCEPT. THIS REALLY ALIGNS WITH CIRM'S 2012 STRATEGIC PLAN TO ACHIEVE CLINICAL PROOF OF CONCEPT WITHIN 2017. THIS WAS RECOMMENDED BY OUR EXTERNAL SCIENTIFIC ADVISORY BOARD WHICH WE HELD BACK IN AUGUST OF LAST YEAR AND STRONGLY RECOMMENDED WE HAVE AN ACCELERATED WAY TO ALLOW THESE SUCCESSFUL PROGRAMS TO BE ABLE TO CONTINUE TO MOVE TOWARDS CLINICAL PROOF OF CONCEPT.

WE THINK THAT ACHIEVING -- WE ALL AGREE THAT ACHIEVING CLINICAL PROOF OF CONCEPT IN A VERY EXPEDITIOUS MANNER WILL BE MEANINGFUL TO PATIENTS AND TO THE PUBLIC AT LARGE. AND WE ALWAYS HAVE TO REMEMBER THOSE ARE THE PEOPLE WHO CREATED THIS AGENCY IN THE FIRST PLACE. AND IT'S ALSO A VERY IMPORTANT INFLECTION POINT FOR ATTRACTING INVESTORS AND MOVING TOWARDS COMMERCIALIZATION.

SO LET ME JUST GIVE YOU AN UPDATE ON THE PROCESS. WE'RE GOING TO FOLLOW STANDARD PROCEDURES, WHICH YOU'RE ALREADY VERY FAMILIAR WITH, WHICH WE'VE USED TIME AND TIME AGAIN. SO WE'RE NOT CREATING A NEW PROCESS FOR HOW THIS WILL BE DONE. WE'RE GOING

TO BE SENDING OUT A PROGRAM ANNOUNCEMENT NEXT MONTH TO THE DISEASE TEAMS AND TO THE STRATEGIC PARTNERSHIPS THAT ARE CURRENTLY FUNDED FOR COMPLETION OF A CLINICAL TRIAL. WE'RE GOING TO HAVE THESE APPLICANTS PUT TOGETHER A DETAILED PROPOSAL ABOUT WHAT THE KEY DEVELOPMENT ACTIVITIES WOULD BE TO ACCELERATE THEIR PROGRESS. THIS IS NOT TO DUPLICATE WHAT THEY'RE ALREADY FUNDED TO DO. THIS IS THE SELECTED KEY ACTIVITIES THAT COULD ACTUALLY ACCELERATE THEIR PROJECT.

IN ADDITION, FOR THOSE PROJECTS WHERE IT'S APPROPRIATE AND WHERE THEY'RE MEETING THEIR MILESTONES, THEY'RE ALSO GOING TO INCLUDE A CLINICAL PROOF OF CONCEPT PHASE II TRIAL. AND THEY'RE ALSO GOING TO PROVIDE A DETAILED BUDGET FOR ALL OF THESE ADDITIONAL ACTIVITIES. THAT IS WHAT THE GWG IS GOING TO REVIEW IN JUNE. AND THEN THOSE RECOMMENDATIONS FROM THE GWG ARE GOING TO BE PROVIDED TO THE ICOC. THEY'RE GOING TO BE PROVIDED TO YOU ALONG WITH PROGRAMMATIC CONSIDERATIONS FOR YOU, THE BOARD, TO MAKE A DECISION.

AND THE SAME OVERSIGHT PROCEDURES ARE GOING TO BE IN PLACE FOR THESE PROJECTS. THEY'RE GOING TO HAVE TO GO THROUGH GO/NO-GO AND PROGRESS MILESTONES. THEY'RE GOING TO HAVE ASSESSMENTS BY

OUR CLINICAL DEVELOPMENT ADVISORY PANEL, WHICH IS A PANEL OF EXPERTS WITH PRECLINICAL, REGULATORY, SCIENTIFIC, TECHNICAL, COMMERCIAL RELEVANCE, MANUFACTURING EXPERTISE. SO THEY'RE GOING TO HAVE ACCESS TO ALL THOSE EXPERT ADVISORS AS WELL.

IN ADDITION, WE SAID WE'RE GOING TO HAVE A POROUS PATHWAY. SO I'M GOING TO BE COMING TO YOU NEXT MONTH WITH A CONCEPT FOR THE NEXT ROUND OF DEVELOPMENT TEAMS, WHICH YOU'LL HAVE THE OPPORTUNITY TO COMMENT UPON AND MAKE YOUR SUGGESTIONS ON, SO THAT THERE WILL BE AN ADDITIONAL AVENUE FOR NEW GRANTEES IN SUBSEQUENT ROUNDS OF TOOLS AND TECHNOLOGIES OR STRATEGIC PARTNERSHIPS OR WHAT WE ARE NOW TERMING THE DEVELOPMENT TEAMS WITH A SUFFICIENT CIRM TRACK RECORD SO THAT WE CAN ASSESS THE EXECUTION AND DEVELOPMENT OF THEIR PROGRAMS AND THEIR POTENTIAL TO REACH CLINICAL PROOF OF CONCEPT, THAT THOSE TWO MAY BE ELIGIBLE IN FUTURE ROUNDS TO ENTER INTO THE ACCELERATED PATHWAY.

SO THIS IS JUST AN UPDATE OF WHAT WE'VE PUT INTO PLACE SINCE YOUR DECISION LAST MONTH. ARE THERE ANY QUESTIONS? YES.

DR. JUELSGAARD: SO, ELLEN, IN SENDING OUT TO THE DIFFERENT DISEASE TEAMS AND STRATEGIC PARTNERSHIPS, ASKING THEM TO SUBMIT PROPOSALS, ARE

WE IDENTIFYING THE CRITERIA THAT THE GWG WILL USE, THE SPECIFIC CRITERIA, AS WELL AS THE WEIGHTING OF THOSE PARTICULAR CRITERIA IN TERMS OF MAKING ITS ASSESSMENTS ON WHICH PROJECTS TO PUT INTO THIS CATEGORY?

DR. FEIGAL: YEAH. AS YOU RECALL, IN DECEMBER WE GAVE YOU A LIST OF WHAT THE REVIEW CRITERIA WOULD BE, AND WE OFFERED THE OPPORTUNITY IF THE BOARD WANTED TO PROVIDE ANY INPUT, FOR EXAMPLE. I THINK OS STEWARD HAD LOOKED THROUGH IT. HE DIDN'T HAVE ANY ADDITIONAL COMMENTS TO ADD. BUT WE DID HAVE AN OPPORTUNITY FOR YOU TO COMMENT.

NORMALLY WHEN WE PUT OUT RFA'S, WE ACTUALLY DON'T PRESENT REVIEW CRITERIA TO THE BOARD, BUT WHAT WE WILL DEFINITELY DO IN THE ANNOUNCEMENT TO THE APPLICANTS IS WE'LL LET THEM KNOW WHAT THE REVIEW CRITERIA ARE.

DR. JUELSGAARD: OKAY. IS THERE A CHANCE TO SEE THAT --

DR. FEIGAL: ABSOLUTELY.

DR. JUELSGAARD: -- IN ADVANCE? THANKS.

DR. FEIGAL: JEFF.

MR. SHEEHY: WELL, I DO KIND OF -- I DIDN'T REALLY RECOGNIZE THAT WE WERE APPROVING A CONCEPT PLAN WITH KIND OF THE DETAILS. I THOUGHT

THAT THERE WERE A LOT OF IDEAS PUT OUT FOR POTENTIAL REVIEW CRITERIA, BUT WE DO WANT THIS PROGRAM TO GO FORWARD.

ONE OF MY CONCERNS, THOUGH, I DON'T KNOW HOW SOMEONE WHO'S ENTERING THE PHASE I CLINICAL TRIAL COULD REALLY PUT TOGETHER A GOOD PACKAGE FOR A PHASE II CLINICAL TRIAL TILL THE PHASE I IS COMPLETED. I MEAN IS IT JUST ME THAT WHAT HAPPENS IN PHASE I IS REALLY GOING TO HAVE A SIGNIFICANT IMPACT ON HOW YOU DESIGN YOUR PHASE II TRIAL? I JUST --

DR. FEIGAL: MAY I COMMENT ON THAT? IS THAT A QUESTION? CAN I COMMENT ON THAT?

MR. SHEEHY: SURE. I WAS GOING TO MAKE A QUESTION, BUT YOU CAN COMMENT ON IT.

DR. FEIGAL: GO AHEAD, JEFF.

MR. SHEEHY: NO. GO AHEAD, PLEASE.

DR. FEIGAL: SO IF THE QUESTION IS WHAT WE OFTEN DO, ALSO PART OF THE APPLICATION, WILL BE ACTUALLY NOT JUST THE PHASE II, BUT THINKING THROUGH THEIR DEVELOPMENT ACTIVITIES. IT'S ALWAYS GOING TO BE SPECULATION DEPENDING ON WHAT THE RESULTS ARE. BUT GENERALLY IN PRODUCT DEVELOPMENT, YOU DO HAVE TO THINK AHEAD AND THINK THROUGH WHAT THE STEPS ARE TO GET TO WHERE YOU WANT TO GO. AND ABSOLUTELY IF THE

PHASE I SHOWS THAT IT'S NOT SAFE, WELL, THEN, THE REST OF THE DISCUSSION IS SOMEWHAT OF A MOOT POINT. BUT IF YOU MAKE THE ASSUMPTION THAT THE WAY YOU'VE DESIGNED YOUR PHASE I IS GOING TO GET YOU AT A SAFE DOSE AND THAT IT'S TOLERATED AND FEASIBLE, YOU ABSOLUTELY DON'T WANT TO WAIT TILL THE END OF IT. YOU DO HAVE TO BE THINKING ABOUT WHAT THAT PHASE II CLINICAL PROOF OF CONCEPT CLINICAL TRIAL NEEDS TO LOOK LIKE.

AND ACTUALLY MOST GROUPS WHO WORK IN PRODUCT DEVELOPMENT ARE DOING THAT. SO VERY TRUE THAT THE RESULTS CAN INFORM HOW YOU MIGHT RESHAPE OR REFINE IT, BUT THEY DO HAVE TO HAVE A SENSE OF WHERE THEY WANT TO GO. AND WE DO THINK THEY'LL BE ABLE TO. AS A MATTER OF FACT, WITH DISEASE TEAM III, WE ACTUALLY HAD TO TAKE OUT SOME THINGS THAT WE SAID WERE OUT OF SCOPE BECAUSE SOME PEOPLE WERE ASKING FOR FUNDING FOR THOSE FUTURE TRIALS.

SO I THINK THAT THE GROUPS WILL BE WELL POISED TO PUT DOWN THEIR IDEAS OF WHAT THOSE CLINICAL PROOF OF CONCEPT TRIALS COULD LOOK LIKE AND WHAT THE BUDGET FOR THEM WOULD BE. BUT ABSOLUTELY THEY'RE DEPENDENT ON MEETING MILESTONES. SO ALL THOSE THINGS ARE CONDITIONAL AND CAVEAT ON BEING ABLE TO MOVE FORWARD. AND THAT'S GOING TO BE PART

OF THEIR PROPOSAL. THEY'LL HAVE TO PUT IN WHAT THE MILESTONES ARE AND WHAT KIND OF INFORMATION THEY NEED TO SEE TO MAKE A DECISION ABOUT WHETHER OR NOT THEY GO TO THE NEXT STEP, AND WE ASSESS THAT.

SO WE'LL BE SEEING THE DATA. WE'LL BE LOOKING AT ALL THOSE THINGS. SO WE'RE GOING TO BE ASSESSING THAT JUST LIKE WE DO.

IF YOU LOOK AT OUR CURRENT DISEASE TEAM IIS, THEY'RE CROSSING A MILESTONE FROM IND FILING TO DOING THE CLINICAL TRIAL. IT COULD BE AT THE IND FILING THE FDA IS GOING TO COME UP WITH NEW ISSUES OR NEW QUESTIONS THAT THEY DIDN'T PREDICT, AND THEY'RE GOING TO HAVE TO TAKE THOSE INTO CONSIDERATION TO RESHAPE OR REFINE THAT PHASE I TRIAL. SO IT'S NEVER BLACK AND WHITE. IT'S GOING TO BE CONDITIONAL ON WHAT THE DATA SHOWS. I DON'T KNOW IF THAT ANSWERED YOUR QUESTION, BUT I WAS TRYING TO SAY BASICALLY THEY HAVE TO THINK AHEAD AND PUT DOWN WHAT THE OPTIONS COULD BE SHOULD THE DATA COOPERATE.

DR. LUBIN: I JUST WANTED TO COMMENT ON DR. TROUNSON'S PRESENTATION. YOU KNOW, WITH THE FLU NOW, MOST MEDICAL CENTERS ARE GETTING MORE AND MORE PATIENTS THAT REQUIRE EXTRACORPOREAL MEMBRANE OXYGENATION TO SURVIVE. AND SO THIS APPROACH OF

LUNG, SOME NEW LUNG THERAPIES ARE REALLY CRITICAL. AND I THINK THAT I'M SURE THE GROUPS THAT ARE DOING THAT ARE THINKING ABOUT THIS, BUT I THINK THAT THAT'S A VERY IMPORTANT STEP BECAUSE WE'RE SEEING WORSE FLU THIS YEAR THAN WE'VE SEEN FOR A LONG TIME.

THE SECOND POINT THAT I WANTED TO MAKE IS AN IDEA THAT PROBABLY WE'VE DONE, BUT IF NOT, I'D LIKE TO KNOW HOW MANY CELLULAR THERAPY PROGRAMS WE HAVE IN THE STATE OF CALIFORNIA AND WHAT THE IMPACT OF CIRM HAS BEEN ON THOSE. THIS IS A GOOD THING TO KEEP IN MIND AS WE LOOK FOR SOMETHING FORWARD THAT'S IMPROVED CARE, DECREASING COSTS, AND I THINK JUST HAVING A HANDLE ON HOW MANY BECAUSE MORE AND MORE PLACES ARE THINKING ABOUT STARTING OR IN IT OR EXPANDING, AND THIS COULD INCLUDE BONE MARROW TRANSPLANT, WHICH IS A CELLULAR THERAPY.

I JUST THINK TO SHOW THE IMPACT THAT WE HAVE ON THE HEALTH OF THE STATE OF CALIFORNIA WOULD BE A NICE PIECE OF DATA AS WE LOOK FOR FUTURE FUNDING. AND MAYBE WE'VE DONE THAT; BUT IF NOT, THIS WOULD BE A GOOD TIME TO THINK ABOUT IT.

DR. TROUNSON: I THINK YOU MAKE A VERY GOOD POINT. WE WILL BE COLLECTING THAT INFORMATION, AND WE SHOULD PRESENT IT IN THAT KIND OF FORM AS YOU SUGGESTED. WE'LL BE COLLECTING THAT AT THE ALPHA

CLINICS BECAUSE MOST OF THE CELL THERAPIES WILL BE COMING IN THROUGH ALPHA CLINICS. SO WE REALLY NEED TO KNOW WHAT ARE THE CELL THERAPIES IN CALIFORNIA. THEY'RE NOT ALL IN OUR PORTFOLIO BECAUSE THERE ARE A LOT OF MSC STUDIES THAT WE DON'T BACK AND SO ON. WE'LL MAKE A TOTAL LIST, AND A NUMBER OF THESE COMPANIES, AS I SAID, AT LEAST ONE OF THOSE IN THAT BILLION-DOLLAR FRAMEWORK ARE DOING A NUMBER OF STUDIES THAT INCLUDE THE WORK IN CALIFORNIA.

SO I THINK, YES, WE CAN GET THAT DATA BECAUSE WE REALLY NEED IT IN OUR BASE FRAMEWORK FOR THE ALPHA CLINICS AND DRAWING THOSE INTO THAT PROGRAM. SO WE SHOULD DO THAT SOONER RATHER THAN LATER. AND IT'S NOT A HUGE LIST AT THE MOMENT. SO IT IS DOABLE.

DR. FEIGAL: I JUST WANT TO SAY WE ACTUALLY HAVE -- WE DO HAVE THAT INFORMATION. AND ONE OF THE THINGS WE'RE THINKING ABOUT MAYBE AS PART OF A DEVELOPMENT UPDATE AT THE MARCH MEETING IS WE COULD BRING UP THOSE NUMBERS TO YOU.

DR. LUBIN: THAT WOULD BE GREAT.

MS. BAUM: IF THIS IS STILL WORKING, I JUST WANTED TO ADD AT THIS INTERNATIONAL CONFERENCE THAT I JUST ATTENDED, CIRM WAS RECOGNIZED AS A SIGNIFICANT FUNDER IN THE AREA OF CELL AND GENE

THERAPY. TWENTY-FIVE PERCENT OF ALL FUNDING RAISED LAST YEAR WAS ATTRIBUTED TO THE GOVERNMENT, OF WHICH A SIGNIFICANT PORTION CAME FROM CIRM. SO IT HAD INTERNATIONAL RECOGNITION AS BEING A SIGNIFICANT PLAYER IN THE FIELD.

DR. LUBIN: I THINK ALL OF THIS IS REALLY IMPORTANT FOR OUR MARKETING AND POSITIONING FOR THE FUTURE. AND THAT'S AN AREA THAT'S COMMONLY USED. I MEAN THE REST OF THEM HAVE A GAP BEFORE THEY GET TO PATIENTS IN CELLULAR THERAPY, ESPECIALLY IF WE INCLUDE BONE MARROW TRANSPLANTS, WHICH ARE CELLULAR THERAPIES. IT'S REALLY QUITE REMARKABLE IN THIS STATE. AND I THINK THAT'S AN IMPORTANT PIECE OF INFORMATION TO PRESENT AS WE LOOK AT OUR FUTURE.

DR. FEIGAL: YEAH. WHAT WE CAN DO IS FOLLOW UP WITH YOU FOR THAT UPDATE INTO THE TYPES OF THERAPIES IN ADDITION TO THE REGIONS AND WHERE CALIFORNIA MIGHT BE THE SOLE SITE VERSUS CALIFORNIA AS ONE OF MULTIPLE SITES. SO WE'D BE HAPPY TO DO THAT.

ARE THERE ANY MORE QUESTIONS FOR ME? OTHERWISE, I CAN MOVE ON TO THE FINANCIAL UPDATE. OKAY. CHILA.

MS. SILVA-MARTIN: GOOD MORNING, MR. CHAIR, MEMBERS OF THE BOARD, MEMBERS OF THE PUBLIC,

AND STAFF. MY NAME IS CHILA SILVA-MARTIN AND I WILL BE REPORTING ON CIRM'S FINANCES.

I KNOW WE HAVE A FEW NEW BOARD MEMBERS. SO FIRST I WANT TO EXPLAIN JUST BRIEFLY THE UNIQUENESS OF BEING A STATE AGENCY. SO FIRST OF ALL, OUR FISCAL YEAR. OUR FISCAL YEAR RUNS FROM JULY 1ST OF ANY GIVEN YEAR THROUGH JUNE 30TH OF THE FOLLOWING YEAR. SO WE'RE CURRENTLY IN THE '13-'14 FISCAL YEAR, WHICH COVERS JULY 1, 2013, THROUGH JUNE 30TH, 2014. ALSO, GIVEN THAT WE'RE A STATE AGENCY, WE MUST ADHERE TO THE STATE'S FINANCIAL REPORTING PROCESSES. SO WE USE THE STATE'S FINANCIAL ACCOUNTING SYSTEM, IT'S CALLED CALSTRS, TO REPORT OUR EXPENDITURES AND THEN TO PREPARE OUR YEAR-END FINANCIAL STATEMENTS.

THE STATE CONTROLLER'S OFFICE IS THE STATE'S CHIEF FISCAL OFFICER, AND AS SUCH WE MAKE ALL OF OUR GRANT AND OPERATIONAL PAYMENTS THROUGH THE STATE CONTROLLER'S OFFICE. AND WE SUBMIT OUR YEAR-END FINANCIAL STATEMENTS TO THEM, AND THEY COMPILE IT INTO A COMPREHENSIVE REPORT.

SO THAT WAS JUST A LITTLE BIT OF BACKGROUND FOR YOU ON THE STATE'S OVERALL FISCAL PROCESS. AND NOW I WANT TO TALK ABOUT CIRM'S FINANCIAL OPERATIONS.

SO JUST A COUPLE OF HIGHLIGHTS. FIRST, FOR THE FIRST SIX MONTHS OF THE FISCAL YEAR, WE HAVE DISTRIBUTED $102 MILLION IN GRANT PAYMENTS. THAT'S UP ABOUT $23 MILLION OVER WHAT WE DISTRIBUTED DURING THE SAME PERIOD IN THE '12-'13 FISCAL YEAR.

WE CONTINUE TO RECEIVE MONTHLY CASH ALLOCATIONS THROUGH COMMERCIAL PAPER. SO OUR CASH RESERVE AS OF DECEMBER WAS $65 MILLION, WHICH IS A HEALTHY BALANCE TO MEET OUR OPERATIONAL NEEDS.

THIS NEXT CHART PROVIDES YOU A SNAPSHOT IN TIME. WHAT IT REPRESENTS ARE EXPENDITURES THAT HAVE BEEN RECORDED IN THE FINANCIAL STATEMENTS AS OF DECEMBER 2013, AND IT COMPARES IT TO THE EXPENDITURES THAT WERE RECORDED DURING THE SAME PERIOD IN '12-'13. THE LAG BETWEEN ACTUAL EXPENDITURES AND RECORDED EXPENDITURES CAN RUN EVERY MONTH ANYWHERE FROM 400 TO $600,000. NOW, I'M NOT GOING TO COVER THE DETAILS OF THE EXPENDITURES AT THIS TIME. I WILL COVER THEM IN MORE DETAIL LATER ON IN MY PRESENTATION, BUT I JUST WANTED TO POINT OUT FROM THIS CHART THAT OUR EXPENDITURES REMAIN PRETTY CONSISTENT FROM YEAR TO YEAR. AS YOU CAN SEE, WE'VE HAD A 5-PERCENT INCREASE OF EXPENDITURES THAT HAVE BEEN RECORDED FOR THE FIRST SIX MONTHS OF THIS FISCAL YEAR.

SO NOW THIS NEXT CHART PROVIDES ALSO A SNAPSHOT IN TIME, AND IT REPRESENTS THE EXPENDITURES AS OF DECEMBER, BUT BY COST CENTER. AND OVERALL, AS YOU CAN SEE, ALL OF OUR COST CENTERS ARE MAINTAINING THEIR BUDGETS WELL WITHIN THEIR ALLOCATION.

SO NOW LOOKING AT THE DETAILS, THIS NEXT CHART REFLECTS WHAT WE WERE AUTHORIZED AN ALLOCATION FOR THE YEAR, WHAT OUR YEAR-END FORECAST IS, AND THIS IS BASED ON EXPENDITURES THAT WE RECORDED TO DATE, ANY OUTSTANDING OBLIGATIONS, AND THEN ANTICIPATED EXPENDITURES FOR THE NEXT SIX MONTHS. SO OVERALL I'M ANTICIPATING THAT WE WILL HAVE SAVINGS OF ABOUT 5 TO -- ANYWHERE FROM 5 TO 10 PERCENT.

AND NOW I JUST WANT TO LOOK BRIEFLY AT EACH OF THE CATEGORIES OF EXPENDITURE.

THE FIRST CATEGORY IS OUR EMPLOYEE EXPENSES. AND AS YOU CAN SEE, WE'RE ANTICIPATING ABOUT A 5-PERCENT SAVINGS IN THIS CATEGORY. SO FOR THOSE OF YOU THAT ARE NEW TO CIRM, IN THIS CATEGORY THE TYPE OF COSTS THAT WE CAPTURE HERE ARE THE SALARIES FOR OUR EMPLOYEES AS WELL AS BENEFITS SUCH AS RETIREMENT AND HEALTH. NOW, BECAUSE WE ARE A STATE AGENCY, WE PARTICIPATE AND PROVIDE BENEFITS THAT HAVE BEEN NEGOTIATED AND APPROVED BY THE

STATE'S CHIEF HUMAN RESOURCE DEPARTMENT, WHICH IS CALHR OR PREVIOUSLY KNOWN AS DPA.

SO THE SAVINGS THAT WE'RE SEEING IN EMPLOYEE EXPENSES ARE FROM A COUPLE OF POSITIONS THAT HAVE NOT BEEN FILLED, AND ALSO WE HAD BUDGETED FOR MERIT SALARY ADJUSTMENTS TO TAKE PLACE ON JULY 1ST, BUT THEY DID NOT GET IMPLEMENTED UNTIL NOVEMBER 1ST.

THE NEXT CATEGORY I'LL COVER IS EXTERNAL SERVICES. AND AS YOU CAN SEE, WE'RE REALLY NOT ANTICIPATING MUCH SAVINGS IN THAT AREA. I DO WANT TO POINT OUT THAT MOST OF OUR COST CENTERS ARE EXPERIENCING SOME SAVINGS IN THAT AREA. SOME ARE BETWEEN FIVE TO $50,000; HOWEVER, WE DO HAVE -- THE FORECAST DOES INCLUDE FUNDS FOR THE SERVICES ASSOCIATED WITH THE PRESIDENTIAL SEARCH. SO THAT IS WHY WE'RE SEEING VERY LITTLE SAVINGS IN THAT CATEGORY.

FOR REVIEWS, MEETINGS, AND WORKSHOPS, WE'RE FORECASTING THAT WE'LL HAVE ABOUT $350,000 LEFT OVER, SOMEWHERE BETWEEN 15 AND 20 PERCENT. THE REASON FOR THE SAVINGS IS THAT EITHER COSTS HAVE NOT MATERIALIZED AT THE LEVEL THAT WE ANTICIPATED OR THEY HAVE NOT MATERIALIZED AT ALL. SO COSTS THAT AREN'T MATERIALIZING AT THE LEVEL THAT WE

ANTICIPATED INCLUDE THESE BOARD MEETINGS. WE BUDGETED A CERTAIN AMOUNT FOR THE BOARD MEETINGS, AND THE COSTS ARE COMING IN LOWER THAN WE HAD BUDGETED. SIMILARLY, OUR CDAP REVIEW MEETINGS THAT ARE HEADED BY DR. FEIGAL, WE DIDN'T HAVE A LOT OF EXPERIENCE IN BUDGETING FOR THESE BECAUSE WE JUST STARTED THEM A COUPLE YEARS AGO, SO WE USED BUDGETS FROM THE GRANTS WORKING GROUP AND MADE SOME ADJUSTMENTS, BUT WE'RE FINDING THAT THE COSTS ARE ACTUALLY COMING IN LOWER EVEN THAN WHAT WE BUDGETED.

ANOTHER FACTOR IS THAT, WHENEVER FEASIBLE, DR. FEIGAL IS HOLDING THOSE MEETINGS INTERNALLY AT THE CIRM HEADQUARTERS, AND SO WE'RE SEEING SAVINGS FROM THAT.

AND THEN WE HAD SEVERAL WORKSHOPS THAT WE HAD ANTICIPATED AND BUDGETED FOR THAT JUST DID NOT MATERIALIZE AT ALL.

FOR OUR MEMBERSHIP AND TRAINING, WE GENERALLY BUDGET 1 PERCENT OF THE SALARY BUDGET. AND IN THAT AREA WE'RE NOT SEEING EXPENDITURES COME IN AT THAT LEVEL. SO THEY'RE COMING IN ABOUT 70 PERCENT OF WHAT WAS BUDGETED.

IN TRAVEL WE HAD BUDGETED $532,000, AND WE'RE ANTICIPATING THAT WE'RE GOING TO BE BEHIND ABOUT $150,000 THAT WON'T BE SPENT. SO IN THIS

CATEGORY WHAT HAPPENS IS EACH OF OUR COST CENTERS PREPARES A TRAVEL PLAN THAT INCLUDES BOTH IN-STATE, OUT-OF-STATE, AND OUT-OF-COUNTRY ANTICIPATED TRIPS. AND THEY PLAN FOR THE ENTIRE YEAR. SO IT'S REALLY IMPORTANT TO INCLUDE ANY TRIPS THAT THEY ANTICIPATE MAY HAPPEN BECAUSE IT'S REALLY -- WE NEED THAT PLAN SUBMITTED TO THE STATE CONTROLLER'S OFFICE, AND THEY MAKE PAYMENT OFF OF THAT PLAN. SO OFTENTIMES A TRIP, WE ANTICIPATE THAT A TRIP WILL TAKE PLACE AND IT DIDN'T MATERIALIZE OR, IF IT DOES MATERIALIZE, THE COST COMES IN LOWER THAN WHAT WE HAD BUDGETED.

ANOTHER FACTOR THAT'S IMPACTING THIS IS OVER THE LAST YEAR --

CHAIRMAN THOMAS: CHILA, SENATOR TORRES HAS A QUESTION.

MR. TORRES: NOT TODAY, BUT CAN YOU PROVIDE ME A COPY OF FOREIGN OUT-OF-STATE AND STATE TRAVEL AND WHERE WE'VE SAVED SOME MONEY AS WELL?

MS. SILVA-MARTIN: ABSOLUTELY. I WILL BE HAPPY TO DO THAT.

MR. TORRES: AND ALSO ARE WE REQUIRED TO PROVIDE A MISSION CRITICAL STATEMENT IN RESPECT TO ANY TRIPS THAT WE TAKE?

MS. SILVA-MARTIN: WHEN WE PUT TOGETHER THE PLAN, YES, WE ARE REQUIRED TO DO THAT.

MR. TORRES: RIGHT. I JUST WANT TO MAKE SURE BECAUSE I KNOW THE GOVERNOR IS VERY, VERY ADAMANT ABOUT THAT. AND THE FACT THAT WE'RE DOING THAT WOULD BE VERY, VERY IMPORTANT.

MS. SILVA-MARTIN: ABSOLUTELY.

MR. TORRES: THANK YOU.

MS. SILVA-MARTIN: I DID DO THAT. AND I DO WANT TO POINT OUT THAT FOR THE OUT-OF-STATE AND OUT-OF-COUNTRY, IN PREVIOUS YEARS THAT BUDGET WAS ACTUALLY HIGHER THAN WHAT IT IS NOW. SO WE HAVE MADE REDUCTIONS OVER THE LAST COUPLE OF YEARS. WHEN J.T. CAME ON BOARD, HE ACTUALLY REQUIRED US TO REDUCE THAT BUDGET.

MR. TORRES: RIGHT. I REMEMBER THAT. AND ALSO WE JUST NEED TO MAKE SURE THAT THE TAXPAYERS KNOW THAT WE'RE BEING VERY JUDICIOUS WITH THESE COSTS AND HOW WE PROVIDE A SPECIFIC RESPONSE TO THOSE COSTS.

MS. SILVA-MARTIN: ABSOLUTELY. I WILL PROVIDE YOU THAT INFORMATION. I DID WANT -- I WAS GOING TO POINT OUT FURTHER THAT ONE OF THE REASONS OUR COSTS ARE ALSO LOWER IS OVER THE LAST YEAR AND A HALF, WE'VE IMPLEMENTED NEW TRAVEL POLICIES. SO, FOR EXAMPLE, THE STATE HAS PRENEGOTIATED STATE RATES FOR AIRLINE TICKETS. AND BECAUSE THOSE TICKETS ARE

FULLY REFUNDABLE AND YOU CAN CHANGE THEM AT ANY TIME, THEY GENERALLY ARE MORE EXPENSIVE THAN NONREFUNDABLE TICKETS. BUT WHAT WE'RE HAVING OUR STAFF NOW DO WHENEVER IT'S POSSIBLE, IF THE TRIP CALLS FOR IT, WE'RE REQUIRING THAT THEY PURCHASE NONREFUNDABLE TICKETS. AND THAT'S ACTUALLY GENERATING SOME SAVINGS FOR US IN THE TRAVEL AREA.

MR. TORRES: I WANT TO THANK YOU FOR THE GREAT WORK YOU'VE BEEN DOING ON THAT TO MAKE SURE THAT ALL THE NUMBERS ARE THERE.

MS. SILVA-MARTIN: THANK YOU.

SO THEN THE LAST CATEGORY I WANTED TO COVER IS THE EQUIPMENT, SUPPLIES, SOFTWARE, AND TELECOMMUNICATIONS. AND REALLY THIS IS A CATEGORY WHERE WE CAPTURE ALL OF OUR OTHER EXPENDITURES. SO WE HAVE OUR I.T. INFRASTRUCTURE WHERE WE HAVE SERVERS AND WE HAVE TO MAINTAIN THOSE SERVERS, WE REPLACE COMPUTERS, WE HAVE EQUIPMENT SUCH AS OUR COPIERS THAT WE HAVE TO MAINTAIN, WE PAY FOR OUR TELEPHONE SERVICES, OUR INTERNET BROADBAND SERVICES, SUBSCRIPTIONS, AND GENERAL EXPENSES, TO NAME A FEW. AND SO IN THAT CATEGORY WE'RE ANTICIPATING SOMEWHERE BETWEEN A 10- TO 15-PERCENT SAVINGS OF ABOUT 50 TO $60,000.

SO I'M GOING TO MOVE ON TO THE NEXT CHART,

AND THAT'S OUR ADMIN EXPENSES. SO, AGAIN, FOR THOSE OF YOU THAT ARE NEW TO THE BOARD, PROPOSITION 71 PLACED A 6-PERCENT CAP ON OUR GENERAL AND ADMINISTRATIVE EXPENDITURES. AND SO THIS CHART REFLECTS WHERE WE ARE WITH THAT FUND -- WITH THOSE FUNDS. SO AS OF JUNE OF LAST YEAR, WE HAD SPENT $75.1 MILLION OR ABOUT 42 PERCENT OF OUR BUDGET. WE HAVE 14.8 PERCENT BUDGETED FOR THE CURRENT YEAR. IT'S ABOUT 8 TO 9 PERCENT.

NOW, WE DON'T ANTICIPATE THAT WE'RE GOING TO SPEND THE FULL 14.8 MILLION. I ANTICIPATE WE'LL HAVE SAVINGS SOMEWHERE BETWEEN 600,000 TO 800,000. SO WHAT WE HAVE AVAILABLE FOR THE '14-'15 FISCAL YEAR AND BEYOND IS SOMEWHERE AROUND 90 TO $91 MILLION. AND WE CURRENTLY PROJECT, BASED ON OUR CURRENT STRATEGIC PLAN, THAT THIS $90 MILLION WILL BE SUFFICIENT TO CARRY US THROUGH THE '20-'21 FISCAL YEAR.

SO THE LAST THING I DID WANT TO MENTION IS THAT WE HAVE BEGUN DEVELOPMENT OF THE '14-'15 BUDGET. SO EARLIER THIS MONTH WE DISTRIBUTED TEMPLATES, BUDGET TEMPLATES, TO THE COST CENTERS ALONG WITH FINANCIAL DATA. THESE BUDGET REQUESTS ARE DUE BACK TO THE FINANCE OFFICE MID-FEBRUARY. WE WILL THEN HAVE INTERNAL DISCUSSIONS WITH THE

PRESIDENT AND THE CHAIR AND FINALIZE THE BUDGETS. WE WILL THEN PRESENT THEM TO THE CHAIR OF THE FINANCE SUBCOMMITTEE SOMETIME IN MARCH. AND THEN WE WILL BRING THEM TO A FINANCE SUBCOMMITTEE EITHER IN LATE MARCH, EARLY APRIL, AND THEN A BUDGET PRESENTATION TO YOU AT THE MAY BOARD MEETING.

THIS CONCLUDES THE PRESENTATION. ARE THERE ANY QUESTIONS? ARE THERE ANY QUESTIONS? NO. OKAY. THANK YOU.

CHAIRMAN THOMAS: THANK YOU, CHILA. THANK YOU, ALAN AND ELLEN AND ELONA AS WELL. AS ALWAYS, A MOST INFORMATIVE PRESENTATION, GIVING THE BOARD A CONTINUING FEEL FOR THE MANY THINGS THAT ARE GOING ON HERE, ALL OF WHICH ARE ADVANCING THE MISSION. SO THANK YOU VERY MUCH.

WE ARE NOW GOING TO GO INTO OUR ACTION ITEMS. WE'RE ACTUALLY GOING TO TAKE ONE OUT OF ORDER. WE'RE GOING TO MOVE FIRST TO ITEM 8, WHICH IS THE CONSIDERATION OF APPLICATIONS FOR RFA 13-02, CIRM BASIC BIOLOGY AWARDS V. DR. SHEPARD WILL BE LEADING OUR DISCUSSION HERE.

DR. SHEPARD: GOOD MORNING, MR. CHAIR, MEMBERS OF THE BOARD, MEMBERS OF THE PUBLIC AND STAFF. IT'S MY PLEASURE TO PRESENT FOR YOUR CONSIDERATION TODAY THE RECOMMENDATIONS OF THE

GRANTS WORKING GROUP FOR RFA 13-02. THIS IS THE BASIC BIOLOGY AWARDS V.

I'D JUST LIKE TO BEGIN MY PRESENTATION BY GIVING A LITTLE OVERVIEW OF THE DIFFERENT TOPICS I'M GOING TO BE COVERING DURING THIS PRESENTATION BECAUSE THERE ARE SEVERAL COMPONENTS. I'M GOING TO BEGIN WITH AN INTRODUCTION TO THE RFA, AND I'M GOING TO EXPLAIN THE TWO DIFFERENT TYPES OF AWARDS THAT ARE OFFERED UNDER THIS INITIATIVE. AND I'D ALSO LIKE TO EXPLAIN HOW THIS PARTICULAR ROUND OF BASIC BIOLOGY AWARDS DIFFERS A LITTLE BIT FROM PREVIOUS ROUNDS THAT WE'VE OFFERED.

WE'LL THEN GO THROUGH THE RECOMMENDATIONS OF THE GRANTS WORKING GROUP AND STAFF RECOMMENDATIONS FOR ONE OF THESE TWO AWARD TYPES, THE FUNDAMENTAL MECHANISMS AWARDS. AFTER THAT WE'LL HAND THINGS OVER TO MR. SHEEHY WHO WILL CONDUCT THE PROGRAMMATIC REVIEW OF THESE AWARDS. AFTERWARDS, IT WILL COME BACK TO ME, AND I WILL EXPLAIN THE RECOMMENDATIONS OF THE GRANTS WORKING GROUP AND STAFF FOR THE SECOND OF THE TWO AWARD TYPES, THE EXPLORATORY CONCEPT AWARDS. AND THEN, ONCE AGAIN, WE'LL GO BACK TO MR. SHEEHY FOR THE PROGRAMMATIC REVIEW OF THOSE AWARDS.

SO I KNOW WE DO HAVE SOME NEW BOARD

MEMBERS AND WE ALSO HAVE SOME OTHERS WHO HAVE BEEN THROUGH PREVIOUS ROUNDS OF BASIC BIOLOGY WITH US. SO I'D JUST LIKE TO BRIEFLY GO OVER THE GOALS OF THIS PROGRAM, WHICH HAS BEEN TO FOSTER CUTTING-EDGE RESEARCH, TACKLING SIGNIFICANT BUT UNRESOLVED ISSUES IN HUMAN STEM CELL BIOLOGY WITH AN EMPHASIS ON UNRAVELING THE KEY MOLECULAR AND CELLULAR MECHANISMS OR, IN OTHER WORDS, PATHWAYS THAT DICTATE CELL FATE.

THE BASIC BIOLOGY PROGRAM IS ONE OF CIRM'S CORE RECURRING RFA PROGRAMS. IN THIS CASE IT'S BEEN ISSUED APPROXIMATELY EVERY ONE AND A HALF YEARS OR SO. AND BY ITS TITLE, YOU CAN TELL THAT THIS IS THE FIFTH ROUND OF THE AWARD. NOW, DESPITE IT'S FAIRLY BASIC SOUNDING NAME, BASIC BIOLOGY, THIS PARTICULAR INITIATIVE ACTUALLY TARGETS A VERY SPECIFIC NICHE OF STEM CELL RESEARCH PRIMARILY FOCUSED ON HUMAN CELL BIOLOGY WHICH IS NOT PARTICULARLY WELL REPRESENTED IN THE FUNDING OF OTHER AGENCIES IN STEM CELL BIOLOGY AND, MORE IMPORTANTLY, IT'S FOCUSING ON KEY MOLECULAR AND CELLULAR PATHWAYS THAT ARE BELIEVED TO BE CRITICAL FOR THE SUCCESSFUL TRANSLATION OF STEM CELL SCIENCE INTO BIOMEDICAL INNOVATION AND EVENTUAL THERAPIES FOR HUMANS.

BUT IN ADDITION TO -- SO THE RECURRING RFA -- CIRM'S OTHER RECURRING RFA PROGRAMS ARE

DEPICTED HERE ALONG THE BOTTOM OF THIS RESEARCH AND DEVELOPMENT PIPELINE WITH THE MORE EARLIER RESEARCH STAGE STUDIES ON THE LEFT AND, OF COURSE, THE MORE LATER DEVELOPMENT AND CLINICAL RESEARCH STAGES ON THE RIGHT. AND WHILE BASIC BIOLOGY IS EARLY RESEARCH THAT DRIVES THE DISCOVERIES THAT EVENTUALLY COME THROUGH THIS PIPELINE TO CREATE NEW THERAPIES, IT ALSO HAS THE POSSIBILITY TO IMPACT PROJECTS THAT ARE MORE MATURE ALONG THE WAY BY INFORMING STUDIES OF MECHANISM OF ACTION OF THERAPEUTIC CANDIDATES, FOR EXAMPLE, AND BY ENABLING SUCH DISCOVERIES AROUND BIOMARKERS.

SO BEFORE I GO INTO WHAT'S NEW AND DIFFERENT ABOUT BASIC BIOLOGY V, I JUST WANT TO LET YOU KNOW WHAT HAS OCCURRED THROUGH THE PREVIOUS FOUR ISSUES OF THIS INITIATIVE. SO AS ITS NAME IMPLIES, THERE HAVE BEEN FOUR SEPARATE RFA'S THAT HAVE BEEN ISSUED TO DATE IN THIS PROGRAM. THE RESULT OF THOSE FOUR INITIATIVES ARE 80 THREE-YEAR GRANTS, TOTALING APPROXIMATELY $115 MILLION OF ALLOCATED FUNDS. THIS FUNDS 79 DIFFERENT PRINCIPAL INVESTIGATORS TO WORK ON HUMAN STEM CELL BIOLOGY ACROSS 18 INSTITUTIONS AROUND THE STATE OF CALIFORNIA.

TO DATE WE HAVE IN OUR DISCLOSURE SYSTEM ABOUT 115 PUBLICATIONS THAT HAVE BEEN ATTRIBUTED TO

THE BASIC BIOLOGY PROGRAM SPECIFICALLY IN ONE WAY OR ANOTHER. AND THESE GRANTS ARE STILL NOT CLOSED OUT. OUR FIRST CYCLE IS JUST NOW CLOSING OUT, AND THAT REPRESENTS ONLY 13 OF THESE 83 AWARDS. SO MANY OF THEM ARE STILL IN THEIR PRIME.

NOW, AS I MENTIONED, THESE PAST AWARDS ARE FOCUSING ON THE STUDY OF FUNDAMENTAL MECHANISMS WITH KEY RELEVANCE TO STEM CELL BIOLOGY. THESE TYPES OF MECHANISMS GENERALLY INVOLVE THE BIOLOGY OF HUMAN PLURIPOTENT AND ADULT STEM CELLS SPECIFICALLY FOCUSED ON UNDERSTANDING THE DETERMINANTS THAT CONTROL CELL FATE DECISIONS; FOR EXAMPLE, LINEAGE SPECIFICATION. HOW CAN WE COAX THESE CELLS INTO BECOMING MATURE TISSUE TYPES THAT WOULD BE IMPORTANT FOR DISEASE MODELING OR FOR THERAPEUTIC APPLICATIONS?

NOW, BEGINNING WITH THE THIRD ROUND OF BASIC BIOLOGY, WE EXPANDED THE SCOPE SLIGHTLY TO INCLUDE ANOTHER TYPE OF STUDY. THIS IS ON THE LOWER BULLET HERE, THE MOLECULAR BASIS OF DISEASE. IN THIS CASE WE'RE REFERRING TO WHAT IS KNOWN AS DISEASE-IN-A-DISH MODELS WHERE STEM CELLS ARE BEING USED, NOT NECESSARILY AS THE OBJECT OF STUDY, BUT AS A TOOL TO INVESTIGATE THE MOLECULAR BASIS OF DISEASE FOR WHICH LITTLE IS KNOWN AND FOR WHICH THE STEM

CELL TECHNOLOGY ENABLES NEW OPPORTUNITIES TO ALLOW THOSE MECHANISMS TO BE ADDRESSED.

OKAY. SO AROUND THE TIME THAT WE WERE BEGINNING TO PUT TOGETHER THE CONCEPT FOR THE FIFTH ITERATION OF THESE AWARDS, OUR STRATEGIC PLAN, WHICH IS THE MEANS BY WHICH CIRM GAUGES PROGRESS TOWARDS ACHIEVING ITS MISSION, WENT THROUGH AN UPDATE. THIS WAS A MONTH LONG PROCESS WITH A LOT OF DIFFERENT INPUT FROM A LOT OF DIFFERENT STAKEHOLDERS. AND IN THIS UPDATE, WITH RESPECT TO OUR BASIC BIOLOGY PROGRAM, THE GOAL, AS UPDATED, WAS TO FOSTER AN ENGINE OF DISCOVERY AND TRANSFORMATIVE RESEARCH. WE TOOK THIS AS A CHALLENGE TO TRY TO SEE WHAT KIND OF CHANGES WE COULD INTRODUCE IN OUR PROGRAM TO INCREASE THE POSSIBILITY OF ACHIEVING TRANSFORMATIVE RESEARCH OPPORTUNITIES.

SO WE BELIEVE THAT STRATEGIES FOR ACHIEVING HIGH IMPACT TRANSFORMATIVE DISCOVERY THAT CAN BE ACHIEVED WITHIN THE REGULATIONS AND PROP 71 CONFINES IN WHICH WE WORK, ONE MEANS IS TO ADDRESS THOSE KEY UNRESOLVED ISSUES OR BOTTLENECKS OF BASIC HUMAN STEM CELL BIOLOGY THAT WE KNOW ARE NECESSARY TO ADVANCE THE SCIENCE. THAT IS EXACTLY THE TYPE OF RESEARCH THAT OUR CURRENT BASIC BIOLOGY INITIATIVE GOES AFTER. HOWEVER, WE ACKNOWLEDGE THE POSSIBILITY

THAT TRANSFORMATIVE DISCOVERIES CAN COME FROM UNEXPECTED DIRECTIONS, PERHAPS STEMMING FROM NEW WAYS OF THINKING OR NEW WAYS TO DO EXPERIMENTS THAT HADN'T BEEN PREVIOUSLY POSSIBLE PERHAPS DUE TO SOME ENABLING SORT OF TECHNOLOGY.

SO WE TRIED TO ENGINEER A COMPLEMENTARY APPROACH INTO OUR EXISTING BASIC BIOLOGY PROGRAM TO PERHAPS CAPTURE SOME OF THESE TYPES OF OPPORTUNITIES THAT ARE A LITTLE BIT MORE DIFFICULT TO ANTICIPATE. SO FOR THIS CYCLE OF THE BASIC BIOLOGY AWARDS, WE OFFERED TWO DIFFERENT TYPES OF AWARDS. THE FIRST TYPE, WHICH WE RENAMED THE FUNDAMENTAL MECHANISMS AWARDS, ARE VERY SIMILAR TO THOSE TARGETED THROUGH OUR PREVIOUS FOUR ROUNDS OF BASIC BIOLOGY. THEY'RE STUDIES TO ELUCIDATE CELLULAR AND MOLECULAR MECHANISMS PERTINENT TO HUMAN STEM CELL BIOLOGY AND REGENERATIVE MEDICINE.

THE SECOND OR THE NEW ELEMENT TO THIS RFA IS THE EXPLORATORY CONCEPT AWARD. THIS IS TO SUPPORT PROPOSALS THAT TEST HIGHLY NOVEL HYPOTHESES THAT, IF PROVEN, WOULD CHALLENGE DOGMA AND RESULT IN A TRANSFORMATIVE DISCOVERY FOR THE STEM CELL FIELD.

NOW, I'D JUST LIKE TO GO INTO A LITTLE BIT MORE DETAIL ABOUT WHAT DISTINGUISHES THE TWO TYPES OF AWARDS BEFORE WE GO INTO THE REVIEW

RECOMMENDATIONS.

SO, FIRST OF ALL, FUNDAMENTAL MECHANISMS AWARDS, AS I MENTIONED, THESE ARE SIMILAR TO PROJECTS TARGETED THROUGH PREVIOUS ROUNDS OF BASIC BIOLOGY. THESE ARE RIGOROUS STUDIES UTILIZING HUMAN STEM CELLS FOCUSED ON HUMAN STEM CELL BIOLOGY THAT WILL SIGNIFICANTLY ADVANCE THE FIELD. THEY'RE FOCUSED ON UNDERSTANDING BASIC CELLULAR AND MOLECULAR MECHANISMS WITH PARTICULAR RELEVANCE TO STEM CELL FUNCTION, CELLULAR DIFFERENTIATION, AND MORE RECENTLY DISEASE MECHANISMS. THESE SHOULD BE BASED ON COMPELLING PRELIMINARY DATA AND STRONG RATIONALE. FOR MANY OF THESE AWARDS, THIS STRONG RATIONALE OF PRELIMINARY DATA COMES IN THE FORM OF PREVIOUS STUDIES IN ANIMAL MODELS SUGGESTING THAT THE PATHWAYS TO BE INVESTIGATED ARE IMPORTANT.

AND AS WITH PREVIOUS ROUNDS, THESE ARE THREE-YEAR AWARDS. FOR THIS CYCLE THE JUSTIFIABLE DIRECT PROJECT COSTS ARE UP TO $250,000 PER YEAR.

NOW, FOR THE EXPLORATORY CONCEPTS AWARD OR THIS NEW TRACK, THE FUNDING MECHANISM IS A LITTLE BIT DIFFERENT. SO, AGAIN, THESE ARE FOR AWARDS TO ENABLE POTENTIALLY TRANSFORMATIVE DISCOVERIES THROUGH HIGH RISK, POTENTIALLY HIGH GAIN EXPLORATORY PURSUITS. WE WEREN'T PRESCRIPTIVE ABOUT THE

SPECIFIC MECHANISMS THAT NEED TO BE STUDIED HERE BECAUSE WE WANTED TO ALLOW OPPORTUNITIES FOR NEW DIRECTIONS. WE JUST STATED THAT THE STUDIES NEEDED TO BE DIRECTLY RELATED TO STEM CELL BIOLOGY, DIRECT REPROGRAMMING, OR DETERMINATION OF CELL FATE AND IDENTITY; IN OTHER WORDS, RELEVANT TO CIRM'S MISSION.

FOR THIS AWARD TRACK, STUDIES MAY UTILIZE HUMAN CELL MODELS. HOWEVER, WITH COMPELLING JUSTIFICATION, THIS TYPE OF AWARD WAS ALSO OPEN TO INVESTIGATORS USING VERTEBRATE ANIMAL MODEL SYSTEMS OR CELL MODELS. BECAUSE OF THEIR HIGHER RISK NATURE, THESE AWARDS ARE OFFERED FOR TWO YEARS DURATION WITH SLIGHTLY LESS BUDGET, JUSTIFIABLE DIRECT PROJECT COSTS OF UP TO $200,000 PER YEAR.

NOW THAT I'VE EXPLAINED THE TWO DIFFERENT TYPES OF AWARDS, I'D LIKE TO JUST GO OVER THE REVIEW PROCESS SO YOU UNDERSTAND HOW THE RECOMMENDATIONS THAT ARE COMING TO YOU TODAY CAME TO BE. AS WITH OUR OTHER ROUNDS OF BASIC BIOLOGY, THESE AWARDS WENT THROUGH A TWO-STEP REVIEW PROCESS. IN THE FIRST STEP, ANY ELIGIBLE PI WAS ALLOWED TO SUBMIT A BRIEF VERSION OF THEIR PROPOSAL TO EITHER A FUNDAMENTAL MECHANISMS AWARD OR AN EXPLORATORY CONCEPTS AWARD TRACK, NOT BOTH. THEY WERE EXPECTED TO CHOOSE WHICH

WAS THE BEST FIT FOR THE RESEARCH PROPOSAL.

THESE PRELIMINARY APPLICATIONS ARE THEN REVIEWED BY EXPERTS FROM OUTSIDE OF CALIFORNIA, SCIENTIFIC EXPERTS. AND I WOULD LIKE TO POINT OUT THAT WE USED INDEPENDENT POOLS OF REVIEWERS FOR EACH TRACK. SO IN OTHER WORDS, THE REVIEWERS WHO WERE LOOKING AT THE FUNDAMENTAL MECHANISMS PROPOSALS ONLY SAW THOSE TYPES OF PROPOSALS. AND THE SAME IS TRUE FOR THE EXPLORATORY CONCEPT PROPOSALS.

THE PRELIMINARY APPLICATIONS ARE ALSO REVIEWED BY CIRM SCIENTIFIC STAFF, PRIMARILY LOOKING FOR ADHERENCE TO ELIGIBILITY AND RESPONSIVENESS CRITERIA FOR THE DIFFERENT TRACKS. ONCE THE PRELIMINARY APPLICATION PROCESS IS COMPLETE, THE HIGHEST RANKED APPLICANTS ARE INVITED TO SUBMIT FULL VERSIONS OF THEIR PROPOSALS TO BE SCRUTINIZED BY THE GRANTS WORKING GROUP. THIS TOOK PLACE LAST OCTOBER 2013.

SO JUST TO GIVE YOU AN IDEA OF THE TYPES OF NUMBERS BEHIND THESE PROCESSES, FOR THIS ROUND WE RECEIVED A TOTAL OF 341 PRELIMINARY APPLICATIONS. THIS IS THE LARGEST NUMBER OF -- THIS RFA RECEIVED THE LARGEST NUMBER OF APPLICANTS OF ANY OF OUR PROGRAMS. THE BREAKDOWN WAS 214 CAME IN THROUGH THE FUNDAMENTAL MECHANISMS TRACK AND 127 THROUGH THIS

NEW EXPLORATORY CONCEPTS TRACK.

AFTER THE PRELIMINARY APPLICATION REVIEW PROCESS, THERE WERE 62 THAT WERE INVITED TO SUBMIT FULL APPLICATIONS. THIS REPRESENTS ABOUT 20 PERCENT OF THE TOTAL APPLICANT POOL.

WHEN THE CONCEPT WAS APPROVED LAST YEAR, THE ALLOCATION REQUESTED WAS FOR $40 MILLION. WE'RE HOPEFUL THAT THIS WOULD BE SUFFICIENT TO FUND UP TO 30 AWARDS TOTAL. OF COURSE, THAT FINAL AMOUNT WOULD DEPEND ON THE NUMBER OF FUNDAMENTAL MECHANISMS VERSUS EXPLORATORY CONCEPT AWARDS. SINCE THE EXPLORATORY CONCEPTS WAS A NEW MODEL FOR US, WE REALLY DIDN'T HAVE A GOOD UNDERSTANDING OF EXACTLY HOW MANY WOULD CHOOSE TO COME IN THROUGH THAT TRACK OR THE OTHER OR WHETHER THAT WOULD OPEN UP THIS OPPORTUNITY TO A WHOLE NEW POOL OF APPLICANTS.

SO WE SUGGESTED THAT A GOOD RATIO PERHAPS TO CONSIDER WOULD BE 20 FUNDAMENTAL MECHANISM AND 10 EXPLORATORY CONCEPT, WHICH WOULD KEEP A GOOD FOCUS ON OUR CORE NICHE, BUT ALSO ENABLE NEW OPPORTUNITIES TO COME IN THROUGH THIS HIGHER RISK CATEGORY.

AND BEFORE WE GO INTO THE REVIEW RECOMMENDATIONS, WHICH WE'RE GOING TO DO FOR ONE TRACK AT A TIME, I JUST WANT TO GIVE YOU AN OVERVIEW OF THE FINAL OUTCOMES OF THE SCIENTIFIC PORTION OF

THE REVIEW, WHICH IS WHAT TOOK PLACE WITH THE GRANTS WORKING GROUP. THERE WERE A TOTAL OF 20 APPLICATIONS ALTOGETHER PLACED INTO TIER I BY THEIR SCORE OF 75 THROUGH A HUNDRED, WHICH PUTS THEM IN THE RECOMMENDED FOR FUNDING CATEGORY. THE BREAKDOWN WERE 16 FUNDAMENTAL MECHANISMS AWARDS AND 4 EXPLORATORY CONCEPT AWARDS, TOTALING ABOUT $21.5 MILLION ALTOGETHER.

THERE WERE 14 APPLICATIONS THAT FELL INTO THE TIER II CATEGORY WITH THE SCORES BETWEEN 65 AND 74, INDICATING THAT THEY'RE OF MODERATE QUALITY OR THE REVIEWER ENTHUSIASM OR NO CONSENSUS WAS REACHED. AND THESE, OF COURSE, ARE SUITABLE FOR PROGRAMMATIC REVIEW AND WILL BE DISCUSSED IN A FEW MINUTES. THOSE TOTAL ABOUT 13.5 MILLION.

AND THEN, FINALLY, THE REMAINING 28 APPLICATIONS WERE SCORED BETWEEN 1 AND 64 AND FELL INTO THE NOT RECOMMENDED FOR FUNDING CATEGORY. STAFF WILL BE MAKING SOME RECOMMENDATIONS BASED ON THE TIER II CATEGORY, FIVE IN TOTAL, THREE FROM THE FUNDAMENTAL MECHANISMS TRACK, AND FOUR FROM THE EXPLORATORY CONCEPTS TRACK. AND I JUST WANT TO POINT OUT THE PROCESS FOR THIS.

STAFF REVIEWED ALL 14 APPLICATIONS THAT FELL INTO TIER II, AND ONLY FIVE ARE RECOMMENDED FOR

FUNDING.

SO NOW I'M GOING TO GO INTO THE ACTUAL REVIEW OF THE FIRST TYPE OF AWARD, THE FUNDAMENTAL MECHANISMS AWARD. AGAIN, THIS IS SIMILAR TO PREVIOUS ROUNDS. THEY'RE STUDIES TO ELUCIDATE CELLULAR AND MOLECULAR MECHANISMS WITH KEY RELEVANCE TO HUMAN STEM CELL BIOLOGY, REGENERATIVE MEDICINE, AND ALSO DISEASE-IN-A-DISH TYPE OF STUDIES.

THESE TYPES OF PROPOSALS ARE REVIEWED BY FOUR KEY CRITERIA. THE FIRST IS SIGNIFICANCE AND INNOVATION. THE GRANTS WORKING GROUP ARE LOOKING AT WHETHER THE PROJECT IS INNOVATIVE, WHETHER IT'S FOCUSED ON MECHANISM, THAT IS A CELLULAR OR MOLECULAR MECHANISM, WHETHER IT'S BASED ON A LOGICAL RATIONALE AND, IF SUCCESSFUL, WOULD IT HAVE A MAJOR IMPACT ON THE FIELD.

THE SECOND KEY CRITERION IS FEASIBILITY AND EXPERIMENTAL DESIGN. REVIEWERS ARE LOOKING TO SEE WHETHER THE APPROACHES PROPOSED ARE SOUND, WHETHER THE AIMS ARE ACHIEVABLE, WHETHER POTENTIAL PITFALLS HAVE BEEN ADDRESSED, AND ALTERNATIVE APPROACHES IDENTIFIED. THEY'RE ALSO LOOKING TO SEE IF THERE'S COMPELLING PRELIMINARY DATA UPON WHICH THE STUDIES ARE BASED AND WHETHER OR NOT THE STUDIES ARE CONDUCTED IN APPROPRIATE FACILITIES AND

ENVIRONMENT.

A THIRD KEY REVIEW CRITERION IS THE TRACK RECORD AND COMMITMENT OF THE PRINCIPAL INVESTIGATOR AND ALSO THE QUALIFICATIONS OF THE TEAM WHO WILL BE ACTUALLY CONDUCTING THE PROPOSED STUDIES.

AND FINALLY, WE DO ASK REVIEWERS TO TAKE A SECOND LOOK AT RESPONSIVENESS TO THE RFA TO ENSURE THAT THE FOCUS IN THE FULL PROPOSAL REMAINS COMMITTED TO THE GOALS AND OBJECTIVES OF THE FUNDAMENTAL MECHANISMS TYPE OF AWARD.

SO JUST LOOKING AT THE FUNDAMENTAL MECHANISMS AWARDS NOW, AS MENTIONED ON THAT SLIDE EARLIER, THERE WERE 16 THAT FELL INTO THE TIER I CATEGORY, RECOMMENDED FOR FUNDING, AND WE AGREE WITH THAT ASSESSMENT. FOR THE TIER II CATEGORY, WHICH THERE WERE NINE, AND THESE ARE THE ONES THAT THE SCIENCE TEAM HERE AT CIRM REVIEWED, AND WE WILL BE RECOMMENDING THREE OF THOSE FOR FUNDING.

AND AT THIS POINT I'D LIKE TO HAND THINGS OVER TO DR. SAMBRANO AND MR. SHEEHY WHO WILL SHOW YOU THE ACTUAL PROPOSALS THAT FELL INTO THIS CATEGORY SO THAT WE CAN LOOK AT THEM -- YOU CAN CONDUCT THE PROGRAMMATIC REVIEW. AND AFTER YOU FEEL THAT YOU HAVE SUFFICIENTLY EXAMINED THOSE, WE CAN COME BACK TO ME AND I'LL INTRODUCE THE REVIEW

CRITERIA FOR THE OTHER TYPE OF AWARD.

AND BEFORE I HAND THINGS OFF, I JUST WANTED TO GIVE PEOPLE AN OPPORTUNITY TO ASK QUESTIONS IF THEY HAD ANY BECAUSE I'VE BEEN TALKING NONSTOP FOR SOME TIME NOW.

DR. LUBIN: THAT WAS AN EXCELLENT PRESENTATION.

DR. SHEPARD: THANK YOU.

MR. SHEEHY: THANK YOU, DR. SHEPARD.

DR. SHEPARD: THANK YOU.

MR. SHEEHY: SO SHOULD I PERHAPS TALK ABOUT THE PROCESS WHILE THEY'RE PULLING THIS UP?

CHAIRMAN THOMAS: CERTAINLY.

MR. SHEEHY: SO WHAT YOU'LL SEE IS THAT THE GRANTS BASICALLY ARE ORGANIZED INTO THREE TIERS. SO WE TRY TO KEEP THIS FAIRLY STRUCTURED SO WE DON'T END UP WITH CHAOS. SO THE FIRST SET OF MOTIONS I WILL ACCEPT WILL BE MOTIONS TO MOVE ANYTHING OUT OF TIER I, WHICH ARE THOSE THAT HAVE BEEN REVIEWED AND RECOMMENDED AS HIGHLY MERITORIOUS BY THE GRANTS WORKING GROUP. IF THERE ARE NO MOTIONS FOR THAT, THEN THE NEXT TIER I WILL GO INTO WILL BE TIER II. AND I'LL TAKE MOTIONS TO MOVE ANY OF THOSE INTO TIER I, AND I WILL START WITH THE STAFF RECOMMENDATIONS AND STAFF WILL PRESENT THEIR RECOMMENDATIONS, AND

THEN WE WILL HOPE THAT BOARD MEMBERS WILL EITHER MAKE A RECOMMENDATION -- WE'LL MAKE SOME SORT OF A MOTION BASED ON THE STAFF RECOMMENDATION.

AND THEN ONCE WE'VE DONE THAT, AND PUBLIC COMMENT CAN COME ON ANY APPLICATION THAT IS UNDER REVIEW BY THE BOARD; THAT IS, ONE THAT HAS A MOTION AND A SECOND, OR PUBLIC COMMENT CAN COME AT THE END WHEN WE TAKE THE GLOBAL MOTION, WHICH IS TO RECOMMEND ALL OF THOSE IN TIER I -- FUND ALL THOSE IN TIER I AND NOT TO FUND ALL THOSE IN TIER II, NOT TO FUND ANY OF THE REST. DID I GET THAT RIGHT? I SHOULD GET A SCRIPT FOR THIS. IT'S EARLY. TOOK ME OUT OF ORDER THIS MORNING.

IS THAT CLEAR? DOES EVERYONE KIND OF GET HOW WE'LL GO THROUGH THIS?

DR. LUBIN: WHERE ARE THESE, JEFF? WHERE ARE THESE IN THE BOOK?

MR. SHEEHY: I PRINTED THEM OUT IN ADVANCE, SO I KIND OF CHEATED.

CHAIRMAN THOMAS: IT WOULD BE TAB 8.

MR. SHEEHY: AND JUST ONE OTHER SMALL NOTE. DR. PRIETO, ARE YOU PREPARED TO TAKE THE CHAIR FOR THOSE WITH WHICH I HAVE A CONFLICT?

DR. PRIETO: YES.

MR. SHEEHY: I THINK THAT THERE MAY BE ONE

OR TWO UNDER DISCUSSION, MAYBE MORE, BUT ONE OR TWO THAT I WOULD HAVE A CONFLICT WITH. SO ONCE THAT MOTION IS MADE AND SECONDED, THEN I'LL PASS TO YOU IF THAT'S OKAY.

JAMES.

MR. HARRISON: JUST ONE ADDITIONAL POINT. BECAUSE THESE PROCESSES ARE STILL FAIRLY NEW, A REMINDER FOR THOSE OF YOU WHO ARE APPOINTED FROM INSTITUTIONS THAT ARE ELIGIBLE FOR CIRM FUNDING, YOU DO NOT PARTICIPATE IN THE VOTE ON THESE APPLICATIONS; HOWEVER, YOU CAN PARTICIPATE IN THE DEBATE AND DISCUSSION PROVIDED THE APPLICATION IS NOT FROM YOUR OWN INSTITUTION.

MR. TORRES: YOU'RE ASKING FOR MOVEMENT FROM TIER II TO TIER I?

MR. SHEEHY: I THINK DR. SAMBRANO WAS GOING TO JUST SHOW US THE TIERS. I HOPE EVERYBODY CAN -- DO YOU HAVE ANY REMARKS?

DR. SAMBRANO: SO THE ONLY THING I WAS GOING TO PRESENT WAS BASICALLY THE FACT THAT I PUT THIS SHEET UP THAT'S ALSO IN YOUR BOOK. THIS IS FOCUSED ONLY NOW ON THE FUNDAMENTAL MECHANISMS APPLICATIONS. AND WHAT YOU'RE SEEING IS ESSENTIALLY THE TIER I, WHICH ARE ALL IN GREEN, AND I CAN SCROLL DOWN AS YOU'D LIKE. AND THE REASON I SHOW THIS IS

THAT AT THE VERY TOP I AM KEEPING TRACK OF THE BUDGET. SO IF YOU CHOOSE TO APPROVE ANYTHING IN TIER II, THAT BUDGET WILL BE UPDATED AS WE GO ALONG.

CHAIRMAN THOMAS: DEAN PULIAFITO HAS A QUESTION.

DR. PULIAFITO: WHERE ARE THESE IN THE BOOK AND WHAT COLOR ARE THEY IN THE BOOK?

CHAIRMAN THOMAS: THEY'RE WHITE.

DR. SAMBRANO: I THINK THEY'RE WHITE. ITEM 8.

DR. PULIAFITO: WHAT?

DR. SAMBRANO: UNDER ITEM 8.

DR. PULIAFITO: AND AS AN OPHTHALMOLOGIST, MR. CHAIRMAN, I MOVE THAT WE GET A BETTER PROJECTOR.

CHAIRMAN THOMAS: SO NOTED, MR. DEAN. THANK YOU.

DR. PULIAFITO: IT DOESN'T MEAN YOU NEED A CATARACT OPERATION IF YOU CAN'T READ THAT.

CHAIRMAN THOMAS: THAT'S VERY REASSURING. THANK YOU, DEAN PULIAFITO.

DR. SAMBRANO: SO THE INTENT HERE IS NOT FOR YOU TO READ THIS GRAPH. AGAIN, THIS IS REALLY ABOUT THE BUDGET. AND I'M HAPPY TO BLOW THAT UP. IT'S SIMPLY FOR US TO KEEP TRACK. THIS TABLE IS IN THE BOOK. AND ALSO I WANT TO INDICATE TO YOU THAT

THE STAFF RECOMMENDATIONS ARE IN THE FORM OF A MEMO THAT SHOULD ALSO BE IN THAT SECTION. SO IT LISTS THE FIVE PROPOSALS THAT ARE IN TIER II THAT STAFF IS RECOMMENDING.

MR. SHEEHY: JUST SO IT'S ON PAGE -- IT STARTS UNDER TAB 8, AND WE'RE ON PAGE 2 OF 4. AND AT THE TOP IT WILL SAY TRACK 1, FUNDAMENTAL MECHANISM APPLICATIONS. AND SO THOSE FIRST -- HOW MANY OF THOSE ARE THERE? THEY'RE IN WHITE. SO THEY'RE ON PAGE 2 IF MEMBERS WANT TO GO.

DR. SAMBRANO: RIGHT. THERE ARE 16 IN TIER I.

MR. SHEEHY: SO THERE'S 16 WHITE ONES. AND JUST TO BE CLEAR, AS FOLKS FIND THOSE APPLICATIONS, AND HOPEFULLY, AGAIN, IT'S PAGE -- THERE'S FOUR PAGES OF APPLICATIONS. WE'RE STARTING BASICALLY ROUGHLY AT THE TOP OF PAGE 2 UNDER THE TRACK 1 FUNDAMENTAL MECHANISMS. SO THE FIRST MOTION I WOULD TAKE IS IF ANYONE WOULD LIKE TO MAKE A MOTION TO TAKE ANY OF THOSE APPLICATIONS IN TIER I OUT OF TIER I AND NOT HAVE THEM BE FUNDED.

DR. DULIEGE: I'M SORRY. JUST TO CLARIFY, ARE YOU ASKING IF THERE'S ANY ONE OF THESE THAT WE WOULDN'T WANT TO BE FUNDED?

MR. SHEEHY: JUST IN TERMS OF PROCESS, WE

SHOULD LOOK AT THEM. WE GENERALLY DON'T DO THAT.

DR. DULIEGE: I KNOW I WOULD ANSWER NO, THERE'S NO ONE I WOULD TAKE OUT OF THIS LIST. AND SO SHOULD WE MAKE A MOTION TO APPROVE ALL THE TIER I'S?

MR. SHEEHY: NO. WE ALWAYS HAVE TO GIVE PEOPLE THE OPPORTUNITY TO TAKE SOMETHING OUT OF THE RECOMMENDED FOR FUNDING CATEGORY. AND IF THERE IS NO RECOMMENDATION TO DO THAT, THEN I THINK -- AND AT THIS POINT I THINK I MAY PASS THE CHAIR OVER TO DR. PRIETO BECAUSE I THINK WE CAN START WITH THE NEXT LOWEST SCORE, WHICH IS THE FIRST ONE IN THE GRAY AREA WITH WHICH I HAVE A CONFLICT, AND I BELIEVE THERE'S A STAFF RECOMMENDATION ON THAT ONE. AM I CORRECT? SO PERHAPS WE COULD PRESENT THE STAFF RECOMMENDATION.

DR. PRIETO: ARE WE TALKING ABOUT 6935?

MR. SHEEHY: 7409.

DR. PRIETO: I'M SORRY. YOU'RE RIGHT. ON THE PREVIOUS PAGE.

DR. DULIEGE: CAN WE JUST PUT MORE LIGHT ON BECAUSE THERE'S NO WAY WE'RE GOING TO BE ABLE TO READ THAT, AND WE SHOULD AT LEAST BE ABLE TO READ OUR BINDERS. SO JUST A LITTLE BIT MORE LIGHT. THANK YOU.

DR. PRIETO: QUESTION, GIL. IS THERE A SEPARATE PAGE IN OUR BINDER THAT SUMMARIZES THE STAFF RECOMMENDATIONS?

DR. SAMBRANO: YES. THERE IS A PAGE THAT'S IN THE FORM OF A MEMO, AND IT PRESENTS EACH OF THESE. BUT I THINK THE IDEA HERE IS THAT WE WILL GO OVER EACH OF THESE STAFF RECOMMENDATIONS AND PRESENT THEM TO YOU. SO WE HAVE A SLIDE THAT SUMMARIZES EACH OF THEM.

DR. SHEPARD: SO WE DO HAVE A SLIDE FOR EACH OF THE RECOMMENDATIONS THAT SUMMARIZE WHAT'S IN THAT MEMO. AND IF YOU LIKE, I COULD JUST READ THROUGH THE SLIDE. AND THEN IF YOU HAVE ANY SPECIFIC QUESTIONS ABOUT IT, THERE ARE SCIENCE OFFICERS PREPARED TO ANSWER MORE IN-DEPTH QUESTIONS IF YOU HAVE ANY THAN WHAT CAN BE GLEANED FROM THE SLIDE. WOULD THAT WORK?

OKAY. ONE THING I DO WANT TO MENTION BEFORE WE GO INTO THESE IS THAT THIS IS THE FIRST TIME WITH THE BASIC BIOLOGY REVIEW THAT THE PROGRAMMATIC IS TAKING PLACE HERE AT THE BOARD MEETING. AND SO WHEN THE CONCEPT WAS PROPOSED, IT WAS BEFORE WE CHANGED THAT PROCESS. AND WHEN WE ENVISIONED THE CONCEPT, WE ENVISIONED THE POSSIBILITY THAT THE PROGRAMMATIC REVIEW WOULD BE A

MEANS OF BALANCING THE NUMBER OF HIGHER RISK EXPLORATORY CONCEPT PROPOSALS WITH THE FUNDAMENTAL MECHANISMS. SO THAT MIGHT BE SOMETHING YOU KEEP IN MIND AS WE GO THROUGH THESE DISCUSSIONS AND WE PRESENT SOME OF THE ARGUMENTS THAT WE FELT WERE THE COMPELLING REASONS FOR RECOMMENDING THESE STAFF RECOMMENDATIONS.

OKAY. SO THE FIRST ONE WE'LL TALK ABOUT IS RB5-06935. THE TITLE IS "MISREGULATED MITOPHAGY IN PARKINSONIAN NEURODEGENERATION." SO THIS IS BASICALLY A DISEASE-IN-A-DISH-TYPE STUDY TO TRY TO GET AT THE MECHANISMS OF CERTAIN FORMS OF PARKINSON'S DISEASE. SO THE KEY POINTS OF CONSIDERATION FOR PROGRAMMATIC REVIEW ARE THAT MECHANISMS LINKING MITOCHONDRIAL DYSFUNCTION TO NEURONAL DEATH IN PARKINSON'S DISEASE REMAIN UNCLEAR. CIRM IS CURRENTLY FUNDING THREE IPSC-BASED PARKINSON'S DISEASE MODELING STUDIES, BUT NONE OF THEM ADDRESSES POTENTIAL MITOCHONDRIAL MECHANISM FOR THIS DISEASE.

SO REVIEWERS WERE GENERALLY IN AGREEMENT THAT THE SCIENTIFIC MERIT OF THIS PROPOSAL WAS HIGH. HOWEVER, THEIR OPINIONS DIFFERED REGARDING THE NOVELTY OF THE PROJECT AS A WHOLE. IT'S BASED ON FINDINGS THAT HAVE ALREADY BEEN DESCRIBED IN ANIMAL

MODELS. SO SOME REVIEWERS FELT THAT ANY NEW FINDINGS WOULD NOT PERHAPS BE TERRIBLY UNEXPECTED BASED ON WHAT'S ALREADY KNOWN. HOWEVER, THIS IS THE FIRST ATTEMPT TO VALIDATE THIS MECHANISM IN A DISEASED HUMAN NEURON TAKEN FROM PATIENTS WITH PARKINSON'S DISEASE. SO IN THAT ASPECT OTHER REVIEWERS FELT THAT THAT WAS WHERE THE NOVELTY LIES.

SO THE STAFF RECOMMENDATION IS THAT WE BELIEVE THAT THERE'S VALUE TO STUDYING THIS MECHANISM IN DISEASED HUMAN NEURONS. AND IF FUNDED, WE WOULD ENSURE COMMITMENT OF A CONTRIBUTOR WITH THE REQUIRED EXPERTISE. THIS INVESTIGATOR IS FAIRLY EARLY CAREER AND HAS AN EXCELLENT RECORD, BUT EARLY CAREER, AND REVIEWERS DID COMMENT THAT IT WOULD BE IMPORTANT THAT A KEY CONTRIBUTOR MENTIONED IN THE APPLICATION STAYS INVOLVED EVEN THOUGH NO COMMITMENT SPECIFICALLY WAS MENTIONED. SO WE WOULD ENSURE THAT THAT OCCURS IF YOU GO WITH THIS RECOMMENDATION.

AND IF ANYBODY HAS MORE QUESTIONS ABOUT THE SCIENCE BEHIND THIS APPLICATION OR MORE DETAILS, MY COLLEAGUE, DR. GRISHAMMER, WOULD BE HAPPY TO EXPLAIN THAT.

MR. TORRES: I WOULD LIKE TO MOVE THIS ITEM INTO THE FUNDING CATEGORY BASED UPON STAFF'S RECOMMENDATION AND ALSO FROM A PROGRAMMATIC REVIEW,

THE FACT THAT OUR PORTFOLIO REALLY IS LACKING IN PARKINSON'S RESEARCH. AND THAT'S SO IMPORTANT ESPECIALLY WITH THE IMPACT THAT THIS HAS HAD ON OUR BOARD MEMBER JOAN SAMUELSON. I SO MOVE.

DR. JUELSGAARD: SECOND THE MOTION.

MR. SHEEHY: I ACTUALLY DON'T HAVE A CONFLICT WITH THIS ONE. THE OTHER TWO I HAVE A CONFLICT WITH. SORRY. TOOK IT A LITTLE OUT OF ORDER. SO WE HAVE THE MOTION ON THE FLOOR TO FUND -- TO BASICALLY ACCEPT THE STAFF RECOMMENDATION AND MOVE THIS INTO THE FUNDABLE CATEGORY WITH THE CAVEATS THAT COULD BE INCLUDED WITHIN THE RECOMMENDATION.

CHAIRMAN THOMAS: WE HAVE A QUESTION FROM DR. PRIETO.

DR. PRIETO: SO WHAT WILL THIS DO TO THE BUDGET? HOW MUCH DOES IT INCREASE THE BUDGET FOR EACH ONE IN EACH CATEGORY THAT WE ADD?

DR. SHEPARD: IF YOU ACCEPTED ALL THREE OF THE STAFF RECOMMENDATIONS, THAT WOULD ADD 3.8 MILLION TO THE TOTAL BUDGET. I DON'T HAVE THE SHEET WITH THE SPECIFIC BREAKDOWN FOR THIS ONE. 1.2 MILLION.

DR. PRIETO: FOR THIS APPLICATION?

DR. SHEPARD: FOR THIS APPLICATION.

DR. PRIETO: OKAY. THANK YOU.

MR. SHEEHY: OTHER BOARD COMMENTS? DISCUSSION? I HAVE DR. LEVIN AND DR. LUBIN AND THEN DR. DULIEGE. SO MAYBE WE'LL TAKE DR. LEVIN, DR. LUBIN, AND THEN DR. DULIEGE.

DR. LEVIN: THANKS, JEFF. I JUST WANTED TO MAKE A QUICK PROCESS QUESTION BEFORE WE GET INTO THE GRANTS THAT I'M CONFLICTED ON. SO I APOLOGIZE. I MISSED THE LAST TWO BOARD MEETINGS IN PART DUE TO COMPLETION OF MY OWN HUMAN EMBRYONIC STEM CELL PROJECT.

MR. TORRES: CONGRATULATIONS.

DR. LEVIN: IS THIS OUR NEW PROCESS NOW FOR ALL GRANT ROUNDS, THAT WE ALWAYS GET THE STAFF COMMENTS INSERTED BEFORE ANY SORT OF VOTE, AND WE'RE DOING THIS FOR EVERY GRANT ROUND BECAUSE THAT WASN'T THE CASE.

DR. PRIETO: WE DO THE PROGRAMMATIC REVIEW HERE NOW.

MR. SHEEHY: BUT WE TAKE -- I BELIEVE IT'S APPROPRIATE AND BASICALLY RESPECTFUL OF STAFF'S EFFORT TO MAKE SOME SORT OF DECISION ON THEIR RECOMMENDATIONS FIRST BEFORE WE KIND OF HAVE A FREE FOR ALL WITH ALL THE REST.

DR. LEVIN: ONLY FOR TIER II.

CHAIRMAN THOMAS: YES. CAN I JUST SPEAK TO THAT? SO UNDER THE NEW PROTOCOL, THE STAFF, WITH RESPECT TO EACH ROUND, EVALUATE THE PROJECTS IN TIER II AND MAKE RECOMMENDATIONS TO THE BOARD IF THEY BELIEVE THAT CERTAIN OF THOSE SHOULD BE FUNDED. AND WE'VE HAD THAT NOW IN PLACE AND THIS IS THE PROCEDURE WE WILL HAVE GOING FORWARD.

DR. LEVIN: THANKS.

MR. SHEEHY: AND WE DON'T HAVE TO ACCEPT THE STAFF RECOMMENDATIONS, NOR ARE WE PREVENTED FROM RECOMMENDING FUNDING OTHER APPLICATIONS THAT WERE NOT RECOMMENDED BY STAFF THAT DIDN'T HAVE A STAFF RECOMMENDATION. BUT MERELY THESE ARE THE ONES WHERE WE TAKE ADVANTAGE OF THE TREMENDOUS EXPERTISE WE HAVE ON STAFF AND GIVE THEM A CUT. AND, AGAIN, I THINK IT'S VERY RESPECTFUL TO TRY TO DEAL WITH THOSE FIRST BEFORE WE DEAL WITH THE REST OF THEM.

AND THEN I HAD DR. LUBIN.

DR. LUBIN: SO I JUST WANTED TO SAY THE FACT THAT THIS IS A YOUNG INVESTIGATOR IS GOOD. WHEN THEY DID THE INNOVATIVE AWARDS OR THE NEW AWARDS, THE OLD SETTLERS GOT THE AWARDS, NOT THE NEW INVENTORS. AND I THINK IT'S A GOOD IDEA TO GO IN THAT DIRECTION. SO I JUST WANTED TO COMMENT ON THAT FOR ANYONE THAT WAS ON THE FENCE.

DR. DULIEGE: ACTUALLY IN MY CASE IT'S A MORE GENERAL QUESTION ABOUT THE BUDGET SO AS TO CLARIFY THAT IF WE WERE TO APPROVE ALL CURRENT RECOMMENDATIONS FROM THE CIRM STAFF, I UNDERSTAND IT WOULD BE STILL UNDER BUDGET. BUT THERE'S QUITE A BIT, ABOUT $26 MILLION OUT OF $40 MILLION, JUST TO GIVE A PERSPECTIVE.

MR. SHEEHY: ADDITIONAL DISCUSSION BY BOARD MEMBERS? DID I MISS ANYONE? ANY PUBLIC COMMENT? THEN I THINK WE'RE AT A POINT WHERE WE CAN CALL THE ROLL.

MS. BONNEVILLE: MARCY FEIT.

MS. FEIT: AYE. I THOUGHT I WAS CONFLICTED WITH THIS ONE. IT'S ON MY CONFLICTS SHEET.

MR. HARRISON: TO BE CLEAR, THIS IS A MOTION TO MOVE APPLICATION 6935 TO TIER I.

MS. FEIT: SO I CAN. THEN YES.

MS. BONNEVILLE: STEVE JUELSGAARD.

DR. JUELSGAARD: AYE.

MS. BONNEVILLE: SHERRY LANSING. LAUREN MILLER.

MS. MILLER: AYE.

MS. BONNEVILLE: JOE PANETTA.

MR. PANETTA: AYE.

MS. BONNEVILLE: FRANCISCO PRIETO.
DR. PRIETO: AYE.
MS. BONNEVILLE: ROBERT QUINT.
DR. QUINT: AYE.
MS. BONNEVILLE: AL ROWLETT. JOAN SAMUELSON. JEFF SHEEHY.
MR. SHEEHY: YES.
MS. BONNEVILLE: JONATHAN THOMAS.
CHAIRMAN THOMAS: YES.
MS. BONNEVILLE: ART TORRES.
MR. TORRES: AYE.
MS. BONNEVILLE: DIANE WINOKUR.
MS. WINOKUR: YES.
MR. HARRISON: MOTION CARRIES BY A VOTE OF TEN TO ZERO.
MR. SHEEHY: OKAY. SO I THINK AT THIS POINT IT IS DEFINITELY IN YOUR HANDS, DR. PRIETO, BECAUSE I THINK I'M FAIRLY CERTAIN THAT THE NEXT TWO STAFF RECOMMENDATIONS ARE ONES THAT I HAVE A CONFLICT WITH.
DR. PRIETO: OKAY. SO JUST TO BE CLEAR, WE'RE GOING TO GO IN ORDER, THEN, STARTING WITH 7409; IS THAT CORRECT?
DR. SHEPARD: YES.
DR. PRIETO: IS THERE A STAFF

RECOMMENDATION?

DR. SHEPARD: SO THIS IS RB5-07409, TITLED "BIOPHYSICAL DETERMINANTS OF EARLY EMBRYONIC STEM CELL FATE SPECIFICATION." SO THIS PROPOSAL REPRESENTS A UNIQUE OPPORTUNITY TO INVESTIGATE CELL MOVEMENTS THAT ARE CRITICAL FOR EARLY HUMAN DEVELOPMENT UTILIZING HUMAN PLURIPOTENT STEM CELLS. THERE ARE NO SIMILAR PROJECTS WITHIN CIRM'S RESEARCH PORTFOLIO THAT ARE ATTEMPTING TO INVESTIGATE THIS STAGE.

REVIEWERS REALLY LIKED THIS PROPOSAL, BUT THEY FELT IT WAS VERY HIGH RISK AND POTENTIALLY HIGH REWARD. IT CAME IN THROUGH THE FUNDAMENTAL MECHANISMS TRACK. SO THAT WAS A REVIEW CRITERIA THAT MIGHT HAVE CONTRIBUTED TO A SLIGHT LESSENING OF ENTHUSIASM ON THEIR PART. HOWEVER, THERE ARE NO OTHER BASIC RESEARCH GRANTS IN CIRM'S PORTFOLIO OR IN ANY OF THE GRANT PROGRAMS, AS A MATTER OF FACT, TACKLING THIS SPECIFIC AREA. AND SO WE FELT IT WOULD BE A GOOD OPPORTUNITY TO HAVE SOMETHING LIKE THIS THAT WE FUND. GIVEN THE FACT THAT IT IS HIGH RISK, WE PROPOSE THAT RISK WOULD BE MANAGED, IF YOU DECIDE TO FUND THIS, BY IMPLEMENTING APPROPRIATE MILESTONES.

SO ONE OF THE KEY RISK FACTORS, AND WHEN

WE TALK ABOUT RISK IN OUR BASIC BIOLOGY GRANTS, I SHOULD MENTION WE'RE NOT TALKING ABOUT RISK AS INTO PATIENT'S HEALTH OR ANYTHING LIKE THAT. IT'S THE RISK OF SUCCESS. IS IT BASED ON A WELL-ESTABLISHED PREMISE AND HOW LIKELY IS IT TO SUCCEED?

IN THIS CASE THIS IS A TECHNICALLY COMPLICATED PROPOSAL WHERE A LOT OF CRITICAL TOOLS ARE UNDER DEVELOPMENT THAT WILL BE NECESSARY TO ACHIEVE THE PROPOSED RESEARCH. SO WE WOULD PROPOSE THAT THERE COULD BE AN EARLY MILESTONE TO ENSURE THAT THOSE CRITICAL TOOLS ARE IN HAND BEFORE ENABLING THE MECHANISTIC STUDIES THAT DEPEND ON THOSE TOOLS TO GO FORWARD. SO THAT'S THE STAFF RECOMMENDATION.

IF ANYBODY WOULD LIKE TO KNOW MORE ABOUT THE SPECIFIC TECHNIQUES OR SCIENCE BEING INVESTIGATED HERE, MY COLLEAGUE, DR. UTA GRISHAMMER, IS PREPARED TO ANSWER YOUR QUESTIONS.

DR. PRIETO: I'LL ENTERTAIN A MOTION TO MOVE THIS INTO TIER I.

DR. JUELSGAARD: SO MOVED.

DR. PRIETO: MOVED BY DR. JUELSGAARD. AND A SECOND?

CHAIRMAN THOMAS: I'LL SECOND.

DR. PRIETO: THANK YOU. ANYONE HAVE

QUESTIONS FOR THE SCIENTIFIC STAFF? OKAY. MARIA, DO YOU WANT TO CALL THE ROLL.

MS. BONNEVILLE: ANNE-MARIE DULIEGE.

DR. DULIEGE: YES.

MS. BONNEVILLE: STEVE JUELSGAARD.

DR. JUELSGAARD: AYE.

MS. BONNEVILLE: LAUREN MILLER.

MS. MILLER: AYE.

MS. BONNEVILLE: JOE PANETTA.

MR. PANETTA: AYE.

MS. BONNEVILLE: FRANCISCO PRIETO.

DR. PRIETO: AYE.

MS. BONNEVILLE: ROBERT QUINT.

DR. QUINT: YES.

MS. BONNEVILLE: AL ROWLETT. JOAN SAMUELSON. OS STEWARD. JONATHAN THOMAS.

CHAIRMAN THOMAS: YES.

MS. BONNEVILLE: ART TORRES.

MR. TORRES: AYE.

MS. BONNEVILLE: DIANE WINOKUR.

MS. WINOKUR: YES.

DR. PRIETO: OKAY. ON THE NEXT ONE, ARE THERE CONFLICTS?

MR. HARRISON: DR. PRIETO, FOR THE RECORD THAT MOTION CARRIES BY A VOTE OF NINE TO ZERO.

DR. PRIETO: THANK YOU. 7285.

DR. SHEPARD: IS EVERYBODY READY? OKAY. THIS IS RB5-07285, TITLED A "NOVEL DRUGGABLE MECHANISM TO SAFEGUARD STEM CELL GENOME." SO ASSURANCE OF GENOME STABILITY IN CELL POPULATIONS THAT ARE INTENDED FOR THERAPY IS A HIGHLY DESIRABLE GOAL. AFTER ALL, IF YOU'RE GOING TO BE TRANSPLANTING CELLS INTO A PATIENT AND YOU EXPECT THEM TO INTEGRATE INTO TISSUES AND BE PRESENT FOR ANY LENGTH OF TIME, YOU WANT TO BE SURE THAT THEY'RE SAFE, THAT THEIR GENOME ISN'T UNDERGOING SOME KIND OF CHANGE THAT COULD BE POTENTIALLY MUTAGENIC OR ONCOGENIC. SO THE ABILITY TO HAVE A DRUG OR SOME SORT OF TREATMENT THAT COULD ASSURE GENOME STABILITY COULD BE VERY BROADLY APPLICABLE, ESPECIALLY IF IT COULD BE APPLIED TO MULTIPLE DIFFERENT -- IF IT COULD BE APPLIED TO MULTIPLE DIFFERENT TYPES OF CELL POPULATIONS THAT ARE CONSIDERED FOR THERAPEUTIC APPLICATION THAT WOULD BE TRANSFORMATIVE.

SO THIS PROJECT COULD HAVE POTENTIAL RELEVANCE TO MANY DIFFERENT TYPES OF STEM CELL-DERIVED POPULATIONS CONSIDERED FOR THERAPY DEVELOPMENT. SO IN THAT RESPECT, IT COULD HAVE A POTENTIALLY TRANSFORMATIVE IMPACT. THE PROPOSAL ADDRESSES AN RFA PRIORITY FOR TRACK 1, UNDERSTANDING

GENOME STABILITY; HOWEVER, IT'S EXTREMELY HIGH RISK. THE PRELIMINARY OBSERVATIONS ARE ENTIRELY BASED IN ANIMAL STUDIES, AND REVIEWERS WERE NOT SURE WHETHER THEY WOULD BE RELEVANT OR REPRODUCIBLE IN THE HUMAN SYSTEM. HOWEVER, IF THEY WERE TO BE, THEY WOULD HAVE BEEN EXTREMELY ENTHUSIASTIC.

SO CIRM FELT THAT TO MITIGATE THIS RISK, AGAIN, THIS IS A PROPOSAL THAT CAME IN THROUGH THE FUNDAMENTAL MECHANISMS TRACK RATHER THAN THE HIGHER RISK TRACK, BUT NONETHELESS, IT COULD REPRESENT A UNIQUE RESEARCH OPPORTUNITY FOR CIRM. SO WE FELT THAT IF YOU ARE SUPPORTIVE OF FUNDING, CIRM COULD WORK WITH THE APPLICANT TO ENSURE THAT A MILESTONE BE INCLUDED SUCH THAT THEY MUST FIRST DEMONSTRATE THE VALIDITY OF THEIR OBSERVATIONS IN THE HUMAN SYSTEM BEFORE EMBARKING ON THE EXTENSIVE MECHANISTIC EXPLANATIONS THAT ARE PROPOSED BECAUSE BASICALLY A GOOD PORTION OF THE PROPOSAL IS AIMED AT UNDERSTANDING THE MECHANISMS BY WHICH THIS DRUG THAT POTENTIALLY ASSURES GENOME STABILITY OPERATES.

SO THAT'S THE STAFF RECOMMENDATION FOR THIS PROPOSAL. AND IF YOU'D LIKE TO KNOW MORE IN-DEPTH DETAILS ABOUT THE SCIENCE, MY COLLEAGUE, DR. MANI VESSAL, IS PREPARED TO ANSWER YOUR QUESTIONS.

DR. PRIETO: DR. JUELSGAARD.

DR. JUELSGAARD: YES. SO THERE'S -- IN THE REVIEW BY THE GRANTS WORKING GROUP, THERE ARE TWO COMMENTS THAT I WOULD LIKE JUST SOME RESPONSE TO. ONE IS THE PROPOSAL IS NOT INNOVATIVE, AND THE SECOND IS THE PROPOSAL MAKES USE OF A SMALL MOLECULE IDENTIFIED BY THE PI AND FOUND THE CLAIMS THAT IT DEMONSTRATES UNPRECEDENTED EFFECTS ON PRESERVING GENOMIC INTEGRITY TO BE OVERSTATED. SO IF WE COULD GET SOME RESPONSE TO THOSE CRITICISMS OF THIS PARTICULAR PROPOSAL, PLEASE.

DR. SHEPARD: WELL, AGAIN, AS WITH ONE OF THE EARLIER APPLICATIONS WE DISCUSSED, THERE WAS SOME SPLIT OPINIONS BY THE REVIEWERS ON WHETHER OR NOT IT'S INNOVATIVE. IN THIS CASE THIS IS NOT THE FIRST TIME SOMEBODY HAS OR OTHER RESEARCHERS HAVE DESCRIBED THE SCREENING OF SMALL MOLECULES AND LOOKING FOR POTENTIALLY VERY EXCITING PROPERTIES THAT CAN IMPACT GENOME STABILITY OR IMPROVED REPROGRAMMING EFFICIENCY, ETC. SO THE GENERAL APPROACH OF IDENTIFYING DRUGS THAT CAN CONVEY THESE PROPERTIES IS NOT NOVEL. THE TYPES OF EXPERIMENTS THAT ARE PROPOSED TO INVESTIGATE THE MECHANISM ARE VERY STANDARD ASSAYS IN THE FIELD.

SO IN TERMS OF THE METHODOLOGIES EMPLOYED,

THAT'S NOT PARTICULARLY INNOVATIVE. WHAT WOULD BE INNOVATIVE IS IF THIS SMALL MOLECULE TURNS OUT TO HAVE THE ACTIVITY THAT IS CLAIMED FOR IT. AND AS MENTIONED IN THE SUMMARY, SOME OF THE REVIEWERS FELT THAT PERHAPS IT WAS BEING OVERSOLD; WHEREAS, OTHERS FELT THAT, IF THIS IS ACTUALLY TRUE, THIS COULD BE VERY IMPORTANT. SO FOR THIS REASON THIS WENT INTO THE HIGH RISK NATURE OF THIS PROPOSAL. AND, AGAIN, IT WAS SUBMITTED THROUGH THIS FUNDAMENTAL MECHANISMS TRACK WHERE HIGHER RISK PROPOSALS, THEY SHOULD BE BASED ON VERY COMPELLING PRELIMINARY DATA.

IN THIS CASE THE PRELIMINARY DATA THAT SUPPORTED THE HYPOTHESIS WAS ENTIRELY FROM MOUSE, AND REVIEWERS HAD SOME CONCERNS BECAUSE SOME FINDINGS THAT AFFECT CERTAIN PROPERTIES IN MICE AREN'T EXACTLY THE SAME IN HUMAN CELLS, AND IT WOULD BE BETTER TO DETERMINE THAT EARLY AND THEN DECIDE WHETHER OR NOT THIS IS WORTH STUDYING THAN TO PERHAPS NOT KNOW. SO THAT WAS DRIVING THOSE TYPES OF COMMENTS IN THE SUMMARY.

DR. JUELSGAARD: THANK YOU.

CHAIRMAN THOMAS: MR. PANETTA HAD A QUESTION.

MR. PANETTA: ACTUALLY MY QUESTION WAS ANSWERED. SO FINE. THANK YOU.

DR. PRIETO: MY QUESTION IS JUST ABOUT THE TITLE. THE DRUGGABLE MECHANISM IS THE USE OF THIS SMALL MOLECULE TO ASSESS ITS EFFECT ON GENOME STABILITY?

DR. SHEPARD: SO THE MOLECULE HAS ALREADY BEEN IDENTIFIED, AND THE CLAIMS OF THE APPLICANT ARE THAT IT SAFEGUARDS THE STEM CELL GENOME. THE GOALS OF THE APPLICATION ARE TO WORK OUT THE MECHANISM OF ACTION FOR THAT SMALL MOLECULE BECAUSE THE PATHWAYS THAT ARE ILLUMINATED BY THESE STUDIES COULD OFFER OTHER OPPORTUNITIES TO ADDRESS GENOME STABILITY.

DR. PRIETO: THAT'S WHAT THEY MEAN BY DRUGGABLE?

DR. SHEPARD: YES.

DR. PRIETO: THANK YOU. SO WE NEED A MOTION TO MOVE THIS APPLICATION.

DR. DULIEGE: I MOTION TO APPROVE THIS RECOMMENDATION.

DR. PRIETO: DR. DULIEGE MOVES TO MOVE THIS INTO TIER I. AND A SECOND?

DR. JUELSGAARD: I SECOND IT.

DR. PRIETO: MR. JUELSGAARD. OKAY. ANY FURTHER DISCUSSION?

CHAIRMAN THOMAS: DR. PRIETO, I JUST HAVE A PROCESS QUESTION. WAS IT EVER CONTEMPLATED, JUST

FOR MEMBERS OF THE BOARD WHO WEREN'T IN THE ROOM, EVER CONTEMPLATED THAT, IF YOU HAD PROJECTS IN THIS CATEGORY THAT WERE SUBMITTED THAT RAN INTO QUESTIONING ON THEIR HIGH RISK NATURE, THAT YOU COULD RECATEGORIZE THOSE INTO THE SECOND CATEGORY? WAS THAT SOMETHING THAT WAS ALLOWED TO HAPPEN?

DR. SHEPARD: WELL, WE DISCUSSED THAT AS A POSSIBILITY WHEN WE WERE INITIALLY LOOKING AT THE TIER PROPOSALS. AS I MENTIONED, WHEN THIS CONCEPT WAS CONCEIVED, AT THAT TIME PROGRAMMATIC REVIEW WAS GOING ON AT THE GRANTS WORKING GROUP SESSION AND THEY WERE PARTICIPATING IN THAT. AND WE FELT THAT THE JUDGMENT OF THE SCIENCE AS FAR AS WEIGHING THE RISKS VERSUS THE REWARD COULD BE TAKEN UNDER CONSIDERATION.

NOW, WE DIDN'T WANT TO JUST CHANGE THE FUNDING MECHANISM OF THE GRANT BECAUSE WE DON'T THINK IT'S FAIR TO THE OTHER GRANT APPLICATIONS. BUT THIS IS AN ACKNOWLEDGEMENT THAT WE'RE LOOKING FOR POTENTIALLY TRANSFORMATIVE RESEARCH OPPORTUNITIES. AND JUST BECAUSE SOMETHING WAS SUBMITTED TO THE WRONG TRACK, IF THERE'S REALLY GOOD POTENTIALLY HIGH GAINS THAT COME IN THAT, EVEN IF IT'S RISKY, IT COULD BE WORTH CONSIDERING. AND BECAUSE THIS FUNDING MECHANISM -- SO THE EXPLORATORY

CONCEPT MECHANISM WAS A SMALL FOCUSED AWARD, TWO YEARS, SMALLER AMOUNT OF MONEY. IT WAS REALLY TO LET PEOPLE TEST AN INITIAL HYPOTHESIS. AND IF IT'S WRONG, THAT'S A LOWER INVESTMENT THAT HAS BEEN MADE IN THAT.

THESE FUNDAMENTAL MECHANISMS AWARDS ARE A SIGNIFICANT INVESTMENT. THEY'RE THREE YEARS, WHICH IS WHY WE LOOK AT PRELIMINARY DATA IN THE EVALUATION OF THOSE. IF A HIGH RISK COMES IN THROUGH THIS, WE'RE COMMITTED TO IT FOR THREE YEARS ESSENTIALLY UNLESS SOMETHING TERRIBLE HAPPENS DURING THE CONDUCT OF THE AWARD. SO WE THOUGHT THAT ONE WAY TO MANAGE THIS RISK WOULD BE SOMETHING THAT WE DO IN OTHER PROGRAMS, WHICH IS WORK WITH THE APPLICANT TO ENSURE THAT THEY'RE MEETING A CERTAIN MILESTONE EARLY TO DERISK THIS BASICALLY.

CHAIRMAN THOMAS: THANK YOU.

DR. PRIETO: DR. LUBIN.

DR. LUBIN: SO, DR. JUELSGAARD, YOU WERE CONCERNED THAT THEY WERE OVERSTATING THE CAPABILITY OR THE POTENTIAL OF THIS AND THAT WAS IN A STUDY, YET YOU VOTED -- YOU SUGGESTED THAT WE FUND THIS. I'M CONFUSED BY THAT.

DR. PRIETO: I THINK YOUR MICROPHONE IS NOT ON. I'M SORRY.

MR. HARRISON: THIS IS ONE YOU CAN'T SPEAK TO.

DR. LUBIN: I'M SORRY.

DR. PRIETO: DR. TROUNSON.

DR. LUBIN: FORGET WHAT I SAID.

MR. TORRES: STRIKE THE TESTIMONY.

DR. JUELSGAARD: WELL, I'M HAPPY TO ANSWER A QUESTION THAT I MIGHT HAVE HEARD, WHICH IS ACTUALLY I WAS JUST -- IT WAS AN INQUIRY ON MY PART. THERE WERE THESE CRITICISMS, AND I WANTED TO HEAR MORE ABOUT THEM JUST SO THAT I UNDERSTOOD THEM. THAT DOESN'T MEAN THAT I ACCEPTED THAT THEY WERE VALID CRITICISMS, BUT I THOUGHT IT WAS WORTH HEARING ABOUT.

DR. PRIETO: THIS WAS A QUESTION RAISED IN THE REVIEW. DR. TROUNSON.

DR. TROUNSON: THE HYPOTHESIS RISK IS THAT DRUG WON'T WORK ON MOUSE CELLS AS WELL AS THE HUMAN. BUT WE ACTUALLY SEE THE SAME PROBLEMS WHEN YOU GROW MOUSE CELLS AS YOU DO HUMAN CELLS. SO IT'S HYPOTHESIS THAT IT WON'T WORK, BUT THERE IS THE SAME PROBLEM. AND IF IT DOES WORK IN THE MOUSE AND IT DOES WORK IN THE HUMAN, IT WOULD BE WORTH AN AWFUL LOT OF MONEY, A LOT OF BENEFIT BECAUSE IT WOULD ALLOW YOU TO MULTIPLY THESE CELLS, ANY CELLS THAT WE

GET, PRESUMABLY ANY CELLS THAT WE CAN GET WITHOUT SEVERE CONTAMINATION, CHROMOSOMAL CHANGES, AND GENE DELETION. SO IT IS QUITE IMPORTANT, AND IT'S A HYPOTHESIS THAT MAYBE IT WON'T WORK ON THE HUMAN BECAUSE SOME THINGS DON'T WORK ON MOUSE AND HUMAN. SO I JUST WANTED TO MAKE SURE THE BOARD UNDERSTOOD THAT.

DR. PRIETO: AND THIS IS -- THIS WORK WILL BE JUST IN A MURINE MODEL, CORRECT?

DR. TROUNSON: NO. THE PRINCIPLE IS THAT THEY NEED TO SHOW THAT THIS DRUG WILL ACTUALLY WORK ON A HUMAN BEFORE WE GO AND COMPLETELY FUND THE STUDY. SO WE'RE ASKING THEM TO MOVE THAT TO THERE. AND SO THERE SHOULD BE SOME --

DR. PRIETO: OH, I SEE. YES. THIS IS THE MILESTONE THAT WE'LL PUT IN PLACE.

DR. TROUNSON: RIGHT.

DR. PRIETO: AND IF THEY PASS THAT MILESTONE, THEN THIS COULD HAVE VERY BROAD APPLICABILITY IN THE STEM CELL FIELD.

DR. SHEPARD: RIGHT.

DR. TROUNSON: IF I COULD SUGGEST THAT YOU INCLUDE THAT RECOMMENDATION FOR THAT MILESTONE, I THINK THAT WOULD BE WORTHWHILE AS WELL.

DR. SHEPARD: THE GRANT IS TO DEMONSTRATE

HOW IT WORKS AND MAKE SURE THAT IT DOES WORK IN HUMAN CELLS BEFORE WE FIGURE OUT HOW IT WORKS.

DR. PRIETO: THIS IS THE SUGGESTED MILESTONE?

DR. SHEPARD: YES.

DR. PRIETO: OKAY. SO DO WE NEED AN AMENDMENT TO THE MOTION IF WE'RE JUST ACCEPTING --

DR. SHEPARD: I DON'T THINK YOU DO. IF YOU ACCEPTED --

DR. PRIETO: IF WE'RE JUST ACCEPTING THE STAFF RECOMMENDATION.

DR. SHEPARD: -- THIS IS KIND OF -- IT KIND OF -- IT GIVES US THE LEVERAGE.

DR. PRIETO: SO THE MOTION, THEN, IS TO ACCEPT THE STAFF RECOMMENDATION AND MOVE THIS INTO THE FUNDABLE CATEGORY. DO WE NEED PUBLIC COMMENT? IS THERE ANY PUBLIC COMMENT?

MR. REED: NOT FOR THIS ONE, BUT THERE WILL BE LATER ON. THANK YOU.

DR. PRIETO: IF WE COULD CALL THE ROLL.

MS. BONNEVILLE: ANNE-MARIE DULIEGE.

DR. DULIEGE: YES.

MS. BONNEVILLE: MARCY FEIT.

MS. FEIT: YES.

MS. BONNEVILLE: STEVE JUELSGAARD.

DR. JUELSGAARD: AYE.
MS. BONNEVILLE: LAUREN MILLER.
MS. MILLER: AYE.
MS. BONNEVILLE: JOE PANETTA.
MR. PANETTA: AYE.
MS. BONNEVILLE: FRANCISCO PRIETO.
DR. PRIETO: AYE.
MS. BONNEVILLE: ROBERT QUINT.
DR. QUINT: YES.
MS. BONNEVILLE: JON THOMAS.
CHAIRMAN THOMAS: YES.
MS. BONNEVILLE: ART TORRES.
MR. TORRES: AYE.
MS. BONNEVILLE: DIANE WINOKUR.
MS. WINOKUR: YES.
MR. HARRISON: THIS MOTION CARRIES BY A VOTE OF TEN TO ZERO.
DR. PRIETO: OKAY. IS THIS BACK TO JEFF?
MR. SHEEHY: YEAH. I THINK THAT CONCLUDES THE STAFF RECOMMENDATIONS FOR THIS CATEGORY. SO WE'RE AT A POINT WHERE I WILL TAKE A MOTION TO MOVE AN APPLICATION IN TIER II INTO TIER I OUTSIDE OF THOSE WE'VE ALREADY CONSIDERED IF THERE IS ANY APPLICATION THAT A MEMBER HAS AN INTEREST IN MOVING.
DR. PRIETO: QUESTION. WERE THERE APPEALS

ON ANY OF THE OTHERS IN TIER II?

MR. SHEEHY: YOU HAVE A LIST OF APPEALS. STAFF HAS GIVEN -- YOU HAVE THIS SHEET?

DR. PRIETO: OH, YES, I DO.

DR. SAMBRANO: I CAN TELL YOU THAT THERE WERE NO FORMAL APPEALS FILED UNDER TRACK 1 IN TIER II.

DR. PRIETO: THANK YOU.

MR. SHEEHY: SO WHILE WE'RE ON THIS TRACK --

DR. DULIEGE: I'D LOVE TO HAVE A BIT MORE INFORMATION. CAN WE HAVE A LITTLE BIT MORE INFORMATION ABOUT THE 47184 THAT END UP, IF I'M CORRECT, APPROXIMATELY THE SAME TYPE OF RANKING? IT WAS STILL REJECTED. SO 07184.

MR. SHEEHY: JUST IN TERMS OF PROCESS, COULD WE -- AND I'LL DEFER TO THE CHAIR AS TO HOW RIGOROUSLY HE WANTS TO ENFORCE THIS. BUT THE GENERAL WAY WE'VE DONE THIS IS THAT IN ORDER TO HAVE A DISCUSSION OF AN APPLICATION, THERE NEEDS TO BE A MOTION AND A SECOND. SO THERE'S SOME ACTIVITY, BUT IT'S YOUR CALL.

CHAIRMAN THOMAS: LET'S ASK THE ULTIMATE WORD ON EVERYTHING. MR. HARRISON.

MR. SHEEHY: IT REALLY DEPENDS ON HOW

RIGOROUSLY YOU'D LIKE ME TO ENFORCE THE PROCESS.

CHAIRMAN THOMAS: I THINK IF A BOARD MEMBER HAS ASKED FOR EXPLANATION ON ONE, THEN WE SHOULD HAVE THAT EXPLANATION.

MR. SHEEHY: OKAY. JUST BECAUSE --

DR. DULIEGE: I UNDERSTAND.

MR. SHEEHY: I'M SORRY. I WAS GOING TO --

DR. DULIEGE: MY QUESTION IS CAN WE HAVE AN EXPLANATION ON, FOR INSTANCE, THE NEXT PROPOSAL THAT GOT THE SAME SCORE BUT WAS NOT RECOMMENDED BY THE CIRM STAFF?

DR. SHEPARD: SO MY COLLEAGUE, DR. MANI VESSAL, IS PREPARED TO DISCUSS THAT APPLICATION. HE JUST NEEDS A SECOND.

MR. SHEEHY: AND, DIANE, DID YOU HAVE A QUESTION?

MS. WINOKUR: HAVE WE FINISHED TRACK 1 AND WE'RE ON TRACK 2?

MR. SHEEHY: NO. WE'RE STILL ON TRACK 2, SO WE'RE ON THE NEXT LOWER ONE DOWN, 7184, "EXOSOMES AS A NOVEL FORM OF CELL-CELL COMMUNICATION FOR NEURONAL HOMEOSTASIS."

MR. TORRES: IS THERE ANY WAY TO INCREASE THE LIGHTING ON THAT SIDE OF THE ROOM? I CAN BARELY

SEE THE BOARD MEMBERS. THANK YOU.

DR. VESSAL: YES. WE DID NOT MAKE A RECOMMENDATION ON THIS APPLICATION BECAUSE ONE OF THE ISSUES THAT THE REVIEWERS HAD RAISED WAS A FLAW THAT WAS IN THE PRELIMINARY DATA THAT CONTRADICTED ONE OF THE CLAIMS THAT THE PI WAS TRYING TO MAKE. SO THERE WAS ACTUALLY DATA THAT WAS PRESENTED IN THE APPLICATION THAT WAS CONTRADICTORY TO THE ACTUAL HYPOTHESIS.

DR. DULIEGE: THANK YOU.

MR. SHEEHY: WE DID GET A LETTER ON THIS ONE. SO IF THERE IS ANY PUBLIC COMMENT ON THIS APPLICATION, I FEEL LIKE, SINCE IT HAS BEEN DISCUSSED BY BOARD MEMBERS, WE SHOULD GIVE THAT OPPORTUNITY. NO. OKAY.

ARE THERE ANY OTHER APPLICATIONS THAT BOARD MEMBERS WOULD EITHER LIKE TO GET MORE INFORMATION ABOUT OR MAKE A MOTION TO MOVE INTO CATEGORY 1? DIANE.

MS. WINOKUR: I JUST HAVE A COMMENT ON NO. 07320. ARE WE ON THAT TRACK YET?

MR. SHEEHY: NO. WE HAVEN'T GONE TO THAT CATEGORY. SO THERE ARE TWO DIFFERENT TRACKS. SO WE'RE DOING THE BIG MONEY TRACK, BUT WE'LL GET THERE.

MS. WINOKUR: OKAY. THANK YOU.

MR. SHEEHY: SO IF THERE'S NO MOTIONS, I THINK, AND THERE ARE NO MOTIONS -- I PRESUME THERE'S NO MOTIONS TO MOVE ANYTHING OUT OF TRACK III INTO THE FUNDABLE CATEGORY. THEN MAYBE WE COULD CONCLUDE THIS TRACK. BEFORE WE GO INTO TRACK 2, SHOULD WE TAKE A BREAK, CHAIR? DO YOU WANT TO DO IT BEFORE OR AFTER THE BREAK?

CHAIRMAN THOMAS: AFTER.

MR. SHEEHY: SO MAYBE A TEN-MINUTE -- WE HAVEN'T HAD A BREAK. WE'VE BEEN AT IT FOR TWO HOURS. SO COME BACK IN FIVE TO TEN. MARIA SAYS FIVE.

DR. DULIEGE: CAN YOU CLARIFY EXACTLY WHERE WE ARE RIGHT NOW IN THE VOTING PROCESS BEFORE WE TAKE A BREAK?

MR. SHEEHY: SURE. WE'VE FINISHED TRACK 1. AND NOW WE'RE IN TRACK 2, WHICH IS ACTUALLY BACKWARDS IN YOUR PAPERS. SO TRACK 2 IS PAGE 1.

DR. PRIETO: SO WE FINISHED FUNDAMENTAL CONCEPTS AND WE'LL DO EXPLORATORY.

MR. SHEEHY: WE'RE DOING EXPLORATORY CONCEPTS NEXT. SO WE'LL GO TO THOSE.

DR. SAMBRANO: I DON'T THINK WE'RE DONE YET. I THINK THE GOAL WAS TO FIRST DO A MOTION ON

THIS TRACK --

DR. PRIETO: ON EVERYTHING IN TIER I.

DR. SAMBRANO: -- BEFORE WE TAKE A BREAK, OR I MEAN AFTER THE BREAK.

DR. DULIEGE: WHY DON'T WE JUST CLOSE ON THAT TRACK COMPLETELY, THEN WE TAKE A BREAK, AND THEN WE START ON THE SECOND TRACK.

CHAIRMAN THOMAS: THAT'S FINE.

MR. SHEEHY: I'M AGNOSTIC. DO WE WANT TO DO THAT?

MR. TORRES: DOES THE STENOGRAPHER NEED A BREAK? YES, SHE NEEDS A BREAK.

MR. HARRISON: I THINK I RECOMMEND WE TAKE A FIVE-MINUTE BREAK AND COME BACK AND TAKE A VOTE ON A MOTION TO APPROVE THOSE APPLICATIONS IN THE FUNDAMENTAL TRACK IN TIER I AND NOT TO FUND THE REMAINING, AND THEN WE CAN MOVE ON TO TRACK 2.

(A RECESS WAS TAKEN.)

MR. SHEEHY: SO I THINK WHERE WE ARE NOW IS THAT WE WILL TAKE A GLOBAL MOTION ON TRACK 1. AND PERHAPS COUNSEL COULD STATE THE FORM, AND THEN I COULD GET SOMEONE TO MAKE AND SECOND IT.

MR. TORRES: SO MOVED.

MR. HARRISON: SO THE FORM OF THE MOTION WOULD BE TO APPROVE THE BASIC BIOLOGY TRACK 1

APPLICATIONS IN TIER I AND NOT TO FUND THE REMAINING BASIC BIOLOGY APPLICATIONS IN TRACK 1.

MR. TORRES: SO MOVED.

MR. SHEEHY: DO I HAVE A SECOND?

DR. JUELSGAARD: SECOND.

MR. SHEEHY: DO WE HAVE ANY PUBLIC COMMENT?

MS. SHEIKH: HELLO. I'M FARAH SHEIKH, AND I'M FROM THE UNIVERSITY OF CALIFORNIA SAN DIEGO. AND I WOULD LIKE TO TALK ABOUT GRANT RB5-07366. AND I WANT TO THANK THE COMMITTEE FOR THE OPPORTUNITY TO PROVIDE COMMENT ON THIS PROPOSAL THAT ADDRESSES AN UNMET CLINICAL NEED IN THE AREA OF HEART DISEASE.

SO AS WE KNOW, HEART DISEASE IS THE NO. 1 KILLER IN THIS NATION. AND IN 2004 73,000 CALIFORNIANS DIED FROM HEART DISEASE, MORE THAN THE TOTAL NUMBER OF DEATHS IN THE YEAR FROM CANCER, DIABETES, LIVER DISEASE, SUICIDE, HOMICIDE, AND HIV COMBINED. AND OUR PROPOSAL SPECIFICALLY FOCUSES ON THE MECHANISM OF ACTION ON A NOVEL BIOLOGICAL PATHWAY THAT COULD LEAD TO SIGNIFICANT ADVANCES AND ACTUALLY TRANSFORM THE DIAGNOSIS AND TREATMENT OF A DEADLY HEART DISEASE CALLED ARRHYTHMOGENIC RIGHT VENTRICULAR CARDIOMYOPATHY OR ARVC.

AND IF YOU HAVEN'T YET HEARD OF THIS

DISEASE, YOU MAY HAVE HEARD OF ATHLETES ALL OF A SUDDEN DROPPING TO THEIR DEATH ON THE FIELD. AND IT'S CONSIDERED ONE OF THE TOP CAUSES OF SUDDEN DEATH IN YOUNG PEOPLE, AND IT INCLUDES CHILDREN AS WELL AS ATHLETES WHO, DESPITE THEIR OUTWARD APPEARANCE OF HEALTH, SUDDENLY DIE WITHOUT ANY CLEAR WARNING.

THIS IS ESPECIALLY DEVASTATING BECAUSE THERE ARE ABSOLUTELY NO CURES. THERE IS ABSOLUTELY NO WAY TO MODIFY THE DISEASE, AND IT'S REALLY HARD TO DIAGNOSE. EVEN WHEN YOUNG PEOPLE ARE DIAGNOSED, 40 PERCENT OF PATIENTS DIE WITHIN TEN YEARS OF DIAGNOSIS. SO EFFECTIVE ACTIONS AND RESEARCH IN THIS AREA ARE URGENTLY NEEDED BECAUSE THE DEVASTATING CONSEQUENCES OF ARVC ARE VERY UNPREDICTABLE AND THEY'RE CATASTROPHIC FOR FAMILIES.

RESEARCH IN THIS AREA WILL ALSO HELP OTHER FORMS OF HEART DISEASE IN TERMS OF THEIR TREATMENTS BECAUSE THERE'S SOME KEY DISEASE FEATURES THAT ARE SHARED. SO I REALLY STRONGLY URGE THE COMMITTEE TO CONSIDER FUNDING OUR RESEARCH PROPOSAL SINCE INVESTMENT IN OUR PROPOSAL WILL SEEK TO ALLEVIATE THIS UNMET CLINICAL NEED FOR RESEARCH IN THE AREA OF ARVC AND ALSO IMPACT PATIENTS WITH OTHER FORMS OF HEART DISEASE AND ALSO ESPECIALLY IN THIS FUNDING

CYCLE WHERE THERE ARE NO OTHER HEART DISEASE GRANTS BEING FUNDED.

PROGRAMMATICALLY I FEEL IT DIVERSIFIES CIRM'S PORTFOLIO BECAUSE IT FUNDS A RESEARCH AREA THAT REALLY GETS TO PEOPLE THAT ARE IMPACTED BY SUDDEN DEATH IN YOUNG CALIFORNIAN CHILDREN, ADULTS, AND ATHLETES. AND IT ALSO SYNERGIZES WITH CALIFORNIA'S MASTER PLAN FOR HEART DISEASE AND STROKE PREVENTION AND TREATMENT, WHICH WAS THE (INAUDIBLE) ESTABLISHED IN CALIFORNIA TO ADDRESS THE URGENT NEED TO REDUCE DEATH FROM HEART DISEASE AND STROKE.

AND FINALLY, I THINK IT PROVIDES AN INVESTMENT TO CALIFORNIA BECAUSE IT MAKES IT A HUB FOR HEART DISEASE RESEARCH IN THIS PARTICULAR AREA WHERE PEOPLE CAN COME TO US AND GET THIS NEEDED TREATMENT AND TO ALSO ATTRACT BUSINESSES TO DEVELOP THESE TREATMENTS FURTHER.

SO WITH THAT, I'D REALLY LIKE TO URGE THE COMMITTEE TO PLEASE CONSIDER THIS PROPOSAL. AND I THANK YOU FOR YOUR TIME.

MR. SHEEHY: DO WE HAVE ADDITIONAL PUBLIC COMMENT ON TRACK 1 APPLICATIONS?

MR. PARKER: GOOD MORNING. THANKS. MY NAME IS LARRY PARKER. AND THANKS FOR ALLOWING ME TO

SPEAK ON THIS.

I NEVER THOUGHT I'D BE THE FACE OF ANYTHING, BUT THIS MORNING I AM THE FACE OF ARVC. I AM THE PATIENT. AND I WAS ASKED TO COME IN AND JUST SPEAK A LITTLE BIT (INAUDIBLE) AND WHAT TYPE OF TREATMENT I'M HAVING RIGHT NOW AND HOW MY LIFE IS GOING.

WELL, IT STARTED OUT ABOUT FIVE YEARS AGO. I WAS SITTING AT HOME IN MY OFFICE DOING SOME WORK, AND ALL OF A SUDDEN I FELT MY HEART START RACING. AND IT'S LIKE, OKAY, IT WILL STOP IN A SECOND, BUT IT NEVER STOPPED. AND IT GOT TO THE POINT WHERE, WELL, GEEZ, I BETTER DO SOMETHING ABOUT IT. SO I CALLED UP A BUDDY OF MINE WHO I KNEW WAS IN THE AREA. I SAID, "HEY, DO YOU MIND TAKING ME TO THE HOSPITAL?" HE GOES, "OKAY. I'LL BE OVER THERE IN A SECOND." TOOK ME TO THE HOSPITAL. I WENT IN, I SAID I GOT AN ACCELERATED HEART RATE. OF COURSE, THEY TOOK ME RIGHT IN.

WHEN THEY TOOK MY PULSE, MY HEART RATE WAS 212. NOW, MY NORMAL HEART RATE, BECAUSE FOREVER I'VE BEEN VERY HEALTHY AND I WORK OUT AT LEAST FIVE DAYS A WEEK, I DO CARDIO FIVE DAYS A WEEK, IS BETWEEN RESTING 55, 60, SOMEWHERE AROUND THERE. SO YOU CAN IMAGINE HOW IT MUST HAVE FELT WHEN I WAS

212. THEY COULDN'T FIGURE OUT A WAY TO GET MY HEART RATE DOWN. SO EVENTUALLY THEY CALLED IN THE CARDIOLOGIST AND THEY KNOCKED ME OUT AND THEY CARDIOBURNED ME, AND I WOKE UP AND I FELT GREAT. BUT SO THEY TRANSFERRED ME TO ANOTHER HOSPITAL, MARIN GENERAL.

THE NEXT MORNING THEY BROUGHT ME IN THE CATH LAB. IT WAS DETERMINED MY -- THAT WAS NOT THE PROBLEM. MY ARTERIES WERE CLEAR AND LOOKING VERY ATHLETIC, AS THE CARDIOLOGIST SAID.

NEXT NIGHT THEY TOOK ME INTO THE EP LAB AND THEY ABLATED ME. AND AT THAT POINT I THOUGHT I WAS PRETTY MUCH OKAY. AT THAT POINT, THOUGH, I WASN'T DIAGNOSED WITH ARVC. THEY JUST ABLATED ME AND THAT'S ALL THERE WAS TO IT. THEY DID A FOLLOW-UP A COUPLE WEEKS LATER WITH THE EP DOCTOR, AND HE SAID I WAS FINE.

ABOUT A YEAR AND A HALF -- AGAIN, THAT WAS MY FIRST ABLATION. ABOUT A YEAR AND A HALF LATER, IT STARTED AGAIN. I WAS IN A RESTAURANT. MY HEART RATE STARTED UP. IT'S LIKE, OH, NO, HERE WE GO AGAIN. THANKFULLY IT STOPPED. STARTED AGAIN THAT NIGHT. SO WENT TO THE DOCTOR. I WAS REFERRED TO UCSF. UCSF HAS PROBABLY THE WORLD'S FOREMOST AUTHORITY IN DR. SCHEINMAN. SO HE DID A SERIES OF

TESTS ON ME. AND BY THE WAY, EVEN THOUGH HE MAY BE THE AUTHORITY ON IT, THERE'S SO MUCH NOT KNOWN ABOUT THIS DISEASE, THAT ALL THEY COULD DO IS TRY TO MANAGE IT.

BUT THEY PUT ME THROUGH A LOT OF TESTS, INCLUDING A CARDIAC MRI, NUKE MED STUDY, PRETTY INVOLVED EKG, GENETIC TESTING. I WENT THROUGH ANOTHER ABLATION THERE, AND THEY BROUGHT ME IN THE CATH LAB. THEY DID A BIOPSY, WHICH I CAN ONLY IMAGINE WHAT THE BILL MUST HAVE LOOKED LIKE. WHEN I WAS FINALLY -- OKAY. WHEN I WAS FINALLY DIAGNOSED WITH ARVC, THAT WAS THE SECOND ONE, THEY PUT ME ON A DRUG CALLED SOTALOL. AND I WAS IN THE HOSPITAL TWO DAYS BECAUSE THEY HAD TO MONITOR THE DRUG. SO I WAS THERE TWO DAYS IN THE HOSPITAL ON THE DRUG.

AND A LITTLE BIT LATER THEY IMPLANTED A DEFIBRILLATOR IN ME. SO THEN ABOUT A YEAR AND A HALF LATER, LAST APRIL, I WAS IN THE GYM. STEPPED ON THE TREADMILL. THE DEFIBRILLATOR FIRED OFF TWICE. AND LET ME TELL YOU, IF YOU'VE NEVER HAD THAT HAPPEN TO YOU, IT'S LIKE SOMEONE HITS YOU WITH A BASEBALL BAT. I BENT OVER. IT WAS PRETTY POWERFUL. SO WENT BACK. THEY DID THE THIRD ABLATION LAST APRIL THE 29TH.

SO EVEN THOUGH THERE ARE DRUGS THEY GIVE

ME, I'VE GOT A DEFIBRILLATOR WHICH PROBABLY SAVED MY LIFE. ALL THEY CAN DO IS SOMEWHAT MANAGE IT. THERE'S JUST NOT ENOUGH INFORMATION ABOUT THIS DISEASE. AND I'M HOPING THERE'S MORE STUDY SO I CAN KEEP CALLING THE DOC HERE AND SAY WHERE ARE WE. AND I DO CALL HER A LOT. THAT'S PROBABLY WHY SHE ASKED ME TO COME BECAUSE I'M PRETTY INVOLVED IN MY OWN THERAPY. AS YOU CAN IMAGINE, MY LIFE STYLE HAS CHANGED. THE DOCTOR SAYS I DON'T WANT YOUR HEART RATE OVER A HUNDRED TEN. I GOT TO BE REAL CAREFUL AT THE GYM. AND I'M AFRAID TO TRAVEL. I'M AFRAID OF SOMETHING HAPPENING. I WANT TO BE NEAR UCSF BECAUSE I DON'T KNOW WHAT'S GOING TO HAPPEN.

I WON A TRIP TO HAWAII LAST YEAR, PRESIDENT'S CLUB IN THE COMPANY I WORK FOR. I DIDN'T GO, ALL EXPENSES PAID, BECAUSE I WAS PARANOID ABOUT SOMETHING MIGHT HAPPEN. SO THANK YOU VERY MUCH FOR YOUR TIME, AND I APPRECIATE IT.

MR. SHEEHY: THANK YOU. DO WE HAVE ADDITIONAL PUBLIC COMMENT?

DR. SPECTOR: YES. MY NAME IS DEBORAH SPECTOR. I'M A PROFESSOR ALSO AT THE UNIVERSITY OF CALIFORNIA SAN DIEGO. I'M IN THE SCHOOL OF MEDICINE AND THE SKAGGS SCHOOL OF PHARMACY. MY EXPERTISE IS IN CELL AND MOLECULAR BIOLOGY AND VIROLOGY. AND FOR

MANY YEARS I HAVE STUDIED HERPES VIRUSES.

I FLEW UP HERE TO SPEAK TO YOU DIRECTLY AND TO SPEAK DIRECTLY TO EXPRESS CONCERN ABOUT A GAP THAT IS IN CIRM'S PORTFOLIO OF GRANTS THAT HAVE BEEN AWARDED. AND THAT RELATES TO CHILD HEALTH. AND SPECIFICALLY IN CHILD HEALTH WHAT HAS BEEN NEGLECTED IS CONGENITAL HEARING LOSS. THE PROBLEM IS EXTREME. ONE IN 250 CHILDREN ARE BORN WITH CONGENITAL HEARING LOSS, AND THAT DOESN'T EVEN COUNT THOSE WHO GET IT FROM OTHER CAUSES OR, AS MANY OF US WILL, WHEN WE AGE.

THE SINGLE MAJOR CAUSE OF CONGENITAL HEARING LOSS IS A VIRUS CALLED CYTOMEGALOVIRUS. IT'S A HERPES VIRUS. AND PROBABLY MOST OF YOU HAVEN'T HEARD ABOUT IT BEFORE. IT IS THE MAJOR VIRAL CAUSE OF BIRTH DEFECTS IN INFANTS.

NOW, PROBABLY IF I ASKED YOU HAVE YOU HEARD ABOUT RUBELLA, AND PROBABLY IF I WENT AROUND, MOST OF YOU HAVE HEARD ABOUT RUBELLA AND KNOW THAT IF A WOMAN CONTRACTED RUBELLA WHEN SHE WAS PREGNANT, THE BABY WAS LIKELY TO HAVE BIRTH DEFECTS, PARTICULARLY HEARING LOSS. TO PUT THIS INTO A CONTEXT FOR YOU, EVERY YEAR CYTOMEGALOVIRUS CAUSES MORE HEARING LOSS THAN RUBELLA EVER DID IN ITS WORST EPIDEMIC YEAR PRIOR TO A VACCINE.

UNFORTUNATELY THIS LACK OF PUBLIC AWARENESS HAS MADE IT VERY DIFFICULT TO GET FUNDS TO STUDY THIS VERY IMPORTANT MEDICAL PROBABILITY. THERE'S NO VACCINE AGAINST CYTOMEGALOVIRUS, THERE ARE NO ANTIVIRAL DRUGS THAT CAN BE USED, AND I HAVE TO TELL YOU THERE'S NOT A VACCINE THAT'S ON THE HORIZON THAT YOU ARE GOING TO SEE IN THE NEXT DECADE. HEARING LOSS, CONGENITAL HEARING LOSS, WHEN THE CELLS OF THE INNER EAR ARE DAMAGED, THEY CANNOT BE REPAIRED AND THEY CANNOT REGENERATE. THUS, IMPLANTATION OF STEM CELLS REALLY BECOMES A THERAPEUTIC POSSIBILITY.

UNFORTUNATELY UNTIL RECENTLY THERE REALLY WAS NO SUCCESSFUL MODEL TO STUDYING HEARING RESTORATION USING HUMAN EMBRYONIC STEM CELLS. WHAT I WANT TO CONVEY TO YOU IS VERY MUCH AS WAS STATED THIS MORNING. THERE WAS A PAPER THAT WAS PUBLISHED AT THE END OF 2012 THAT CHANGED THE LANDSCAPE. IT WAS A PAPER THAT DESCRIBED A PROTOCOL TO DIFFERENTIATE HUMAN EMBRYONIC STEM CELLS INTO THE CELLS THAT WERE PROGENITORS AND BECAME THE CELLS OF THE INNER EAR. WHAT WAS MORE IMPORTANT, THEY COULD SHOW THAT THOSE CELLS ENGRAFTED, DIFFERENTIATED, AND RESTORED FUNCTION.

NOW, I'VE STUDIED CYTOMEGALOVIRUS FOR MANY

YEARS. AT THE TIME THIS PAPER CAME OUT, WE HAD FOUND THROUGH DEEP RNA SEQUENCING THAT MICRO-RNA'S AND CELLULAR RNA'S WERE DYSREGULATED IN INFECTED NEURAL PROGENITORS, AND THESE WERE DIRECTLY RELATED TO THE DEVELOPMENT OF CELLS NEEDED FOR HEARING.

I'M HERE, MY COLLEAGUE DR. ALAN RYAN, I SOLICITED HIM AS A COLLABORATION. HE HAS EXPERTISE THAT COMPLEMENTS MY OWN IN THE PHYSIOLOGY AND FUNCTION OF HEARING AND DYSFUNCTION AND HAS STUDIED FOR MANY YEARS ANIMAL MODELS OF HEARING LOSS. WE SUBMITTED A PROPOSAL TO CIRM AS PART OF THE BASIC PROPOSAL. YOU ARE REVIEWING THESE NOW. OUR PROPOSAL IS RB5-07082. I WANT TO IMPRESS ON YOU THERE IS AN INCREDIBLE NEED FOR THIS WORK. WE HAVE THE TOOLS NOW TO ADDRESS THE PROBLEM. WE DIDN'T HAVE THOSE TOOLS BEFORE. AND I REALLY ENCOURAGE YOU TO CONSIDER HAVING THESE STUDIES AS PART OF CIRM'S PORTFOLIO. THANK YOU VERY MUCH.

MR. SHEEHY: THANK YOU. IS THERE ANY ADDITIONAL PUBLIC COMMENT ON ANY APPLICATION IN TRACK 1? THEN I BELIEVE COULD THE --

MS. ROBERSON: I'M JUDY ROBERSON FROM SACRAMENTO. I'M A HUNTINGTON'S DISEASE ADVOCATE, PRESIDENT OF THE JOSEPH P. ROBERSON FOUNDATION. OUR FAMILY FOUNDED THE HUNTINGTON'S CLINIC AT UC DAVIS.

IT'S THE LARGEST HD CLINIC IN THE UNITED STATES.

HUNTINGTON'S DISEASE IS A HEREDITARY BRAIN DISEASE. HAS JUST AS MANY PATIENTS AS ALS AND CYSTIC FIBROSIS. IT'S NOT WELL-KNOWN, BUT IT'S WHAT KILLED MY HUSBAND, THREE OTHER LOVED ONES IN OUR FAMILY, AND WE HAVE 17 LOVED ONES AT RISK.

BECAUSE OF CIRM AND THE ICOC, THE HUNTINGTON'S CLINIC AT UC DAVIS, WHICH IS THE LARGEST HD CLINIC IN THE UNITED STATES, NOW IS THE SITE OF THE FIRST-IN-HUMAN CLINICAL TRIAL PHASE I FOR HUNTINGTON'S USING ADULT STEM CELLS, MSC'S. ENROLLMENT BEGAN IN SEPTEMBER WITH GREAT EXCITEMENT AND HOPE. THIS YEAR MARKS THE TWENTY-FIRST YEAR SINCE THE GENE FOR HUNTINGTON'S DISEASE WAS FOUND, AND WE STILL HAVE NOT ONE TREATMENT. PEOPLE TOLD US MAYBE BLUEBERRIES WOULD HELP, EATING BLUEBERRIES. RESEARCH FOUND THAT NOT EVEN BLUEBERRIES HELP. WE HAVE NOTHING.

SO I'M HERE TODAY TO THANK YOU, THE ICOC, FOR VOTING UNANIMOUSLY TO FUND THIS GRANT WHICH SCORED IN FIRST PLACE. I'M ALSO HERE TO THANK DON GIBBONS. HE INVITED ME TO BE A PANELIST AT THE WORLD STEM CELL SUMMIT IN EARLY DECEMBER. AND WHAT OUR GOAL WAS WAS TO TEACH OTHER PEOPLE HOW TO BE ADVOCATES FOR THEIR DISEASE. AND I THINK IT WAS

SUCCESSFUL. DON REED WAS ON THE PANEL TOO.

I HAVE A SEAT ON THE FDA AS THE FIRST VOTING PATIENT REPRESENTATIVE TO THE HUNTINGTON'S DISEASE ADVISORY COMMITTEE. AND I'M HOPING THAT MY ROLE IN THE FDA CAN HELP PUSH THROUGH APPROVALS FOR THIS STEM CELL TRIAL FOR HUNTINGTON'S ALONG WITH OTHER POTENTIAL TREATMENTS IN THE FUTURE.

I WANT TO THANK TWO PEOPLE FROM OUR SACRAMENTO AREA FOR SERVING ON THE ICOC, NEW PEOPLE I HAVEN'T MET, DR. KEN BURTIS AND AL ROWLETT. SO I HOPE TO MEET YOU BOTH IN PERSON AT SOME POINT. THANK YOU AGAIN FOR -- YOU MIGHT NOT KNOW, BUT THE WORLD, ENTIRE WORLD, THERE'S HUNTINGTON'S DISEASE IN BOTH SEXES, AND 10 PERCENT OF OUR POPULATION ARE CHILDREN, AND THERE'S PEOPLE IN EVERY COUNTRY, IN EVERY RACE WITH HUNTINGTON'S DISEASE. THE WORLD IS WATCHING WHAT'S HAPPENING WITH YOU, WITH CIRM, UC DAVIS. THANK YOU SO MUCH.

MR. SHEEHY: THANK YOU, JUDY.

MS. JACKSON: HI. I'M KATIE. I STAND IN FRONT OF YOU TODAY WITH A MUCH DIFFERENT FEELING THAN I STOOD IN FRONT OF YOU IN JULY OF 2012. I'LL NEVER FORGET THE DAY LOOKING UP AT THE SCREEN AND SEEING DR. WHEELOCK'S PROJECT SCORING NO. 1 BY THE SCIENTIFIC REVIEW BOARD. THE MOMENT WE HEARD THE

FINAL YES BY THE ICOC TO FUND DR. WHEELOCK'S PHASE I TRIAL, THE FEELING I FELT I CAN'T EVEN PUT INTO WORDS, EXCITEMENT, RELIEF, AND OVERWHELMING LIBERATING FEELING OF HOPE. I REMEMBER THINKING, OH, MY GOODNESS, THIS IS GOING TO HAPPEN. THANK YOU, THANK YOU, CIRM. THIS IS GOING TO HAPPEN.

I STAND HERE IN FRONT OF YOU TODAY AS A CAREGIVER AND A WIFE OF AN AMAZING BRAVE MAN WHO HAS NOW BEEN THROUGH THE SCREENING PROCESS AND IS NOW ENROLLED IN HD PRECELL. WE HAVE BEEN THROUGH BASELINE, OUR FIRST TRIAL VISIT, AND JUST TWO DAYS AGO WE HIT ANOTHER MILESTONE OF HAVING OUR THREE-MONTH BASELINE CALL -- AFTER BASELINE CALL APPOINTMENT. WE ARE EXCITED FOR APRIL WHEN WE GET TO GO IN FOR OUR SECOND SIX-MONTH VISIT TO THE HOSPITAL. THE WORLD IS WATCHING ON THE EDGE OF THEIR SEATS.

I WOULD LIKE TO THANK KEVIN MCCORMACK FOR GIVING ME THE OPPORTUNITY TO BLOG ABOUT WHAT THE JULY 2012 ICOC BOARD MEETING MEANT TO MY FAMILY AND MY HD COMMUNITY. I WAS THRILLED TO HEAR THAT MY BLOG GOT THE THIRD MOST CIRM READ BLOG OF 2013. I THINK THIS IS A TESTAMENT TO HOW MANY PEOPLE ARE WATCHING AND WAITING ON EXCITEMENT TO HEAR ABOUT THIS HISTORICAL TRIAL.

HUNTINGTON'S DISEASE IS WITH NO HOPE, NO THERAPY, NO TREATMENT. FINALLY, FINALLY HAS HOPE. IN THE FIRST EVER IN HUMAN TRIAL FUNDED, ENROLLING, AND MOVING FORWARD QUICKLY, AS QUICKLY AS POSSIBLE, TO BRING THE FIRST EVER THERAPY TO HUNTINGTON'S DISEASE. THANK YOU TO DR. NOLTA AND THE UC DAVIS LAB, DR. WHEELOCK, AND EVERYONE AT THE UC DAVIS HD CLINIC. AND, OF COURSE, NONE OF THIS WOULD HAPPEN WITHOUT CIRM.

I AM THE VICE PRESIDENT OF HELP REACH INTERNATIONAL, A NONPROFIT FOR HD. WE HAVE A RADIO SHOW RIGHT NOW THAT HAS OVER 83,000 LISTENERS INTERNATIONALLY. WE HAVE HAD AMAZING GUESTS ON OUR SHOW LIKE ELLEN FEIGAL, AND I HAVE BEEN ON MANY TIMES TALKING ABOUT CIRM AND THIS TRIAL. OUR COMMUNITY IS VERY EXCITED TO LISTEN ABOUT ALL THAT'S GOING ON.

I AM CHRONICLING BLOGS ABOUT OUR PERSONAL JOURNEY THROUGH THIS TRIAL. I WOULD LIKE TO AGAIN THANK KEVIN FOR LETTING ME BLOG THESE CHRONICLES ON CIRM'S BLOG. AND SO FAR I'VE BEEN HEARING THAT THEY'RE BEING SYNDICATED, WHICH IS WONDERFUL. I GET CALLS ALL THE TIME FROM MOTHERS WHO HAVE LOST THEIR CHILDREN, CHILDREN WHO ARE LOSING THEIR PARENTS, AND I ALWAYS -- FROM THEIR VERY CRUEL DISEASE, BUT THE

SPIRIT OF THE HD COMMUNITY IS AMAZING. WE ARE FIGHTERS, AND I ALWAYS SAY NEVER UNDERESTIMATE A MOTHER WHO IS ON A MISSION TO SAVE HER CHILDREN.

AND, CIRM, YOU HAVE GIVEN US MOTHERS HOPE THAT THE FUTURE GENERATIONS WILL NOT HAVE TO LIVE THE WAY WE HAVE AND OUR PAST GENERATIONS HAVE HAD TO LIVE WITH HUNTINGTON'S DISEASE.

I'D LIKE TO LEAVE YOU REAL QUICK WITH MY DREAM. MY DREAM IS THAT WE ARE THE LAST GENERATION TO HAVE TO LIVE WITH THIS -- THE DEVASTATION AND FEAR THAT THIS DISEASE PROMISES OUR FAMILY. BECAUSE OF THIS TRIAL, MY DREAM AND MY HD COMMUNITY'S DREAM IS BECOMING A REALITY. THANK YOU, CIRM.

MR. SHEEHY: THANK YOU. YES, DR. DULIEGE.

DR. DULIEGE: IF I JUST MAY MAKE A COMMENT HERE, MAYBE ON BEHALF OF THE ICOC, BUT CERTAINLY ON BEHALF OF MYSELF, TO THANK AGAIN ALL OF YOU FOR YOUR COURAGE TO COME, YOUR DETERMINATION, AND YOUR ENCOURAGEMENT AS WELL. IT'S REMARKABLE. IT'S REALLY A LESSON FOR ALL OF US. SO THANK YOU. AND WE DEFINITELY DO HOPE, ALL OF US, THAT YOUR DREAM WILL COME TRUE AT SOME POINT SOONER RATHER THAN LATER.

I ALSO WANTED TO THANK THE OTHER PRESENTERS ABOUT THE CARDIOLOGY CONDITION AS WELL AS

THE CMD CONDITION FOR THEIR EFFORT TO COME AND, AGAIN, THEIR STAMINA TO PRESENT HERE THE SCIENCE. I WANT TO SAY THAT AT TIMES FOR US THESE GRANTS ARE GIVEN BASED ON SCIENTIFIC MERIT. IT DOESN'T MEAN THAT WE EITHER IGNORE THE IMPORTANCE OF THIS FIELD OR THE IMPACT IT CAN HAVE IN YOUR LIFE. BUT IT'S THE SCIENTIFIC MERIT COMPARED TO OTHER GRANTS THAT HAVE BEEN PRESENTED.

AND I WANT TO SAY AS A SIDE THAT I'M A PEDIATRICIAN, AND I WORKED FOR TWO TO THREE YEARS ON CMD VACCINES AND COULDN'T MORE AGREE WITH YOU. WE'RE NOT READY TO HAVE ONE.

MR. SHEEHY: THANK YOU, DR. DULIEGE. AND SO I THINK WE'RE READY FOR THE MOTION.

MR. HARRISON: JUST AS A REMINDER, THE MOTION IS TO APPROVE THE BASIC BIOLOGY TRACK 1 APPLICATIONS IN TIER I AND NOT TO FUND THE REMAINING BASIC BIOLOGY TRACK 1 APPLICATIONS. AND BOARD MEMBERS WHO ARE ELIGIBLE TO PARTICIPATE IN THE VOTE SHOULD ANSWER YES OR NO EXCEPT WITH RESPECT TO ANY CONFLICTS THEY MAY HAVE IF THEY'RE CONFLICTED WITH ANY OF THE APPLICATIONS IN TRACK 1.

MR. TORRES: SO MOVED.

DR. JUELSGAARD: SECOND.

MR. SHEEHY: SO MARIA.

MS. BONNEVILLE: ANNE-MARIE DULIEGE.

DR. DULIEGE: YES, EXCEPT FOR POTENTIAL CONFLICT OF INTEREST.

MS. BONNEVILLE: MARCY FEIT.

MS. FEIT: YES, EXCEPT FOR THOSE FOR WHICH I AM CONFLICTED.

MS. BONNEVILLE: STEVE JUELSGAARD.

DR. JUELSGAARD: AYE.

MS. BONNEVILLE: LAUREN MILLER.

MS. MILLER: YES.

MS. BONNEVILLE: JOE PANETTA.

MR. PANETTA: AYE.

MS. BONNEVILLE: FRANCISCO PRIETO.

DR. PRIETO: AYE, EXCEPT FOR THOSE FOR WHICH I HAVE A CONFLICT.

MS. BONNEVILLE: ROBERT QUINT.

DR. QUINT: YES.

MS. BONNEVILLE: JEFF SHEEHY.

MR. SHEEHY: 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: DIANE WINOKUR.

MS. WINOKUR: YES.

MR. HARRISON: AND THAT MOTION CARRIES BY A VOTE OF TEN TO ZERO.

MR. SHEEHY: THANK YOU. SO I THINK WE'RE READY TO GO INTO TRACK 2, EXPLORATORY CONCEPTS. DID YOU WANT TO MAKE A COMMENT?

CHAIRMAN THOMAS: YEAH. JUST FOR MEMBERS OF THE BOARD, AS YOU KNOW, UNDER THE PROTOCOL THAT'S NOW BEEN IN PLACE ALMOST A YEAR, WITH RESPECT TO PROJECTS THAT WERE RECOMMENDED FOR FUNDING, WE HAVE AN APPELLATE PROCESS IN PLACE WHICH HAS BEEN WORKING VERY NICELY OVER THE COURSE OF THE LAST FEW MEETINGS WITH RESPECT TO VARIOUS ROUNDS OF FUNDING. AND WHAT THAT APPELLATE PROCESS IS DESIGNED TO DO IS TO GIVE APPLICANTS AN OPPORTUNITY TO HAVE STAFF REVISIT THEIR PROJECTS AND FOR STAFF TO RECOMMEND OR NOT RECOMMEND TO THE BOARD THAT WE FUND THEM.

WHAT WE'RE TRYING TO AVOID IS HAVING APPEALS DONE AS A MATTER OF FIRST INSTANCE AT THE BOARD, WHICH IS WHAT WAS THE PROCESS SEVERAL YEARS AGO. AND SO JUST WANT TO REMIND EVERYBODY THERE ARE PROJECTS HERE AND PI'S WHO HAVE EITHER GONE THROUGH THE APPELLATE PROCESS UNSUCCESSFULLY WHO WANTED TO TALK ABOUT SOMETHING AND THERE ARE THOSE THAT HAVE NOT GONE THROUGH THE APPELLATE PROCESS WHICH, TO

THOSE OF YOU IN THE AUDIENCE IN THAT LATTER CATEGORY, I WOULD STRONGLY ENCOURAGE THAT YOU DO THAT FIRST BECAUSE IF YOU DON'T GO THROUGH THAT AND YOU COME TO THE BOARD, EVEN IF YOU'RE MAKING PROGRAMMATIC ARGUMENTS, IT SOMEWHAT, I THINK, PREDISPOSES THE BOARD TO NOT GIVE AS MUCH CONSIDERATION AS HAD YOU GONE TO THE APPELLATE PROCESS.

SO I JUST WANT THE BOARD TO BE AWARE OF ALL THAT AS WE GO INTO THIS SECOND GROUP OF AWARDS AND THOSE THAT FOLLOW. THANK YOU, MR. SHEEHY.

MR. SHEEHY: THANK YOU, DR. THOMAS. SO, DR. SHEPARD, ARE WE READY? YOU'RE DOING A GREAT JOB, BY THE WAY. THANK YOU. I KNOW IT'S A LITTLE COMPLICATED TODAY.

DR. SHEPARD: OKAY. NOW LET'S SWITCH GEARS. WE'RE TALKING ABOUT THE SECOND TYPE OF AWARD, THE EXPLORATORY CONCEPTS AWARD. THIS WAS A NEW ELEMENT ADDED TO OUR BASIC BIOLOGY PROGRAM. SO IT'S NEW TO EVERYONE HERE, EXISTING AND NEW BOARD MEMBERS.

SO JUST TO REMIND EVERYONE AGAIN, THIS IS A FOCUSED SHORT PROPOSAL TO TEST THE HIGHLY NOVEL HYPOTHESIS OR A NEW IDEA THAT, IF PROVEN, WOULD POTENTIALLY RESULT IN A TRANSFORMATIVE DISCOVERY FOR

THE STEM CELL FIELD PERHAPS BY CHALLENGING DOGMA OR UNCOVERING SOMETHING NEW AND UNEXPECTED.

BECAUSE OF THIS HIGH RISK, HIGH POTENTIAL GAIN TYPE OF STUDY THAT WE WERE TRYING TO TARGET, THE REVIEW CRITERIA ARE SLIGHTLY DIFFERENT THAN THEY WERE FOR THE FIRST TYPE OF AWARD WE DISCUSSED, TO PLACE MORE EMPHASIS ON THE NOVELTY AND POTENTIAL OUTCOMES.

SO THE FIRST REVIEW CRITERION IS NOVELTY AND TRANSFORMATIVE POTENTIAL. REVIEWERS WERE LOOKING AT WHETHER OR NOT THE APPLICANT PROPOSED A NOVEL HYPOTHESIS, WHETHER IT'S BASED ON A LOGICAL RATIONALE, AND, IF SUCCESSFULLY TESTED, WOULD THE OUTCOME OF THAT RESEARCH BE TRANSFORMATIVE. IT'S IMPORTANT TO NOTE THAT PRELIMINARY DATA WAS NOT A REVIEW CRITERIA FOR THIS AWARD ALTHOUGH IT WAS SUGGESTED IN THE RFA THAT IF YOU HAVE PRELIMINARY DATA, IT COULD BE HELPFUL TO SUPPORT THE RATIONALE. BUT, AGAIN, IT WAS NOT A BASIS OF THE REVIEW CRITERIA.

THE SECOND KEY REVIEW CRITERION IS FEASIBILITY AND EXPERIMENTAL DESIGN. WERE THE APPROACHES PROPOSED ENABLING OF THE HYPOTHESIS TO BE TESTED? ARE THE AIMS ACHIEVABLE? DOES THE RESEARCH TAKE PLACE IN AN APPROPRIATE ENVIRONMENT? AGAIN,

THE TRACK RECORD AND COMMITMENT OF THE PRINCIPAL INVESTIGATOR IS AN IMPORTANT REVIEW CRITERION AS WELL AS THE QUALIFICATIONS OF THE RESEARCH TEAM. AND ONCE AGAIN, WE ASKED THE REVIEWERS TO TAKE A SECOND LOOK AT RESPONSIVENESS IN THE FULL APPLICATION TO ENSURE THAT IT IS A PROJECT THAT IS RELEVANT TO STEM CELL BIOLOGY, DIRECT REPROGRAMMING, OR DETERMINATION OF CELL FATE AND IDENTITY, AND WHETHER OR NOT THE MODEL SYSTEMS USED IN THESE STUDIES WERE EITHER HUMAN OR WITH COMPELLING JUSTIFICATION A VERTEBRATE MODEL SYSTEM.

SO JUST LOOKING AT THESE TYPE OF AWARDS NOW, WE ENDED UP WITH FOUR THAT WERE RECOMMENDED FOR FUNDING IN TIER I, SCORING BETWEEN 75 AND 100. THESE ARE SMALLER AWARDS AND SHORTER AWARDS. SO THIS TOTALS ONLY UP TO ABOUT $2.5 MILLION. THERE WERE FIVE PROPOSALS THAT FELL INTO THIS MIDDLE CATEGORY OF TIER II, AS I MENTIONED BEFORE, INDICATING MODERATE QUALITY OR NO CONSENSUS WITH REVIEWER ENTHUSIASM AND SUITABLE FOR PROGRAMMATIC REVIEW. AND THEN THERE WERE TEN THAT SCORED WITHIN TIER III, NOT RECOMMENDED FOR FUNDING.

FROM THIS TYPE OF AWARD, STAFF HAS RECOMMENDATIONS FOR TWO OF THE PROPOSALS FROM TIER II. WE ONLY LOOKED AT THE PROPOSALS IN TIER II,

ACCEPTED THE GRANTS WORKING GROUP RECOMMENDATIONS FOR TIER I. WE DID GO THROUGH EACH OF THE PROPOSALS IN TIER II, AND ONLY THE TWO THAT I WILL PRESENT TO YOU SHORTLY ARE THE ONES WE'RE RECOMMENDING FOR FUNDING AT THIS TIME.

MR. SHEEHY: THANK YOU, DR. SHEPARD. SO COULD WE SEE THE WHATCHAMACALLIT? AND THIS WILL BE PAGE 1. SO WE'RE REALLY OPERATING ON PAGE 1 OF -- THERE'S FOUR THAT ARE IN WHITE. AND SO OUR -- WE'VE SPENT ABOUT 25 MILLION OF OUR BUDGETED 40 MILLION. AM I CORRECT? ARE WE UPDATED, DR. SAMBRANO?

DR. SAMBRANO: YES, THAT'S CORRECT. SO THIS INCLUDES EVERYTHING THAT'S IN TIER I AS WELL FOR TRACK 2.

MR. SHEEHY: OKAY. GREAT. GREAT. AND THESE AWARDS ARE MUCH LESS THAN THE ONES WE'VE BEEN FUNDING ABOUT, LOOKS TO ME, LIKE JUST A LITTLE BIT OVER HALF A MILLION DOLLARS APIECE. SO I THINK IS THERE ANY -- IS THERE A MOTION TO MOVE ANYTHING OUT OF TIER I? OUT OF TIER I. WE'VE GOT TO GIVE PEOPLE A CHANCE TO MOVE THEM OUT, DON. GIVE THEM JUST A SECOND JUST IN CASE.

NOW I THINK WE WOULD TAKE THE STAFF RECOMMENDATIONS, DR. SHEPARD, AND I THINK THERE ARE TWO RECOMMENDATIONS.

DR. SHEPARD: SO I GUESS FOLLOWING THE MODEL WE DID FOR THE PREVIOUS TYPE OF AWARD, MAYBE WE SHOULD GO IN ORDER. OKAY. ALL RIGHT. SO EVERYBODY IS GOOD TO START THIS DISCUSSION? THERE'S NO CONFLICTS THAT WE NEED TO WORRY ABOUT? THERE ARE. OKAY. SORRY.

THIS IS PROPOSAL NO. RB5-7458 ENTITLED "NONINVASIVE LIVE IMAGING OF STEM CELL SIGNATURE METABOLIC STATES."

SO IN THIS PROPOSAL THE APPLICANT HAS A UNIQUE TOOL IN THEIR HANDS. IT'S A UNIQUE IMAGING PLATFORM THAT ENABLES SINGLE CELLS TO BE EXAMINED WITHOUT THE NEED FOR LABELING OR OTHER FORMS OF MANIPULATION THAT CAN INADVERTENTLY IMPACT CELL BEHAVIOR. THIS ENABLES CELLS TO BE EXAMINED IN AN IN SITU SETTING AT THE SINGLE CELL LEVEL. SO THIS IS A GROUNDBREAKING NEW IMAGING PLATFORM.

THIS PROPOSAL TESTS WHETHER THIS TECHNIQUE CAN BE SUCCESSFULLY APPLIED TOWARDS INVESTIGATING FUNDAMENTAL STEM CELL BEHAVIORS IN WAYS THAT HAVE NOT BEEN PREVIOUSLY POSSIBLE.

KEY POINTS TO CONSIDER, THE DEVELOPMENT AND USE OF SINGLE CELL IMAGING TECHNIQUES REPRESENT THE CUTTING-EDGE OF THE FIELD AND THEY'RE NOT PARTICULARLY WELL REPRESENTED IN CIRM'S RESEARCH

PORTFOLIO AT THIS TIME. SO IT'S AN EXCITING NEW PLATFORM.

A SUCCESSFUL OUTCOME TO THIS STUDY COULD HAVE A TRANSFORMATIVE IMPLICATION FOR BOTH BASIC AND TRANSLATIONAL SCIENCE.

MR. SHEEHY: THANK YOU, DR. SHEPARD. DO I HAVE A MOTION TO ACCEPT THE STAFF RECOMMENDATION?

DR. PRIETO: SO MOVED.

MR. SHEEHY: DO I HAVE A SECOND?

DR. DULIEGE: I SECOND.

MR. SHEEHY: IS THERE ANY DISCUSSION? PUBLIC COMMENT ON THIS APPLICATION? COULD WE GET A ROLL CALL, MARIA, PLEASE. MS. BONNEVILLE.

MS. BONNEVILLE: ANNE-MARIE DULIEGE.

DR. DULIEGE: YES.

MS. BONNEVILLE: MARCY FEIT.

MS. FEIT: YES.

MS. BONNEVILLE: STEVE JUELSGAARD.

DR. JUELSGAARD: AYE.

MS. BONNEVILLE: LAUREN MILLER.

MS. MILLER: AYE.

MS. BONNEVILLE: JOE PANETTA.

MR. PANETTA: AYE.

MS. BONNEVILLE: FRANCISCO PRIETO.

DR. PRIETO: AYE.

MS. BONNEVILLE: ROBERT QUINT.
DR. QUINT: YES.
MS. BONNEVILLE: JEFF SHEEHY.
MR. SHEEHY: YES.
MS. BONNEVILLE: JONATHAN THOMAS.
CHAIRMAN THOMAS: YES.
MS. BONNEVILLE: ART TORRES.
MR. TORRES: AYE.
MS. BONNEVILLE: DIANE WINOKUR.
MS. WINOKUR: YES.
MR. HARRISON: MOTION CARRIES BY A VOTE OF ELEVEN TO ZERO.
MR. SHEEHY: THANK YOU. SO THERE'S ANOTHER STAFF RECOMMENDATION, I THINK, DR. SHEPARD.
DR. SHEPARD: YES. THE SECOND STAFF RECOMMENDATION IS FOR RB5-07414, "DIRECTED DIFFERENTIATION OF SPECIALIZED ENDOTHELIAL CELLS."
SO THIS PROJECT IS FOCUSED ON THE DIFFERENTIATION OF HUMAN EMBRYONIC STEM CELLS INTO ENDOTHELIAL CELLS. THIS IS A CRITICAL CELL TYPE FOR REGENERATIVE MEDICINE APPLICATIONS. IN FACT, THERE'S A STRONG EMPHASIS ON SPECIFYING ARTERIAL SUBTYPES OF THESE ENDOTHELIAL CELLS WHICH COULD BE AN IMPORTANT RESOURCE FOR CREATING VASCULAR GRAFTS IN FUTURE TRANSLATIONAL TYPE STUDIES.

THE PROPOSAL ACTUALLY ADDRESSES TWO THAT ARE NOT REPRESENTED STRONGLY IN CIRM'S RESEARCH PORTFOLIO. ONE, THE SPECIFICATION OF ENDOTHELIAL CELL TYPES FROM PLURIPOTENT STEM CELLS; AND, TWO, THE ROLE OF CELL MECHANICS IN THE DIFFERENTIATION OF STEM CELLS. SO THIS IS ONE OF THOSE FUNDAMENTAL MECHANISMS THAT ARE TARGETED BY OUR ACTUALLY FUNDAMENTAL MECHANISMS AWARDS.

SOME OF THE REVIEWERS COMMENTED THAT THE SCOPE OF ACTIVITIES IN THIS AWARD WERE SIMILAR TO THE ONES THAT THEY TYPICALLY SEE THROUGH THE OTHER TRACK THAT WE ALREADY DISCUSSED, BUT THIS WAS A HIGHER RISK PROPOSAL BASICALLY DUE TO SOME LACK OF PRELIMINARY DATA, WHICH IS WHY THE APPLICANT PROBABLY CHOSE TO SUBMIT IT THROUGH THIS TRACK.

FINALLY, THE APPLICANT IS A CURRENT CIRM GRANTEE IN THE NEW FACULTY II PROGRAM WHOSE PROJECT IS NEARING THE END. AND THIS BASIC BIOLOGY GRANT WOULD ALLOW THIS PRINCIPAL INVESTIGATOR TO CAPITALIZE ON THE INITIAL INVESTMENT CIRM HAS MADE ON THE NEW FACULTY AWARD.

SO THE RECOMMENDATION IS TO FUND. AND IF YOU WOULD LIKE TO KNOW MORE DETAILS ABOUT THE SCIENCE BEHIND THIS PROPOSAL, MY COLLEAGUE, DR. RAHUL THAKAR, THERE HE IS, IS HERE TO ANSWER ANY

QUESTIONS.

MR. SHEEHY: DO I HAVE A MOTION TO ACCEPT THE STAFF RECOMMENDATION?

DR. DULIEGE: I SECOND AGAIN.

MR. TORRES: SECOND.

MR. SHEEHY: SO THE MOTION IS BY DR. DULIEGE AND SECONDED BY SENATOR TORRES. DO WE HAVE ANY BOARD COMMENT?

DR. JUELSGAARD: SO IN THE PREVIOUS GRANT THAT WE JUST RECOMMENDED, THE OVERALL SCORE WAS 70. IN THIS CASE THE OVERALL SCORE IS 67. AND SO WE'RE GETTING DOWN INTO THE 60S, WHICH IS OFTENTIMES AN AREA THAT WE DON'T SEE GRANTS RECOMMENDED FOR APPROVAL. SO CAN YOU TALK TO ME A LITTLE BIT ABOUT WHAT WENT ON IN THE REVIEW SESSION THAT LED TO THIS AVERAGE SCORE OF 67? I READ THE REVIEW, AND IT'S NOT CLEAR TO ME WHAT THE CRITICISMS WERE OR THE CONCERNS WERE THAT LED TO A SCORE AT THAT LEVEL.

DR. SHEPARD: SO I WOULD ASK DR. THAKAR TO COME TO ADDRESS THOSE QUESTIONS.

DR. THAKAR: HELLO. SO YOU'RE WONDERING WHAT THE EXACT ISSUES WERE THAT LOWERED THE SCORE DOWN TO WHAT IT WAS. EFFECTIVELY THERE WERE SOME CRITICISM FROM THE PI'S THAT THERE SHOULD HAVE BEEN MORE EXPLANATION IN TERMS OF ALTERNATIVE APPROACHES

IN TERMS OF IF ANY OF THESE PROPOSED METHODS FAILED.

THEY ALSO WANTED -- I'M TRYING TO MAKE SURE I SAY THIS WITHOUT BREAKING ANY CONFIDENTIALITY. THERE'S ALSO CRITICISM ABOUT THE TEAM ITSELF THAT HAS BEEN ASSEMBLED BEING VAGUE.

IT COMES DOWN TO THIS PROPOSAL IS -- THIS APPLICATION IS PROPOSING DIFFERENT ENDOTHELIAL CELL SUBTYPES. AND THE BIGGEST THING IN THE COURSE OF THE DISCUSSION THAT THE REVIEWERS HAD WAS IS THERE ENOUGH EVIDENCE BEING PRESENTED THAT WHEN THEY DO THESE CHEMICAL AND PHYSICAL STIMULATIONS, ARE THEY ACTUALLY INDEED PRODUCING THESE SUBTYPES. SO THE QUESTION WAS RAISED ARE THE ASSAYS AT THE END THOROUGH ENOUGH? ARE THEY DOING WHAT'S NECESSARY? AND THAT'S ALSO WHAT DR. SHEPARD ALLUDED TO EARLIER IN TERMS OF SOME OF THE PRELIMINARY DATA, HENCE IT'S BEING A TRACK 2.

DOES THAT CLEAR THINGS UP? I CAN SPEAK IN MORE DETAIL IN A CLOSED SESSION.

DR. JUELSGAARD: LET ME JUST ASK THE QUESTION THIS WAY. SO DO YOU THINK THAT THE 67 SCORE WAS AN UNFAIR SCORE; OR, RATHER, DO YOU BELIEVE, NO, IT'S A FAIR SCORE, BUT GIVEN THE IMPORTANCE AND POTENTIAL FOR THIS PARTICULAR PROJECT, IT SHOULD BE FUNDED ANYWAY?

DR. THAKAR: SO ARE YOU ASKING FOR THE STAFF OPINION OF THIS THEN?

DR. JUELSGAARD: I'LL START WITH YOUR OPINION.

DR. THAKAR: WELL, MY OPINION IS IT IS A FAIR SCORE WHEN YOU TAKE INTO ACCOUNT THE CONTEXT OF THE SCORE. YES, THAT CRITICISM EXISTS, BUT IT'S ALSO VOID BY THE FACT THAT THERE'S A NUMBER OF POSITIVES; NAMELY, LIKE THE GAP IN OUR RESEARCH PORTFOLIO, FOR EXAMPLE, THE CELL MECHANICS GAP AS WELL AS THE RESEARCH ON ENDOTHELIUM. WHEN YOU LOOK AT IT IN THAT CONTEXT, BUT YOU ALSO WEIGH IN THE REVIEWER CRITICISMS, I THINK THAT'S HOW YOU GOT THE SCORE THAT IT HAD. OTHER THAN THAT, I WOULD BE GLAD TO OFFER YOU MORE IN CLOSED SESSION.

DR. JUELSGAARD: JUST THEN TO GET TO THE SECOND QUESTION, BUT STILL YOU FEEL, IN SPITE OF THOSE CRITICISMS AND THAT SCORE, THIS IS SOMETHING WORTH FUNDING BECAUSE, AND THEN THERE'S A BLANK THERE WHICH YOU CAN FILL IN.

DR. THAKAR: I THINK THIS IS -- IT'S MORE OF A PROGRAMMATIC ISSUE.

MR. SHEEHY: I THINK DR. TROUNSON HAD A COMMENT.

DR. TROUNSON: SO I THINK, BOARD, THAT THE

CRITICAL COMPONENT HERE IS THAT WE REALLY DON'T HAVE MUCH WORK GOING ON IN ENDOTHELIAL CELLS. ENDOTHELIAL CELLS ARE REALLY THE VASCULAR SUBSET THAT YOU REALLY NEED FOR ALL REGENERATIVE PURPOSES. IF YOU DON'T HAVE THAT SUBSET, YOU'RE IN PROBLEMS WITH TRANSPLANTATION, WITH CELL DELIVERY, HEART, LUNG, MUSCLE, EVERYTHING. SO WHAT WE REALLY DON'T HAVE MUCH IS WORK IN THIS ENDOTHELIAL AREA. YET A LOT OF THE FOCUS IN REGENERATIVE MEDICINE IS ON ENDOTHELIAL CELLS.

NOW, THEY'VE GOT A PROPOSAL WHICH WOULD PROBABLY TAKE US TOWARDS, IF NOT GET TOWARDS, ENDOTHELIAL CELLS. AND IT'S A LITTLE BIT RISKY, YES, BECAUSE IT'S IN THIS RISKY SECTION; BUT IF WE HAD THE ABILITY TO DERIVE THESE ENDOTHELIAL CELLS FROM PLURIPOTENTIAL STEM CELLS, IT WOULD BE A VERY POWERFUL ADJUNCT TO WHAT WE'RE DOING WITH ALL SORTS OF OTHER TRANSPLANTATION. SO WE FELT THAT, YES, IT'S RISKY; YES, IT'S A TEAM WHICH IS PRETTY REASONABLE, IF NOT NECESSARILY THE HIGHEST TOP, BUT IT'S A VERY GOOD TEAM. AND IT'S JUST POSSIBLE THAT THEY WOULD DELIVER ON THIS IN THIS KIND OF PROGRAM WHICH WE'VE SAID WE WANT TRANSFORMATIVE STUFF.

SO, IN ESSENCE, WE FELT THAT THIS WAS A FAIR THING PROGRAMMATICALLY THAT WOULD SORT OF

ELEVATE IT INTO SOMETHING THAT WOULD BE REALLY WORTHWHILE IF THEY CAN MAKE A START, IF THEY COULD GET A START, IF THEY COULD GET THE EDGE ON THIS TECHNOLOGY, AND WE FEEL THAT THEY PROBABLY WILL. AND SO IT WAS WORTH A SHOT FROM OUR POINT OF VIEW.

DR. JUELSGAARD: THANK YOU.

MR. SHEEHY: DR. PRIETO.

DR. PRIETO: YES. I THINK DR. TROUNSON REALLY NICELY SUMMARIZED THE PROGRAMMATIC REASONS THAT WE WOULD MOVE AN APPLICATION LIKE THIS. AND UNDER OUR PREVIOUS SCHEMA, THIS IS THE SORT OF THING -- THE DISCUSSION THAT WOULD HAVE TAKEN PLACE AT THE GRANTS WORKING GROUP, WHICH COULD HAVE ELEVATED THE SCORE THERE SO THAT WE WOULD HAVE SEEN IT THEN POTENTIALLY IN TIER I. BUT WE ARE NOW IN CHARGE OF THAT PORTION OF THE REVIEW, AND WE HAVE TO MAKE THAT DECISION HERE.

I'D JUST LIKE TO MAKE A COMMENT ABOUT THE PROCESS. ON ANY GIVEN DAY WITH ANY GIVEN REVIEWER ASSIGNED TO A SPECIFIC GRANT, THIS IS REALLY A TIGHTLY BUNCHED GROUP OF APPLICATIONS IN TIER II ON THE SCORE. THESE SCORES ARE IDENTICAL. THERE IS REALLY NO DIFFERENCE BETWEEN A 65 AND A 67 AND A 62. I MEAN YOU GET A DIFFERENT REVIEWER AND THEY'RE IN THE SAME -- THEY'RE NOT ONLY IN THE SAME BALLPARK,

THEY'RE ON THE SAME BASE PATH. THEY'RE BETWEEN THIRD AND HOME.

MR. SHEEHY: ANY OTHER -- YES. DR. SAMBRANO.

DR. SAMBRANO: I JUST WANT TO PROVIDE A LITTLE BIT OF CLARIFICATION. SO JUST SO YOU'RE AWARE, IN TERMS OF THE RECOMMENDATIONS THAT WE ARE BRINGING TO YOU, WE ARE NOT CHALLENGING THE SCIENTIFIC SCORE ON ANY OF THESE. AND I THINK, AS WAS ARTICULATED BY DR. PRIETO AND OTHERS, THE POINT HERE IS TO IDENTIFY ADDITIONAL PROGRAMMATIC VALUE THAT EACH OF THESE APPLICATIONS COULD BRING INDEPENDENT OF THAT SCORE. BECAUSE THESE ARE IN TIER II WHERE THE SCORE IS PERHAPS NOT OF THE SAME QUALITY AS THOSE IN TIER I, BUT THEY ARE STILL SUFFICIENTLY MERITORIOUS, THAT THEY COULD BE FUNDED, IDENTIFYING THESE PROGRAMMATIC FACTORS, I THINK, ARE SOMETHING THAT ARE AVAILABLE TO YOU FOR DISCUSSION AND CONSIDERATION.

MR. SHEEHY: JUST TO BE CLEAR, AT THE TOP OF YOUR PAGE, IT DEFINES TIER II, WHICH MEANS MODERATE SCIENTIFIC QUALITY OR CONSENSUS OR SCIENTIFIC MERIT -- OR CONSENSUS ON SCIENTIFIC -- I'M GOING BLIND TOO -- ON SCIENTIFIC MERIT CANNOT BE REACHED.

CHAIRMAN THOMAS: I'M SURE DEAN PULIAFITO HAS A NICE PROCEDURE.

MR. SHEEHY: AND MAY BE SUITABLE FOR PROGRAMMATIC CONSIDERATION BY THE ICOC. SO THIS IS KIND OF WHAT WE ANTICIPATED.

DO WE HAVE ANY MORE -- DR. DULIEGE.

DR. DULIEGE: SO I JUST WANT TO FOLLOW ON WHAT DR. PRIETO SAID. YOU KNOW, IT'S REALLY IMPORTANT THAT WE REVIEW ALL THE APPLICATIONS FOR WHICH YOU'RE RECOMMENDING FUNDING, BUT IT WOULD BE RARE THAT WE WOULD GO AGAINST THAT RECOMMENDATION. IT'S MORE IMPORTANT TO ME THAT YOU'RE GIVING US A LITTLE BIT MORE BACKGROUND ON WHY FOR THOSE WHO ARE IN TIER II, IN FACT, HAVE SIMILAR SCORES. YOU'RE NOW RECOMMENDING THE FUNDING. WHAT DIFFERENTIATED THAT RECOMMENDATION? WHAT'S THE BASIS FOR THIS DIFFERENT RECOMMENDATION? PARTICULARLY FOR, FOR INSTANCE, 07320, AND THERE'S NOT THAT MANY. IF YOU WOULDN'T MIND TO GO VERY BRIEFLY FOR EACH OF THESE THREE THAT YOU DIDN'T RECOMMEND FOR FUNDING, WHAT WAS THE RATIONALE COMPARED TO THOSE WHERE YOU RECOMMENDED IT?

DR. SHEPARD: WE DIDN'T LOOK FOR REASONS TO NOT RECOMMEND SOMETHING. WE LOOKED FOR COMPELLING REASONS TO RECOMMEND THEM. AND WE

DID --

DR. DULIEGE: TRUE. THIS MADE THE DIFFERENCE.

DR. SHEPARD: AND WE ARE PREPARED TO DISCUSS -- IF YOU WANT TO DISCUSS SOMETHING ABOUT THE PORTFOLIO ABOUT SOME OF THE OTHER APPLICATIONS IN TIER II, WE'RE PREPARED TO DO THAT WITH YOU AND WE'RE HAPPY TO DO SO. WE JUST PULLED UP A COUPLE THAT WE HAD COMPELLING REASONS TO DO SO. THE PROGRAMMATIC REVIEW IS LARGELY SOMETHING THAT'S GOING TO TAKE PLACE HERE, AND YOU ALSO HAVE OPINIONS TO WEIGH IN ON THIS MATTER.

DR. PRIETO: DO WE NEED A MOTION ON SPECIFIC APPLICATIONS BECAUSE OF THE CONFLICTS?

MR. SHEEHY: I THINK WE DO. AND I THINK MAYBE, UNLESS SOMEONE HAS ANOTHER COMMENT ABOUT THIS APPLICATION, WE SHOULD TAKE PUBLIC COMMENT ON IT AND GO AHEAD AND VOTE, AND THEN WE CAN TALK ABOUT THE OTHERS WHICH I THINK IS VERY REASONABLE. DOES THAT MAKE SENSE?

DR. PRIETO: YES, BECAUSE I WOULD LIKE TO MAKE A MOTION ON ONE OF THEM.

MR. SHEEHY: AND, AGAIN, JUST BECAUSE STAFF DIDN'T RECOMMEND THEM -- DID NOT MAKE A RECOMMENDATION DOESN'T PRECLUDE US FROM HAVING A

DISCUSSION OR TAKING ACTION ON THEM.

DR. SHEPARD: AS I MENTIONED EARLIER, WHEN WE CONCEIVED OF THIS CONCEPT, WE ENVISIONED THAT THE PROGRAMMATIC REVIEW BECAUSE AT THE TIME IT WAS TAKING PLACE AT THE GRANTS WORKING GROUP MEETING WHERE PATIENT ADVOCATES AND THE SCIENTISTS WORKED TOGETHER DURING PROGRAMMATIC REVIEW. AND THEY ENVISIONED THAT WANTING TO BALANCE SOME ADDITIONAL RISK IN THE PORTFOLIO BY FUNDING MORE OR LESS OF THE TRACK 2 APPLICATIONS WOULD BE AN OPTION. SO I THINK THIS IS A REALLY USEFUL DISCUSSION FOR YOU TO HAVE.

MR. SHEEHY: SO DO WE HAVE ANY PUBLIC COMMENT? SORRY. DR. VUORI.

DR. VUORI: IF IT'S APPROPRIATE FOR ME TO MAKE THE COMMENT. AND FOLLOWING A LITTLE BIT ON WHAT STEVE SAID, I THINK WHAT MIGHT BE HELPFUL WHEN THE ICOC MEMBERS ASK YOU GUYS TO RESPOND TO THE CRITIQUE BY THE REVIEWERS, ESPECIALLY IF THE CRITICISM STEVE OUTLINED REALLY RELATES MAYBE TO THE REVIEWERS POTENTIALLY QUESTIONING WHETHER THIS IS THE RIGHT TEAM AND WHETHER THEY HAVE THE RIGHT THOUGHT PROCESS IN PLACE TO EXECUTE, IF THE STAFF COULD SIMPLY MAKE A COMMENT THAT YOU HAVE THE CONFIDENCE THAT THEY CAN DO THAT, THAT WILL BE HELPFUL. I THINK THAT WOULD SORT OF ALLEVIATE THE

CONCERNS.

DR. TROUNSON: YOU WANT US TO MAKE A COMMENT?

MR. SHEEHY: YEAH. I THINK THAT'S KIND OF -- IF YOU WOULDN'T MIND, DR. TROUNSON.

DR. TROUNSON: I THINK, AS I SAID IN MY COMMENTS, THAT I THINK THIS TEAM IS OKAY. I THINK THEY'VE GOT THE ABILITIES TO DO THIS. THIS IS SOMETHING THAT COULD BE DONE, SHOULD BE DONE. SO WE HAVE ENOUGH CONFIDENCE IN THIS TEAM FOR THEM TO DO IT.

AND WHEN WE LOOK THROUGH THE PORTFOLIO OF MAKING THESE RECOMMENDATIONS, WE SPEND A BIT OF TIME THINKING ABOUT THAT AND WHETHER IT COULD BE BETTER COMPOSED. AND WE SAID, WELL, REALLY IF THEY COULD SHOW IT, IT WOULD BE SUCH A NICE BIG STICK. IT WOULD CHANGE THINGS QUITE A LOT, THAT WE OUGHT TO GIVE THEM A SHOT BECAUSE THEY'RE REALLY IN THE RIGHT FRAMEWORK. WELL, THAT'S WHY WE'RE RECOMMENDING THAT PRINCIPALLY PROGRAMMATICALLY TO YOU THAT THEY COULD DO IT.

MR. SHEEHY: OKAY. ANY OTHER BOARD DISCUSSION? ANY PUBLIC COMMENT? COULD WE CALL THE ROLL, PLEASE.

MS. BONNEVILLE: ANNE-MARIE DULIEGE.

DR. DULIEGE: YES.
MS. BONNEVILLE: MARCY FEIT.
MS. FEIT: YES.
MS. BONNEVILLE: STEVE JUELSGAARD.
DR. JUELSGAARD: AYE.
MS. BONNEVILLE: LAUREN MILLER.
MS. MILLER: AYE.
MS. BONNEVILLE: JOE PANETTA.
MR. PANETTA: AYE.
MS. BONNEVILLE: FRANCISCO PRIETO.
DR. PRIETO: AYE.
MS. BONNEVILLE: ROBERT QUINT.
DR. QUINT: YES.
MS. BONNEVILLE: JEFF SHEEHY.
MR. SHEEHY: YES.
MS. BONNEVILLE: JONATHAN THOMAS.
CHAIRMAN THOMAS: YES.
MS. BONNEVILLE: ART TORRES.
MR. TORRES: AYE.
MS. BONNEVILLE: DIANE WINOKUR.
MS. WINOKUR: YES.
MR. HARRISON: MOTION CARRIES BY A VOTE OF ELEVEN TO ZERO.
MR. TORRES: I HAVE A MOTION, MR. CHAIRMAN.

MR. SHEEHY: YES. SENATOR TORRES HAS A MOTION.

MR. TORRES: I'D LIKE TO MOVE RB5-07320 INTO THE FUNDING CATEGORY.

DR. PRIETO: SECOND.

MR. SHEEHY: WE HAVE A SECOND FROM DR. PRIETO. WHAT IS THE INTEREST OF THE BOARD? WOULD YOU LIKE TO HEAR ABOUT THIS APPLICATION?

DR. DULIEGE: YES. ABSOLUTELY.

MS. WINOKUR: I HAVE SOME COMMENTS.

MR. SHEEHY: AND THEN, OF COURSE, WE'LL HAVE COMMENTS. SO MAYBE THE WAY WE'LL TAKE IT, DIANE WINOKUR WOULD LIKE TO MAKE A COMMENT TOO. WOULD YOU PREFER TO MAKE IT BEFORE OR AFTER WE HAVE THE DISCUSSION OF THE APPLICATION?

MS. WINOKUR: AFTER.

MR. SHEEHY: OKAY. SO YOU'LL BE FIRST UP.

DR. SHEPARD: SO FOR 7320 DR. MANI VESSAL IS PREPARED TO DISCUSS THAT ONE.

DR. VESSAL: SO THIS ONE IS FOR APPLICATION 7320 ON THE EXPLORATORY CONCEPT APPLICATION, WHICH IS PLANNING TO IDENTIFY KEY SIGNALING PROTEINS THAT LEAD TO DORSAL SPINAL SENSOR INTERNEURONS. AND THE PI HAS SHOWN SOME PRELIMINARY DATA THAT HAS IDENTIFIED A SPECIFIC PROTEIN THAT

WILL INDUCE INTERNEURONS AND WILL -- BASICALLY AN INTERNEURON DERIVATION.

AND THEN THE PI CLAIMS TO AND PLANS TO IMPLEMENT THESE PROTEINS IN THE DIFFERENTIATION OF THE STEM CELLS AND THEN TO USE AS ASSAYS TO REGENERATE FOR INTERNEURONS USING EMBRYONIC STEM CELLS AND TO TEST THEIR FUNCTIONALITY IN THE CULTURE SYSTEMS.

THE REVIEWERS FOUND THIS ACTUALLY A QUITE INTERESTING APPLICATION, AND OVERALL THE SCORE IS PRETTY GOOD. THEY DID RAISE SOME CONCERNS, HOWEVER, OVER THE QUALITY OF THE PRELIMINARY DATA THAT WAS PRESENTED IN THE APPLICATION. AND THEY DID POINT OUT THAT THE TRANSFORMATIVE POTENTIAL FOR THIS PROPOSAL LIES IN THE FACT THAT THE SENSORY NEURONS ARE YET TO BE DERIVED FROM HUMAN EMBRYONIC STEM CELLS. AND, IF SUCCESSFUL, IT COULD POTENTIALLY HAVE A BROADER IMPLICATION TO THE FIELD.

THERE WERE SOME WEAKNESSES ALSO THAT WERE POINTED OUT FOR THE FEASIBILITY IN THAT THEY REALLY MAINLY WERE CONCERNED THAT IT LACKED TECHNICAL INNOVATION IN THEIR APPROACH. AND THE FOCUS WAS QUITE NARROW USING THE FAMILY OF PROTEINS THAT THEY'RE USING. AND ALSO THE OTHER MAIN CRITICISM THAT REALLY PUZZLED THE REVIEWERS WERE THE FACT THAT

THIS IS BEING DONE IN SLICE WORK AND NOT IN VIVO WHOLE ANIMAL AS WOULD BE THE OPTIMAL. SO THAT WAS REALLY THE OTHER MAIN ISSUE WITH THIS THAT THE REVIEWERS RAISED. OTHERWISE, THEY FOUND IT TO BE A STRAIGHTFORWARD APPLICATION AND PRETTY WELL PRESENTED.

NOW, IN TERMS OF THE FACT THAT WE DID NOT RECOMMEND THIS APPLICATION WAS REALLY MAINLY THAT IT IS IN THE EXPLORATORY TRACK; WHEREAS, THIS IS REALLY A MORE MECHANISTIC STUDY AND MORE SORT OF FUNDAMENTAL STUDY THAT WOULD HAVE REALLY PERHAPS BEEN BETTER SUITED FOR THE FIRST ONE. HOWEVER, HAVING SAID THAT, IT REALLY LACKED THE GROUNDBREAKING NOVELTY THAT THIS TRACK HAS REQUESTED AND THE BAR THAT HAS BEEN SET FOR IT.

SO, AGAIN, THAT WAS ANOTHER ISSUE THAT SORT OF HAD BEEN BROUGHT UP FOR THIS APPLICATION.

MR. SHEEHY: THANK YOU, DR. VESSAL.

DIANE, DID YOU WANT TO MAKE SOME COMMENTS ABOUT THIS?

MS. WINOKUR: YES, I DO. THANK YOU. I AM THE ADVOCATE FOR ALS AND MS, AND THIS IS A PROPOSAL HAVING TO DO WITH SPINAL CORD INJURY. THE THING THAT IT HAS IN COMMON WITH MY CONCERNS IS THE FACT THAT IN SEVERAL OF THE NEURODEGENERATIVE ILLNESSES

LIKE ALS AND MS, THERE IS A LOSS OF SENSORY FUNCTION. AND SO THIS IS ONE OF THE FIRST PROPOSALS I'VE READ THAT SEEKS TO LOOK AT THAT IN NEW WAYS. AND I WANTED TO POINT OUT THAT IT NOT ONLY AFFECTS SPINAL CORD INJURY, BUT SEVERAL OF THE NEURODEGENERATIVE ILLNESSES IN WHICH IT HAS NEVER BEEN STUDIED.

MR. SHEEHY: THANK YOU. DR. VUORI.

DR. VUORI: I'D LIKE TO ASK TWO QUESTIONS. MAYBE STAFF COULD ANSWER TWO QUESTIONS. WOULD YOUR OPINION BE DIFFERENT IF THIS WOULD HAVE BEEN SUBMITTED ACTUALLY ON THE OTHER TRACK? THAT'S QUESTION NO. 1.

AND QUESTION NO. 2 IS HOW DID YOU DISCUSS, IF AT ALL, SORT OF THE POTENTIAL PROGRAMMATIC GAP THAT THERE MIGHT BE IN CIRM'S PORTFOLIO IN THIS AREA?

DR. VESSAL: THE SECOND QUESTION WAS? I MISSED YOUR SECOND QUESTION.

DR. VUORI: SECOND QUESTION WAS WAS THERE DISCUSSION ABOUT THE POSSIBILITY THAT THIS COULD ADDRESS PROGRAMMATIC AREA WHERE THERE IS A GAP CURRENTLY IN THE PORTFOLIO?

DR. VESSAL: SO THE FIRST QUESTION, THE ISSUE WITH IT FOR THE FIRST TRACK WAS THAT THE CELLS

THAT THEY'RE USING ARE MOUSE CELLS. IN THE FIRST TRACK WE HAD INDICATED VERY SPECIFICALLY HUMAN.

THE SECOND QUESTION -- SORRY. WHAT WAS THE QUESTION AGAIN? THE CLAIM THAT -- THERE'S ACTUALLY A CLAIM THAT WE DON'T HAVE ANY REPRESENTATION OF THE SORT OF INHIBITORY NEURONS AND SENSORY NEURONS IN THE SPINAL CORD. WE ACTUALLY DO HAVE SOME REPRESENTATION OF IT ALBEIT NOT IN BASIC BIOLOGY. WE DO HAVE IT IN SEED AND WE ALSO HAVE IT IN TRANSLATIONAL TEAMS, BUT THERE IS ONE THAT'S PERIPHERAL IN MUSCULAR ATROPHY THAT IS IN BASIC BIOLOGY PORTFOLIO, BUT THAT COULD INFORM THIS SYSTEM. SO FROM A PROGRAMMATIC, AGAIN, IT'S NOT THAT WE HAVE NOTHING GOING ON RIGHT NOW.

MR. SHEEHY: DR. VESSAL, HOW MUCH DO -- DO WE HAVE VERY MUCH IN SPINAL CORD INJURY AS A WHOLE AT THIS POINT?

DR. VESSAL: WE DO. ACTUALLY IT'S PRETTY WELL REPRESENTED ALL ACROSS OUR PORTFOLIO FROM SORT OF THE BASIC SIDE AND TO THE TRANSLATIONAL SIDE. AND WE -- SO YES IN A SHORT. WE DO HAVE A FAIR REPRESENTATION OF IT BASED ON THE APPLICATIONS THAT HAVE COME IN AT LEAST.

MR. SHEEHY: ARE THERE OTHER BOARD COMMENTS? DR. TROUNSON.

DR. TROUNSON: WELL, JUST TO BE FAIR, I'M FOR WHAT THE STAFF RECOMMENDATION IS HERE. BUT THE SENSORY NEURONS IN THE SPINAL CORD ARE NOT SOMETHING THAT WE'VE CONCENTRATED A LOT ON. IT'S MORE ABOUT MOTOR NEURONS AND ACTUALLY MAKING MOTOR NEURONS FUNCTION BETTER. THERE'S ALWAYS A RISK, OF COURSE, WHEN YOU GET INTO SENSORY NEURONS BECAUSE THAT'S WHERE PAIN IS. WHATEVER YOU'RE GOING TO DO THERE IS A PRETTY RISKY BUSINESS. BUT THE ANCILLARY PART OF THAT IS IN PAIN DISEASE. IF YOU UNDERSTOOD IT BETTER, IT MIGHT LEAD YOU TO DOING THINGS RATHER DIFFERENTLY.

SO I DO THINK IT IS A VERY INTERESTING AREA. THIS IS A YOUNG SCIENTIST WHO'S BEING MENTORED BY MORE SENIOR ONES. SO I KIND OF LIKE THAT. AS YOU KNOW, JEFF, I LIKE THAT SORT OF THING. SO I'M IN SUPPORT OF THE STAFF. I JUST WANTED TO BE FAIR ACROSS MY SORT OF EDGY FEELINGS HERE THAT IT'S NOT A BAD PROJECT, THAT I DIDN'T SEE IT AS MAYBE SO POTENT AS THE OTHER THREE, BUT IT'S GOT MERIT. IT DOES HAVE MERIT.

MR. SHEEHY: THANK YOU.

DR. PRIETO: IF I COULD JUST RESPOND TO THAT CLINICALLY, I THINK IT'S A VERY GOOD POINT. HAVING APPROPRIATE SENSORY INPUT IS WHAT ALLOWS YOU

TO USE YOUR MOTOR NEURONS CORRECTLY.

MR. SHEEHY: DO WE HAVE ADDITIONAL BOARD COMMENT?

MR. TORRES: I WOULD JUST LIKE TO ADVISE THE BOARD MEMBERS, IF THEY HAVEN'T SEEN IT ALREADY, THE MEDIAN SCORE WAS 75, ONLY TWO POINTS OFF OF WHAT WAS FUNDED INITIALLY. SO I THINK, GIVEN THE NATURE OF THE PROGRAMMATIC DECISION, AS WELL AS THE REVIEW NUMBERS, I THINK WE'D BE SAFE TO SUPPORT THIS AND TO MOVE IT FORWARD. BUT I'LL WAIT TO HEAR PUBLIC COMMENT.

MR. SHEEHY: I'D ALSO NOTE THAT THEIR HIGH SCORE WAS -- THE HIGHEST SCORE WAS HIGHER THAN THREE APPLICATIONS WE'VE ALREADY APPROVED.

DO WE HAVE PUBLIC COMMENT?

MR. REED: I'M DON REED. AS YOU KNOW, MY SON, ROMAN REED, IS PARALYZED. AND ONE OF THE BIG PROBLEMS A PARALYZED PERSON HAS IS THE INABILITY TO USE THEIR SKIN SENSORS. MY SON HAS A TERRIBLE WOUND ON HIS RIGHT KNEE WHERE HE BUMPED UP AGAINST SOMETHING HOT AND DIDN'T KNOW IT UNTIL SOMEONE POINTED OUT THAT YOUR CLOTHING WAS ON FIRE. A PERSON WHO HAS DESCRIBED WHAT IT'S LIKE TO BE PARALYZED SAYS IMAGINE GOING TO THE DENTIST AND YOU GET NOVOCAIN IN YOUR JAW AND YOU'RE NUMB AND YOU

CAN'T FEEL ANYTHING. IMAGINE IF YOUR WHOLE BODY WAS LIKE THAT PERMANENTLY. YOU CANNOT HUG YOUR CHILD THE WAY YOU AND I DO. THIS IS A HUGE THING.

ALSO, I WOULD STRONGLY DISAGREE THAT THIS IS NOT UNIQUE. THIS IS VERY UNIQUE. I KNOW OF NO OTHER PROJECT WHICH IS SPECIFICALLY TARGETING THE SENSORY PROCESS. WE HAVE TO BRING IT BACK CAREFULLY. ONE OF THE PROJECTS THAT ROMAN REED SPONSORED WAS AN ATTEMPT TO USE ADULT STEM CELLS TO TURN THEM INTO MOTOR NEURONS. SO IT WAS PUT IN THE MOUSE, AND IT WAS A DUPLICATION OF ANOTHER PERSON'S PROJECT. AND EVERYTHING LOOKED GOOD FOR FIVE DAYS AND THEN WENT BACK, AND THE MOUSE WENT INTO TERRIBLE AGONY AND THEY WERE GNAWING OFF THEIR LIMBS. THEY HAD TO BE PUT DOWN.

SO WHEN WE COME TO TRY AND MAKE CURES FOR PARALYSIS, WE HAVE TO DEAL STRONGLY WITH THE SENSORY ISSUE. AND THAT'S EXACTLY WHAT THIS PROGRAM, THIS PROJECT DOES. I STRONGLY RECOMMEND WE DO IT.

MR. TORRES: MR. REED.

MR. REED: YES, SIR.

MR. TORRES: THANK YOU FOR YOUR COMMENTS. AND THANK YOU AGAIN FOR THE COURAGE THAT YOUR SON HAS BEEN USING IN HIS ADVOCACY ACROSS THE COUNTRY FOR SPINAL CORD INJURY. AND I'M SO PROUD THAT MAYBE

SOMEDAY HE'LL BE IN THE STATE SENATE BECAUSE I KNOW HE'S RUNNING THIS YEAR.

MR. REED: THANK YOU, SIR.

DR. BUTLER: MY NAME IS SAMANTHA BUTLER, AND I'M THE PI ON THIS GRANT. AND I'D BE HAPPY TO ANSWER ANY QUESTIONS THAT THE BOARD HAS ON THE GRANT. BUT I WANTED JUST TO REITERATE WHAT MR. REED HAS SAID.

PEOPLE WITH DAMAGED SPINAL CORDS LOSE BOTH MOTOR AND SENSORY FUNCTION. MOTOR FUNCTION IS NEEDED TO BE ABLE TO MOVE. EQUALLY IMPORTANT IS SENSORY FUNCTION WHICH ENABLES US TO SENSE THE ENVIRONMENT AND BOTH ENJOY IT, SAY, FROM THE TOUCH OF ANOTHER PERSON, AND KEEP THE BODY FROM GETTING DAMAGED BY, SAY, TOUCHING A HOT SURFACE. AS MR. REED HAS SPOKEN, IT IS A COMMON PROBLEM OF PARALYZED PATIENTS THAT THEY GET THIRD-DEGREE BURNS BECAUSE THEY WERE NOT AWARE THAT THEY WERE IN DANGER.

BOTH OF THESE FUNCTIONS MUST BE RESTORED TO PATIENTS AFTER INJURY. AN IMPORTANT PROGRESS, INDEED, HAS BEEN MADE IN RESTORING MOTOR CIRCUITS FROM STEM CELL-DERIVED MOTOR NEURONS; HOWEVER, VERY LITTLE PROGRESS HAS YET BEEN MADE REGENERATING SENSORY CIRCUITS WHICH WOULD ALLOW PATIENTS TO EXPERIENCE THE ENVIRONMENT.

THIS GRANT REPRESENTS THE CRITICAL FIRST STEP TOWARDS THE GOAL, THAT GOAL. WE ARE LOOKING TO IDENTIFY A PROTOCOL BY WHICH SENSORY NEURONS CAN BE DERIVED FROM EMBRYONIC STEM CELLS AND THEN TESTING THEM FOR THEIR FUNCTIONALITY IN THE SPINAL CORD.

I'D LIKE TO JUST ADDRESS ONE OF THE REVIEWER'S CRITICISMS, WHICH IS THAT WE CHOSE TO USE SLICE CULTURE. THE REASON WE CHOSE TO USE SLICE CULTURE IS BECAUSE THIS IS AN EXPLORATORY TWO-YEAR GRANT. WE MENTIONED IN THE GRANT THAT WHEN WE TRANSPLANT, WE HAVE MANY CONDITIONS THAT WE HAVE TO TEST. WHEN WE TRANSPLANT THEM INTO SLICES, WE WILL GET A SENSE OF WHETHER THEY'RE FUNCTIONAL SO THAT WE CAN THEN MOVE AHEAD IN A TIMELY MANNER INTO THE TRANSPLANTATION IN RODENT MODELS AND FROM THERE INTO PATIENTS. THAT IS VERY MUCH OUR GOAL. IT'S ONLY THE SHORT TIMELINE OF THIS GRANT THAT PREVENTED US FROM EXPLICITLY SUGGESTING THAT.

I'D JUST LIKE TO TOUCH ON THIS PROPOSAL'S TRANSFORMATIVE POTENTIAL. AGAIN, IT'S THE FIRST STEP THAT WOULD LET PATIENTS BE ABLE TO AVOID PAINFUL STIMULI AND BE ABLE TO TOUCH THEIR CHILD OR SPOUSE AFTER YEARS OF BEING UNABLE TO DO SO. IT WOULD ALSO, I WOULD STRONGLY ARGUE, TEST A NEW PARADIGM IN DEVELOPMENTAL BIOLOGY FOR HOW THE

PROTEINS THAT I'M INTERESTED IN, THE BONE MORPHOGENETIC PROTEINS, MAY PATTERN TISSUE. THEY ARE WIDELY -- THE BMP'S, AS WE'VE HAD IN A NUMBER OF GRANTS, ARE WIDELY USED TO DIRECT STEM CELLS TOWARDS DIFFERENT FATES; THUS, IF OUR MECHANISM, THE MODEL THAT WE ARE PROPOSING THAT THEY HAVE HIGHLY DIVERSE ACTIVITIES, THEY'RE NOT FUNCTIONALLY REDUNDANT, THESE STUDIES WILL HAVE IMPLICATIONS FOR RESEARCHERS WORKING ACROSS STEM CELL BIOLOGY.

AND I'D ALSO JUST LIKE TO FINISH BY REITERATING WHAT MR. REED SAID, THAT I POLITELY DISAGREE THAT SPINAL CORD INJURY -- THE GRANTS LOOKING AT THE RECOVERY OF SENSORY FUNCTION ARE WELL REPRESENTED IN THE CIRM PORTFOLIO, THIS AREA ON THE RECOVERY OF SENSORY FUNCTION AFTER INJURY HAS BEEN WELL FUNDED. IT'S NEVER BEEN FUNDED, FOR EXAMPLE, IN THIS BASIC BIOLOGY MECHANISM OF WHICH, IF I MAY SAY, THERE ARE ONLY FOUR GRANTS IN TOTAL LOOKING AT ANY ASPECT OF SPINAL CORD RECOVERY. THANK YOU.

MR. SHEEHY: THANK YOU, DR. BUTLER.

DR. BUTLER: ANY QUESTIONS?

MR. SHEEHY: ANY QUESTIONS FOR DR. BUTLER FROM BOARD MEMBERS? THANK YOU. ADDITIONAL PUBLIC COMMENT? DR. DULIEGE.

DR. DULIEGE: I WAS GOING TO MAKE A

MOTION.

MR. SHEEHY: WE HAVE A MOTION. ARE WE PREPARED TO VOTE THEN? THE ROLL CALL, PLEASE.

MS. BONNEVILLE: ANNE-MARIE DULIEGE.

DR. DULIEGE: THE MOTION IS TO APPROVE THAT FOR FUNDING, AND THE ANSWER FOR ME IS YES.

MS. BONNEVILLE: MARCY FEIT.

MS. FEIT: YES.

MS. BONNEVILLE: STEVE JUELSGAARD.

DR. JUELSGAARD: AYE.

MS. BONNEVILLE: LAUREN MILLER.

MS. MILLER: YES.

MS. BONNEVILLE: JOE PANETTA.

MR. PANETTA: AYE.

MS. BONNEVILLE: FRANCISCO PRIETO.

DR. PRIETO: AYE.

MS. BONNEVILLE: ROBERT QUINT.

DR. QUINT: YES.

MS. BONNEVILLE: JEFF SHEEHY.

MR. SHEEHY: YES.

MS. BONNEVILLE: JONATHAN THOMAS.

CHAIRMAN THOMAS: YES.

MS. BONNEVILLE: ART TORRES.

MR. TORRES: AYE.

MS. BONNEVILLE: DIANE WINOKUR.

MS. WINOKUR: YES.

MR. HARRISON: MOTION CARRIES ELEVEN TO ZERO.

DR. BUTLER: I WOULD LIKE TO THANK THE BOARD TREMENDOUSLY FOR THEIR SUPPORT.

MR. SHEEHY: THANK YOU, DR. BUTLER.

SO WE ONLY HAVE TWO OTHER GRANTS IN THIS AREA. DO WE HAVE ANY MOTIONS ON THE REMAINING TWO? DR. PRIETO.

DR. PRIETO: I'D LIKE TO MOVE APPLICATION 7398 TO RECOMMEND THAT THAT BE MOVED INTO TIER I.

MS. FEIT: SECOND.

MR. SHEEHY: WE HAVE A SECOND FROM DR. FEIT.

DR. PRIETO: AND I CAN DISCUSS THE PROGRAMMATIC REASONS.

MR. SHEEHY: YES.

DR. PRIETO: SO WHILE WE HAVE A FAIR AMOUNT OF INVESTMENT IN THE AREA OF DIABETES, THIS HAS BEEN CONCENTRATED ON OUR DISEASE TEAM AND THE ONE APPROACH THAT THEY ARE USING TOWARD A CELLULAR THERAPY FOR TYPE 1 DIABETES. THIS GRANT IS USING A DIFFERENT APPROACH AND ADDRESSES ONE OF THE MAJOR BOTTLENECKS IN THAT FORM -- IN THE POTENTIAL FOR THAT KIND OF A TREATMENT, WHICH IS THE SUPPLY OF

PANCREATIC CELLS THAT WOULD BE GLUCOSE SENSITIVE AND GLUCOSE RESPONSIVE AND TREAT THE DISEASE.

IF YOU'RE FAMILIAR WITH THE DISEASE TEAM'S WORK, ONE OF THE ISSUES THAT'S GOING TO COME UP AS THEY MOVE INTO CLINICAL TRIALS WILL BE DOSING AND DOSE RESPONSE. WE KNOW THAT YOU DO NOT NEED 100 PERCENT OF YOUR PANCREATIC FUNCTION IN ORDER TO CONTROL THIS DISEASE, BUT YOU NEED A CERTAIN PERCENTAGE OF IT. THEY ARE WORKING WITH, THAT IS, OUR DISEASE TEAM, IS WORKING WITH A SMALL DEVICE WITHIN WHICH CELLS WILL BE ENCAPSULATED WHICH WILL HAVE A FINITE CAPACITY IN TERMS OF HOW MANY MILLION CELLS WILL BE ABLE TO BE PUT INTO THAT.

WITHIN THE MOUSE MODEL THAT'S NOT AN ISSUE PROBABLY BECAUSE OF THE MOUSE LIFE SPAN; BUT PRIMARILY BECAUSE OF THE SIZE OF THE ANIMAL, PROVIDING ENOUGH PANCREATIC CELLS TO CONTROL THE DISEASE IS NOT MUCH OF AN ISSUE. IN THE HUMAN THAT IS POTENTIALLY GOING TO BE A MAJOR ISSUE. SO THIS WOULD ALLOW ANOTHER APPROACH TO THAT PROBLEM.

MR. SHEEHY: THANK YOU, DR. PRIETO. IT'S VERY SOUND PROGRAMMATIC REASON TO ADVANCE THIS, I THINK. AND I DO NOTE THAT THE MOTION WAS MADE BY AND SECONDED BY OUR PATIENT ADVOCATE FOR TYPE 1 DIABETES AND THEN SECONDED, DESPITE OUR PATIENT

ADVOCATE, FOR TYPE 2 DIABETES. SO I THINK PURELY ON A PROGRAMMATIC POINT OF VIEW, I THINK THAT AT LEAST THE ADVOCATES FROM THAT AREA CLEARLY THINK THAT THIS IS IMPORTANT.

DO WE HAVE OTHER COMMENTS FROM BOARD MEMBERS ABOUT THIS?

DR. DULIEGE: I COMPLETELY AGREE WITH YOU. I WOULD LIKE TO ASK AGAIN, I'M NOT ONLY THINKING ABOUT THE IMPORTANCE, AND DEFINITELY TOTALLY RESPECTING YOUR VIEW AS PATIENT ADVOCATES, BUT FROM A SCIENTIFIC STANDPOINT, IS THERE EITHER A LACK OF POTENTIAL QUALITY OR MERIT? WHERE IS THE SCIENCE? OR THAT IS NOT A PROBLEM, IN WHICH CASE WE'LL LIKELY APPROVE IT.

DR. SHEPARD: ONCE AGAIN, I'LL REFER TO MY COLLEAGUE, DR. RAHUL THAKAR, TO EXPLAIN THE SCIENTIFIC REVIEW.

DR. THAKAR: HELLO. LET ME GIVE A BRIEF OVERVIEW OF THIS APPLICATION. IN THIS EXPLORATORY CONCEPTS TRACK PROPOSAL, THE APPLICANT INTENDS TO ENGINEER AN IN VITRO EXTRACELLULAR MATRIX-BASED CULTURE SYSTEM WHICH CAN REGULATE LINKAGE DIFFERENTIATION IN ADULT HUMAN PANCREATIC PROGENITOR CELLS FROM THE PANCREAS. THESE CELLS HAVE THE POTENTIAL TO PROVIDE A SOURCE FOR ALLOGENEIC ISLET

TRANSPLANTATION.

THE FIRST AIM WILL TEST WHETHER THE ARTIFICIAL EXTRACELLULAR MATRIX, THE ECM, ECM PROTEINS WILL DIRECT DIFFERENTIATION OF ADULT HUMAN PANCREATIC PROGENITOR CELLS INTO BETA-LIKE CELLS.

THE SECOND AIM SEEKS TO OPTIMIZE PHYSICAL PROPERTIES OF MATRICES TO ENHANCE THE BETA CELL DIFFERENTIATION AND SUBSEQUENT CELL HARVEST.

ON THE CRITERION OF SIGNIFICANCE AND INNOVATION, THE HYPOTHESIS IS NOT NOVEL. THIS APPLICATION IS UNIQUE IN THAT IT PROPOSES TO IDENTIFY PUTATIVE HUMAN PANCREATIC PROGENITOR CELLS. THE PROPOSED ENGINEERED ARTIFICIAL ECM CULTURE SYSTEM IS NOVEL. THE ROLE OF THE ECM IN CELL DIFFERENTIATION IS POORLY UNDERSTOOD, AND THIS STUDY OUTLINES THIS PROPOSAL AND UTILIZES A VERY PROMISING APPROACH. IF SUCCESSFUL, THIS COULD LEAD TO CELL-BASED THERAPY TO TREAT DIABETES.

NOW, UNDER THE CRITERION OF FEASIBILITY IN EXPERIMENTAL DESIGNS, THERE WERE A NUMBER OF CRITIQUES. ONE WAS THE REVIEWERS WANTED BETTER EVIDENCE THAT THIS POPULATION OF CELLS WAS INDEED CLONAL. THE APPLICANT MAKES REFERENCE TO IT. THE REVIEWERS JUST WANTED MORE.

THE REVIEWERS ALSO CRITICIZED THAT THE

ASSAYS PROPOSED AT THE END OF THE APPLICATION ARE NOT ROBUST AND DO NOT ADEQUATELY TEST THE CELL POPULATION'S FUNCTIONALITY. THIS WAS CONSIDERED TO BE A FLAW. THE BETA CELLS THAT ARISE FROM THE PROGENITOR CELLS DID NOT APPEAR TO BE AS FUNCTIONAL AS THOSE THAT HAVE ARISEN FROM PLURIPOTENT CELLS. ON THE OTHER HAND, THE APPLICANT PRESENTS EXTENSIVE PRELIMINARY DATA SUGGESTING THE EXISTENCE OF THIS PUTATIVE -- THIS PROPOSED POPULATION OF CELLS IN MICE. AND ALSO THERE'S PRELIMINARY STUDIES USING HUMAN CELLS TO DEMONSTRATE SOME DIFFERENTIATION INTO INSULIN-EXPRESSING CELLS. SO IT'S A TRACK 2 AND THE REVIEWERS WERE ESSENTIALLY JUST LOOKING FOR MORE.

REVIEWERS PRAISED THE BIOENGINEERING COMPONENT OF THIS APPLICATION AND CONSIDERED IT A STRENGTH. AS FOR THE PI AND THE TEAM, THE PI IS CONSIDERED TO BE AN OUTSTANDING BIOENGINEER, AND HE OR SHE HAS AN EXPERTISE IN MODIFYING POLYMERS AND HAS BEEN STUDYING ARTIFICIAL ECM FOR OVER A DECADE. THE PI AND THE RESEARCH TEAM AS A WHOLE HAVE COMPLEMENTARY SKILLS. THEIR SKILLS COMPLEMENT EACH OTHER AND ARE NECESSARY AND SUFFICIENT TO CARRY OUT THE STUDY.

DR. DULIEGE: THANK YOU. VERY USEFUL. THANK YOU.

MR. SHEEHY: CAN I ASK A QUESTION? SO THE REVIEWERS WANTED MORE. THERE WASN'T THE REQUIREMENT FOR PRELIMINARY DATA IN THIS.

DR. VESSAL: THAT IS CORRECT. AND I CAN COVER THE NUANCES IN GREATER DETAIL IF YOU NEED IN CLOSED SESSION.

MR. SHEEHY: I JUST WONDER HOW HEAVILY WE SHOULD WEIGHT -- THIS IS KIND OF THE PLACE WHERE TRANSFORMATIVE -- THE TECHNOLOGY DOES SEEM LIKE IT COULD BE POTENTIALLY TRANSFORMATIVE. DR. TROUNSON.

DR. TROUNSON: SO ONE OF THE THINGS IN THIS AREA I'M A LITTLE CONCERNED ABOUT IS THAT DOUG MELTON AT HARVARD REALLY HAS GOT A SYSTEM -- A FACTOR THAT CAN ACTUALLY EXPAND PANCREATIC, FUNCTIONAL PANCREATIC CELLS. AND THAT'S NOT IN HERE. AND I THINK THAT'S THE REALLY TRANSFORMATIVE STEP THAT'S HAPPENING IN THE FIELD DOWN AT THAT LEVEL. SO I THINK THAT THAT WILL DEFINITELY OVERTAKE THIS APPROACH. AND SO THAT'S ONE REASON WHY I THINK THE TRANSFORMATIVE PART IS PROBABLY NOT HERE AND IS SOMEWHERE ELSE BECAUSE IT'S LIKELY TO BE REALLY EFFECTIVE IN THE FIELD.

AND I PRESENTED THAT DATA SOME TIME AGO HERE. IT IS PRETTY PERSUASIVE, AND HE CLAIMS IT'S THE -- MELTON CLAIMS IT'S THE BIGGEST DEVELOPMENT

THAT HE'S REALLY EVER HAD. AND I THINK IT IS IN A TRANSFORMATIVE STATE. SO MY PROBLEM HERE IS THAT I JUST THINK THIS ONE IS NOT GOING -- THIS ONE IS GOING TO BE SO MUCH IN THE SHADOW OF THE TRANSFORMATION THAT'S HAPPENING WITH THE WORK AT HARVARD. AND I JUST BRING THAT TO YOU AS SOMETHING TO CONSIDER.

MR. SHEEHY: WHAT CELL TYPE IS HE WORKING IN AT HARVARD?

DR. TROUNSON: SORRY?

MR. SHEEHY: IS HE WORKING IN PLURIPOTENT CELLS?

DR. TROUNSON: NO. HE ACTUALLY CAN EXPAND THE PANCREATIC CELLS THEMSELVES, JEFF, WHICH NOBODY HAS EVER BEEN ABLE TO DO THAT. AND THEY REALLY DIDN'T UNDERSTAND WHERE THOSE EXPANDABLE CELLS COME FROM, BUT HE'S BEEN ABLE TO DO THAT. WHAT I REALLY HAVEN'T SEEN YET IS REALLY STRONG EVIDENCE THAT THAT FACTOR IS WORKING TO THE SAME EXTENT IN THE HUMAN AS IT DID IN THE MOUSE. BUT I UNDERSTAND IT DOES. SO, YEAH, I'M JUST GIVING YOU THAT INFORMATION JUST TO HELP YOU WITH THE TRANSFORMATIVE PART RATHER THAN ANYTHING ELSE.

DR. VUORI: IS IT TRANSDIFFERENTIATION?

DR. TROUNSON: NO. IT SEEMS TO BE

MULTIPLYING A SUBSET OF THE CELLS THAT ARE THERE. SO AS FAR AS I KNOW, IT IS A POPULATION THAT'S EXPANDABLE AND EXPANDS QUITE DRAMATICALLY UNDER THESE CIRCUMSTANCES. THE MOUSE WORK WAS REALLY PRETTY EMPHATIC, AND I'M STILL SORT OF WAITING FOR THE BOLUS OF THE HUMAN WORK TO COME FORWARD. BUT I KNOW THERE'S BEEN MAJOR INTEREST FROM J & J IN THIS AREA, AND I THINK THEY'RE WORKING WITH HIM TO SORT OF TAKE THIS WHOLE AREA FORWARD. SO IT'S JUST FOR INFORMATION JUST TO REMIND YOU OF SOME STUFF THAT HAPPENED.

DR. PRIETO: THAT SOUNDS A LITTLE LIKE SOME OF THE QUESTIONS RAISED BY AT LEAST ONE OF THE REVIEWERS OF WHETHER OR NOT THERE ARE THESE STEM CELLS IN ADULT PANCREAS. BUT IT SEEMS TO ME THAT FROM DIFFERENT AREAS WE'RE GETTING THE INFORMATION THAT, YES, IN FACT, THERE ARE. IT'S SORT OF LIKE WHAT WE'RE SEEING IN THE WHOLE FIELD. THERE ARE STEM CELLS EVERYWHERE ONCE YOU START LOOKING.

DR. TROUNSON: I THINK THAT'S RIGHT, FRANCISCO. SOMETIMES YOU SAY IN THE HEART THERE'S NO CELLS, AND THE EVIDENCE IS THE HEART DOESN'T REALLY REPAIR ITSELF MUCH. BUT I THINK IT'S A MATTER OF BEING ABLE TO FIND THOSE SITUATIONS. YOU KNOW, NOW WE SAID THAT CELLS COULDN'T REALLY

TRANSDIFFERENTIATE. CLEARLY THEY'RE ABLE TO DO THAT. WE JUST HAVE TO UNDERSTAND THAT. AND SO I THINK IT IS REALLY DOWN IN THIS BASIC LEVEL THAT THESE THINGS ARE STARTING TO HELP US UNDERSTAND.

SO THERE ARE, THERE CLEARLY ARE ABILITIES TO MULTIPLY PANCREATIC CELLS THAT WE NEVER HAD BEFORE. I THINK YOU WILL FIND THAT IN THE HEART. YOU CAN FIND IT PROBABLY IN MOST TISSUES. AND WE KNOW THAT THEY DO OVERTURN -- TURN OVER AT A CERTAIN RATE. WE'VE JUST GOT TO FIND THE CONDITIONS THAT CAN ENABLE THEM TO TURN OVER AT A MUCH FASTER WAY.

DR. PRIETO: IT SEEMS TO ME THE QUESTION THAT THEY'RE LOOKING AT HERE IS CAN THEY USE THESE EXTRACELLULAR MATRICES THAT THEY'RE CREATING TO CONTROL THAT DIFFERENTIATION. IF YOU CAN, THEN OBVIOUSLY THAT'S A BIG ADVANCE.

MR. SHEEHY: DO WE HAVE ADDITIONAL -- I THINK THIS IS REALLY A CALL FOR US. DO WE HAVE PUBLIC COMMENT ON THIS?

DR. CHIU: MEMBERS OF THE BOARD, MEMBERS OF CIRM, AND MEMBERS OF THE PUBLIC, I'M ARLENE CHIU FROM THE CITY OF HOPE. AND THIS APPLICATION IS NOT FROM THE CITY OF HOPE. I WANT TO SPEAK IN SUPPORT OF IT. AT FIRST I THOUGHT I WAS COMING HERE TO SPEAK ON PROGRAMMATIC GROUNDS, BUT I CAN SEE THAT ON

SCIENTIFIC GROUNDS THERE IS SOME ROOM FOR DEBATE AS WELL.

SO FIRST ON PROGRAMMATIC GROUNDS. THE TWO INVESTIGATORS ARE NOT FUNDED BY CIRM OR AT LEAST THE PRINCIPAL INVESTIGATOR AND THEIR TEAM HAVE NEVER BEEN SUPPORTED BY CIRM. THEY'RE FROM CALTECH, WHICH IS ONE OF THE PREMIERE INSTITUTIONS IN THE WORLD AND CERTAINLY IN CALIFORNIA. IT WOULD BE WONDERFUL TO GET SOME OF THEIR EXPERTISE TO WORK ON STEM CELL BIOLOGY.

AS HAS BEEN MENTIONED BEFORE, THE PI IS AN EXPERT IN THE FIELD OF ARTIFICIAL MATRICES. AND THAT IS WHERE THE ELEMENT OF NOVELTY RESIDES TO A LARGE PART, ALTHOUGH NOT SOLELY. HE IS THE DIRECTOR OF THE BECKMAN INSTITUTE AND AN EMINENT CHAIRED PROFESSOR AT CALTECH. AND HE HAS BECOME VERY INTERESTED IN A COLLABORATION WITH A MORE JUNIOR SCIENTIST ON THE USE OF EXTRACELLULAR MATRICES IN PROMOTING DIFFERENTIATION AND PROGENITOR WORK.

THE OTHER MEMBERS OF THE TEAM ARE INDEED LOOKING AT THE PROBLEM THAT DR. TROUNSON HAS MENTIONED, AND GREAT ADVANCES HAVE BEEN MADE BY THE MELTON GROUP AT HARVARD. THIS IS DIFFERENT FROM USING EMBRYONIC STEM CELLS AS A STARTING MATERIAL. BUT AS YOU CAN SEE, THE FIELD IS A LITTLE BIT MURKY

IN THAT WHAT ARE THE EXACT CELLS THAT ARE PRODUCING THESE NEW CELLS COMING FROM ENDOGENOUS TO THE ORGAN. AND THIS GROUP HAS FOUND THAT THERE ARE INDEED -- THEY'VE BEEN ABLE TO HARVEST THESE PROGENITOR TISSUE STEM CELLS, HOWEVER YOU LIKE TO CALL THEM, AND THEN TO PROMOTE THEIR DIFFERENTIATION. AND, IN FACT, ONE OF THE INVESTIGATORS AT THE SAME TIME IS ALSO LOOKING AT EMBRYONIC STEM CELLS GOING ALONG THE SAME PATHWAY. SO YOU HAVE A NICE JUXTAPOSITION WITHOUT ANY PRECONCEIVED IDEAS OF HOW TO MOVE THIS FIELD FORWARD OF GETTING AN END PRODUCT.

THE OTHER ADVANTAGE IN USING HUMAN CADAVERIC TISSUE IS, OF COURSE, WE KNOW THAT THE EDMONTON PROTOCOL, WHICH IS USED NOW TO TREAT PATIENTS, USES CADAVERIC TISSUE, BUT THERE JUST ISN'T ENOUGH CADAVERIC TISSUE FOR ALL THE TRANSPLANTS THAT ARE NEEDED. AND SO BECAUSE THEY CAN SHAKE OUT WHAT'S LEFT IN CADAVERIC TISSUE TO START THESE STUDIES, IT'S A BIG STEP FORWARD IN THAT THE FDA, WHO HAVE ALREADY APPROVED THE EDMONTON PROTOCOL, WOULD HAVE A LOWER BAR IN APPROVING THIS SHOULD IT MOVE FORWARD TO BE TRANSPLANTATION. SO IT'S A STEP CLOSER TO THE PATIENT IF YOU WANT TO LOOK AT IT THAT WAY.

SO WHAT ABOUT PROGRAMMATIC, STRICTLY

PORTFOLIO? I TOOK A QUICK LOOK AT THE PORTFOLIO, AND I BELIEVE CIRM HAS COMMITTED ABOUT 40-ISH, $40 MILLION TO DIABETES OUT OF ALL THE GRANTS THAT HAVE BEEN FUNDED. OF THIS 40 MILLION, ABOUT 39 MILLION HAS BEEN FUNDING FULL GRANTS FROM VIACYTE, WHICH IS WONDERFUL BECAUSE WE'VE GOTTEN BUY-IN FROM INDUSTRY, BUT ONLY ABOUT ONE PLUS MILLION IS TO ACADEMIC INVESTIGATORS, TWO INVESTIGATORS FROM UC SAN DIEGO. I THINK PROGRAMMATICALLY, IT MIGHT BE A GOOD IDEA TO INVEST A LITTLE BIT MORE IN PRIMARY INVESTIGATIONS FROM ACADEMIA SO THAT YOU CAN ENRICH THE FIELD. AND THERE MIGHT BE CROSSCUTTING BENEFITS SHOULD YOU FIND THAT MATRICES, INDEED, MOVE THIS FIELD FORWARD.

SO AS I SAID, THESE TWO INVESTIGATORS HAVE NOT BEEN FUNDED BY CIRM BEFORE, AND IT WOULD GET THEM IN.

MY TIME IS UP AND I THANK YOU FOR YOUR ATTENTION.

MR. SHEEHY: THANK YOU, DR. CHIU. MARCY FEIT.

MS. FEIT: I ALWAYS WANT TO START APPLAUDING WHEN DR. CHIU TALKS. THANK YOU FOR THAT PRESENTATION.

I THINK THIS RFA GIVES US A UNIQUE OPPORTUNITY TO APPROACH IT IN A DIFFERENT MANNER.

AND I THINK, BECAUSE THIS IS AN EXPLORATORY TRACK, I THINK IT REALLY GETS HIGH MARKS FOR MEETING THAT GOAL.

MR. SHEEHY: THANK YOU, MARCY. DO WE HAVE ADDITIONAL BOARD OR PUBLIC COMMENT ON THIS GRANT? THEN I THINK WE SHOULD CALL THE ROLL.

MS. BONNEVILLE: ANNE-MARIE DULIEGE.

DR. DULIEGE: YES.

MS. BONNEVILLE: MARCY FEIT.

MS. FEIT: YES.

MS. BONNEVILLE: STEVE JUELSGAARD.

DR. JUELSGAARD: AYE.

MS. BONNEVILLE: LAUREN MILLER.

MS. MILLER: YES.

MS. BONNEVILLE: JOE PANETTA.

MR. PANETTA: AYE.

MS. BONNEVILLE: FRANCISCO PRIETO.

DR. PRIETO: AYE.

MS. BONNEVILLE: ROBERT QUINT.

DR. QUINT: YES.

MS. BONNEVILLE: JEFF SHEEHY.

MR. SHEEHY: YES.

MS. BONNEVILLE: JONATHAN THOMAS.

CHAIRMAN THOMAS: YES.

MS. BONNEVILLE: ART TORRES.

MR. TORRES: AYE.

MS. BONNEVILLE: DIANE WINOKUR.

MS. WINOKUR: YES.

MR. HARRISON: MOTION CARRIES ELEVEN TO ZERO.

MR. SHEEHY: DO WE HAVE A MOTION TO MOVE ANY OTHER GRANT INTO TIER I, THE FUNDABLE CATEGORY?

DO WE HAVE THE OMNIBUS MOTION WHICH IS -- COULD COUNSEL STATE IT?

MR. HARRISON: TO FUND THE BASIC BIOLOGY TRACK 2 APPLICATIONS IN TIER I AND NOT TO FUND THE REMAINING BASIC BIOLOGY TRACK 2 APPLICATIONS.

MR. TORRES: SO MOVED.

MR. SHEEHY: DO WE HAVE A SECOND?

DR. JUELSGAARD: SECOND.

MR. SHEEHY: DO WE HAVE PUBLIC COMMENT ON ANY APPLICATION IN THIS ROUND? OKAY. WE CAN CALL THE ROLL. REMEMBER THE FORM, IF YOU DO HAVE A CONFLICT, TO NOTE THAT WHEN YOU GIVE YOUR VOTE.

MS. BONNEVILLE: ANNE-MARIE DULIEGE.

MR. SHEEHY: THIS IS THE MOTION TO FUND THE ROUND.

DR. DULIEGE: YES, EXCEPT FOR THOSE FOR WHICH I HAVE A CONFLICT OF INTEREST.

MS. BONNEVILLE: MARCY FEIT.

MS. FEIT: YES, EXCEPT FOR MY CONFLICTS.
MS. BONNEVILLE: STEVE JUELSGAARD.
DR. JUELSGAARD: AYE.
MS. BONNEVILLE: LAUREN MILLER.
MS. MILLER: AYE.
MS. BONNEVILLE: JOE PANETTA.
MR. PANETTA: AYE.
MS. BONNEVILLE: FRANCISCO PRIETO.
DR. PRIETO: AYE, EXCEPT FOR THOSE WITH WHICH I MAY HAVE A CONFLICT.
MS. BONNEVILLE: ROBERT QUINT.
DR. QUINT: AYE. YES.
MS. BONNEVILLE: JEFF SHEEHY.
MR. SHEEHY: 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: DIANE WINOKUR.
MS. WINOKUR: YES.
MR. HARRISON: MOTION CARRIES ELEVEN TO ZERO.
MR. SHEEHY: BACK TO YOU, DR. THOMAS.
CHAIRMAN THOMAS: THANK YOU VERY MUCH,

MR. SHEEHY, DR. PRIETO, AND OVERALL, FIRST AND FOREMOST, DR. SHEPARD, FOR GETTING US THROUGH A COMPLICATED PRESENTATION WITH GREAT RESULTS. SO THANK YOU VERY MUCH.

DR. SHEPARD: THANK ALL OF YOU AS WELL.

CHAIRMAN THOMAS: OKAY. WE HAVE ONE ITEM WE'RE GOING TO TAKE OUT OF ORDER BEFORE WE GRAB LUNCH. IT IS, AGAIN, ONE OF THESE BITTERSWEET MOMENTS. MICHAEL, WILL YOU PLEASE COME UP TO THE FRONT?

MARCY IS GOING TO START OUT MAKING A FEW COMMENTS, AND THEN OTHERS MAY CHIME IN, AND I WILL CLOSE. THIS IS, I WILL SAY, PARTICULARLY UNUSUAL. NORMALLY WE HAVE THESE SORTS OF RESOLUTIONS MONTHS AFTER SOMEBODY HAS LEFT THE BOARD, AND IT'S VERY STRANGE TO SEE MICHAEL, WHO WAS SITTING RIGHT OVER THERE FIVE WEEKS AGO, NOW AT THE PODIUM ON THE RECEIVING END OF THIS. BUT I'LL HAVE MORE TO SAY AT THE END. SO, MARCY, IF YOU COULD PLEASE START.

MS. FEIT: CAN YOU ALL HEAR ME? IT'S REALLY UNUSUAL TO THINK BACK ABOUT THE VERY BEGINNINGS. AS WE WATCH SOME OF OUR COLLEAGUES LEAVE THIS BOARD, WE LOSE SOME OF THE HISTORIANS. AND IN MICHAEL'S CASE HE HELPED PUT TOGETHER PROP 71. AND THEN HE WAS COERCED BY ROBERT KLEIN TO HELP

ESTABLISH THIS INSTITUTE. AND SAID, "OH, JUST A COUPLE OF YEARS, MICHAEL, THAT'S ALL WE WANT." AND SIX PLUS YEARS LATER, HE'S STILL WITH US, AND IT IS REALLY SAD TO NOT HAVE HIM ON THIS BOARD.

IT'S BEEN MY PLEASURE, MY HONOR, AND MY OPPORTUNITY TO WORK WITH MICHAEL ON THIS BOARD IN THE BEGINNING AND NOW AND ALSO SPECIFICALLY ON THE FINANCE COMMITTEE.

MICHAEL HAS JUST DONE AN OUTSTANDING JOB. EARLY ON, FOR THOSE OF YOU WHO WERE HERE AND CAN REMEMBER, THE FINANCE TOOK A SPOTLIGHT PARTICULARLY IN THE STATE BECAUSE WE STILL HAD PEOPLE IN THE BROADER COMMUNITY WHO WERE CHALLENGING THIS PROCESS AND PROP 71 AND DID NOT WANT US TO GO FORWARD. AND SO PAYING SPECIFIC ATTENTION TO THE FINANCES AND MAKING SURE THAT THERE WAS COMFORT ON THE BOARD ABOUT HOW WE WERE GOING TO APPROACH, AND REMEMBER AT THE SAME TIME WE WANTED TO GET FUNDING STARTED, BUT WE ALSO NEEDED TO PUT THE POLICIES TOGETHER. AND SO WE WERE ALMOST DOING THINGS SIMULTANEOUSLY AND A LOT OF PRESS ATTENTION TO THAT.

MICHAEL TOOK US FROM THAT VERY CHAOTIC PERIOD INTO A PERIOD NOW, AS YOU SAY, THE FINANCE PRESENTATION TODAY, WITH A LOT OF UNDERSTANDING AND CLARITY OF WHERE WE'VE BEEN, WHAT WE HAVE USED, WHAT

FUNDING IS LEFT, AND PROJECTED IN THE FUTURE. AND SO THERE'S JUST A CLEAR TRAIL AND UNDERSTANDING AND A REALLY GREAT FORMAT OF HOW WE'RE MANAGING THE FINANCES, THE PRECIOUS RESOURCES THAT THE TAXPAYERS HAVE GIVEN US.

SO, MICHAEL, ON BEHALF OF MYSELF PERSONALLY, I WANT TO THANK YOU FOR ALL THAT YOU'VE DONE. HE'S, ON A PERSONAL SIDE, ALWAYS A GENTLEMAN AND CAN MEET THE CONTROVERSIES, TAKE THE CRITICISMS FROM THE BOARD, AND IMPLEMENT THEM IN A VERY KIND AND GENTLE WAY WITH THE STAFF. AND IT'S BEEN AN HONOR AND A PLEASURE.

ON TAB 11 IS THE RESOLUTION. AND I DO WANT TO READ A LITTLE BIT FROM IT BECAUSE IT REALLY EXPLAINS HOW VALUABLE HE HAS BEEN TO CIRM AS A RESOURCE.

MICHAEL GOLDBERG, OVER A CAREER SPANNING 30 YEARS, HAS BEEN A SUCCESSFUL CO-FOUNDER AND CEO, BOARD MEMBER, AND VENTURE CAPITALIST. MICHAEL JOINED THE LIFE SCIENCE INDUSTRY IN 1981 AND PARTICIPATED IN COMMERCIALIZATION OF THE FIRST GENERATION OF RECOMBINANT DNA MONOCLONAL ANTIBODY AND PCR TECHNOLOGY.

IN ADDITION TO HIS WORK AS A CORPORATE BOARD MEMBER AND INVESTOR, MICHAEL GOLDBERG HAS

SERVED ON THE BOARD OF THE WESTERN ASSOCIATION OF VENTURE CAPITALISTS AND THE ADVISORY COUNCILS OF THE HARVARD CENTER FOR GENETICS AND GENOMICS, THE STANFORD NEUROSCIENCE INSTITUTE, THE CALTECH DIVISION OF BIOLOGY, AND THE BERKELEY CENTER LAW IN TECHNOLOGY.

MICHAEL IS ALSO A DEVOTED PATIENT ADVOCATE SERVING AS A MEMBER OF THE PERSONALIZED MEDICAL COALITION AND HONORARY TRUSTEE OF THE NATIONAL CHILDHOOD CANCER FOUNDATION AND AN EARLY SUPPORTER OF PROP 71.

TREASURER PHIL ANGELIDES APPOINTED MICHAEL GOLDBERG TO SERVE ON THE GOVERNING BOARD OF THE CALIFORNIA INSTITUTE FOR REGENERATIVE MEDICINE IN 2004, AND TREASURER BILL LOCKYEAR REAPPOINTED HIM IN 2010.

AS A FOUNDING MEMBER OF CIRM'S GOVERNING BOARD, MICHAEL BROUGHT A WEALTH OF KNOWLEDGE, INSIGHT, AND EXPERIENCE. MICHAEL CONTRIBUTED HIS FINANCIAL ACUMEN TO CIRM THROUGH HIS LEADERSHIP OF THE BOARD'S FINANCIAL SUBCOMMITTEE, THROUGH HIS COUNSEL TO THE CHAIRMAN OF THE BOARD, THE PRESIDENT, AND THE CIRM STAFF. MICHAEL GOLDBERG ALSO CONTRIBUTED TO THE BOARD BY SERVING AS A MEMBER OF THE INTELLECTUAL PROPERTY AND INDUSTRY SUBCOMMITTEE

CALLED THE IP TASK FORCE, THE LEGISLATIVE SUBCOMMITTEE, AND ON TWO PRESIDENTIAL SEARCH SUBCOMMITTEES.

MICHAEL, THROUGH HIS EXPERIENCE, COMMITMENT, KNOWLEDGE, AND LEADERSHIP CONTRIBUTED GREATLY TO THE MOMENTUM OF DISCOVERY INTO FUTURE THERAPIES WHICH WILL BE THE ULTIMATE OUTCOME OF THE DEDICATED WORK OF THE RESEARCHERS RECEIVING CIRM FUNDING.

MICHAEL, ON BEHALF OF THE PATIENTS WHO ARE LOOKING FORWARD TO THESE THERAPIES AND THIS BOARD AND THIS INSTITUTE, THANK YOU SO MUCH FOR BEING A PART OF IT.

(APPLAUSE.)

CHAIRMAN THOMAS: SENATOR TORRES.

MR. TORRES: I FIRST MET MICHAEL IN HIS OFFICE WHEN I WAS TRYING TO GAIN HIS VOTE TO BECOME VICE CHAIRMAN OF THIS INCREDIBLE ORGANIZATION, AND A FRIENDSHIP ENSUED OF MUTUAL RESPECT AND ADMIRATION, OF SHARING OUR CHILDREN'S STORIES ABOUT STANFORD AND HOW MUCH IT COSTS AND HOW MUCH IT'S GOING TO CONTINUE TO COST, BUT WELL WORTH THE COST, BUT ALSO JUST FAMILY. AND I AM SO HAPPY THAT YOU HAVE FOUND HAPPINESS IN YOUR PERSONAL LIFE AS WELL BECAUSE IT SHOWS. AND YOU HAVE AN INCREDIBLE HEART.

THE ONLY THING I WILL NOT MISS ARE YOUR CORNY JOKES, BUT I INTEND TO KEEP IN TOUCH. AND I HOPE YOU DO AS WELL. I LOVE YOU.

CHAIRMAN THOMAS: THANK YOU, SENATOR. MR. SHEEHY.

MR. SHEEHY: WELL, I WANT TO JUST, FIRST OF ALL, IT'S BEEN AN ABSOLUTE JOY TO SERVE WITH MICHAEL GOLDBERG, BUT I THINK WHAT IS HAPPENING IS WE'RE SEEING A REAL TRANSITION. I THINK YOU'RE THE LAST OF YOUR CLASS, SO TO SPEAK, A VERY CLASSY CLASS: DUANE ROTH, TED LOVE, ED PENHOET, PEOPLE FROM INDUSTRY WHO HAVE CONTRIBUTED TO THE FORMATION OF THIS INSTITUTE. AND YOU KNOW THERE WAS SOME MUTTERINGS AT THE BEGINNING, OH, INDUSTRY, INDUSTRY. THE INTEGRITY -- AND MICHAEL SURELY SHINES WITH THESE OTHER THREE INDIVIDUALS -- THE ABSOLUTE INTEGRITY WITH WHICH THEY TOOK ON THE TASK, THE SACRIFICES THAT THEY ALL HAVE MADE, INCLUDING MICHAEL, IN BUILDING THIS INSTITUTE HAVE BEEN A TREMENDOUS PUBLIC SERVICE TO THE PEOPLE OF CALIFORNIA AND TO THE PATIENTS WHO WILL EVENTUALLY BENEFIT FROM THESE THERAPIES.

SO I PERSONALLY AM VERY GRATEFUL. THANK YOU, MICHAEL.

CHAIRMAN THOMAS: OTHER COMMENTS? THANK

YOU, MR. SHEEHY.

DR. PRIETO: MICHAEL, I JUST HOPE YOU KNOW HOW MUCH WE'LL MISS YOU. I THINK IT WAS REALLY -- YOU BROUGHT EXPERTISE THAT WE SORELY NEEDED EARLY IN THE CHAOTIC BEGINNINGS OF THIS INSTITUTE, BUT ALSO A LEVEL HEAD THAT MEANT SO MUCH AT A TIME WHEN WE HAD MORE THAN OUR SHARE OF DRAMA. AND REALLY APPRECIATE YOU HELPING US THROUGH THAT.

CHAIRMAN THOMAS: DR. TROUNSON.

DR. TROUNSON: MICHAEL, I THINK ON BEHALF OF MYSELF AND ALL THE STAFF AT CIRM, YOU'VE BEEN ONE OF THE PEOPLE ON THE BOARD WHO ARE THE MOST ACCESSIBLE AND THE MOST COMPLIMENTARY AND THE MOST HELPFUL. YOU'VE BEEN FANTASTIC PARTICULARLY TO OUR FINANCIAL GROUP. AND YOUR GUIDANCE AND SUGGESTIONS OFF CAMERA, I THINK, WERE REALLY, REALLY HELPFUL AND ENABLED US TO GET THINGS DONE IN A VERY EFFECTIVE WAY.

BUT YOU'RE A VERY LIKABLE GUY ALSO, NOT THAT THE REST OF THE BOARD ARE NOT LIKABLE, VERY LIKABLE, BUT YOU'RE PARTICULARLY LIKABLE. AND I KNOW THAT YOU AND I ARE GOING TO KEEP UP TOGETHER IN THE FUTURE, AND I'M SURE MEMBERS OF THE BOARD WILL KEEP IN TOUCH WITH YOU. BUT FOR YOU AND I, AND I THINK KEY MEMBERS OF THE STAFF HERE, WE'LL KEEP IN

CONTACT, MICHAEL, BECAUSE YOU HAVE SOMETHING THAT'S VERY SPECIAL AND IT'S A FRIENDSHIP AND IT WILL GO ON -- FOR ME IT WILL GO ON FOREVER AND I THINK MANY OF THE STAFF MEMBERS IT WILL, AND I ACTUALLY THINK THE BOARD ALSO WHO KNOW YOU REASONABLY WELL.

BUT THERE ARE MANY THINGS THAT WILL HAPPEN IN THE FUTURE, I THINK, WHERE WE'LL PROBABLY NEED YOUR GUIDANCE BECAUSE THINGS ARE HAPPENING OUT THERE THAT YOU AND I ARE AWARE OF THAT WOULD HELP THE BOARD FROM TIME TO TIME. SO I JUST HOPE THAT IF WE'RE ABLE TO REACH OVER TO YOU AT TIMES, THAT YOU CAN GIVE US SOME ADVICE AS WE MOVE FORWARD BECAUSE I THINK THAT WOULD BE REALLY, REALLY HELPFUL AS A CONTINUING FRIENDSHIP ROLE WITH THE AGENCY AND WITH ME PERSONALLY AND I THINK KEY MEMBERS OF OUR STAFF. THANK YOU VERY MUCH. YOU'RE A GOOD BLOKE.

MR. REED: ONE THING ABOUT MICHAEL IS THAT HE IS SO SMART. I SAW HIM ONE TIME OUTSIDE READING A BOOK AND HE WAS LAUGHING. I WONDERED WHAT COULD THIS BOOK BE THAT WOULD MAKE HIM LAUGH OUT LOUD. THAT'S A GOOD BOOK. AND IT WAS A BIOLOGY BOOK. AND THERE ARE ALL THESE LINES OF LETTERS, DISCONNECTED LETTERS. AND HE SAID, "HA-HA-HA, LOOK AT THAT." AND I SAID, "WHAT IS IT?" AND HE SAYS, "THIS GUY IS SO SMART." WELL, HERE'S A MAN THAT KNOWS ALL THESE

DIFFERENT FIELDS WHICH HAVE BENEFITED US SO MUCH. WE'RE GOING TO MISS YOU INTENSELY.

AND THE ONLY THING I CAN SAY IS WHAT GIVES ME COMFORT IN TIMES OF GENUINE SADNESS IS WHEN THE INVENTOR OF KERMIT THE FROG DIED, JIM HENSEN, AND HIS WIFE SAID, "WE WILL NOT MOURN THAT WE WILL MISS YOU. WE WILL TAKE JOY THAT WE GOT THE CHANCE TO KNOW YOU."

CHAIRMAN THOMAS: MR. JUELSGAARD.

DR. JUELSGAARD: THIS WILL BE VERY BRIEF. I JUST WANT TO SAY THANK YOU, MICHAEL. AS MANY OF YOU MAY OR MAY NOT KNOW, MICHAEL IS THE REASON I'M ON THIS BOARD, AND THAT'S A BURDEN, I'M AFRAID, MICHAEL, YOU ARE GOING TO HAVE TO BEAR FOR A LONG TIME.

CHAIRMAN THOMAS: MICHAEL, WE'VE HAD THE PRIVILEGE OF SHARING MANY CONVERSATIONS. WE HAVE OUR PERIODIC LUNCHES AT COCO'S WHERE YOU ALWAYS WERE NOT ONLY INSIGHTFUL AS TO SUBSTANCE ON CIRM, BUT AS TO THE BEST ITEMS ON THE MENU. WE HAVE HAD YOU COME AND SIT WITH US IN CONNECTION WITH ANY NUMBER OF ITEMS, NOT JUST FINANCE, NOT JUST INDUSTRY, BUT YOU ALONG WITH OTHERS ON THE BOARD, DUANE, I THINK, IN PARTICULAR. REALLY YOU WERE A BRIDGER. YOU WERE SOMEBODY WHO COULD SORT OF HEAR DISPARATE POINTS OF

VIEW THAT DIDN'T ALWAYS AGREE AND WERE ABLE TO COME TO A COMPROMISE SOLUTION AND DO SO IN THE GENTLE MANNER THAT HAS BEEN SPOKEN TO HERE BY MANY ON THE BOARD AND WOULD ALLOW US TO PROCEED ON TO SOLUTIONS THAT REALLY HELPED CIRM ADVANCE.

YOU'RE SOMEBODY WHO HAS BEEN CRUCIAL IN THE INDUSTRY EXPERTISE. AS JEFF SAID, THE OLD GUARD HAS NOW LEFT. WE HAVE NEW GUARD, MOST RECENTLY JOE HAS JOINED US TO TAKE UP THE INDUSTRY MANTLE. WE DO NEED TO FIND SOMEBODY TO STEP INTO YOUR SHOES. IT WILL NOT BE SOMEBODY WHO CAN AT ALL EASILY REPLACE YOU AND WHAT YOU'VE BROUGHT. IN FACT, IT WILL BE IMPOSSIBLE GIVEN YOUR ROLE OVER SO MANY YEARS, BUT WE WILL DO THE BEST WE CAN.

SO ON BEHALF OF THE BOARD, JUST WANT TO RECOGNIZE YOUR MASSIVE CONTRIBUTION, YOUR DEDICATION, YOUR FRIENDSHIP, AND WE HAVE FOR YOU IN FRAMED FORM THE RESOLUTION MARCY REFERRED TO, AND YOU HAVE THE BOARD'S SINCEREST GRATIFICATION AND APPRECIATION FOR ALL THAT YOU'VE DONE. SO THANK YOU VERY MUCH.

(APPLAUSE.)

MR. GOLDBERG: SO IS LUNCH NEXT? IS IT? OKAY. SO THE GOOD NEWS THAT I HAVE TO REPORT IS THE LONGER IT TOOK TO GET TO THIS AGENDA ITEM, THE

SHORTER MY REMARKS HAVE BECOME.

SO IT'S BEEN AN ABSOLUTE HONOR TO SERVE MY FELLOW CALIFORNIANS IN CONNECTION WITH THIS. FROM THE TIME WE WORKED ON PROP 71, MANY OF US TOGETHER, TO THE TIME THAT WE'VE GOTTEN TO NOW WHERE WE HAVE, MY LAST COUNT, EIGHT CLINICAL TRIALS GOING OR ABOUT TO GO AND THE PROMISE OF WHAT SO MANY OF US HAD HOPED FOR NINE YEARS AGO AND TEN YEARS AGO ARE BEGINNING TO REALLY COME TO PASS.

THE PRIVILEGE OF WORKING WITH ALL OF YOU, EVEN THE TWO NEW BOARD MEMBERS, WELCOME, CONGRATULATIONS. IT'S A MAGNIFICENT OPPORTUNITY FOR YOU TO SERVE YOUR FELLOW CALIFORNIANS. THIS HAS BEEN A MAGNIFICENT STATE AGENCY TO HELP PARTICIPATE IN THE CREATION OF.

IN TERMS OF ENTREPRENEURIAL EFFORTS, THIS ACTUALLY EXCEEDED -- PUTTING ALL THIS TOGETHER EXCEEDED ANYTHING I'VE SEEN DONE IN INDUSTRY OVER THE PAST 30 YEARS. THE TIME FRAME, THE CONSTRAINTS, THE TRANSPARENCY THAT WAS REQUIRED FOR ALL OF THE SCIENTIFIC, ETHICAL, AND OTHER POLICIES TO BE DEPLOYED. AND I'M JUST SO THRILLED AND SO PROUD TO HAVE BEEN A SMALL PART OF ALL THIS.

AND TO THE STAFF, THE SCIENTIFIC TEAM, THE UNSUNG HEROES OF WHAT REALLY GOES ON HERE, OF

COURSE, TO CHILA WHO MAKES ME LOOK GOOD ALL THE TIME AND HER ORGANIZATION, AND TO THE SENIOR STAFF WHO HAVE BEEN KIND TO ME AND SUPPORTED ME IN THE THINGS THAT I'VE BEEN REQUESTING OVER THE YEARS TO EFFECTIVELY DISCHARGE MY DUTIES. SO AS THEY SAY AT THE PASSOVER SEDER, AND I APOLOGIZE IN ADVANCE TO SENATOR TORRES FOR THE LAST CORNY JOKE, THEY TRIED TO KILL US. THEY FAILED. LET'S EAT.

(APPLAUSE.)

CHAIRMAN THOMAS: ON THAT NOTE AND ON THAT ADVICE, WE NEED -- BOARD MEMBERS, PLEASE LISTEN FOR A MINUTE HERE. WE NEED TO GO GET OUR LUNCH ACROSS. WE STILL HAVE A BUSY AGENDA. WE'RE GOING TO WORK THROUGH LUNCH. SO IF YOU COULD GO GET YOUR LUNCH AND BRING IT BACK OVER AND WE'LL PROCEED AS SOON AS EVERYBODY HAS REGROUPED.

(A RECESS WAS TAKEN.)

CHAIRMAN THOMAS: OKAY. WE ARE RECONVENING HERE. AS EVERYBODY CONTINUES THEIR LUNCH, WE'RE GOING TO TAKE CARE OF THREE VERY SHORT AGENDA ITEMS, VERY SHORT, BEFORE WE GET TO THE GENOMICS MATTER. SO WE'RE GOING TO START WITH ITEM 12, CONSIDERATION OF THE CANDIDATE POSITION STATEMENT FOR PRESIDENT.

THE PRESIDENTIAL SEARCH SUBCOMMITTEE MET

LAST EVENING, REVIEWED THIS STATEMENT, WHICH HAD BEEN PUT TOGETHER BY WARREN OVER A PERIOD OF THE LAST FEW WEEKS WITH VARIOUS OF US. THE RESULT WAS WE HAD A VOTE ON THE LATEST VERSION AT THE PRESIDENTIAL SEARCH SUBCOMMITTEE LAST NIGHT, AND WARREN IS HERE TO DISCUSS THAT AS IT REQUIRES A VOTE OF THE FULL BOARD FOR HIM TO PROCEED FURTHER IN THE PROCESS. WARREN.

MR. ROSS: THANK YOU. WE'LL MAKE THIS BRIEFER THAN YOUR PIECE OF TIRAMASU WAS THERE.

THE DOCUMENT IS ACTUALLY CALLED THE POSITION SPECIFICATION. I'M NOT QUITE SURE WHERE THE OTHER NAME CAME FROM, BUT IT'S MILDLY CONFUSING. IT IS A DOCUMENT INTENDED TO, FIRST OF ALL, ATTRACT PEOPLE TO THE POSITION, INFORM PEOPLE ABOUT THE POSITION, SHARE WHAT SOME OF THE CHALLENGES ARE, AND TALK A GOOD BIT ABOUT THE ORGANIZATION ITSELF. IF YOU READ IT, YOU REALIZED THAT WE PUT SOME VERY SPECIFIC INFORMATION IN THERE FROM THE PROPOSITION 71 LANGUAGE ITSELF. WE DID THAT. WE DON'T NORMALLY DO THAT SORT OF THING; BUT GIVEN THE HISTORY AND THE COMPLEXITY OF THIS MANAGEMENT/GOVERNANCE STRUCTURE, WE DECIDED IT WOULD BE A GOOD IDEA TO PUT IT THERE IN BLACK AND WHITE FOR PEOPLE TO READ, AS WELL AS THE CANDIDATE SELECTION CRITERIA THAT THE BOARD

APPROVED PREVIOUSLY.

WE REVIEWED IT LAST NIGHT IN THE SEARCH COMMITTEE. WE MADE A COUPLE OF EDITS, WHICH AS SOON AS JAMES SWALLOWS, I'M GOING TO ASK HIM TO ACTUALLY SHARE THE EDITS WITH YOU. BUT THE MOST IMPORTANT PART OF THIS DOCUMENT IS IT'S BEGINNING TO TELL THE STORY OF THE ORGANIZATION, THE POSITION, AND THE SEARCH. AND SO I DO WANT TO HEAR FROM YOU IF YOU FEEL THAT WE HAVE NOT ACCOMPLISHED THAT IN A REASONABLE WAY.

MR. HARRISON: THE SUBCOMMITTEE MADE TWO CHANGES TO THE CANDIDATE SPEC. THE FIRST IS ON PAGE 8 UNDER CRITICAL QUALITIES OF PRESIDENT LEADERSHIP. IN THE FOURTH BULLET, SECOND SENTENCE, THE WORDS INCREASING, AN INCREASING WERE STRUCK. SO THE SENTENCE NOW READS HOLDS HIGH STANDARDS AND IS ABLE TO RECRUIT PEOPLE TO MEET THOSE STANDARDS.

THE SECOND AND LAST CHANGE IS ON PAGE 9 UNDER EDUCATION, CREDENTIALS, AND RELEVANT EXPERIENCE. TO THE SECOND BULLET, AFTER THE WORD "FROM," WE'D ADD INDUSTRY. AND AT THE END OF THE SENTENCE WE'D ADD THE PHRASE "BUT NOT REQUIRED" SO THAT THE FULL BULLET WOULD READ A WELL-RESPECTED SCIENTIST AND SUCCESSFUL LEADER OF A STEM CELL PROGRAM FROM INDUSTRY, AN INTERDISCIPLINARY

INSTITUTE, OR ACADEMIC ENTITY OF AT LEAST COMPARABLE SIZE AND SCOPE IS PREFERRED, BUT NOT REQUIRED.

SO WITH THOSE TWO CHANGES, THE SUBCOMMITTEE APPROVED THE CANDIDATE SPEC AS PRESENTED BY DR. ROSS.

CHAIRMAN THOMAS: DO I HEAR A MOTION TO SO APPROVE?

MR. TORRES: SO MOVED.

CHAIRMAN THOMAS: MOVED BY SENATOR TORRES. SECONDED BY --

DR. FRIEDMAN: SECOND.

CHAIRMAN THOMAS: -- BY DR. FRIEDMAN. ANY COMMENTS BY MEMBERS OF THE BOARD?

MR. TORRES: YES. AS A MEMBER OF THE PRESIDENTIAL SEARCH SUBCOMMITTEE, I JUST WANT TO THANK YOU, DR. ROSS. YOU HAVE BEEN INCREDIBLE THUS FAR. I THINK YOU'RE GOING TO TAKE US TO A WONDERFUL TRAJECTORY TO MAKE SURE THAT WE GET THE RIGHT PERSON TO FILL THE BIG SHOES THAT DR. TROUNSON HAS LEFT FOR US. BUT I PERSONALLY WANT TO THANK YOU AND ESPECIALLY REGARDING YOUR INTEGRITY AND CHARACTER AS YOU'VE SHOWN THROUGH THIS PROCESS.

MR. ROSS: THANK YOU. YOU'RE MAKING ME VERY NERVOUS.

CHAIRMAN THOMAS: MR. JUELSGAARD.

DR. JUELSGAARD: YES. THIS ISN'T DIRECTLY RELATED TO THE MATERIAL YOU PUT TOGETHER, BUT THIS CAME OUT OF A DISCUSSION THAT WE HAD LAST EVENING AROUND CONFLICTS OF INTEREST. AND SO ONE OF THE CONFLICTS OF INTEREST THAT I WASN'T AWARE OF IS THAT YOU'RE FROM INDUSTRY AND YOU HAVE A HOLDING OF 5 PERCENT OR MORE IN A STEM CELL COMPANY NO MATTER WHERE IT'S LOCATED. IT COULD BE IN NEW YORK AND HAVE NOTHING TO DO WITH CALIFORNIA, NOTHING TO DO WITH CIRM. THAT WOULD, FROM A CONFLICT OF INTEREST POINT OF VIEW, DISQUALIFY YOU FROM SEEKING THIS POSITION.

AND SO I WOULD LIKE TO RECOMMEND THAT THE GOVERNANCE COMMITTEE RECONSIDER THAT PARTICULAR CONFLICT OF INTEREST POLICY THAT WE HAVE REGARDING MEMBERS OF INDUSTRY. I THINK IT'S VERY NARROWLY DRAWN, AND I'M NOT SURE THAT IT SERVES A USEFUL PURPOSE, AT LEAST AT THE 5-PERCENT LEVEL.

CHAIRMAN THOMAS: JAMES, IS THAT SOMETHING THAT REQUIRES -- THAT DOESN'T REQUIRE A MOTION. WE WOULD JUST HAVE IT AS SOMETHING THAT WE WANT ON THE AGENDA AT THE GOVERNANCE SUBCOMMITTEE, CORRECT?

MR. HARRISON: CORRECT. WE'D ASK THE CHAIR OF THE GOVERNANCE SUBCOMMITTEE TO SCHEDULE A MEETING TO ADDRESS IT. AND, IN FACT, WE NEED TO

HAVE A GOVERNANCE SUBCOMMITTEE MEETING IN ANY EVENT, SO WE CAN ADD THIS TO THE AGENDA.

CHAIRMAN THOMAS: OKAY. AND I AGREE WITH MR. JUELSGAARD. I BELIEVE THAT'S A VERY GOOD SUGGESTION. I THINK THAT WAS THE CONSENSUS OF THE SEARCH SUBCOMMITTEE LAST EVENING.

OTHER COMMENTS ON THE MOTION? ANY COMMENTS FROM MEMBERS OF THE PUBLIC? HEARING NONE, JAMES, I ASSUME VOICE VOTE IS OKAY ON THIS.

MR. HARRISON: EXCEPT FOR THE TWO MEMBERS WHO ARE ON THE PHONE.

CHAIRMAN THOMAS: CORRECT. OKAY. SO ALL THOSE IN FAVOR OF THE ADOPTION OF THESE PRESIDENTIAL SPECS PLEASE SAY AYE. OPPOSED? ABSTENTIONS?

MEMBERS ON THE PHONE, I'M SORRY.

DR. WESTON: AYE.

DR. FINE: AYE.

MS. BONNEVILLE: THAT WAS DR. FINE AND DONNA WESTON.

CHAIRMAN THOMAS: THANK YOU. THANK YOU, BOTH OF YOU. MR. HARRISON, IT SO SEEMS TO HAVE BEEN APPROVED RESOUNDINGLY. THANK YOU. AND THANK YOU, WARREN. WE LOOK FORWARD TO CONTINUATION OF THE JOURNEY.

GOING TO NOW TO TURN TO A COUPLE OF FAIRLY

QUICK GEOFF LOMAX ISSUES. I THINK WE HAD TO PUT ONE OF THESE OFF FROM THE LAST BOARD MEETING, SO WE APPRECIATE YOUR INDULGENCE, MR. LOMAX. GO TO ITEM 9, CONSIDERATION OF APPOINTMENT OF NEW MEMBERS TO THE MEDICAL AND ETHICAL STANDARDS WORKING GROUP.

DR. LOMAX: THANK YOU VERY MUCH, MR. CHAIRMAN, MEMBERS OF THE BOARD. LAST SUMMER WE LOST THE SERVICES OF DR. NICOLE LOCKHART TO THE STANDARDS WORKING GROUP. DR. LOCKHART BROUGHT A TREMENDOUS AMOUNT OF EXPERIENCE THAT INFORMED THE DEVELOPMENT OF OUR STEM CELL BANKING INITIATIVE. AND SO WE FELT THAT, GIVEN THE EARLY STAGES OF THAT INITIATIVE, IT WAS ESSENTIAL TO FIND SOME EQUIVALENT EXPERIENCE TO FILL THAT ROLE IN THE STANDARDS WORKING GROUP.

WE WERE FORTUNATE ENOUGH TO IDENTIFY MARIANA BLEDSOE, WHO BRINGS A WEALTH OF EXPERIENCE BOTH IN BIOBANKING, BIOREPOSITORIES, AND ALL THE ETHICAL, LEGAL, AND POLICY CONSIDERATIONS THAT ACCOMPANY THAT TYPE OF ACTIVITY.

SO IN YOUR BINDER YOU HAVE A MORE DETAILED BACKGROUND ON HER EXPERIENCE, BUT TO SAY WE FEEL RELIEVED THAT WE WERE ABLE TO ENTERTAIN HER CANDIDACY TO THE STANDARDS WORKING GROUP AT A TIME WHERE WE'RE IN THE CRITICAL PHASES OF IMPLEMENTING OUR IPS REPOSITORY. SO WE WOULD SEEK YOUR APPROVAL

FOR HER APPOINTMENT TO THE STANDARDS WORKING GROUP.

CHAIRMAN THOMAS: DO I HEAR A MOTION?

DR. JUELSGAARD: SO MOVED.

CHAIRMAN THOMAS: MR. JUELSGAARD.

SECONDED BY --

MR. SHEEHY: SECOND.

CHAIRMAN THOMAS: -- MR. SHEEHY.

DISCUSSION BY MEMBERS OF THE BOARD? ANY PUBLIC COMMENT? MOVE TO A VOTE. ALL THOSE IN FAVOR PLEASE SAY AYE. OPPOSED? ABSTENTIONS? THOSE ON THE PHONE?

DR. FINE: AYE.

CHAIRMAN THOMAS: THANK YOU, LEON. DONNA, ARE YOU STILL THERE?

DR. WESTON: YES. THAT WAS AN AYE.

CHAIRMAN THOMAS: GREAT. THANK YOU. OKAY. THAT'S APPROVED UNANIMOUSLY AS WELL.

ON TO ITEM NO. 10, CONSIDERATION OF INITIATING RULEMAKING FOR AMENDMENT OF SECTION 100070 OF THE CIRM MEDICAL AND ETHICAL STANDARDS. MR. LOMAX.

DR. LOMAX: THANK YOU VERY MUCH, MR. CHAIRMAN. I WOULD LIKE TO INDICATE THERE'S A SLIGHT DISCREPANCY BETWEEN THE SLIDES THAT WILL BE ON THE SCREEN AND WHAT IS IN YOUR BINDER, BUT I DO NOT

BELIEVE IT TO BE SUBSTANTIVE IN NATURE.

FIRST OF ALL, I JUST FOR A MOMENT WANTED TO EXPLAIN WHAT INITIATING THE RULEMAKING PROCESS ENTAILS BECAUSE I KNOW, AGAIN, WE HAVE A NUMBER OF NEW MEMBERS, AND WE FREQUENTLY COME TO YOU WITH THIS REQUEST. SO I THOUGHT I'D BRIEFLY OUTLINE THE PROCESS.

AS YOU ARE AWARE, CIRM MAINTAINS AN EXTENSIVE BODY OF REGULATIONS, AND OFTEN WE NEED TO UPDATE THOSE REGULATIONS IN RESPONSE TO NEW DEVELOPMENTS.

SO THE PROCESS IS EFFECTIVELY SIX STEPS. IT FIRST INVOLVES EITHER AN ICOC WORKING GROUP, A SUBCOMMITTEE OF THE ICOC, OR CIRM STAFF WILL DEVELOP A POLICY PROPOSAL IN RESPONSE TO A NEED. IN THIS CASE I'M BRINGING FORWARD A PROPOSAL THAT WAS DEVELOPED BY THE MEDICAL AND ETHICAL STANDARDS WORKING GROUP TO AMEND OUR MEDICAL AND ETHICAL STANDARDS.

STEP 2, WHICH IS WHERE WE ARE TODAY, WOULD BE THEN FOR YOU ALL TO CONSIDER INITIATING THE PROCESS WHERE WE GO ABOUT ACTUALLY CHANGING THE REGULATION. AND THEN IF YOU APPROVE THAT, WE WOULD THEN TAKE THE PROPOSED AMENDMENT TO THE OFFICE OF ADMINISTRATIVE LAW, WHICH IS A STATE AGENCY THAT

REVIEWS OUR REGULATORY RULEMAKING PROCESSES AND MAKES SURE THEY WERE COMPLIANT WITH STATE LAW.

THERE IS A PAUSE AT THAT POINT WHERE WE NOTIFY THE WORLD THAT WE ARE INTENDING TO CHANGE OUR RULES. AND THAT ALLOWS FOR PUBLIC COMMENT, WHICH IS STEP 4. WE COMPILE AND REVIEW THOSE COMMENTS. IN SOME CASES WE WOULD GO BACK TO OUR WORKING GROUP AND INDICATE THAT THERE WERE SOME COMMENTS RECEIVED, AND THEY WOULD CONSIDER THEM AND POTENTIALLY REVISE THE PROPOSAL. THAT PROPOSAL THEN COMES BACK TO THE ICOC FOR FINAL APPROVAL, AND THEN WE GO TO THE OFFICE OF ADMINISTRATIVE LAW SEEKING THE FINAL, FINAL RULE.

SO I AM TODAY BRINGING TO YOU A POLICY PROPOSAL AGAIN THAT WOULD AFFECT OUR MEDICAL AND ETHICAL STANDARDS REGULATIONS. BY WAY OF BACKGROUND, OUR EXISTING REGULATIONS REQUIRE A STEM CELL RESEARCH OVERSIGHT COMMITTEE TO REVIEW AND APPROVE CLINICAL STUDIES INVOLVING THE TRANSPLANTATION TO HUMAN PATIENTS OF CELLS DERIVED FROM PLURIPOTENT STEM CELLS. BUT CIRM ALSO REQUIRES GRANTEES TO COMPLY WITH THE FEDERAL REGULATIONS FOR THE PROTECTION OF HUMAN SUBJECTS, BETTER KNOWN AS THE COMMON RULE.

SO THE COMMON RULE ALSO REQUIRES AN INSTITUTIONAL REVIEW BOARD TO REVIEW AND APPROVE AND

MONITOR CLINICAL STUDIES. THEREFORE, WE HAVE ACTUALLY TWO REVIEWS GOING ON FOR THE SAME CLINICAL PROTOCOL.

A NUMBER OF OUR GRANTEES' INSTITUTIONS HAVE DECIDED TO CONCENTRATE THEIR EXPERTISE WITHIN THE INSTITUTIONAL REVIEW BOARD TO DO THESE TYPES OF REVIEWS. THEY JUST SEE IT AS THE MOST EFFECTIVE WAY TO ENSURE THE SAFETY AND EFFICACY OF CLINICAL RESEARCH.

SO THE STANDARDS WORKING GROUP MEMBERSHIP UNANIMOUSLY RECOMMENDED A REGULATORY CHANGE THAT WOULD ALLOW THE INSTITUTIONAL REVIEW BOARD TO BE THE EXCLUSIVE REVIEW BODY FOR THE SAFETY AND EFFICACY OF SUCH TRIALS CONSISTENT WITH FEDERAL REGULATIONS AND THE COMMON RULE. THEREFORE, THE OBLIGATION FOR A STEM CELL RESEARCH OVERSIGHT COMMITTEE WOULD GO AWAY, BUT THE IRB WOULD STILL REVIEW ANY STUDY. INSTITUTIONS EXERCISING THIS OPTION WOULD, THEREFORE, NOT BE REQUIRED TO CONDUCT A SEPARATE SCRO REVIEW.

SO CIRM RECOMMENDS INITIATING THE RULEMAKING PROCESS TO ENABLE THIS REGULATORY CHANGE. JAMES, WAS THAT SUFFICIENT FOR THE RECORD? THANK YOU. ARE THERE ANY QUESTIONS?

DR. DULIEGE: IT SOUNDS OBVIOUSLY THE

RIGHT THING TO DO TO SIMPLIFY THE PROCESS. HOWEVER, WHAT ASSURANCE DO WE HAVE THAT THE IRB'S OF THESE INSTITUTIONS HAVE ENOUGH KNOWLEDGE IN TERMS IN PARTICULAR OF STEM CELL RESEARCH AS OPPOSED TO GENERAL IRB?

DR. LOMAX: YES. IT'S A GOOD QUESTION. SO UNDER THE FEDERAL COMMON RULE, FIRST AND FOREMOST, THEY WERE OBLIGATED TO HAVE THAT EXPERTISE IN THE REVIEW. SO IF THEY DO NOT HAVE IT SITTING ON THEIR IRB, THEY ARE OBLIGATED TO BRING IN THAT EXPERTISE THROUGH OUTSIDE EXPERTS. NOW, AS A PRACTICAL MATTER, ALMOST ALL OUR GRANTEE ORGANIZATIONS CONTRIBUTED TO THE DEVELOPMENT OF THIS PROPOSAL, SO WE HAD A WORKSHOP LEADING UP TO THIS, HAVE INDICATED THEY'RE NOT GOING TO CHANGE WHAT THEY DO. WHAT THEY ACTUALLY DO IS THEY HAVE THEIR IRB AND THEIR STEM CELL OVERSIGHT COMMITTEE MEET SIMULTANEOUSLY BECAUSE THEY'VE DEVELOPED A LOCAL LEVEL OF INTELLECTUAL KNOWLEDGE WITHIN THEIR INSTITUTION. THEY DON'T WANT TO LOSE THAT. IT'S JUST SIMPLY ON AN ADMINISTRATIVE COMPLIANCE BASIS, IT ALLOWS THEM TO SORT OF UMBRELLA THAT PROCEDURE UNDER THE IRB REVIEW AND APPROVAL PROCESS.

DR. DULIEGE: THANK YOU.

DR. LEVIN: SO I WASN'T AWARE THAT --

APPARENTLY PEOPLE ARE DOING THIS, YOU SAY, RIGHT? SO THAT MEANS THAT FEDERAL GOVERNMENT ALSO WILL ALLOW COMBINATION OF SCRO AND IRB REVIEW FOR NIH COMMITTEES, OR THIS WOULD ONLY BE FOR CIRM-FUNDED ONES?

DR. LOMAX: SO TO BE CLEAR, THE REQUIREMENT FOR A STEM CELL RESEARCH OVERSIGHT COMMITTEE TO REVIEW A CLINICAL PROTOCOL IS A UNIQUE REQUIREMENT OF CIRM. WE DECIDED EARLY ON IN THE PROCESS, BECAUSE WE WROTE THESE RULES AT THE TIME WHEN THERE WAS VERY LITTLE FEDERAL -- ACTUALLY THERE WAS NO FEDERAL FUNDING, SO WE THOUGHT AS A PRECAUTION WE SHOULD MAKE SURE THERE IS SOME EXTRA CHECK ON CLINICAL RESEARCH. BUT NOW THAT THE FIELD HAS MATURED AND CELL-BASED THERAPEUTICS ARE NOW COMING INTO CLINICAL TRIALS, THE IRB PROCESS IS ENTIRELY EFFECTIVE FROM MY PERSPECTIVE AND FROM THE PERSPECTIVE OF OUR GRANTEES.

SO WHAT IT IS IS IT'S SORT OF REMOVING SOMETHING THAT WE IMPLEMENTED AS A PRECAUTION AT THE VERY BEGINNING GIVEN THE UNCERTAINTY OF THE FIELD AT THE TIME WHEN WE WROTE OUR ORIGINAL REGULATIONS IN 2006.

DR. LEVIN: SO THIS IS AN EXTRA LEVEL OF REVIEW ONLY THAT CIRM PUT IN?

DR. LOMAX: CORRECT. IT'S AN EXTRA LEVEL OF REVIEW UNIQUE TO CIRM.

CHAIRMAN THOMAS: SO DO I HEAR A MOTION THAT WE PROCEED AS RECOMMENDED?

DR. LUBIN: I'LL MOVE IT.

CHAIRMAN THOMAS: MOVED BY DR. LUBIN.

DR. DULIEGE: SECOND.

CHAIRMAN THOMAS: SECONDED BY DR. DULIEGE. ANY FURTHER COMMENT BY MEMBERS OF THE BOARD? ANY PUBLIC COMMENT? OKAY. WE'LL DO THIS ON A VOICE VOTE AS WELL. ALL THOSE IN FAVOR PLEASE SAY AYE. OPPOSED? ABSTENTIONS? THOSE ON THE PHONE?

DR. FINE: AYE.

DR. WESTON: AYE.

CHAIRMAN THOMAS: THANK YOU. THAT IS APPROVED UNANIMOUSLY AS WELL. THANK YOU VERY MUCH, MR. LOMAX.

DR. LOMAX: THANK YOU FOR YOUR TIME. THANK YOU, MR. CHAIRMAN.

CHAIRMAN THOMAS: OKAY. WE'RE NOW GOING TO GO BACK TO ITEM NO. 7, WHICH IS THE CONSIDERATION OF APPLICATIONS FOR RFA 12-06, CIRM STEM CELL GENOMICS CENTER OF EXCELLENCE AWARDS. THIS DISCUSSION WILL BE LED BY MR. YAFFE. MICHAEL, PLEASE PROCEED.

DR. YAFFE: THANK YOU, MR. CHAIRMAN, MEMBERS OF THE BOARD, MEMBERS OF THE PUBLIC. I'M HERE TO BRING FOR YOUR CONSIDERATION THE RECOMMENDATIONS FROM THE GRANTS WORKING GROUP ON RFA 12-06, STEM CELL GENOMICS CENTER OF EXCELLENCE AWARDS.

THE SEQUENCING OF THE HUMAN GENOME COMPLETED TEN YEARS AGO YIELDED THE GENETIC BLUEPRINT OF THE HUMAN CELL AND INITIATED AN EXCITING AND UNPRECEDENTED ERA OF BIOMEDICAL SCIENCE. GENOMICS IS THE QUEST TO UNDERSTAND THAT BLUEPRINT. IT IS THE STUDY OF GROUPS OF GENES OR THE ENTIRE COLLECTION OF AN ORGANISM'S GENES WITH A FOCUS ON UNCOVERING THEIR INTERACTION AND EXPLAINING THEIR COMBINED INFLUENCE ON GROWTH, DEVELOPMENT, AND BIOLOGICAL FUNCTION.

GENOMICS IS ALSO A SET OF POWERFUL EXPERIMENTAL APPROACHES AND TECHNIQUES FOR ANALYZING THESE INTERACTIONS AND INCLUDES DNA SEQUENCING, GENETIC MAPPING, AN ANALYSIS OF GENE EXPRESSION ACROSS SETS OF GENES OR THE ENTIRE GENOME.

GENOMICS CAN PROVIDE NOVEL INSIGHTS INTO MOLECULAR MECHANISM AND THE INTERPLAY OF GENETIC AND ENVIRONMENTAL FACTORS IN DISEASE. THESE GENOMIC APPROACHES HAVE TREMENDOUS POTENTIAL FOR

ACCELERATING THE PACE AND EXPANDING THE SCOPE OF STEM CELL RESEARCH.

TO FULLY EXPLOIT AND APPLY THESE POWERFUL AND RAPIDLY EVOLVING TECHNOLOGIES, STEM CELL SCIENTISTS NEED READY ACCESS TO GENOMICS EXPERTISE AND OPPORTUNITIES FOR COLLABORATION WITH EXPERTS IN GENOMICS, EXPERIMENTAL DESIGN, AND THE BIOINFORMATICS ANALYSIS OF THE MASSES OF DATA PRODUCED BY SUCH STUDIES.

THE AIM OF THIS INITIATIVE IS TO ESTABLISH AND MAINTAIN IN CALIFORNIA A CENTER OF EXCELLENCE FOR STEM CELL GENOMICS. THE GOALS OF THIS CENTER WILL BE TO PROVIDE ADVANCED GENOMICS AND BIOINFORMATICS RESOURCES FOR CALIFORNIA STEM CELL RESEARCHERS. AND FURTHER, TO SUPPORT RESOURCE INTENSIVE GENOMICS PROJECTS THAT WILL SUBSTANTIALLY ADVANCE STEM CELL BIOLOGY AND THERAPEUTICS.

THESE CENTERS SHOULD ALSO FACILITATE THE STANDARDIZATION, COORDINATION, HANDLING, AND ANALYSIS OF GENOMIC DATA AND THE ADVANCE OF GENOMICS TECHNOLOGY AND INFORMATICS APPLIED TO STEM CELL RESEARCH.

THE GENOMICS CENTER AWARDS APPLICATION PROCESS WAS OPEN TO BOTH FOR-PROFIT AND NONPROFIT ORGANIZATIONS, AND PROPOSED CENTERS WERE MEANT TO

AUGMENT AND INTERFACE WITH EXISTING GENOMICS AND BIOINFORMATICS RESOURCES. WE WERE NOT ASKING FOR THE CREATION DE NOVO OF NEW CENTERS, BUT, IN FACT, AN AUGMENTATION, ELABORATION OF ESTABLISHED AND EXISTING GENOMICS RESOURCES.

WE ENCOURAGED MULTIPLE INSTITUTIONAL PROPOSALS AND INDICATED THAT A SIGNIFICANT INSTITUTIONAL COMMITMENT WAS EXPECTED.

THE AWARD DETAILS AS APPROVED BY YOU IN THE CONCEPT PROPOSAL WAS SUPPORT FOR UP TO FIVE YEARS, THE FUNDING OF ONE OR UP TO TWO CENTERS, AND TOTAL PROGRAM COSTS FOR THE ENTIRE INITIATIVE OF UP TO $40 MILLION.

APPLICATIONS FOR THIS PROGRAM HAD FOUR KEY COMPONENTS. THE FIRST, CENTER ORGANIZATION AND OPERATIONAL PLAN IN WHICH THE APPLICANTS DESCRIBE THEIR ORGANIZATION, HOW IT WILL RUN, WHO THE PARTICIPANTS ARE, AND OTHER ASPECTS OF THE OVERALL ORGANIZATION. THE SECOND IS COLLABORATIVE RESEARCH ACTIVITIES. AT LEAST 30 PERCENT OF THE FUNDING AND ACTIVITY OF THESE CENTERS NEEDS TO BE COMMITTED TO COLLABORATIVE RESEARCH AND COLLABORATIVE ACTIVITIES TO SUPPORT CALIFORNIA STEM CELL RESEARCHERS.

THESE ACTIVITIES SHOULD PROVIDE STEM CELL RESEARCHERS WITH ACCESS TO STATE-OF-THE-ART GENOMICS

AND BIOINFORMATICS TECHNOLOGIES AND EXPERTISE AND ASSISTANCE IN EXPERIMENTAL DESIGN AND DATA ANALYSIS.

A THIRD COMPONENT ARE CENTER-INITIATED RESEARCH PROJECTS. APPLICANTS WERE REQUIRED TO PROPOSE AT LEAST TWO AND COULD PROPOSE UP TO FOUR DISTINCT PROJECTS. THESE PROJECTS SHOULD BE CRITICAL, TRANSFORMATIVE, DATA INTENSIVE HUMAN GENOMICS RESEARCH APPLIED TO STEM CELL BIOLOGY. AND THEY COULD INCLUDE NOVEL TECHNOLOGY DEVELOPMENT PROJECTS ADDRESSING MAJOR BOTTLENECKS IN STEM CELL GENOMICS RESEARCH.

AND THE FOURTH COMPONENT OF THE APPLICATION IS THE DATA COORDINATION AND MANAGEMENT COMPONENT, ACTIVITIES TO PROVIDE INFRASTRUCTURE AND EXPERTISE FOR STORAGE, TRANSFER, ASSEMBLY, AND PUBLICATION OF DATA FROM STEM CELL GENOMICS PROJECTS WITH, ADDITIONALLY, THE FOLLOWING CAVEAT, THAT IF TWO AWARDS ARE MADE, ONLY ONE WOULD BE FUNDED FOR THIS ACTIVITY.

I'D NOW LIKE TO BRIEFLY GO OVER THE REVIEW CRITERIA USED BY GRANTS WORKING GROUP MEMBERS IN THE ANALYSIS AND EVALUATION OF THESE APPLICATIONS, AND THIS IS THE REVIEW CRITERIA WHICH WAS STATED IN THE RFA.

FIRST, FOR CENTER ORGANIZATION AND

ENDORSEMENT -- CENTER ORGANIZATION AND OPERATIONAL PLAN, CENTER LEADERSHIP, THE WORKING GROUP ASKED THE FOLLOWING QUESTIONS: WHETHER CENTER LEADERSHIP HAS APPROPRIATE EXPERTISE AND EXPERIENCE WHERE THE PROPOSED ORGANIZATION IS COHERENT AND WELL DEVELOPED WITH WELL-DEFINED AND APPROPRIATE LEADERSHIP AND OPERATIONAL RESPONSIBILITIES, WHETHER THE BUDGET IS REALISTIC, APPROPRIATE, AND REFLECTS REASONABLE COSTS, AND THE NATURE AND AMOUNT OF INSTITUTIONAL SUPPORT, WHETHER IT IS SIGNIFICANT AND APPROPRIATE.

IN THE AREA OF THE COLLABORATIVE RESEARCH ACTIVITIES, WHETHER APPROPRIATE AND WELL-DEVELOPED PLANS FOR RECRUITING, EVALUATING, AND ACCEPTING COLLABORATIVE PROJECTS ARE PROPOSED, IF PROGRAM LEADERS HAVE EXPERIENCE IN COORDINATING LARGE COLLABORATIVE PROJECTS, THE NATURE AND QUALITY OF THE PLANS FOR EXECUTING COLLABORATIONS AND COORDINATING CENTERS AND COLLABORATOR ACTIVITIES, AND WHETHER THESE ARE WELL DEVELOPED, AND IF ADEQUATE AND APPROPRIATE CENTER RESOURCES AND PERSONNEL WILL BE AVAILABLE TO FACILITATE COLLABORATIVE PROJECTS.

FOR THE CENTER-INITIATED RESEARCH PROJECTS, EACH ONE WAS EVALUATED SEPARATELY. THEY WERE EVALUATED BY THE FOLLOWING CRITERIA: FIRST,

SIGNIFICANCE AND INNOVATION; SECOND, FEASIBILITY AND EXPERIMENTAL DESIGN; AND, THIRD, PROJECT LEADERSHIP AND RESEARCH TEAM.

AND IN THE AREA OF DATA COORDINATION AND MANAGEMENT, IS THE LEADERSHIP AND OPERATIONAL TEAM, DOES IT HAVE APPROPRIATE EXPERTISE AND EXPERIENCE? IS THE EXISTING AND PROPOSED INFRASTRUCTURE ADEQUATELY SUPPORTING THE NEEDED DATA CAPACITY? IS PROPOSED TECHNOLOGY AND INFORMATICS PLATFORMS SUFFICIENT IN SCOPE AND QUALITY? AND IS THE PROPOSED STAFFING AND BUDGET APPROPRIATE AND ADEQUATE?

AS MOST OF YOU KNOW, I'M BRINGING TO YOU THE RESULTS OF A SECOND ROUND OF GRANTS WORKING GROUP REVIEW OF GENOMICS APPLICATIONS. DURING THE FIRST ROUND REVIEW, THE GRANTS WORKING GROUP DID NOT RECOMMEND ANY OF THE APPLICATIONS FOR FUNDING. THEY DID NOT SEND THEM FORWARD TO THE ICOC. WE TOOK THE RESULTS OF THAT REVIEW AND THE SUGGESTIONS AND CRITIQUES AND PROVIDED FEEDBACK TO THE APPLICANTS AND INVITED ALL OF THOSE APPLICANTS FROM THE FIRST ROUND TO SUBMIT NEW APPLICATIONS FOR A SECOND REVIEW. APPLICANTS WERE ALLOWED TO CHANGE PROPOSAL COMPONENTS, ESTABLISH NEW COLLABORATIONS, AND/OR COMBINE EFFORTS. AND SEVERAL APPLICANTS FROM THE

FIRST ROUND DID COMBINE EFFORTS AND BRING IN JOINT APPLICATIONS.

FIVE APPLICATIONS WERE RECEIVED AND THESE WERE REVIEWED BY THE GRANTS WORKING GROUP IN NOVEMBER. THE APPLICATIONS WERE SCORED SEPARATELY FOR THE OVERALL GENOMICS CENTER AND FOR THE DATA COORDINATION AND MANAGEMENT COMPONENT. SO EACH RECEIVED TWO SCORES.

ADDITIONALLY, REVIEWERS WERE INSTRUCTED THAT THEY COULD PROPOSE REMOVAL OF INDIVIDUAL CENTER-INITIATED PROJECTS. THIS WAS DONE CONSISTENT WITH PREVIOUS AND ESTABLISHED PRACTICES. IT IS NOT DISSIMILAR TO WHAT HAS HAPPENED IN A NUMBER OF RFA'S WHERE THE GRANTS WORKING GROUP HAS RECOMMENDED A PROJECT WITH THE DELETION OF A SPECIFIC AIM OR CERTAIN GROUP OF ACTIVITIES AND APPROPRIATE CHANGES IN THE BUDGET.

THAT CHANGE PROPOSAL TO REMOVE CENTER-INITIATED PROJECTS WAS DONE BEFORE ANY SCORING OF THE APPLICATION OCCURRED. IT WAS DONE DURING THE DISCUSSION OF THAT SPECIFIC APPLICATION.

I SHOW YOU HERE THE RESULTS OF THE SCORING. THEY SHOULD ALSO BE IN YOUR BOOKS. I GUESS IT'S TAB 7. AND THERE ARE TWO TABLES HERE. ONE IS FOR THE SCORES AND RANKING FOR THE GENOMICS

CENTER AND THE SECOND FOR THE DATA COORDINATION AND MANAGEMENT COMPONENT. WHAT YOU CAN SEE IS THE REVIEWERS JUDGED THIS TO BE A PARTICULARLY STRONG SET OF APPLICATIONS. REVIEWERS ASSIGNED SCORES WHICH PLACED FOUR APPLICATIONS FOR GENOMIC CENTER IN THE FUNDABLE TIER I. REVIEWERS ASSIGNED SCORES WHICH PLACED TWO APPLICATIONS FOR THE DATA COORDINATION AND MANAGEMENT COMPONENT IN THE FUNDABLE TIER I. ADDITIONALLY, THE GRANTS WORKING GROUP VOTED TO RECOMMEND THE TOP SCORING DATA COORDINATION AND MANAGEMENT PROPOSAL FOR FUNDING.

THE BUDGET NUMBERS, WE CAN CLARIFY THAT. THERE'S WHAT WAS APPLIED FOR AND THERE'S WHAT WAS RECOMMENDED. SO THOSE NUMBERS MAY BE DIFFERENT, AND WE CAN GET INTO THE DETAILS OF THAT.

I WOULD LIKE TO PRESENT NOW THE STAFF RECOMMENDATION. AND WE RECOMMEND THE FUNDING OF GC1R-6673 GENOMICS CENTER. THIS IS THE TOP SCORING PROPOSAL.

WE RECOMMEND RETAINING CENTER-INITIATED PROJECT NO. 2. THIS IS CONSISTENT WITH THE GRANTS WORKING GROUP MINORITY RECOMMENDATION. THERE WAS A VOTE TO REMOVE THIS CENTER-INITIATED PROJECT. A MINORITY OF THE GRANTS WORKING GROUP VOTED TO RETAIN IT. WE RECOMMEND RETAINING THIS PROJECT.

WE RECOMMEND REMOVAL OF CENTER-INITIATED PROJECT NO. 3, CONSISTENT WITH THE GRANTS WORKING GROUP RECOMMENDATION.

WE FURTHER RECOMMEND FUNDING OF 6673'S DATA COORDINATION AND MANAGEMENT COMPONENT, AND THIS IS ALSO CONSISTENT WITH THE GRANTS WORKING GROUP RECOMMENDATION.

THE TOTAL AWARD, BASED ON THE SCIENTIFIC STAFF RECOMMENDATION, IS $33.3 MILLION. THE AWARD, BASED ON THE STRAIGHT GRANTS WORKING GROUP RECOMMENDATION, WOULD BE $27.8 MILLION. THE APPLICATION REQUEST IS FOR 40 MILLION.

THE RATIONALE FOR OUR SUPPORT AND RECOMMENDATION OF 6673 IS THAT, FIRST, THE PROPOSAL RECEIVED TOP SCORES FOR BOTH GENOMICS CENTER AND THE ASSOCIATED DATA COORDINATION AND MANAGEMENT COMPONENTS. SECOND, THE PROGRAM INVOLVES PARTICIPANTS AND COLLABORATORS FROM MULTIPLE CALIFORNIA INSTITUTIONS AND ORGANIZATIONS WITH BROAD GEOGRAPHICAL DISTRIBUTION. THERE ARE PARTICIPATING INSTITUTIONS IN BOTH NORTHERN AND SOUTHERN CALIFORNIA. AND, THIRD, THE APPLICATION FEATURES OUTSTANDING INSTITUTIONAL COMMITMENT, INCLUDING SUBSTANTIAL MATCHING FUNDS, SPACE COMMITMENT, AND OTHER RESOURCES.

OUR RATIONALE TO RECOMMEND INCLUSION OF CENTER-INITIATED PROJECT NO. 2 IS THAT THIS PROJECT WILL ADVANCE SINGLE CELL GENOMICS, A CUTTING-EDGE TECHNOLOGY THAT CAN MAKE CRITICAL CONTRIBUTIONS TO STEM CELL BIOLOGY. AND FURTHER, THIS PROJECT WILL CONTRIBUTE SUBSTANTIALLY TO AN UNDERSTANDING OF CELLULAR SUBPOPULATIONS, STEM CELL HETEROGENEITY, AND CANCER STEM CELL GENOMICS.

THIS IS OUR RECOMMENDATION. I WOULD BE HAPPY TO TAKE ANY OF YOUR QUESTIONS AND THANK YOU FOR YOUR ATTENTION.

CHAIRMAN THOMAS: MICHAEL, BEFORE WE GET TO FURTHER QUESTIONS, I HAVE A NUMBER THAT I WANT TO KICK THINGS OFF WITH HERE. WE'VE HAD A NUMBER OF ISSUES RAISED IN RECENT DAYS AND WOULD LIKE TO ASK YOU WITH RESPECT TO SOME OF THEM JUST TO CLARIFY BECAUSE THEY ARE ISSUES THAT OBVIOUSLY DESERVE A RESPONSE.

SO FIRST QUESTION I WOULD HAVE FOR YOU IS 18 MONTHS HAVE PASSED SINCE THE RFA WAS ORIGINALLY ISSUED. AND WE'VE HAD A LOT OF DISCUSSIONS IN THE MEANTIME ABOUT CIRM'S STRATEGIC PRIORITIES AND THE ALLOCATION OF OUR FUNDING. THAT WAS THE SUBJECT MATTER, FOR EXAMPLE, OF AN ENTIRE DAY'S WORKSHOP IN DECEMBER. IS THIS GENOMICS PROJECT STILL A

STRATEGIC PRIORITY IN LIGHT OF THOSE DISCUSSIONS?

DR. YAFFE: I WOULD SUGGEST IT'S EVEN MORE A PRIORITY TODAY THAN IT WAS TWO YEARS AGO. THE POWER AND VERSATILITY OF GENOMICS ANALYSIS HAS ONLY INCREASED OVER THE PAST TWO YEARS, AND THE TOOLS BECOMING AVAILABLE ARE GOING TO PLAY CRITICAL ROLES IN THE CHARACTERIZATION OF CELL LINES, SOME OF WHICH WILL BE USED FOR THERAPY, THE IDENTIFICATION OF BIOMARKERS AND THE ANALYSIS OF VARIABLE PATIENT RESPONSES TO NOVEL THERAPIES, AND ALL THESE ACTIVITIES ARE CRITICAL CONTRIBUTORS TO OUR TRANSLATIONAL MISSION AND TO THE MOVEMENT OF STEM CELL AND STEM CELL PRODUCTS INTO THE CLINIC.

CHAIRMAN THOMAS: THANK YOU. THERE HAVE BEEN SOME ISSUES RELATED TO THE ELIMINATION OF CERTAIN OF THE CENTER-INITIATED PROJECTS. YOU COMMENTED ON THEM IN YOUR SCOPE HERE. COULD YOU JUST ELABORATE A BIT ON THAT BECAUSE THERE SEEMS TO BE A LACK OF UNDERSTANDING ON EXACTLY WHAT WAS ALLOWED AND HOW THAT PROCESS WAS IMPLEMENTED.

DR. YAFFE: YES. THERE WAS LANGUAGE IN THE RFA, WE COULD PROVIDE THAT LANGUAGE VERBATIM FOR YOU IF YOU WOULD PREFER, THAT INDICATED THAT THE GRANTS WORKING GROUP WOULD MAKE RECOMMENDATIONS ABOUT THE FUNDING OF DIFFERENT CENTER-INITIATED

PROJECTS, THAT THIS WOULD BE PART OF THEIR MESSAGE AND RECOMMENDATION TO THE BOARD. THAT IS, ALL APPLICATIONS WERE REQUIRED TO HAVE TWO CENTER -- AT LEAST TWO CENTER-INITIATED PROJECTS. SOME OF THEM PROPOSED THREE, SOME PROPOSED FOUR. WE ALLOWED AND INSTRUCTED THE GRANTS WORKING GROUP REVIEWERS THAT THEY COULD REMOVE A PROJECT IF THEY FELT THAT THIS REMOVAL WOULD STRENGTHEN OVERALL THE PROGRAM THAT WAS BEING PROPOSED.

CHAIRMAN THOMAS: AS YOU SAID, THAT'S CONSISTENT WITH WHAT WE'VE DONE IN OTHER ROUNDS.

DR. YAFFE: ABSOLUTELY. WE HAVE SEEN EXAMPLES WHERE REVIEWERS HAVE RECOMMENDED THE DELETION OF A SPECIFIC AIM OR A SET OF ACTIVITIES AND THEY'VE COMMUNICATED THAT TO YOU, AND IN SOME CASES YOU'VE ACCEPTED THAT RECOMMENDATION AND APPROVED AN AWARD AT A REDUCED BUDGET LEVEL WITH REDUCED ACTIVITIES, AND SCIENTIFIC STAFF THEN WORKED WITH THOSE APPLICANTS TO MAKE SURE THAT THE PROJECT STILL HAD COHERENCE AND WAS CONSISTENT WITH THE CONCERNS OF THE REVIEWERS AND THE SPECIFICATION THAT THE BOARD MADE.

CHAIRMAN THOMAS: I WANT TO JUST FINISH HERE, DR. LEVIN, IF I COULD. SO HOW DOES NIH DO THIS? DO WE NEED TO FOLLOW WHAT THEY DO? ARE WE

DIFFERENT FROM WHAT THEY DO? WHAT IS --

DR. YAFFE: WELL, WE'RE DIFFERENT FROM NIH, ALTHOUGH CERTAINLY THERE ARE PARALLELS TO NIH. BUT AT NIH THE STAFF DECIDE WHERE THE CUTOFF LINE IS GOING TO BE FOR PAYMENT. THEY ALSO DECIDE WHAT THE BUDGET IS GOING TO BE. SO THIS IS REALLY QUITE A DIFFERENT SYSTEM WHERE YOU, OUR BOARD, ARE RESPONSIBLE FOR MAKING ALL OF THE FUNDING DECISIONS.

CHAIRMAN THOMAS: SO I NOTICE THAT STAFF HAS RECOMMENDED TO REINCLUDE ONE OF THE CENTER-INITIATED PROJECTS BACK INTO THE OVERALL PLAN. HOW WOULD THAT HAVE AFFECTED SCORING? HOW IS IT AFFECTING SCORING NOW?

DR. YAFFE: WELL, WE HAVE NO WAY OF KNOWING HOW THAT WOULD AFFECT SCORING. REALLY I HAVE NO INFORMATION THAT WOULD LET ME KNOW HOW THAT WOULD AFFECT SCORING. WE'RE RECOMMENDING THAT PARTIALLY BASED ON PROGRAMMATIC REASONS, WHICH, IN FACT, SHOULDN'T HAVE BEEN PART OF SCORING. AND THOSE PROGRAMMATIC REASONS INCLUDE THE INCREDIBLE VALUE OF THIS TECHNOLOGY THAT'S BEING DEVELOPED IN THIS CENTER-INITIATED ACTIVITY AND ALSO THE PROGRAMMATIC VALUE OF STUDYING AN AREA INVOLVING CELL HETEROGENEITY AND CANCER STEM CELLS WHICH A PARTICULAR FOCUS IS NOT WELL REPRESENTED IN OUR

PORTFOLIO.

CHAIRMAN THOMAS: I NOTICE THERE'S REFERENCE TO MATCHING FUNDS AS A CRITERION, ONE OF THE REVIEW CRITERIA. I ASSUME ALL APPLICANTS WERE APPRISED THAT MATCHING FUNDS WERE ONE THING THAT WOULD BE CONSIDERED IN THE REVIEW?

DR. YAFFE: THERE WAS NO REQUIREMENT FOR MATCHING FUNDS. THERE WAS A CLEAR STATEMENT THAT WE EXPECTED SIGNIFICANT INSTITUTIONAL COMMITMENT. THIS INSTITUTIONAL COMMITMENT COULD BE IN THE FORM OF MATCHING FUNDS, SPACE, EQUIPMENT, OTHER KINDS OF RESOURCES. THE GRANTS WORKING GROUP WAS INFORMED THAT A KEY REVIEW CRITERION SHOULD BE THE AMOUNT AND NATURE OF THE INSTITUTIONAL COMMITMENT. SOME APPLICATIONS INCLUDED MATCHING FUNDS AS PART OF THAT INSTITUTIONAL COMMITMENT, OTHERS DID NOT.

THE CASE OF THE APPLICATION WE'RE RECOMMENDING HAD A LARGE AMOUNT OF MATCHING FUNDS IN ADDITION TO A LOT OF OTHER IMPORTANT RESOURCES.

CHAIRMAN THOMAS: OKAY. IF I CAN JUST SWITCH FOR ONE SECOND TO THE CENTER OF EXCELLENCE, THE TOPIC OF RECOMMENDING ONLY ONE AWARD. SINCE WE HAD IN THERE IT COULD BE ONE UP TO TWO, ETC., WHAT'S THE RATIONALE HERE FOR JUST RECOMMENDING ONE?

DR. YAFFE: STAFF, FIRST OF ALL, BELIEVES

THAT THE RECOMMENDED CENTER WILL FULFILL ALL OF THE GOALS OF THE INITIATIVE, THAT IT INCLUDES ALL ACTIVITIES THAT WERE SPECIFIED IN THE RFA AND THAT WERE GOALS OF ESTABLISHING A CENTER OF EXCELLENCE.

SECOND, SO WE DON'T SEE A COMPELLING NEED FOR A SECOND CENTER.

AND SECOND OR THIRD, THERE IS NOT CURRENTLY IN THE BUDGET FOR THIS INITIATIVE ADEQUATE FUNDS TO FUND TWO CENTERS AT A LEVEL WHERE THEY COULD TRULY FUNCTION AS CENTERS OF EXCELLENCE.

CHAIRMAN THOMAS: SO YOU COULDN'T JUST -- WE HAVE FOUR IN THE FUNDABLE CATEGORY HERE. YOU COULDN'T JUST AWARD 10 MILLION TO EACH AND HAVE THAT AS A WORKING PROGRAM?

DR. YAFFE: WE FEEL IT WOULD BE IMPRACTICAL TO DIVIDE THE FUNDS AMONG FOUR SEPARATE APPLICANTS OR ENTITIES, THAT SUCH A DIVISION WOULD NOT PRODUCE COHESIVE AND COHERENT GENOMICS CENTERS OF EXCELLENCE. ADDITIONALLY, IT WOULD BE WASTEFUL, IN OUR OPINION, BECAUSE THERE WOULD BE MANY REDUNDANT ACTIVITIES.

CHAIRMAN THOMAS: OKAY. THOSE ARE ALL MY QUESTIONS. SO LET'S MOVE -- YES, MR. HARRISON.

MR. HARRISON: I JUST WANTED TO REMIND MEMBERS OF THE BOARD TO CONSULT THEIR CONFLICT LIST

BEFORE ADDRESSING THIS SUBJECT. BECAUSE THIS PROGRAM IS LIMITED TO ONE OR TWO AWARDS, IF YOU HAVE A CONFLICT WITH RESPECT TO ANY APPLICATION, YOU'RE CONFLICTED WITH RESPECT TO ALL OF THEM. AND GIVEN THE FACT THAT THERE ARE A LOT OF COLLABORATING INSTITUTIONS INVOLVED IN THESE APPLICATIONS, THERE ARE A LOT OF CONFLICTS. SO I JUST ASK YOU TO CONSULT YOUR LIST BEFORE RAISING YOUR HAND TO SPEAK.

DR. LUBIN: AND THAT RELATES TO DISCUSSION, NOT JUST VOTING?

MR. HARRISON: CORRECT.

CHAIRMAN THOMAS: MR. JUELSGAARD.

DR. JUELSGAARD: SO, MICHAEL, I HAVE A SERIES OF QUESTIONS. AND I'LL DO THESE IN A PARTICULAR ORDER. I WANT TO START WITH THE PROCESS FOR GRADING THESE APPLICATIONS THAT WAS FOLLOWED AT THE GRANTS WORKING GROUP.

SO IF I UNDERSTOOD YOU CORRECTLY, IF THOSE PROJECTS, FOR THE ONE THAT YOU'RE PROPOSING BE APPROVED, IF THOSE PROJECTS HAD NOT BEEN RECOMMENDED TO BE DELETED, BUT HAD REMAINED IN THE PROPOSAL AND THEN GRADED, YOU DON'T KNOW IF THAT WOULD HAVE CHANGED THE SCORE OR NOT; IS THAT RIGHT?

DR. YAFFE: WE HAVE NO WAY OF KNOWING THAT.

DR. SAMBRANO: SO I CAN MAYBE GIVE A LITTLE FURTHER EXPLANATION ON THAT. THE WAY THE SCORING OCCURRED DURING THE REVIEW, THIS WAS AT THE END OF DISCUSSING ALL OF THE PROPOSALS. SO THEY WERE GIVEN THE OPPORTUNITY TO REMOVE A PROJECT VIA A MAJORITY VOTE. ONCE THEY DID THAT AND CONCLUDED THAT THIS PORTION, THIS CENTER-INITIATED PROJECT, IS REMOVED, THEN AT THAT TIME THEY COMPOSED A SCORE WITHOUT THAT PROJECT. THERE WAS NO SCORE THAT WAS COMPOSED WITH THAT PROJECT THAT WAS OTHERWISE REMOVED IN IT. SO WE DON'T KNOW WHAT THAT SCORE WOULD BE.

AND THIS WAS NOT DONE AS PART OF A FORMULA, BUT RATHER THE WAY WE ASKED REVIEWERS TO COMPOSE THE SCORE WAS TO WEIGHT THE DIFFERENT ELEMENTS TO CONSIDER, FOR EXAMPLE, THE BUDGET CONTRIBUTION TO EACH OF THE CENTER-INITIATED PROJECTS, WEIGHT THAT ALONG WITH EACH OF THE ELEMENTS. SO IT WOULD BE IMPOSSIBLE FOR US TO KNOW WHAT THE SCORE WOULD BE OTHERWISE.

DR. TROUNSON: SO THE OVERALL SCORE, JUST TO CLARIFY, WAS NOT AN AVERAGE OF ALL THE MARKS. IT DIDN'T WORK LIKE THAT. SO THEY MADE A JUDGMENT ON THE WHOLE PROGRAM. SO YOU COULDN'T GET IT FROM AVERAGING THE MARKS THAT WERE GIVEN FOR THE OTHER

COMPONENTS.

DR. JUELSGAARD: SO BECAUSE I THINK THIS IS A REALLY IMPORTANT ISSUE TO REALLY BE CLEAR ABOUT, WHAT I'D LIKE TO DO IS IF YOU WOULD PUT UP THE EXACT LANGUAGE FROM THE RFA ON HOW THE GWG IS TO GO ABOUT SCORING THESE, ASSESSING THEM, PLEASE. THAT'S NOT THE ONES I'M THINKING OF.

DR. YAFFE: WELL, THE LOWER QUOTE IS DIRECTLY FROM THE RFA.

DR. JUELSGAARD: NO. I UNDERSTAND THAT, BUT THERE ARE TWO OTHER PARTS OF THE RFA THAT PRECEDE THAT THAT I THINK ARE IMPORTANT TO FOCUS ON AS WELL. I WANT THE BOARD TO REALLY UNDERSTAND WHAT WAS IN THE RFA VERSUS OR VIS-A-VIS WHAT WAS DONE.

MS. BONNEVILLE: DO YOU WANT IT UP ON THE SCREEN?

DR. JUELSGAARD: YES. YES. I WANT PEOPLE TO BE ABLE TO SEE IT.

DR. YAFFE: WE MAY HAVE TO CHANGE COMPUTERS.

DR. JUELSGAARD: MARIA, MAYBE THE EASIEST THING. I HAD SENT JAMES A COPY OF THE -- WE CAN SEND IT VIA EMAIL TO ALL OF THE MEMBERS IN THE ROOM HERE, AND WE CAN JUST LOOK AT IT THAT WAY AS OPPOSED TO WHAT SEEMS TO BE A LARGE EFFORT TO TRY AND

PROJECT IT.

(PAUSE IN PROCEEDINGS.)

DR. JUELSGAARD: SO THIS IS THE FIRST MENTION IN THE RFA OF HOW PROPOSALS ARE TO BE SCORED. AND IF YOU WERE TO READ THROUGH THAT AND JUST STOP AT THE END OF IT, YOU WOULDN'T COME TO THE CONCLUSION THAT, IN ESSENCE, YOU COULD ELIMINATE PROJECTS AS PART OF THE SCORING PROCESS. AND, AGAIN, YOU DON'T KNOW WHETHER OR NOT THEY DID -- WHETHER OR NOT THE ELIMINATION OF PROJECTS IN THEIR MIND AFFECTED THE SCORING, BUT NONETHELESS, IT MAY HAVE.

I'M NOT HERE TO SUGGEST THAT SOMETHING INAPPROPRIATE WAS DONE, BUT I JUST WANT PEOPLE TO BE AWARE OF THE LANGUAGE AND WHAT IT SAID. AND SO SOME PEOPLE MAY HAVE TAKEN AWAY A DIFFERENT VIEW OF HOW THIS WAS GOING TO WORK THAN OTHERS. AND THAT'S THE ONLY POINT THAT I WANT TO MAKE.

SO, NOW, THERE'S ANOTHER SLIDE AFTER THIS ONE THAT ADDS A COUPLE OF MORE POINTS TO THIS. SO ANYWAY, I THINK FOR ME -- THIS IS THE COMPLETE LANGUAGE THAT I WAS ABLE TO FIND IN THE RFA THAT DEALT WITH HOW PROPOSALS ARE SCORED. THERE MAY BE OTHERS, BUT I DIDN'T SEE THEM. AND, AGAIN, IT'S JUST TO MAKE SURE THAT EVERYBODY UNDERSTANDS WHAT

PEOPLE WERE LOOKING AT AND WHY SOME PEOPLE MAY HAVE VIEWED THE PROCESS DIFFERENTLY THAN OTHERS.

I'M NOT HERE TO ARGUE THAT THE PROCESS WAS DONE INCORRECTLY, SIMPLY JUST SO THAT WE'RE OPEN ABOUT THIS ISSUE AND EVERYBODY IS AWARE OF WHAT WAS SAID AND WHAT WAS DONE.

DR. SAMBRANO: I MEAN IF I CAN MAYBE MAKE REFERENCE TO SOME OF THESE. THE FIRST ONE THAT YOU SHOW, FOR EXAMPLE, IS REALLY RELATED TO PROGRAMMATIC REVIEW, WHICH USED TO OCCUR AT THE GRANTS WORKING GROUP AND NOW OCCURS HERE. AND THAT'S ESSENTIALLY WHAT THAT IS DIRECTLY REFERENCING. AND SO WHEN THE RFA WAS CRAFTED, IT WAS PRIOR TO WHEN WE HAD BASICALLY ADOPTED THE NEW SYSTEM WHERE WE DO ONLY THE SCIENTIFIC REVIEW AT THE GRANTS WORKING GROUP. SO CERTAINLY WHEN WE HAD THIS REVIEW, THE RFA DID NOT REFLECT THOSE CHANGES. SO A LOT OF THE LANGUAGE IS ALSO LOOKING BACK AT A DIFFERENT TIME.

DR. JUELSGAARD: SO THEN THE SECOND MAJOR ISSUE THAT'S BEEN RAISED, AND I'LL JUST GO THROUGH THIS AND I'LL BE DONE, WAS THE ISSUE OF PROVIDING FINANCIAL SUPPORT FROM INSTITUTIONS THAT ARE INVOLVED. AND, AGAIN, THERE WERE STATEMENTS THAT WERE MADE IN THE RFA. AND SO THE NEXT TWO SLIDES ADDRESS THE KINDS OF SUPPORT THAT CIRM WAS

DISCUSSING.

THERE'S, I THINK, ONE MORE, MICHAEL, IF PEOPLE ARE DONE WITH THAT. SO, AGAIN, WHILE NO SPECIFIC REFERENCE IS MADE TO FINANCIAL COMMITMENT, IT DOESN'T SAY ANYWHERE IN THERE THAT THERE'S AN EXPECTATION THAT THERE WOULD BE ANY. CLEARLY THE LANGUAGE, AT LEAST FROM MY POINT OF VIEW, IS WRITTEN BROADLY ENOUGH THAT IF SOMEBODY WANTED TO COMMIT FINANCIALLY, THEY WERE FREE TO DO THAT. AND IF THAT IMPACTED THE DECISION, THEN IT IMPACTED THE DECISION. BUT, AGAIN, I CAN UNDERSTAND WHY SOME PEOPLE FELT THAT PERHAPS WE WERE LOOKING AT SOMETHING THAT REALLY WASN'T A PART OF THE RFA.

AND SO, AGAIN, IT'S SORT OF A DIFFERENCE IN INTERPRETATION ISSUES THAT I THINK HAVE GIVEN RISE TO SOME OF THE CONCERNS. AND I WANTED TO, BECAUSE I WILL PROBABLY TALK ABOUT THEM A BIT MORE, SO I WANTED AT LEAST THIS GROUP TO BE ON THE SAME PAGE AS TO WHAT WE SAID WITH RESPECT TO WHATEVER DISCUSSION COMES.

DR. FRIEDMAN: CAN I ASK THAT WE GO BACK TO THE PREVIOUS SLIDE JUST FOR A MOMENT? SO, STEVE, AS I READ THAT FIRST BULLET THERE, IT SEEMS A BIT CLEARER TO ME THAN AT LEAST YOU'RE PORTRAYING IT. IT SAYS THE QUALITY AND AMOUNT OF INSTITUTIONAL

SUPPORT WILL BE A KEY CONSIDERATION. THAT'S NOT QUITE AS AMBIGUOUS AS SOME OF THE OTHER POINTS YOU MADE EARLIER, WHICH I DO AGREE WITH YOU. THAT WAS A LITTLE MORE AMBIGUOUS. THIS ONE SEEMS PRETTY STRAIGHTFORWARD.

DR. JUELSGAARD: NO. I'M NOT HERE TO ARGUE, MICHAEL, WHETHER IT'S AMBIGUOUS OR NOT, BUT I DO THINK THAT, BECAUSE IT DOESN'T USE THE WORD "FINANCIAL," SOME PEOPLE MAY JUST HAVE NOT EVEN CONSIDERED THAT OR NOT. I DON'T KNOW. BUT ANYWAY, AGAIN, IT'S JUST BEING VERY CLEAR AS TO WHAT WE SAID.

DR. FRIEDMAN: FAIR ENOUGH.

DR. JUELSGAARD: BECAUSE IF A DISCUSSION DOES DEVELOP AROUND THIS, THEN WE KNOW WHAT WE SAID.

DR. FRIEDMAN: THANK YOU.

CHAIRMAN THOMAS: DR. YAFFE.

DR. YAFFE: I JUST WANT TO SUGGEST THAT OTHER TYPES OF SUPPORT COULD HAVE BEEN PROVIDED AND COMMITTED BY THE APPLICANT INSTITUTION, SUCH AS SPACE, ADDITIONAL RESOURCES, EQUIPMENT, PERSONNEL, SALARIES. THERE WERE LOTS OF TYPES OF SUPPORT THAT COULD BE COMMITTED. SOME OF THE APPLICATIONS DID INCLUDE THOSE FEATURES, SOME DID NOT.

DR. JUELSGAARD: JUST ONE MORE QUESTION,

DR. TROUNSON. SO I ASKED AHEAD OF THIS IF THE INSTITUTIONS THAT ARE OR INSTITUTIONS THAT ARE BEING RECOMMENDED FOR APPROVAL, IF THEY WOULD BE WILLING TO DISCLOSE THE AMOUNTS OF MONEY THAT THEY WERE WILLING TO PUT INTO THIS PROJECT. AND AS I UNDERSTAND IT FROM MR. HARRISON, THEY'RE AGREEABLE TO DOING THAT, AND YOU HAVE THOSE FIGURES. SO IF YOU COULD PERHAPS PROVIDE THEM TO THIS GROUP, THEN WE WOULD HAVE THAT ADDITIONAL INFORMATION AVAILABLE TO US.

DR. YAFFE: SO FOR THE APPLICANT -- FOR THE APPLICATION 6673, JUST TO REMIND YOU IS THE ONE THAT WE'RE RECOMMENDING FOR YOUR FUNDING, THERE'S AN INSTITUTIONAL COMMITMENT OF $4.7 MILLION. AND THIS REPRESENTS, IN FACT, FINANCIAL CONTRIBUTIONS FROM FOUR DISTINCT INSTITUTIONS.

DR. JUELSGAARD: THANK YOU.

DR. YAFFE: I COULD GIVE YOU THE NUMBERS ON THE REST. I SHOULD SAY THAT THESE AMOUNTS WERE COMMUNICATED IN A LETTER FROM AN INSTITUTIONAL OFFICIAL, WHICH WAS A REQUIREMENT OF THE APPLICATION, INCLUDED IN THE APPLICATION PACKAGE THAT WAS REVIEWED BY THE GRANTS WORKING GROUP. THESE ARE LETTERS WRITTEN BY OFFICIALS AT THE INSTITUTION WHO ARE PRESUMABLY EMPOWERED TO MAKE

COMMITMENTS OF FINANCIAL SUPPORT, SPACE, AND OTHER KINDS OF RESOURCES.

IN APPLICATION 6708, THERE WAS A COMMITMENT TO USE EXISTING GENOMICS FACILITIES. THERE WAS NO COMMITMENT OF FUNDS.

APPLICATION 6709, THERE WAS AN INDICATION TO USE SPACE -- EXISTING SPACE IN THE PI'S LABORATORY. THERE WAS NO COMMITMENT OF NEW MONEY.

APPLICATION 6702, THERE WAS A COMMITMENT OF $1.8 MILLION, REPRESENTING CONTRIBUTIONS FROM TWO DIFFERENT PARTICIPATING INSTITUTIONS.

AND THE LAST APPLICATION IS NOT RECOMMENDED.

CHAIRMAN THOMAS: OTHER QUESTIONS FROM MEMBERS? MR. PANETTA.

MR. PANETTA: THANK YOU. I'VE GOT A FEW QUESTIONS, AND THEN I'D LIKE TO COMMENT AS WELL, MICHAEL. THANKS FOR THE PRESENTATION. AND THERE ARE SOME THINGS THAT ARE A LITTLE UNCLEAR TO ME THAT I'D LIKE TO UNDERSTAND A LITTLE BIT MORE.

FIRST OF ALL, YOU MENTIONED THAT YOU CAME TO THE CONCLUSION THAT IT WOULD PROBABLY NOT BE PRACTICAL TO SPLIT FUNDING AND THAT IT WOULD NOT ADEQUATELY FUND BOTH PROPOSED -- TWO PROPOSED INSTITUTES. SO I'D LIKE TO UNDERSTAND. IS THERE A

BUDGET FOR THIS, OR IS THAT BEING DETERMINED BASED ON THE PROPOSALS THAT WERE MADE?

DR. YAFFE: WELL, THE BUDGET FOR THE OVERALL PROPOSAL, WHICH, OF COURSE, IS ENTIRELY UP TO YOU, WAS ORIGINALLY SET AT $40 MILLION. IF YOU WOULD LIKE TO RAISE THE BUDGET TO 160 MILLION, WE COULD FUND ALL FOUR PROPOSALS.

MR. PANETTA: SO WHAT YOU'RE SAYING BASICALLY IS THAT IF YOU WERE TO SPLIT THIS INTO TWO CENTERS AT $20 MILLION APIECE OR WE COULD POTENTIALLY RAISE THAT IF WE WANTED TO TO $50 MILLION AND FUND TWO COLLABORATIVELY, WE HAVE THE OPTION TO DO THAT IF WE --

DR. YAFFE: YOU CERTAINLY HAVE THE OPTION TO DO THAT. WE DON'T BELIEVE THAT WOULD BE THE MOST EFFECTIVE USE OF CIRM'S FUNDS.

MR. PANETTA: OKAY. ONE THING THAT STRUCK ME IN THE CRITERIA, THE ELIGIBILITY CRITERIA, IN THE APPLICATION COMPONENTS WAS THE REPEATED REFERENCE TO INTERFACE WITH EXISTING GENOMICS AND BIOINFORMATICS RESOURCES AND COLLABORATIVE RESEARCH ACTIVITIES. AND I NOTICE THAT IN THE PROPOSAL 06709 THERE WAS A SPECIFIC REFERENCE TO A COLLABORATION OR COLLABORATIONS BY SCRIPPS WITH ILLUMINA, THE LEADING SEQUENCING GENOMICS COMPANY, AND WITH THE JC VENTER

INSTITUTE. WAS THERE A SPECIFIC PROPOSAL TO COLLABORATE IN ON 6703 OR --

DR. YAFFE: YES, THERE IS. AND THERE ARE SEVEN INSTITUTIONS AND ORGANIZATIONS, ONE OF WHICH IS A COMPANY, THAT ARE PART OF THAT APPLICATION. THE APPLICANT IS HERE. I'M NOT SURE I CAN REVEAL THE IDENTITIES OF ALL OF THE PARTICIPATING INSTITUTIONS, BUT HE MAY CHOOSE TO.

MR. PANETTA: AND THEN, AGAIN, I'M JUST CURIOUS, AS A NEW MEMBER OF THE COMMITTEE, ON PROCEDURE HERE AS TO WHY WE WOULD NOT SPECIFICALLY MENTION THE OPPORTUNITY TO CONTRIBUTE MATCHING FUNDS. IT JUST SEEMS STILL THAT IT'S A LITTLE BIT AMBIGUOUS TO ME THAT WE WOULDN'T HAVE ASKED FOR THAT OR AT LEAST SUGGESTED THAT THAT WAS A CRITERIA.

DR. YAFFE: WE DIDN'T DO THAT IN THIS ONE. PERHAPS WE SHOULD HAVE.

CHAIRMAN THOMAS: DR. TROUNSON.

DR. TROUNSON: SO JUST TO TRY MAYBE HELP TO SLIGHTLY CLARIFY THIS. I MET WITH ALL OF THE GROUPS THAT ACTUALLY REPLIED AFTER THE FIRST ROUND. AS YOU REALIZE IN THE FIRST ROUND, THERE WAS NO RECOMMENDATION TO FUND. SO I SPOKE TO THEM ALL EXCEPT STANFORD. BUT AT THAT TIME THE SALK WAS OPERATED FROM STANFORD, SO I SPOKE TO JOE ECKER AND

THE LEADERSHIP AT THE SALK. SO I TALKED TO ALL OF THOSE PEOPLE AND VERY STRONGLY INDICATED, NO. 1, WE WOULD NOT BE BUILDING BUILDINGS. SO WE WEREN'T GOING TO PUT INTO BRICKS AND MORTAR, THAT THE CONTRIBUTIONS FROM THE INSTITUTIONS WERE REALLY CRITICAL, AND THAT INCLUDED ALL OF THOSE THINGS, INCLUDING FINANCE.

SO SPACE WAS IMPORTANT BECAUSE THEY'D HAVE TO DONATE SPACE BECAUSE WE WEREN'T BUILDING BUILDINGS, AND THAT THE CONTRIBUTIONS BY STAFF AND EQUIPMENT AND FINANCE WAS REALLY IMPORTANT FOR THE APPLICATIONS, AND THAT I EMPHASIZED THAT I THOUGHT THERE WAS SOME BENEFIT FROM COLLABORATIONS ACROSS INSTITUTIONS. AND I THINK WE SAW SOME MAJOR RESHUFFLING OF THE APPLICATIONS AS A RESULT OF THAT.

SO I GAVE THEM THAT INPUT, ALL OF THOSE PEOPLE THAT REAPPLIED EXCEPT FOR STANFORD. AND SO THEY WERE AWARE FROM THAT DISCUSSION THAT COMPONENT INCLUDED THE ABILITY TO INPUT INSTITUTIONAL OR ALL FUNDS OR SPACE TO DO WITH THIS CENTER BECAUSE WE WEREN'T -- WE WERE LIMITED TO A DEGREE WITH THE FUNDING. THERE'S A LIMITATION. A LOT OF PEOPLE THOUGHT THAT 40 MILLION WAS REALLY NOT A LARGE AMOUNT FOR A GENOMICS SPECIALTY CENTER, AND THAT THERE WOULD HAVE TO BE ANCILLARY FUNDING FROM OTHER

SOURCES. SO THAT WAS PART OF THE DISCUSSION.

MR. PANETTA: THANKS, ALAN. WELL, I WOULD JUST URGE THE OVERSIGHT COMMITTEE TO THINK ABOUT BEING VISIONARY HERE WITH RESPECT TO THE STRENGTH THAT WE HAVE IN CALIFORNIA IN GENOMICS IN BOTH THE NORTH AND THE SOUTH. AND I THINK THE STANFORD PROPOSAL IS OBVIOUSLY AN EXCELLENT PROPOSAL, BUT THE FACT THAT WE'VE GOT SOMETHING UNIQUE HERE THAT YOU REALLY DON'T SEE ANYWHERE ELSE, AND THIS IS THE ABILITY TO TAKE ADVANTAGE OF GENOMICS STRENGTH IN NORTHERN CALIFORNIA AND IN SOUTHERN CALIFORNIA, AND LOOKING AT THE STRENGTH OF THE SCRIPPS PROPOSAL AND THE COLLABORATIVE NATURE WITH SOME VERY HIGHLY RENOWNED INSTITUTIONS SUCH AS JCVI AND THE OPPORTUNITY TO COLLABORATE WITH ILLUMINA REALLY CREATES A UNIQUENESS THAT TO ME WOULD SAY THAT MAYBE WE OUGHT TO CONSIDER DOING MORE THAN ONE OF THESE AND TAKING A LOOK AT HOW WE MIGHT BE ABLE TO FUND BOTH OF THEM AS WELL BECAUSE AT THE SAME TIME HAVING TWO OF THESE COULD SYNERGIZE THE OPPORTUNITY FOR US TO MOVE FORWARD AS WELL.

CHAIRMAN THOMAS: CAN I JUST, DR. YAFFE, JUST A POINT OF CLARIFICATION TO YOU. IT IS CORRECT THAT THIS PROPOSAL DOES HAVE SIGNIFICANT STATEWIDE GEOGRAPHICAL DIVERSITY; IS THAT CORRECT?

DR. YAFFE: ABSOLUTELY. AND IF THE APPLICANT APPROVES, I'LL TELL YOU WHO THE OTHER PARTICIPATING INSTITUTIONS ARE. IN ADDITION TO STANFORD, WHICH IS THE PI INSTITUTION, THE SALK WHICH IS THE CO-PI INSTITUTION, IT ALSO INCLUDES UCSD, THE VENTER INSTITUTE IN SAN DIEGO, ILLUMINA, SCRIPPS, AND UC SANTA CRUZ. SO ALL OF THOSE INSTITUTIONS ARE PARTICIPATING IN THE STANFORD APPLICATION.

MR. PANETTA: THANKS FOR CLARIFYING THAT.

CHAIRMAN THOMAS: DR. BURTIS.

DR. BURTIS: JAMES, AM I CLEAR? SO I THINK ONE OF THE THINGS THAT GIVES US PAUSE HERE, OF COURSE, IS THAT GENERALLY HISTORICALLY THIS GROUP, WHEN THINGS ARE IN THE FUNDABLE RANGE, THEY GET FUNDED TO THE EXTENT THAT WE'RE ABLE. AND SO THIS IS A BIT OF A UNIQUE SITUATION. AND WE ALWAYS HATE TO LEAVE GOOD SCIENCE ON THE TABLE IF IT'S POSSIBLE TO INCLUDE IT. BUT I THINK IT MIGHT BE USEFUL FOR THOSE OF US LIKE MYSELF THAT WERE ALTERNATES IN THE PAST AND FOR SOME OF THE NEW MEMBERS OF THE BOARD, YOU SPOKE AT THE BEGINNING, MICHAEL, ABOUT THE OVERRIDING GOAL TO CREATE A CENTER BEYOND JUST THE SCIENCE THAT WAS INVOLVED. AND YET I FEEL SOME TENSION THERE BECAUSE WE ALL ARE INTERESTED IN THE

SCIENCE AND GETTING THE BEST SCIENCE DONE FOR THE STATE.

SO COULD YOU REFRESH A LITTLE BIT AND SPEAK AGAIN TO WHATEVER WAS IN THE ORIGINAL DISCUSSIONS ABOUT WHY THAT WAS AN OVERRIDING GOAL EVEN BEYOND THE INDIVIDUAL PIECES BECAUSE IT'S SO DIFFERENT FROM WHAT WE USUALLY DO?

DR. YAFFE: YES. WE WANTED TO CREATE A RESOURCE. SO WE'VE CREATED A NUMBER OF RESOURCES, WE BEING CIRM AND YOU, HAVE CREATED A NUMBER OF RESOURCES, INCLUDING SHARED LABS WHICH ARE LABORATORIES AT A NUMBER OF INSTITUTIONS WHERE DIFFERENT RESEARCHERS CAN COME, USE THE FACILITY, GAIN TRAINING, HAVE ACCESS TO EXPERTISE. AND THAT'S THE KIND OF THING WE WANTED TO ALSO CREATE FOR GENOMICS AND STEM CELL RESEARCHERS.

SO THE COLLABORATIVE COMPONENT OF THIS IS ESSENTIAL AND KEY. WE REQUIRED THEM TO COMMIT AT LEAST 30 PERCENT OF THEIR BUDGET AND ACTIVITIES FOR THESE COLLABORATIVE ACTIVITIES. WHAT ARE THE COLLABORATIVE ACTIVITIES? RESEARCHERS FROM ANY UNIVERSITY OR COMPANY OR INSTITUTE IN CALIFORNIA CAN SUBMIT A PROPOSAL FOR A COLLABORATIVE GENOMICS STEM CELL PROJECT. AND IF KEY CRITERIA ARE MET, THOSE PROJECTS WILL GO ON AT THESE CENTERS OR IN

COLLABORATION WITH THESE CENTERS, MAKE AVAILABLE EXPERTISE, EQUIPMENT, FACILITIES, TECHNIQUES. THAT'S ONE OF THE COMMITMENTS THAT EACH OF THESE APPLICANTS IS MAKING. AND, IN FACT, SOME OF THESE EXCELLENT PROJECTS FROM WHAT MAY BE THE NONFUNDED APPLICANTS COULD ENTER AND STILL BE PART OF THIS ACTIVITY THROUGH THIS COLLABORATIVE MECHANISM.

DR. BURTIS: THANK YOU.

MR. TORRES: WOULD YOU REPEAT THE LIST OF INSTITUTIONS AGAIN?

DR. YAFFE: YES. STANFORD UNIVERSITY, THE SALK INSTITUTE, UC SAN DIEGO, THE VENTER INSTITUTE IN SAN DIEGO, ILLUMINA CORPORATION, SCRIPPS RESEARCH INSTITUTE, AND THE UNIVERSITY OF CALIFORNIA SANTA CRUZ.

MR. TORRES: GO SLUGS. NOW, ILLUMINA IS IN SAN DIEGO AS WELL?

DR. YAFFE: YES.

CHAIRMAN THOMAS: MR. JUELSGAARD.

DR. JUELSGAARD: SO JUST SO I'M CLEAR, ILLUMINA PARTICIPATED IN TWO DIFFERENT APPLICATIONS?

DR. YAFFE: YES. AND THAT WAS ENTIRELY PERMITTED. THEY COULDN'T COME IN AS A PI OR A CO-PI ON TWO DIFFERENT APPLICATIONS, BUT AS A COLLABORATOR, POTENTIAL SUBCONTRACTOR THEY COULD.

DR. JUELSGAARD: I THINK IT'S IN THE LETTERS THAT HAVE BEEN SENT, BUT WHO WAS THEIR COLLABORATOR IN THE OTHER APPLICATION, THE ONE THAT YOU'RE NOT RECOMMENDING?

DR. YAFFE: WHO WAS THEIR INSTITUTIONAL COLLABORATOR?

DR. JUELSGAARD: YES.

UNIDENTIFIED SPEAKER: IT'S PROBABLY CONFIDENTIAL.

DR. JUELSGAARD: NO. IT'S IN THE LETTERS WE'VE RECEIVED. I'LL LOOK THEM UP.

DR. YAFFE: THAT'S CONFIDENTIAL INFORMATION UNLESS THE -- IT'S IN THE APPEAL. OKAY. THAT'S SCRIPPS RESEARCH INSTITUTE, DR. JEANNE LORING.

DR. JUELSGAARD: BUT YOU SAID SCRIPPS WAS ALSO PART OF THE GROUP YOU'RE RECOMMENDING.

DR. YAFFE: THAT'S RIGHT, AS A COLLABORATOR. SO DIFFERENT PI'S -- SORRY -- DIFFERENT RESEARCHERS.

DR. JUELSGAARD: I'M GLAD YOU CLARIFIED THIS THEN. THAT'S VERY INTERESTING.

DR. YAFFE: YES. THERE'S THE PERSONALITIES AND THERE'S THE INSTITUTIONS.

CHAIRMAN THOMAS: DR. LEVIN.

DR. LEVIN: THANKS. SO I'M STILL CONFUSED A BIT ABOUT THE REVIEW CRITERION AND HOW THEY WERE APPLIED IN THIS SITUATION, AND OBVIOUSLY A LOT OF OTHER PEOPLE ARE. OVERALL THE REASON THAT THIS, I THINK, IS SO IMPORTANT, TO ME AT LEAST, IS THAT IN READING THE REVIEWS, THEY DON'T SEEM TO ALIGN WITH THE NUMERICAL SCORES THAT WERE GIVEN, WHICH IS WHAT IS THE BASIS OF THE DECISION.

AND IN LOOKING HERE AT THE SLIDES THAT MR. JUELSGAARD PUT UP, IT SAYS INSTITUTIONAL COMMITMENT IS VERY IMPORTANT, BUT IT EXPLICITLY MENTIONS SPACE, RESOURCES, COMMITMENT OF PERSONNEL, AND DOES NOT MENTION MATCHING FUNDS, WHICH WE HAVE DONE IN THE PAST WHEN MATCHING FUNDS WAS AN IMPORTANT ITEM THAT WE THOUGHT NEEDED TO BE ADDED LIKE IN THE MAJOR FACILITIES WHERE IT WAS 25 PERCENT OF THE SCORE.

AND EVEN MORE SO THE FIRST SLIDE THAT HE PUT UP CLEARLY SAID THAT THE SCORES FOR THE CIP'S WERE GOING -- CFE'S WERE GOING TO BE DONE INDIVIDUALLY AND THEN COMBINED. AND THEN THE NEXT SLIDE SAID THAT ANY PROJECTS THAT WOULD BE REMOVED WOULD BE DONE AFTER THAT. AND I THINK I UNDERSTOOD FROM YOU AT THE BEGINNING THAT THAT'S NOT WHAT HAPPENED, THAT THE PROJECTS WERE REMOVED FIRST AND THEN THE SCORE.

DR. YAFFE: THAT'S CORRECT.

DR. LEVIN: AND SO, FOR EXAMPLE, FOR THE TOP-RANKED APPLICATION, TWO OF THE FOUR PROJECTS WERE REMOVED, AND IT WAS ONLY AFTER THAT WHEN THE TWO WEAKEST PROJECTS IN THE GRANTS WORKING GROUP'S OPINION WAS REMOVED, THAT THE SCORES WERE GIVEN AND HAD THE HIGHEST VARIANCES I RECALL FROM 70 ALL THE WAY UP TO 95 EVEN WITH THOSE TWO REMOVED.

DR. SAMBRANO: CORRECT.

DR. LEVIN: SO I GUESS THAT'S -- THAT'S MORE NOW OF A COMMENT THAN A -- IS THERE A REASON WHY IT WASN'T DONE THE WAY IT WAS STATED IN THE RFA, TO GIVE THE NUMERICAL SCORE FIRST AND THEN THE RECOMMENDATIONS, BECAUSE I THINK THAT THAT'S HOW IT'S BEEN DONE THOSE TIMES THAT A SPECIFIC ONE HAS BEEN REMOVED IN THE PAST.

DR. SAMBRANO: WELL, I DON'T THINK THE RFA STATES WHEN THE SCORE IS GIVEN. IT JUST SAYS EACH WILL BE CONSIDERED SEPARATELY AND SCORES WILL BE ASSIGNED TO EACH OF THE COMPONENTS. IT DOESN'T SAY HOW THEY WILL THEN COME TOGETHER OR BE COMPOSED INTO A SINGLE FINAL SCORE. SO THE PROCESS THAT WE UTILIZED WAS ALIGNED WITH THE WAY WE'VE DONE IT IN OTHER REVIEWS IN TERMS OF GIVING THE GRANTS WORKING GROUP THE OPPORTUNITY AND FLEXIBILITY TO BASICALLY

SET A CONDITION ON AN AWARD, SUCH AS TO IMPOSE A MILESTONE, TO REMOVE AN ACTIVITY, ADJUST THE BUDGET.

AND SO SINCE THEY HAD TO DO THIS FOR EACH OF THE SEPARATE COMPONENTS BEFORE COMING UP WITH THEIR COMPOSITE SCORE, THEY HAD TO DETERMINE WHAT THE SCOPE OF THAT APPLICATION WAS SUCH THAT THEY WOULD VOTE ON REMOVING A PROJECT IF THEY FELT IT WAS GOING TO IMPROVE THE APPLICATION. SO THEY FIRST TOOK THAT VOTE. AND IN THE CASES WHERE IT CAUSED A REMOVAL OF THE PROJECT, OUR INSTRUCTIONS TO THEM WERE THE APPLICATION NOW INCLUDES ONLY THIS SUBSET OF PROJECTS. WHAT IS THE SCORE? OTHER THAN THAT, WE DID NOT ASK THEM TO SCORE THE APPLICATION OR COME UP WITH AN ALTERNATIVE SCORE.

DR. LEVIN: OKAY. I DON'T THINK THAT -- CAN YOU GO BACK TO THE FIRST ONE OF THESE FOUR SLIDES BECAUSE I DON'T BELIEVE THAT'S WHAT IT SAID IN THE RFA IS ALL. WE'RE NOT ON YOUR SLIDES ANYMORE. I THINK IT WAS THE THREE COMPONENT SCORES WILL BE COMBINED TO DETERMINE A COMPOSITE TOTAL SCORE FOR THE ENTIRE APPLICATION FOR THE CFE'S.

DR. SAMBRANO: IT SAYS, RIGHT, THESE PROJECT SCORES WILL BE WEIGHTED PROPORTIONATELY TO THE FUNDS REQUESTED FOR EACH PROJECT AND THEN COMBINED TO DETERMINE A SCORE FOR THE

CENTER-INITIATED PROJECT COMPONENT OF THE APPLICATION. SO WHAT THEY DID IS THEY DID EACH COMPONENT. SO IN OTHER WORDS, THEY REVIEWED THE CENTER ORGANIZATION, THEN THE COLLABORATIVE PROJECTS. THEY WENT THROUGH EACH OF THE CENTER-INITIATED PROJECTS, AND THEN AT THAT POINT IS WHEN THEY COMPOSED A SCORE. THEY DIDN'T COMBINE THE PROJECTS FIRST AND THEN WITH THE REMAINING TWO. THEY HAD A MORE COMPREHENSIVE SCORE.

AND PART OF THE REASON FOR DOING SO WAS THAT IN COMING UP WITH A COMPOSITE SCORE, THE IDEA BEHIND HAVING A FORMULA MEANT THAT THE WEIGHT OR THE WEIGHTING WAS FIXED FOR EACH COMPONENT. BUT YOU COULD IMAGINE A SCENARIO WHERE YOU HAVE A PROPOSAL WHERE THE CENTER-INITIATED PROJECTS ARE TERRIFIC, BUT THEN THE CORE COMPONENT, THAT IS THE CENTER ORGANIZATION, IS NOT. SO HOW MUCH WEIGHT YOU GIVE THOSE MAY DEPEND ON THE REVIEWERS' ASSESSMENT OR FEELING OF CAN THEY EVEN HOLD A CENTER. AND IF THEY CAN'T, THEN THE FACT THAT THEY HAVE GREAT CENTER-INITIATED PROJECTS IS OVERRULED BY THAT.

SO WE ALLOWED THE REVIEWERS TO WEIGH THOSE THINGS IN THEIR HEAD RATHER THAN TO APPLY A SPECIFIC FORMULA.

DR. LEVIN: I THINK ALSO THERE WAS CONCERN

OVER THE MANAGEMENT STRUCTURE IS SOMETHING THAT ALSO APPEARED IN THE REVIEW FOR THE TOP-RANKED APPLICATION, WHICH WAS, I GUESS, CONFUSING TO ME AS WELL SINCE THAT WAS SO IMPORTANT.

CHAIRMAN THOMAS: I HAVE A QUICK QUESTION, THEN MS. WINOKUR NEXT. HOLD ON A SECOND, DR. TROUNSON.

SO, DR. YAFFE, IS IT TRUE THAT THERE WERE -- THIS WASN'T THE ONLY PROPOSER THAT HAD INDIVIDUAL CENTER-INITIATED PROJECTS REMOVED IN THE PROCESS OF THE REVIEW, CORRECT?

DR. YAFFE: THAT'S CORRECT.

CHAIRMAN THOMAS: THANK YOU.

DR. TROUNSON: SO, CHAIR, I WONDER IF I COULD GET ONE OF OUR LEGAL OFFICERS TO ACTUALLY TELL YOU WHAT WE'RE INSTRUCTED TO FROM THE SCIENCE GROUP AND THE BOARD.

MR. HARRISON: SO LET ME JUST ADDRESS ONE ISSUE BECAUSE DR. SAMBRANO IS CORRECT. THERE WAS A CHANGE IN PROCESS THAT OCCURRED AFTER THE RFA WAS ISSUED IN RESPONSE TO THE IOM RECOMMENDATIONS. AND THAT DID INVOLVE TRANSFERRING PROGRAMMATIC REVIEW FROM THE GRANTS WORKING GROUP TO THE BOARD, BUT RETAINING WITHIN THE DISCRETION OF THE GRANTS WORKING GROUP THE ABILITY TO RECALIBRATE. AND WHAT

THAT MEANT WAS THAT THE GRANTS WORKING GROUP HAD THE AUTHORITY TO RECOMMEND THAT CONDITIONS BE IMPOSED ON AWARDS PRIOR TO SCORING THOSE AWARDS.

AND THE REASON FOR THAT CHANGE WAS TO ALLOW PARTICIPATION OF ALL OF THE MEMBERS OF THE GRANTS WORKING GROUP, INCLUDING THE SPECIALISTS WHO ADVISE THE GRANTS WORKING GROUP WHO OFTEN COME AND PARTICIPATE IN THE DISCUSSION OF ONLY ONE APPLICATION AND THEN LEAVE. SO RATHER THAN WAITING TO CONDUCT RECALIBRATION AFTER THE SCORES HAD BEEN SUBMITTED, THAT WAS DONE WHILE THE SPECIALISTS AND EVERYONE ELSE WAS PRESENT IN THE ROOM SO THAT MOTIONS COULD BE MADE TO IMPOSE CONDITIONS ON APPLICATIONS. AND ONLY AFTER THOSE MOTIONS WERE HEARD WOULD THE APPLICATIONS BE SCORED.

SO DR. SAMBRANO IS CORRECT, THAT THAT CHANGE IN PROCESS HAD AN IMPACT ON THE WAY THAT THIS REVIEW WAS HANDLED.

DR. TROUNSON: AND FOR ALL REVIEWS, JAMES, FROM NOW ON, RIGHT?

MR. HARRISON: CORRECT.

CHAIRMAN THOMAS: MS. WINOKUR.

MS. WINOKUR: WELL, I FIRST NEED TO CONFESS THAT I'M NOT ALLOWED TO MAKE ANY COMMENTS.

DR. FRIEDMAN: THANK YOU FOR CLARIFYING

THAT.

MS. WINOKUR: MY COMMENTS HAVE NOTHING TO DO WITH ANY PROPOSALS. ON ANYTHING?

MR. HARRISON: CORRECT.

CHAIRMAN THOMAS: SORRY, BUT WELL SAID. MR. PANETTA.

MR. PANETTA: THANK YOU, MR. CHAIRMAN. I'D LIKE TO GO BACK AGAIN, AS THE INDUSTRY REPRESENTATIVE HERE, I'D LIKE TO GO BACK TO THE ISSUE OF COLLABORATION BECAUSE ILLUMINA IS SUCH A STRENGTH IN GENOMICS FROM THE INDUSTRY SIDE WITHOUT A DOUBT. AND I'M WONDERING IF YOU COULD EXPLAIN TO US WHAT THE NATURE OF THE COLLABORATION IS AND COMPARE AND CONTRAST THE NATURE OF THE COLLABORATION OF ILLUMINA WITH THE APPLICATION THAT YOU'RE PROPOSING FOR APPROVAL VERSUS 06709.

DR. YAFFE: I'M NOT SURE THAT WE CAN GO INTO THAT LEVEL OF DETAIL UNLESS WE GO INTO PRIVATE SESSION, EXECUTIVE SESSION. THIS INVOLVES PROPRIETARY INFORMATION, DETAILS IN THE GRANT WHICH WE, IN GENERAL, DON'T TALK ABOUT IN PUBLIC FORUM.

DR. TROUNSON: SO, CHAIR, I WONDER -- I JUST WONDER IF THE PI IS PREPARED TO COMMENT ON ANY OF THAT PART OF THE QUESTION BEFORE WE WOULD NEED TO GO THERE. SO PERHAPS WE COULD ASK THE PI WHETHER

THEY'RE PREPARED TO COMMENT ON ANY PART OF THAT QUESTION.

CHAIRMAN THOMAS: FAIR ENOUGH. I SHOULD SAY THAT IF YOU'D RATHER HAVE THAT IN CLOSED SESSION, YOU HAVE THAT CHOICE AS WELL.

DR. SNYDER: SURE. AS FAR AS OUR COLLABORATION WITH ILLUMINA, WE'RE ACTUALLY USING THEM STRAIGHT UP FOR GENOME SEQUENCING, JUST FOR ONE ASPECT OF A LARGE ARRAY OF ACTIVITIES. SO OURS IS REALLY FOCUSED ON THE GENOME SEQUENCING SIDE. I CAN'T COMMENT ON WHAT THE -- I DON'T KNOW WHAT THE APPLICATION IS DOING.

DR. LORING: SO MY APPLICATION -- I'M JEANNE LORING, AND I'M THE CO-PROJECT DIRECTOR WITH A SCIENTIST AT ILLUMINA NAMED MOSTAFA RONAGHI, WHO IS THE CHIEF TECHNICAL OFFICER AND INTERESTINGLY ALSO COMES FROM THE STANFORD GENOME CENTER ORIGINALLY. GOOD PLACE, THAT GENOME CENTER.

MY PARTNERSHIP WITH ILLUMINA IS ACTUALLY EQUAL PARTNERSHIP. WE ARE PLANNING TO DEVELOP STEM CELL-BASED TOOLS TOGETHER. ILLUMINA, OF COURSE, WILL BE RESPONSIBLE FOR THE THINGS THAT THEY'RE VERY GOOD AT LIKE SEQUENCING, BUT MY LAB AND I WILL BE RESPONSIBLE FOR THINGS THAT WE'RE REALLY GOOD AT, WHICH IS SINGLE CELL ANALYSIS AND OTHER EMBRYONIC

AND IPS CELL-BASED TOOLS.

SO IT'S REALLY A COOPERATIVE EFFORT. WHAT WE WANT TO DO ON A SCIENTIFIC LEVEL WITH ILLUMINA SCIENTISTS IS TO DEVELOP NEW STEM CELL-SPECIFIC TOOLS. THAT'S OUR MAIN GOAL.

CHAIRMAN THOMAS: THANK YOU. OTHER COMMENTS FROM MEMBERS OF THE BOARD? QUESTIONS FOR DR. YAFFE? HEARING NONE, I GUESS, FRANCISCO, WE SHOULD TURN IT OVER TO YOU NOW TO COMPLETE THE --

DR. PRIETO: I THINK WE'LL HAVE TO HAVE A MOTION ON THE FLOOR AND WE'LL GET THOSE SHORTLY. GIL, WERE YOU GOING TO SAY SOMETHING ELSE?

DR. SAMBRANO: WE WERE JUST GOING TO BRING UP THE TABLES, AND I CAN JUST ORIENT YOU AROUND THOSE JUST TO MAKE SURE WE'RE CLEAR ON WHAT THE BUDGET IS AND SO FORTH.

DR. PRIETO: SO WHILE YOU'RE DOING THAT --

MR. TORRES: ARE YOU READY FOR A MOTION? IS THAT WHAT YOU'RE SAYING?

DR. PRIETO: IN A MOMENT. JUST WANT TO REMIND EVERYONE THAT THIS IS DIFFICULT BECAUSE WE HAVE A LOT OF MOVING PARTS. THE REVIEWERS WERE SPECIFICALLY ADVISED DURING THE REVIEW THAT GRANTS SCORED IN THIS RANGE WERE FUNDABLE AND THEY WERE ALSO AWARE OF OUR BUDGET. SO WE HAVE THE DIFFICULT

PROBLEM OF WAY MORE POTENTIAL AWARDEES THAN WE ACTUALLY HAVE BUDGETED MONEY TO SPEND, ALTHOUGH WE ARE FREE TO CHANGE THAT.

I THINK THE FIRST THING THAT I'D LIKE TO ENTERTAIN, BECAUSE I THINK THIS WILL BE THE EASIER PART OF IT, IS A MOTION ON THE DATA COORDINATION AND MANAGEMENT PART OF THIS. THERE ARE FIVE APPLICATIONS.

I THINK THE FIRST I THINK I'LL ASK IS IF THERE'S A MOTION TO MOVE ANY APPLICATION FROM THE NOT RECOMMENDED FOR FUNDING CATEGORY UP INTO TIER I. OKAY.

SO ABSENT THAT MOTION, CAN I ASK FOR A MOTION TO MOVE ANY APPLICATION OUT OF TIER I?

DR. LEVIN: WE'RE REQUIRED TO DO THIS BY THE RFA, RIGHT? THERE ONLY CAN BE ONE?

DR. SAMBRANO: YES.

DR. PRIETO: WE'RE BUDGETED FOR ONE. IN THIS CASE THERE'S MUCH MORE OF A CLEAR DELINEATION OF SCORES WITH ONE APPLICATION SCORING 12 POINTS HIGHER THAN THE NEXT CLOSEST. SO IF I CAN HAVE A MOTION.

MR. TORRES: A MOTION TO RECOMMEND THE STAFF RECOMMENDATION?

DR. SAMBRANO: CAN I JUST MAYBE --

MR. TORRES: IS THAT AN APPROPRIATE MOTION?

DR. SAMBRANO: -- MAKE A CLARIFICATION? SO THE GRANTS WORKING GROUP ITSELF DID HAVE A MOTION ON WHICH DATA COORDINATION MANAGEMENT CENTER THEY SPECIFICALLY WANTED TO SEE FUNDED, WHICH IS THE TOP ONE, 6673. SO THERE WAS A MOTION MADE TO THAT EFFECT. SO THE GRANTS WORKING GROUP RECOMMENDATION, ALTHOUGH YOU HAVE TWO IN TIER I BASED ON SCORE, THERE WAS A SPECIFIC DIRECTED MOTION THAT 6673 --

DR. PRIETO: SO WE CAN DO THIS IN TWO WAYS. WE CAN EITHER MOVE SOMETHING OUT OF TIER I AND THEN VOTE TO APPROVE WHAT'S LEFT IN TIER I, OR WE CAN SIMPLY TAKE A MOTION TO ACCEPT THE GRANTS WORKING GROUP RECOMMENDATION. I'D LIKE TO HEAR ONE OR THE OTHER.

MR. TORRES: SO MOVED ON THE LATTER. WOULD YOU RESTATE THE MOTION?

MR. HARRISON: SURE. AS I UNDERSTAND SENATOR TORRES' MOTION, IT IS TO APPROVE FUNDING OF DATA COORDINATION AND MANAGEMENT APPLICATION 6673 AND NOT TO FUND THE REMAINING APPLICATIONS FOR DATA COORDINATION AND MANAGEMENT.

MR. TORRES: CORRECT.

DR. JUELSGAARD: I SECOND THAT MOTION.

DR. PRIETO: ANY COMMENT FROM THE BOARD, FROM THOSE WHO ARE ABLE TO PARTICIPATE? ANY PUBLIC COMMENT?

MR. REED: I DON'T PRETEND TO FULLY UNDERSTAND THIS. THIS IS A LOT OF COMPLEX STUFF. BUT 6709 GOT A LOW SCORE AND SAID IT HAD NO FINANCIAL CONTRIBUTION, BUT IT ALSO HAD AN EQUAL PARTNERSHIP WITH ILLUMINA. DOES THAT NOT HAVE A FINANCIAL VALUE?

DR. PRIETO: WHAT WE'RE TALKING ABOUT NOW IS JUST THE DATA COORDINATION AND MANAGEMENT PART OF THE APPLICATION. THAT DOESN'T INCLUDE THE GENOMIC CENTER OR THE CENTER-INITIATED PROJECTS.

MR. REED: I THOUGHT THIS WAS THE ONLY CHANCE WE HAVE TO TALK ABOUT THAT.

DR. PRIETO: NO. NO. NO. WE'LL ATTACK THAT SEPARATELY. THIS IS THE BIOINFORMATICS AND DATA PORTION OF IT. SO WE HAVE A MOTION ON THE FLOOR AND A SECOND TO APPROVE THE GRANTS WORKING GROUP RECOMMENDATION FOR THE HIGHEST RATED APPLICATION, WHICH IS 6673. CAN WE HAVE THE ROLL.

MS. BONNEVILLE: STEVE JUELSGAARD.

DR. JUELSGAARD: AYE.

MS. BONNEVILLE: LAUREN MILLER.

MS. MILLER: AYE.

MS. BONNEVILLE: JOE PANETTA.
MR. PANETTA: AYE.
MS. BONNEVILLE: FRANCISCO PRIETO.
DR. PRIETO: AYE.
MS. BONNEVILLE: ROBERT QUINT.
DR. QUINT: ABSTAIN.
MS. BONNEVILLE: JON THOMAS.
CHAIRMAN THOMAS: YES.
MS. BONNEVILLE: ART TORRES.
MR. TORRES: AYE.
MS. BONNEVILLE: DIANE WINOKUR.
MS. WINOKUR: I ABSTAIN.
DR. PRIETO: WISELY.
MS. WINOKUR: I CAN'T SAY ANYTHING.
MR. HARRISON: MOTION CARRIES WITH SIX YES VOTES AND ONE ABSTENTION.
DR. PRIETO: THANK YOU. OKAY. NOW I'LL ENTERTAIN MOTIONS ON THE GENOMICS CENTER. I THINK THE CLEANEST -- YES, GIL.
DR. SAMBRANO: SO I JUST WANT TO CLARIFY SOMETHING ON THE BUDGET JUST SO THAT IT'S CLEAR. WHEN DR. YAFFE PRESENTED THE TOTAL NUMBERS, THEY'RE NOT EXACTLY MATCHING UP WITH WHAT'S ON THIS TABLE, BUT I WANT TO EXPLAIN WHAT IS ON THIS TABLE.
SO FOR THE DATA COORDINATION AND

MANAGEMENT CENTER, WHICH YOU JUST APPROVED, THAT IS 3.99 MILLION AND IS SHOWN ON THAT TABLE AS SUCH. FOR APPLICATION 6673, IN TERMS OF THE GENOMICS CENTER, AS RECOMMENDED BY THE GRANTS WORKING GROUP, THAT IS, WITHOUT PROJECT TWO, THE BUDGET AMOUNT WOULD BE 23.8 MILLION. IF THAT WERE FUNDED AS RECOMMENDED BY CIRM STAFF, THAT IS, INCLUDING PROJECT TWO, IT WOULD BE 29.3 MILLION. SO I JUST WANT TO MAKE SURE THAT THERE'S A POTENTIAL DIFFERENCE DEPENDING ON HOW YOU CHOOSE TO ADDRESS THAT PARTICULAR APPLICATION. FOR ALL THE OTHERS, THOSE ARE AS RECOMMENDED BY THE GRANTS WORKING GROUP.

DR. PRIETO: OKAY. THANK YOU. SO HERE ON THE GENOMICS CENTER ITSELF, SO ON THE TOP OF YOUR SCREEN HERE, AGAIN, WE HAVE A COUPLE OF DIFFERENT MOTIONS THAT I CAN ENTERTAIN. I MAY NEED SOME GUIDANCE FROM COUNSEL HERE. WE HAVE THE CONFLICTING RECOMMENDATIONS, IF YOU WILL, FROM THE GRANTS WORKING GROUP AND THE STAFF. WE ALSO HAVE THE OPTION OF VOTING FOR THIS -- VOTING FOR THE CENTER BEFORE OR AFTER MAKING THAT DECISION WHETHER TO INCLUDE IT.

I WOULD SUGGEST THAT WE FIRST VOTE ON THE STAFF RECOMMENDATION AND THEN DECIDE WHERE THAT PUTS

THE VARIOUS APPLICATIONS. AND THEN WE CAN GO ONE BY ONE.

MR. TORRES: SO MOVED.

DR. PRIETO: I'M SUGGESTING A MOTION ON THE STAFF RECOMMENDATION AND THE MINORITY REPORT FROM THE GRANTS WORKING GROUP TO REINSTALL OR REINSTATE THE CENTER-INITIATED PROJECT 2.

CHAIRMAN THOMAS: SO, FRANCISCO, ARE YOU SAYING YOU'RE LOOKING TO APPROVE 6673 AS AMENDED BY REINCLUSION OF THE ONE PROJECT? IS THAT THE MOTION YOU'RE LOOKING FOR?

DR. PRIETO: NO. I'M SUGGESTING A MOTION TO ADD THAT TO THE APPLICATION AS RECOMMENDED BY STAFF AND AS RECOMMENDED BY THE GRANTS WORKING GROUP AND THEN VOTE ON THE APPLICATION AS A WHOLE.

CHAIRMAN THOMAS: SO MOVED.

MR. TORRES: SECOND.

DR. PRIETO: DISCUSSION. SUDDENLY NO ONE HAS AN OPINION.

DR. LEVIN: COULD I MAYBE SUGGEST THAT IT'S -- IT COULD BE MORE COMPLICATED THAN THAT IN THAT IF WE'RE GOING TO DO ANYTHING CREATIVE IN TERMS OF ADJUSTING THE BUDGET OR SPLITTING THINGS UP OR RAISING THE BUDGET, THAT PUTTING IN OR TAKING OUT A PROJECT OF SIX PLUS MILLION DOLLARS IS A DECISION

THAT AFFECTS THE OVERALL SLATE THERE, NOT JUST THE SINGLE PROPOSAL UNDER CONSIDERATION.

DR. PRIETO: WELL, IT AFFECTS THIS PROPOSAL. IT AFFECTS OUR DECISION OVERALL. I THINK YOU ALLUDED TO THIS EARLIER, THAT THERE IS THE POTENTIAL THAT THE SCORES MIGHT HAVE BEEN DIFFERENT IF THE MAJORITY OF THE WORKING GROUP HAD INCLUDED THIS RATHER THAN EXCLUDED IT. AND THERE WAS A DIVERGENCE OF OPINION.

DR. LEVIN: WELL, I DIDN'T MEAN JUST THAT. BUT THAT WITHOUT THAT PROJECT IN THERE, THIS CENTER IS ONLY $24 MILLION, WHICH IS JUST A LITTLE OVER HALF OF THE TOTAL BUDGET. SO MINOR ADJUSTMENTS TO BUDGETS COULD ALLOW FOR THE TWO CENTERS THAT WERE ORIGINALLY, AS I RECALL, CONCEIVED FOR THIS RFA TWO YEARS AGO OR MORE, BUT THAT AT THE HIGHER LEVEL OF 29 PLUS THE DATA COORDINATING CENTER, IT PRETTY MUCH PRECLUDES ANY FUNDING GOING ANYWHERE ELSE.

DR. PRIETO: YEAH, I CAN'T SPEAK TO THAT, WHETHER IT WAS ORIGINALLY INCLUDED THAT WAY. MAYBE MICHAEL OR GIL.

DR. SAMBRANO: SO THE RFA CONTEMPLATED ONE OR TWO. IT DID NOT SPECIFY WHICH ONE, BUT BASICALLY THE LIMIT WOULD BE TWO. AND THE CONCEPT SPECIFIED UP TO 40 MILLION.

DR. PRIETO: MR. JUELSGAARD.

DR. JUELSGAARD: SO MY CONCERN ABOUT THE PROPOSAL THAT'S ON THE TABLE RIGHT NOW IS THAT WE DON'T KNOW THE ANSWER AS TO WHETHER IF PROJECT NO. 2, WHICH YOU'RE RECOMMENDING, STAFF IS RECOMMENDING, BE INCLUDED IN THE FUNDING, WE DON'T KNOW IF THAT HAD BEEN INCLUDED IN THE GWG'S ANALYSIS, WHETHER THE SCORES WOULD HAVE BEEN THE SAME OR NOT. WE DON'T KNOW ONE WAY OR THE OTHER WHETHER THE SCORES WOULD HAVE BEEN LOWER. WE JUST DON'T KNOW HOW THAT IMPACTED IT. AND I'M A LITTLE WORRIED THAT THERE IS THE POSSIBILITY THAT, BY INCLUDING IT, THE SCORES MIGHT HAVE GONE DOWN, AND, IN FACT, IT MIGHT EVEN HAVE BEEN IN SECOND PLACE. SO I'M PRETTY RELUCTANT IN MY OWN MIND TO SORT OF WORK -- TO GO IN THE OPPOSITE DIRECTION OF WHAT THE GWG RECOMMENDED AS MUCH ON THAT BASIS PERHAPS AS ANY. IT'S LESS ON THE SCIENTIFIC MERIT ISSUE, BUT JUST ON MORE THE PROCESS, NOT REALLY UNDERSTANDING HOW THAT WOULD HAVE AFFECTED THE BIGGER PICTURE.

DR. SAMBRANO: IF I CAN JUST COMMENT ON THIS BRIEFLY. I THINK YOU'RE RIGHT. WE CAN'T KNOW WHAT THE SCORE WOULD BE. ON THE OTHER HAND, THE VOTE TO REMOVE THAT PROJECT WAS SPLIT. SO YOU HAVE ESSENTIALLY ABOUT HALF OF THE GRANTS WORKING GROUP

MEMBERS WHO WERE IN FAVOR OF REMOVING IT, THE OTHER HALF THAT WEREN'T. YOU KNOW, WHETHER THAT IMPACTS ON HOW YOU VIEW THAT OR HOW YOU WOULD CALCULATE THAT IN YOUR MIND I DON'T KNOW, BUT AT LEAST I'M OFFERING THAT AS ADDITIONAL INFORMATION.

DR. JUELSGAARD: DO YOU HAVE THE EXACT PERCENTAGES THAT WERE IN FAVOR OF REMOVING IT? SO THERE'S A MINORITY REPORT WHICH SUGGESTS TO ME THAT IT'S LESS THAN 50 PERCENT. SO DO YOU KNOW THE EXACT PERCENTAGES THAT WERE IN FAVOR OF REMOVING IT AND THE PERCENTAGES --

DR. SAMBRANO: THE VOTE, YES, THE VOTE WAS NINE TO SEVEN.

DR. JUELSGAARD: OKAY. THANK YOU.

DR. TROUNSON: SO I THINK, STEVE, ALSO, IN THIS YOU NEED TO CONTEMPLATE IN THERE THE IMPORTANCE OF THE SORT OF SINGLE CELL WORK. THAT'S REALLY, REALLY IMPORTANT TO THIS FIELD. AND SO WHEN THE STAFF TOOK A LOOK AT IT, THERE'S NO DOUBT ABOUT IT. THE LEAD SCIENTIST IS THE BEST PERSON IN THE WORLD IN THE SINGLE CELL. WHERE THEY DID TAKE A HIT WAS AROUND THE PHENOTYPES OF THE CELLS THAT THEY WERE GOING TO BE USING. WELL, DR. CLARK IS -- I THINK HE'S AN EXTRAORDINARY GOOD RESEARCHER, AND I THINK THE STANFORD PEOPLE ARE TERRIFIC AT THAT. THEY'VE

WORKED OUT LINEAGES FOR MANY, MANY DIFFERENT CELL LINEAGES. SO I FELT CONFIDENT THAT THIS TEAM WAS REALLY UP TO THE PHENOTYPING PART.

BUT SOME OF THE GRANTS WORKING GROUP FELT THAT THAT'S WHERE IT WAS LEFT OUT, NOT ON THE GENOMICS PART, BUT ON THE PHENOTYPING OF THE CELLS. WELL, I DO THINK OUR BEST CELL PHENOTYPE IS PROBABLY THERE IN THAT UNIVERSITY. AND CLARK IS CERTAINLY AMONGST THEM. HE'S WORKED OUT PHENOTYPES FOR CANCER STEM CELLS, WHICH HAS BEEN PRETTY DIFFICULT TO DO. SO WE FELT THAT THIS WAS ON BALANCE A VERY STRONG REASON TO INCORPORATE IT IN. AND WE CAN'T TELL WHETHER THAT WOULD HAVE AN IMPACT.

CERTAINLY A GOOD PART OF THE GRANTS WORKING GROUP FELT THAT THAT WOULDN'T HAVE MADE A DIFFERENCE TO THEM. THEY WOULD HAVE STILL BEEN VERY SUPPORTIVE OF THIS PROJECT. SO THAT'S WHY WE CAME SO STRONGLY BEHIND IT.

AND ALL THE STAFF ARE SUPPORTIVE OF MY VIEW OF THIS. AND WE DON'T REALLY HAVE -- THERE WAS NO SPLIT AMONGST US. WE THINK WE WOULD BE REALLY DUMB NOT TO GET THIS WORK IN THERE. THAT WAS SORT OF THE DUMBNESS OF OUR NOT DOING IT. BUT NEVERTHELESS, WE DO RESPECT THE GRANTS WORKING GROUP BECAUSE THAT'S AN IMPORTANT ELEMENT OF WHAT WE DO.

SO IN THIS PARTICULAR INSTANCE, WE'RE MAKING A RECOMMENDATION WHICH IS SLIGHTLY DIFFERENT, BUT AT LEAST IT'S SUPPORTIVE OF AT LEAST CLOSE TO HALF OF THOSE PEOPLE.

DR. PRIETO: SO I HAVE A QUESTION FOR DR. TROUNSON. THIS FALLS UNDER THE SINGLE CELL ANALYSIS LIKE THE SMALLER GRANT THAT WE APPROVED THIS MORNING. ARE THERE OTHER AVENUES, OTHER RFA'S THAT WE HAVE IN THE WORKS THROUGH WHICH THIS WORK MIGHT GET DONE?

DR. TROUNSON: NOT TO THAT EXTENT BECAUSE IT WOULD BE GENUINELY PART OF BASIC RESEARCH. SO WE WOULD BE DOWN AROUND ABOUT A MILLION IF YOU COULD ACTUALLY DO THAT. PERHAPS IF YOU DID IT IN THREE OR FOUR DIFFERENT PROJECTS, THREE OR FOUR GOT UP IN THAT AREA, YES, THAT WOULD BE MAYBE EQUIVALENT, BUT I DON'T THINK WE'VE GOT THE TIME AND SO FORTH FOR THAT TO BE ABLE TO SORT OF RAKE THAT IN.

SO WHAT THEY'RE DOING HERE IS REALLY PRETTY EMPHATIC ACROSS A NUMBER OF PARTICULARLY DIFFICULT AREAS WHERE THEY SORT OF WANT TO SORT OF CONCENTRATE THIS. SO I DON'T THINK YOU'D FIND THAT INCORPORATED APPROACH ANYWHERE BECAUSE IT'S GOING TO COST SIX MILLION.

AND WHEREAS YOU COULD DO A LITTLE PART OF

IT, AND WE SAW EARLY THIS MORNING THERE'S A VERY SMALL PART OF IT BEING DONE IN A BASIC SCIENCE PROJECT, BUT WE REALLY WANT CALIFORNIA TO STAND OUT, AND I THINK THIS IS ONE. WHEN WE DESIGNED IT IN THE MIND, THE GENOMICS, THIS WAS ONE OF THE THINGS THAT I HAD IN MIND THAT WE REALLY HAD TO GET DOWN TO THE SINGLE CELL GENOMICS BECAUSE IF WE DIDN'T GET DOWN THERE, WE WOULD NEVER UNDERSTAND THE CELL PROPERLY.

AND SO I JUST THINK IT'S ONE OF THE BASIC ELEMENTS OF US MOVING FORWARD, GENUINELY MOVING FORWARD, AND I THINK WE WOULD CREATE ENORMOUS LEADERSHIP OUT OF THIS. SO THAT'S WHY I WAS ATTRACTED TO IT. AND AS I SAID, I THINK IT WAS REALLY ONLY THE PHENOTYPING THAT WAS KIND OF LEFT OUT IN THE APPLICATION. AND I FELT THAT THE SCIENTISTS HAD IT WITHIN THEM. THEY JUST DIDN'T GET IT ON PAPER IN THE WAY TO PERSUADE ALL OF THE REVIEWERS.

DR. PRIETO: OTHER COMMENTS? YES.

MR. PANETTA: I'D JUST LIKE TO GO BACK TO BUILD ON DR. LEVIN'S COMMENT HERE BECAUSE PROCEDURALLY I'M NOT SURE I UNDERSTAND HOW WE'RE GOING TO MOVE FORWARD HERE. BUT ONE OF THE THINGS THAT SEEMS TO ME MIGHT BE A CHALLENGE HERE WITH REGARD TO ADDING THIS PROJECT BACK IN IS THE FACT

THAT THERE'S AT LEAST A PROPOSED LIMITED BUDGET OF ABOUT $40 MILLION HERE, THAT DO WE HAVE THE OPPORTUNITY TO ADJUST THAT BUDGET POTENTIALLY. AND THAT GOES TO THE NEXT QUESTION.

GIVEN WHAT I HEARD AND THE COMMENTS RELATIVE TO THE TWO PROPOSALS AND THE OPPORTUNITY TO WORK WITH ILLUMINA, WHICH, AGAIN, I THINK IS AN ENORMOUS OPPORTUNITY, AND THE STRENGTH OF THE 6709 PROPOSAL THERE, WILL WE HAVE THE OPPORTUNITY TO CONSIDER POTENTIALLY HAVING TWO OF THESE CENTERS?

DR. PRIETO: I THINK TO ANSWER THAT QUESTION, YES, WE HAVE THE OPPORTUNITY. AS THE BOARD WE CAN INCREASE THE BUDGET FOR THIS; BUT, OF COURSE, THAT'S TAKING FUNDS AWAY FROM OTHER THINGS WE MIGHT DO. THERE IS NOTHING CAST IN STONE ABOUT THE SPECIFIC DOLLAR AMOUNT THAT WE SET, BUT IT IS PART OF OUR OVERALL BUDGET.

CHAIRMAN THOMAS: JUST WANT TO POINT OUT, JOE, THAT WE SPENT A FULL DAY IN DECEMBER ON THE WHOLE ISSUE OF FINITE RESOURCES AND PRIORITIZATION AND EVERYTHING ELSE. AND SO THE CONCEPT OF INCREASING BUDGETS AS WE GO ALONG IS ONE THAT WE'D HAVE TO THINK HARD AND SERIOUS ABOUT BEFORE WE DID ANYTHING.

DR. LEVIN: CAN I JUST ADD HOW MUCH UNDER

BUDGET WE WERE ON THE BASIC BIOLOGY?

DR. SAMBRANO: SO WE WERE AT 27 -- ABOUT 27 MILLION IN TERMS OF THE FINAL APPROVAL, AND THE BUDGET WAS 40. SO ABOUT 13.

DR. PRIETO: AND DO WE HAVE LEEWAY TO ADJUST THE BUDGET PROPOSED BY THE APPLICANTS TO REDUCE THE AWARDS?

DR. SAMBRANO: SO YOU COULD, BUT I THINK YOU WOULD HAVE TO DO IT VERY CAREFULLY BECAUSE I THINK, IN THE WAY THAT THE GRANTS WORKING GROUP MADE ITS MOTIONS TO REMOVE A PROJECT AND THE ASSOCIATED BUDGET WITH IT, THE APPLICATION WAS CONSTRUCTED IN A WAY THAT YOU COULD REMOVE PROJECTS. SO I MEAN I THINK IT WOULD REQUIRE YOU DOING THAT, BUT HOW YOU WOULD CHOOSE WHICH PROJECTS TO REMOVE AND WHICH ONES TO KEEP I THINK MIGHT POSE A CHALLENGE.

DR. BURTIS: I WAS GOING TO ASK AS ANOTHER ALTERNATIVE, AND I JUST PUT THIS OUT AS KIND OF A COUNTERPART TO AUGMENT THE 30 PERCENT FOR COLLABORATIVE PROJECTS SO THAT WE ONLY HAVE ONE CENTER, BUT THAT IT HAS A GREATER CAPACITY TO BRING IN OTHER GOOD SCIENCE THAT MAY HAVE RISEN UP IN THIS PROCESS, JUST AS AN ALTERNATIVE IDEA THAT WOULD STILL KEEP IT WITHIN THE CAP, BUT WOULD ALLOW ADDITIONAL FLEXIBILITY TO THAT ONE CENTER TO

COLLABORATE. JUST AN IDEA.

DR. PRIETO: I'M NOT SURE I UNDERSTAND, BUT ARE YOU SUGGESTING OTHER -- PROJECTS INITIATED BY OTHER CENTERS TO BE BROUGHT INTO THAT CENTER?

DR. BURTIS: WE WERE DISCUSSING THAT EARLIER, THE IDEA THAT THERE WAS WITHIN THIS -- I THINK MICHAEL WAS TALKING ABOUT THE IDEA THAT WITHIN THIS WAS COLLABORATIVE MONEY, AND THAT GOOD IDEAS THAT HAD RISEN UP IN OTHER PROPOSALS MIGHT WELL FIND THEIR WAY TO THAT COLLABORATIVE ENTERPRISE. AND IF THAT COLLABORATIVE ENTERPRISE WERE TO HAVE ITS FUNDING AUGMENTED, WOULD THAT POTENTIATE THAT EVEN MORE?

DR. TROUNSON: THAT WAS CERTAINLY ONE DISCUSSION AT THE GRANTS WORKING GROUP. I DON'T KNOW IF IT TRANSPIRED TO ANY RECOMMENDATION, BUT WE WERE ASKED SEVERAL TIMES COULD THAT HAPPEN. AND I THINK WE SAID THIS IS REALLY OPEN TO THE BOARD TO MAKE THOSE DECISIONS. SO I DON'T THINK THERE WAS A SPECIFIC RECOMMENDATION.

DR. SAMBRANO: THERE WAS A MOTION MADE, BUT IT FAILED. BUT, YOU KNOW, THE RECOMMENDATION WAS ESSENTIALLY WHAT YOU ARE SUGGESTING, TO AUGMENT THE COLLABORATIVE RESEARCH COMPONENT TO ALLOW ADDITIONAL PROJECTS TO COME IN, PARTICULARLY FROM

OTHER APPLICATIONS THAT WOULDN'T BE FUNDED BUT THAT STILL HAVE MERITORIOUS PROJECTS THAT COULD ENTER.

DR. PRIETO: I THINK WE NEED TO MAKE SOME DECISIONS HERE, AND I'D SUGGEST LET'S START BY DECIDING DO WE ACCEPT THE STAFF RECOMMENDATION OR NOT ON THIS ONE PIECE, ADDING THIS CENTER-INITIATED PROJECT 2 BACK INTO THE MIX. IF THERE ARE NO OTHER COMMENTS.

DR. TROUNSON: THERE MIGHT BE INPUT FROM THE PUBLIC.

DR. PRIETO: YES. FIRST, ANY MORE BOARD COMMENT?

CHAIRMAN THOMAS: I WOULD TAKE DR. TROUNSON'S ADVICE VERY SERIOUSLY. I DO THINK THE SINGLE STEM CELL ASPECT OF THIS IS A KEY COMPONENT THAT YOU'D WANT TO HAVE IN ANY SORT OF LARGER SCALE PROJECT THAT SERIOUSLY DEALS WITH THE ISSUES. SO I WOULD BE IN FAVOR OF THAT.

DR. PRIETO: PUBLIC COMMENT?

DR. KWOK: MY NAME IS PUI KWOK. I'M AT UCSF. I'M HERE TO SPEAK ON BEHALF OF MY COLLEAGUES AT UCSF, UCLA, UC BERKELEY, AND THE LAWRENCE BERKELEY NATIONAL LAB.

I SENT A LETTER TO THE ICOC BOARD LAST FRIDAY AND POINTED OUT SOME OF THE THINGS THAT WE

HAVE BEEN DISCUSSING EARLIER. BUT INSTEAD OF WORRYING ABOUT THAT, I THINK THAT IN MY PIECE I LEFT WITH YOU EARLIER, THE QUESTION OF THE OVERALL SCORING PROCEDURE AND THE REVIEW PROCESS IS REALLY NOT THE KEY HERE. THE KEY IS THAT WE FEEL REALLY STRONGLY THAT BRINGING GENOMICS AND INFORMATICS TO HELP ADVANCE STEM CELL BIOLOGY AND THERAPEUTICS IS TOO IMPORTANT FOR US TO DELAY THE WORK BY ASKING FOR ANOTHER ROUND OF REVIEW.

INSTEAD, MY COLLEAGUES AND I WOULD LIKE TO PUT FORWARD A PROPOSAL THAT PEOPLE HAVE BEEN ESSENTIALLY TALKING ABOUT. YOU KNOW, THE RESPONSE TO THE RFA HAS BEEN VERY, VERY REMARKABLE. REALLY ALL THE EXPERTS IN GENOMICS AND BIOINFORMATICS IN CALIFORNIA HAVE TEAMED WITH ALMOST ALL THE STEM CELL RESEARCHERS IN CALIFORNIA FOR SOME REALLY AMAZING PROJECTS. SO WITHOUT FUNDING ANY CENTERS, THE RFA ALREADY DID THE WORK, WHICH YOU WILL SEE THE GOAL OF BRINGING GENOMICS TO THE STEM CELL COMMUNITY.

AND OBVIOUSLY THE GRANT REVIEWERS ALSO AGREED. THE PANEL OF OUT-OF-STATE EXPERTS WERE SO IMPRESSED, THAT FOUR APPLICATIONS WERE PLACED INTO TIER I. IF YOU READ THE REVIEWERS CAREFULLY, YOU WILL SEE THAT TWO CENTER-INITIATED PROJECTS IN EACH OF THE FOUR TIER I PROJECTS WERE RATED HIGHLY AND

ENTHUSIASTICALLY RECOMMENDED FOR FUNDING. SO THIS IS A RINGING ENDORSEMENT OF THE IDEA THAT APPLYING GENOMICS AND BIOINFORMATICS APPROACHES TO STEM CELL RESEARCH IS EXCITING AND TRANSLATING.

SO OUR PROPOSAL TO THE BOARD IS REALLY TO ABANDON THE CENTER CONCEPT BECAUSE IT'S ALREADY DONE. GENOMICS HAVE BEEN BROUGHT IN TO GO WITH STEM CELL. SO, RATHER, THE REVIEWERS ALREADY HAVE DONE THE JOB OF IDENTIFYING REALLY, REALLY GOOD PROJECTS, INCLUDING THREE SINGLE CELL PROJECTS FROM OTHER CENTERS, NOT JUST FROM STANFORD. SO I WOULD PROPOSE THAT INSTEAD OF WAITING TO FORM THE CENTER THAT WOULD THEN INVITE AND REVIEW MERITORIOUS COLLABORATIVE PROJECTS, WE SHOULD JUST MOVE FORWARD AND CONDUCT THESE EIGHT EXCITING TIER I STUDIES NOW AS EACH PROJECT ALREADY HAS INFRASTRUCTURE READY IN THE PARTICULAR INSTITUTIONS.

SO WE RECOGNIZE THAT OUR PROPOSAL IS VERY DIFFERENT FROM THE ORIGINAL RFA CALLS FOR, BUT WE BELIEVE THAT THIS APPROACH ACHIEVES THE ULTIMATE GOAL SET OUT IN THE RFA, AND IT'S THE BEST USE OF ALLOCATED FUNDING BY THE TAXPAYERS, AND WILL BRING STEM CELL RESEARCH TO A HIGHER LEVEL WITHOUT THE EXPENSE AND ENCUMBRANCE OF A CENTER OF BUREAUCRACY. AND, FURTHERMORE, IT WOULD BRING EQUITY TO A REVIEW

PROCESS WHOSE FAIRNESS IS SOMEHOW QUESTIONED.

SO WE RESPECTFULLY URGE THE BOARD TO ADOPT OUR PROPOSAL AS THE BEST WAY TO MOVE THIS FORWARD. THANK YOU.

MR. REED: THIS IS LIKE THE SUPER BOWL. WHOEVER WINS WILL DO A FANTASTIC JOB. WHOEVER COMES IN SECOND WOULD ALSO HAVE DONE A FANTASTIC JOB. I DON'T LIKE THE IDEA OF DOING TWO. I THINK THAT WE HAVE TOO LITTLE MONEY LEFT. I THINK WE HAVE TO BE VERY CAREFUL TO HUSBAND OUR RESOURCES CAREFULLY.

I DO THINK THAT WE'RE JUDGING A LITTLE BIT APPLES AND ORANGES THOUGH. I THINK THAT UCSD PUTS A TREMENDOUS FINANCIAL GIFT WITH THE ILLUMINA. I THINK THAT IS A VALUE WHICH I DON'T SEE REFLECTED ON THE SCORE. I'M SURE STANFORD WILL DO A FANTASTIC JOB. EITHER WILL DO GREAT. I DON'T THINK WE SHOULD DO TWO. I THINK WE HAVE TO BE CAREFUL NOW. THANK YOU.

DR. PECKMAN: MY NAME IS STEVE PECKMAN. I'M THE ASSOCIATE DIRECTOR OF THE UCLA STEM CELL RESEARCH CENTER. AND WE SUBMITTED AN APPLICATION. IT SEEMS TO ME THAT THE ICOC HAS ALREADY DETERMINED THE OUTCOME FOR THE DATA COORDINATION AND MANAGEMENT COMPONENT OF THIS RFA. AND PERSONALLY I THINK YOU'VE DONE AN EXCELLENT JOB. UC SANTA CRUZ IS A

WORLD LEADER IN THE AREA FOR BIOINFORMATICS.

I WOULD ALSO SAY THAT WE TOTALLY ENDORSE THE PROPOSAL, RADICAL THOUGH IT MAY SEEM, FROM UCSF, WHICH IS THE GRANTS WORKING GROUP DID AN AMAZING JOB REVIEWING THE SCIENCE. WE HAVE AN UNPRECEDENTED NUMBER OF CAMPUSES REPRESENTED IN TERMS OF RECOMMENDED FOR FUNDING. YOU'VE BROUGHT THE GENOME CENTERS TOGETHER, AND YOU'VE GOTTEN UNIVERSITIES AND PRIVATE ENTITIES TO COLLABORATE.

NOW IT SEEMS THE GOAL OF THE ICOC WOULD BE TO PROMOTE THE RESEARCH. AND THAT'S WHAT'S REPRESENTED THROUGH THE PROJECTS FORWARDED BY THE CENTERS. SO WE WOULD STRONGLY ENCOURAGE YOU TO ADOPT THE IDEA THAT WAS JUST PRESENTED BY UCSF. THANK YOU.

DR. LORING: I'M YIELDING THE FLOOR TO MY ESTEEMED COLLEAGUE. I'LL LET MIKE GO FIRST.

DR. SNYDER: WELL, THANKS. I'M MICHAEL SNYDER. I'M CHAIR OF GENETICS AND HEAD OF THE CENTER FOR GENOMICS AND PERSONALIZED MEDICINE AT STANFORD. I ALSO HAVE GATHERED THE DIRECTOR OF THE APPLICATION RECOMMENDED FOR FUNDING. JOE ECKER, SITTING NEXT TO ME, IS THE CO-DIRECTOR.

SO I'LL TELL YOU WE PUT A LOT OF THOUGHT INTO THIS. WE REALLY REACHED ALL AROUND CALIFORNIA

TO TRY AND PUT TOGETHER THE VERY BEST GENOMICS CENTER WE COULD. WE BROUGHT TOGETHER LEADING STEM CELL SCIENTISTS, LEADING GENOMICISTS TO REALLY HAVE A VERY HIGH IMPACT CENTER. AND WE FELT THAT'S WHAT WE DID. WE BROUGHT IN SEVEN INSTITUTIONS. IT'S ALL THE ONES YOU HEARD MENTIONED EARLIER. THE LUDWIG WAS LEFT OUT, BUT THAT'S IN THERE AS WELL.

AND WE BROUGHT ALL THESE GROUPS TOGETHER; AND AS FAR AS I CAN TELL, THAT'S PRETTY UNPRECEDENTED. I DON'T KNOW THAT I'VE EVER SEEN SEVEN GROUPS FROM CALIFORNIA ALL WORKING TOGETHER WITH A COMMON GOAL, WHICH IS REALLY TO ADVANCE STEM CELL GENOMICS IN OUR STATE. WE THINK WITH THAT TEAM WE CAN REALLY HAVE A VERY HIGH IMPACT CENTER.

ALSO, PRETTY AMAZING TO ME IS WE GOT ALL OF THESE INSTITUTIONS TO GIVE SUPPORT, NOT JUST FACILITIES. PROBABLY EVERYBODY DID THAT FOR THEIR APPLICATIONS. AND WE BUILT A BRAND-NEW FACILITY. YOU CAN COME VISIT IT. IT'S AMAZING. AND IT HOLDS LOTS OF SEQUENCERS. IT LOOKS GREAT. BUT WE DID MORE THAN THAT. WE ROUNDED UP SUPPORT FROM THE ADMINISTRATIONS OF OUR VARIOUS INSTITUTIONS, AND THEY ALL CONTRIBUTED. MY COUNT ACTUALLY HAD IT AT $7 MILLION. IT COULD DROP A LITTLE THAT PROJECT 3 AND CERTAINLY PROJECT 2 AREN'T FUNDED, BUT IT WILL

STILL BE VERY SUBSTANTIAL. I'M QUITE CONFIDENT IT WOULD STILL BE AT LEAST OVER FOUR MILLION. IT WILL BE A LOT OF MONEY.

NOW, 40 MILLION OR WHATEVER THIS FINAL NUMBER IS GOING TO BE, 30 MILLION, IS A LOT OF MONEY, BUT GENOMICS EATS IT UP VERY FAST. THE MACHINES ARE EXPENSIVE, THE CONSUMABLES ARE EXPENSIVE, THE EXPERTISE NEEDED TO RUN THIS STUFF IS INCREDIBLY SOPHISTICATED. AND YOU REALLY DO NEED TOPNOTCH THINGS. AND THIS EXTRA SUPPORT, EVEN THOUGH IT MAY NOT HAVE BEEN REQUIRED IN THE APPLICATION, IT WILL STRETCH TAXPAYER'S DOLLARS A LOT FURTHER. AND WE REALLY MADE THE EXTRA EFFORT TO BRING IN THAT SUPPORT SO WE CAN HAVE EVEN HIGHER IMPACT THAN WHAT CIRM WAS WILLING TO COMMIT IN THE FIRST PLACE.

SO I THINK WE'VE REALLY STEPPED UP TO THE CHALLENGE AND PUT TOGETHER WHAT WE THINK IS A WORLD-CLASS CENTER.

THE OTHER THING I'D LIKE TO SAY THAT'S SPECIAL ABOUT OUR CENTER IS GENOMICS ISN'T JUST SEQUENCING GENOMES. AND WE HAVE A GREAT COLLABORATION WITH ILLUMINA. YOU HEARD THAT ALREADY. THAT'S PART OF IT. BUT, QUITE FRANKLY, GENOMICS IS ALSO FOLLOWING GENE EXPRESSION, MAPPING

REGULATORY SITES, DOING SINGLE CELL GENOMICS. WE HAVE ALL OF THAT EXPERTISE IN OUR CENTER. IN FACT, WE HAVE MOST OF THE INVENTORS OF THAT EXPERTISE IN OUR CENTER BETWEEN JOE ECKER IN MY GROUP AND STEVE QUAKE'S GROUP. MOST OF THE EXISTING TECHNOLOGIES THAT ARE OUT THERE WERE INVENTED BY OUR CENTERS.

NOT ONLY THAT, WE ACTUALLY HAVE THE PIPELINES NEEDED FOR PROCESSING DATA IN A UNIFORM FASHION. THIS IS A BIG PART OF THE RFA. I'M NOT SURE EVERYONE APPRECIATES THIS. TO TAKE DATA, THIS IS BIG DATA, PROCESS IT IN A UNIFORM FASHION, GET IT IN A FASHION THAT'S DISPLAYABLE TO THE PUBLIC TAKES YEARS OF EXPERIENCE. WE HAVE EIGHT TO NINE YEARS OF EXPERIENCE TO BE ABLE TO DO THIS SORT OF THING. IT'S NOT TRIVIAL. IT COSTS MILLIONS OF DOLLARS, AND WE'VE INVESTED VERY HEAVILY TO BE ABLE TO BRING THAT EXPERTISE INTO OUR CENTER. AND BETWEEN JOE'S GROUP AND OUR GROUP, WE CAN DO THAT. WE CAN DELIVER. AND I THINK THAT'S WHY OUR INSTITUTIONS STEPPED UP BECAUSE THEY KNOW WE HAVE GREAT PROJECTS, THEY KNOW WE HAVE THE EXPERTISE TO BE ABLE TO DO THIS. AND WE'RE ACTUALLY THE ONLY GROUP, AS FAR AS I KNOW, THAT'S WORKED WITH UCSC AT THIS LEVEL. CERTAINLY AT THE LEVEL WE'RE TALKING ABOUT. AND WE HAVE VERY DEFINED RELATIONSHIPS TO BE ABLE TO DO THIS IN A

VERY SEAMLESS FASHION.

THE LAST COMMENT I'LL MAKE IS I WILL MAKE A BIG PITCH FOR CIP-2 BECAUSE, IN FACT, SINGLE CELL GENOMICS IS THE HOT FIELD THESE DAYS. AND, IN FACT, IT WAS RECOGNIZED AS THE TECHNOLOGY OF THE YEAR FOR 2013. AND WE HAVE THE WORLD'S LEADERS THERE. WE THINK THE PROJECT WE'VE SET UP IS REALLY TERRIFIC, AND SO I WOULD URGE YOU TO INCLUDE IT. I WAS HOPING TO BE ABLE TO URGE YOU TO INCLUDE CIP-3. I CAN SEE THAT'S GOING TO BE A TOUGH SELL AFTER THIS DISCUSSION, BUT WE DO THINK THE ADDITION OF EPIGENOMICS AND THE ADDITION OF NEURODEGENERATIVE DISEASES, THAT'S A PROJECT ON SCHIZOPHRENIA, WOULD BE VALUABLE TO THE CENTER.

SO I DO WANT TO URGE YOU TO ACTUALLY FUND OUR CENTER. WE THINK WE HAVE ALL THE COMPONENTS IN PLACE. WE ACTUALLY THINK WE'RE UNIQUELY SUITED FOR THIS. THERE'S A REASON OUR MEDIAN SCORE IS 90, WHICH IS QUITE A BIT HIGHER THAN THE OTHERS. AND THAT'S BECAUSE WE HAVE ALL THE ELEMENTS IN PLACE. WE HAVE THE INSTITUTIONAL COMMITMENTS, WE HAVE THE EXPERTISE, AND WE HAVE THE KNOW-HOW, PLUS WE HAVE THE DEDICATION AND COMMITMENT OF A LOT OF THE LEADERS IN OUR FIELD. SO, ANYWAY, I URGE YOU TO SUPPORT OUR CENTER AND ITS VARIOUS PROJECTS.

THANKS.

DR. PRIETO: OKAY. DR. LORING.

DR. LORING: THANK YOU AGAIN. I'M JEANNE LORING AND WITH ME IS MOSTAFA RONAGHI AT ILLUMINA. WE'RE CO-PROJECT DIRECTORS FOR THE CENTER FOR ADVANCED STEM CELL GENOMICS, WHICH IS THE ONE THAT WAS SCORED THIRD ON YOUR LIST.

ALL THREE OF OUR PROJECTS REMAINED INTACT, SO WE HAD NO CHANGES IN OUR SCORES. AS YOU CAN SEE, OUR RANGE WAS FROM 70 TO 88, AND 70 WAS ALSO THE LOWEST SCORE FOR STANFORD, WHICH I THINK PROBABLY WAS THE SAME REVIEWER.

ANYWAY, SO WHAT I WANT TO TELL YOU IS JUST A COUPLE OF FACTS, AND THEN I'M GOING TO TELL YOU SOMETHING ABOUT OUR PHILOSOPHY, WHICH IS QUITE DIFFERENT FROM THE OTHERS.

ONE OF THE ISSUES THAT CAME UP EARLY IS SINGLE CELL GENOMICS. I JUST WANT TO POINT OUT THAT WE HAD A PAPER IN *NATURE BIOTECHNOLOGY*. IT WAS A COLLABORATION BETWEEN MY LAB AND ILLUMINA IN WHICH WE DID THE FIRST WHOLE GENOME TRANSCRIPTOME ANALYSIS OF SINGLE CELLS. WE WERE LOOKING AT CANCER STEM CELLS AND THE PATIENT'S BLOOD FROM MELANOMA PATIENTS. SO WE ACTUALLY CAN LEGITIMATELY CLAIM TO BE THE FIRST. CERTAINLY IT'S A VERY CROWDED FIELD,

AND WE MAY NO LONGER BE THE BEST, BUT WE CERTAINLY WERE THE FIRST.

SO WHAT I WANT TO TELL YOU IS ABOUT OUR PHILOSOPHY AND THE DIFFERENCES. I'VE HEARD THE WORD "INDUSTRY," I THINK IT WAS, 32 TIMES TODAY. AND IN OTHER MEETINGS I'VE HEARD BEFORE INDUSTRY HAS COME UP AS BEING EXTREMELY VALUABLE FOR THE FUTURE OF CIRM AND HOW CIRM'S FUNDING WILL BE ABLE TO BE PROJECTED INTO THE FUTURE AFTER THE BOND MEASURES ARE OVER. SO WE WROTE THIS APPLICATION WITH THAT IN MIND.

WHAT WE PROPOSE TO DO IS TO PUT -- IS TO INVEST THE MONEY IN CREATING NEW TOOLS FOR GENOMICS RESEARCHERS, WHICH IS SOMETHING WE'VE ALREADY BEEN DOING AND ILLUMINA IS THE BEST IN THE WORLD AT. I DON'T KNOW IF ALL OF YOU ARE FAMILIAR WITH ILLUMINA, BUT IT TOOK QUITE A JUMP IN ITS STOCK PRICE A COUPLE OF WEEKS AGO BECAUSE IT'S NOW PROMISING A $1,000 SEQUENCE. WHAT I'M TRYING TO TELL YOU IS WE HAVE, WITH THEM AS PARTNERS, WE HAVE ACCESS TO ALL THAT TALENT, ALL THAT INFRASTRUCTURE.

WE DID NOT BRING IN EXTRA MONEY FROM SCRIPPS. THAT WOULD HAVE BEEN PRETTY DIFFICULT TO DO. AND ILLUMINA IS NOT ALLOWED TO HAVE DONATED EXTRA MONEY. AS A PUBLIC COMPANY, THEY DIDN'T FEEL

COMFORTABLE IN DOING THAT. HOWEVER, THEY DID OFFER TO PROVIDE THE INFRASTRUCTURE. AND I THINK THAT'S MUCH MORE VALUABLE THAN ANY FEW MILLIONS OF DOLLARS.

WE DO NOT INTEND TO SPEND THIS MONEY FOR FIVE YEARS AND QUIT. WE INTEND TO INVEST THIS MONEY OVER FIVE YEARS AND CREATE TOOLS THAT CAN BE USED FOR THE CLINICAL APPLICATION OF STEM CELLS FOR DIAGNOSTIC TESTS TO TEST WHETHER THE STEM CELLS ARE USABLE FOR TRANSPLANTATION. WE'RE DOING THAT INDEPENDENTLY IN OUR LAB, AND WE'VE DEVOTED -- WE GOT VERY HIGH MARKS FOR OUR COLLABORATIVE PROPOSAL BECAUSE OUR INTENTION IS TO BRING THESE TOOLS TO ALL THE STEM CELL RESEARCHERS IN CALIFORNIA. AND WE KNOW WHAT THAT TAKES BECAUSE THAT'S WHAT WE'VE BEEN DOING.

I JUST WANT TO CLOSE -- IS MY TIME UP? IT FIGURES. OKAY. YOU CAN READ MY -- I WAS GOING TO TELL YOU SOME OF THE SELECTIVE COMMENTS, BUT YOU'LL SEE THEY'RE ALL REALLY POSITIVE WITH THE EXCEPTION OF NOT PROVIDING EXTRA MONEY.

DR. PRIETO: YES, MICHAEL.

DR. FRIEDMAN: IF I COULD MAKE ONE OR TWO COMMENTS, PLEASE. I CAN'T VOTE ON THIS, BUT WOULD LIKE TO JUST MAKE SOME -- SHARE SOME THOUGHTS. I THINK THOSE WHO CAN VOTE ON THIS FACE SOME

LEGITIMATELY CHALLENGING DECISIONS. THIS IS REALLY HARD. AND I THINK THE REASON FOR THAT IS AMPLY DEMONSTRATED BY THE REALLY SUPERB QUALITY OF INDIVIDUALS WHO ARE COMPETING FOR THIS. THESE ARE REALLY EXCELLENT PEOPLE, AND THAT'S DEMONSTRATED.

AND WHILE THE PROCESS -- WHILE THE REVIEW PROCESS, I THOUGHT, WAS GOOD AND APPROPRIATE, IT COULD HAVE BEEN BETTER. IT COULD HAVE BEEN CLEARER. AND I CERTAINLY RECOGNIZE WAYS IN WHICH THAT CERTAINLY COULD HAVE BEEN MADE MORE PRECISE.

I WOULD URGE, WHEN THE VOTE ACTUALLY COMES, FOR PEOPLE TO ACCEPT THE RECOMMENDATIONS OF THE REVIEW STAFF. I THINK THAT WHILE THERE ARE MANY GOOD APPLICANTS HERE, HAVING ONE INTEGRATED PROPOSAL FOR THE REASONS THAT THEY SUGGESTED STRIKES ME --

DR. PRIETO: ARE YOU SAYING OF THE SCIENTIFIC STAFF OR OF THE REVIEW WORKING GROUP? THOSE ARE TWO DIFFERENT THINGS.

DR. FRIEDMAN: THE SCIENTIFIC STAFF. THANK YOU.

DR. ECKER: IS THERE STILL PUBLIC COMMENT?

DR. PRIETO: YES. IF YOU COULD INTRODUCE YOURSELF.

DR. ECKER: YEAH. MY NAME IS DR. JOE ECKER. I'M A HOWARD HUGHES MEDICAL INVESTIGATOR AT

THE SALK INSTITUTE AND CO-DIRECTOR OF THE CENTER THAT MIKE SNYDER IS RUNNING AT STANFORD. I JUST THOUGHT I'D ADD A FEW POINTS AND SOME CLARIFICATION.

IN THE FIRST ROUND OF THIS PROPOSAL, CALL FOR PROPOSALS, I WAS THE DIRECTOR OF MY OWN CENTER, AND WE HAD SEVERAL GROUPS INVOLVED IN SAN DIEGO. AND AFTER DISCUSSION WITH THE STAFF AND THE IDEA THAT ONE CENTER WOULD BE MORE EFFECTIVE, AND I AGREE WITH THAT, WE JOINED WITH MIKE'S GROUP. WE'VE WORKED TOGETHER OVER THE YEARS FOR SEVERAL NIH PROJECTS, THE ENCYCLOPEDIA OF FUNCTIONAL ELEMENTS FOR THE HUMAN GENOME, THE ROADMAP PROJECT, AND SEVERAL OTHERS THAT WE WOULD COME TOGETHER.

SO OUR GROUP ACTUALLY IS EIGHT INSTITUTIONS BECAUSE I'M A HOWARD HUGHES INVESTIGATOR AS IS STEVE QUAKE ON THE CIP-2 AS IS DAVE HAUSSLER, SO THERE'S THAT AS WELL.

ALSO, IN TERMS OF INDUSTRY, WE DO HAVE, AS MIKE MENTIONED, A SIGNIFICANT SUBCONTRACT TO ILLUMINA SO THAT WE SUPPORT SAN DIEGO INDUSTRY, BUT I'D LIKE TO POINT OUT THAT A NUMBER OF COMPANIES HAVE BEEN FOUNDED BY MEMBERS OF OUR GROUP. AS MIKE MENTIONED, MANY TECHNOLOGIES HAVE BEEN DEVELOPED, PIONEERED BY MEMBERS OF OUR GROUP, AND COMPANIES HAVE BEEN FOUNDED; FOR EXAMPLE, SEVERAL COMPANIES BY

STEVE QUAKE. AND MOST OF THE TECHNOLOGIES THAT WE'RE PROPOSING TO DEPLOY FOR BOTH CALIFORNIA INVESTIGATORS THROUGH THE COLLABORATIVE PROJECT AS WELL AS ULTIMATELY CALIFORNIA PATIENTS HAVE BEEN PIONEERED BY MEMBERS OF OUR GROUP.

AND IT SHOULDN'T BE UNDERSTATED AS TO HOW MUCH OF A CHALLENGE IT IS TO ESTABLISH TRUE GENOMICS PIPELINES TO BE ABLE TO DELIVER THIS KIND OF DATA TO GROUPS LIKE UCSC. AND IT'S TAKEN, IN FACT, THE BETTER PART OF THE LAST YEAR JUST TO ESTABLISH NEW PIPELINES WITH THEM AS PART OF THE ENCODE 3 PROJECT WHICH WE'RE INVOLVED WITH BECAUSE OF THE CHALLENGING NATURE OF THE DATA. SO I WOULDN'T UNDERESTIMATE THE, QUOTE, EXPERIENCE REQUIRED TO CARRY OUT THIS AS AN EFFECTIVE PROJECT TO DELIVER THE KIND OF DATA THAT CALIFORNIA STEM CELL INVESTIGATORS NEED.

AND THE LAST POINT WILL BE IN TERMS OF BUDGET. AS MIKE MENTIONED, GENOMICS -- WHEN I MENTIONED THIS TO AN NIH PROGRAM PERSON ABOUT WHAT THE BUDGET WAS, THEY THOUGHT IT WAS A PILOT PROJECT. IN OTHER WORDS, THE CHALLENGE IN TRYING TO DELIVER EFFECTIVE GENOMICS TO A COLLABORATOR IS REALLY LIMITED WITH THE BUDGET. IN FACT, I WOULD SUPPORT DR. BURTIS' SUGGESTION THAT TO REALLY ENABLE SOME OF THE OUTSTANDING PROJECTS THAT HAVE BEEN DESCRIBED BY

SOME OF THE OTHER CENTER PROPOSALS, THAT IF YOU WERE TO INCREASE THAT COLLABORATIVE PROJECT BUDGET, SOME OF THOSE COULD ACTUALLY GET DONE WITHIN -- RATHER THAN TRYING TO SAVE MONEY, REALLY ENABLE THE KIND OF GENOMIC SCIENCE THAT I THINK CALIFORNIA STEM CELL INVESTIGATORS NEED. SO THANKS VERY MUCH.

DR. PRIETO: OKAY. WE COULD TALK ABOUT THAT. I THINK IT WOULD BE A SEPARATE ISSUE. SO RIGHT NOW, MR. HARRISON, IF YOU COULD RESTATE THE MOTION AND THEN CALL THE ROLL. WE HAVE ANOTHER COMMENT? TWO MORE COMMENTS. INTRODUCE YOURSELF.

DR. BALDWIN: I'M KRISTIN BALDWIN, AN ASSOCIATE PROFESSOR AT SCRIPPS RESEARCH INSTITUTE AND ALSO ADJUNCT AT UCSD. AND I'VE BEEN A PREVIOUS CIRM GRANTEE SINCE I JUST STARTED MY LAB, I GUESS, EIGHT YEARS AGO. IN BOTH OF THE GRANTS I CAME IN AS A BIOLOGIST AND PLANNED TO USE GENOMICS. AND I'M TELLING YOU THAT SO THAT YOU CAN UNDERSTAND WHY I CHOSE TO BE ON THE PROJECT I'M ON, WHICH I'M A CO-PI WITH MIKE SNYDER, RATHER THAN SOME OF THE OTHER INITIATIVES AROUND THE STATE OF CALIFORNIA.

I HAVE A REAL PASSION AND INTEREST IN GENOMICS AS IT APPLIES TO STEM CELLS. OUR LAB MADE THE FIRST STEM CELLS THAT MAKE MICE. WE DID THE FIRST GENOME SEQUENCING OF THEM AND FOUND THAT THEY

CAN BE SAFER THAN OTHERS. AND WE NOW HAVE A CIRM GRANT TO DO A LOT OF WHAT THIS LARGER GRANT WOULD DO, WHICH IS TRY TO FIND WAYS TO REDUCE THE NUMBER OF MUTATIONS AND ABERRATIONS IN INDUCED PLURIPOTENT STEM CELLS FROM HUMANS.

AND SO WITH THAT PROJECT, INITIALLY I WAS WITH A DIFFERENT GROUP, INCLUDING VCVI, AND AFTER THE RESHUFFLING, I TALKED TO A LOT OF THE GROUPS, AND THE ONE I CHOSE IS THE ONE I'M IN. AND I CHOSE IT FOR THE REASONS, I THINK, THAT WERE ALSO WRITTEN IN THE GRANT WORKING GROUP, WHICH IS THE GROUP HAS A REALLY BROAD REPRESENTATION OF THE PEOPLE I ADMIRE AND THINK ARE THE REAL GENOMICS PIONEERS OF OUR GENERATION. AND WHEN I SAW WHAT TECHNOLOGIES THEY WERE WORKING ON AND THEIR PASSION AND THE ADVANCES THAT THEY HAD MADE, I SAID I WOULD REALLY LIKE TO BE PART OF THIS GROUP. AND I WAS ABLE TO JOIN THE GROUP AND LEARN A LOT.

SO EVEN THOUGH YOUR DECISION MAY BE BASED ON DIFFERENT METRICS THAN MINE, I CAN ALSO SAY THAT IN BETWEEN THE TWO RFA'S, MY FATHER WAS DIAGNOSED WITH CANCER. AND WE PERFORMED WHOLE GENOME SEQUENCING ON HIS CANCER, AND HE DIDN'T MAKE IT. BUT DURING THAT TIME I REALIZED THAT WHOLE GENOME SEQUENCING AND SEQUENCING OF STEM CELLS AND SINGLE

CELLS IS SO CRITICALLY IMPORTANT TO PEOPLE'S LIVES. AND SO JUST AS A RESEARCHER AND A DAUGHTER, I REALLY THINK THE PROPOSAL THAT WE'RE ON IS THE BEST. AND I WOULD ACTUALLY ALSO SUPPORT REALLY INCREASING THE NUMBER OF COLLABORATIVE PROJECTS THAT CAN BE SOLICITED IN THE COMMUNITY BECAUSE I SAW SO MUCH GOOD SCIENCE THAT WAS PROPOSED FOR THESE GENOMICS GRANTS THAT WE DIDN'T HAVE MONEY FOR. SO IF THAT COULD BE DONE, I THINK IT WOULD BE REALLY GREAT. THANKS.

DR. PRIETO: WE HAD ONE MORE COMMENT.

DR. NUNN: HELLO. MY NAME IS MIKE NUNN. I'M EXECUTIVE DIRECTOR OF RESEARCH DEVELOPMENT AT THE SALK INSTITUTE, AND I WAS INVOLVED IN BOTH THE FIRST ROUND APPLICATION FROM OUR INSTITUTE AS WELL AS BRINGING TOGETHER THIS COLLABORATION.

AND BEFORE I GO FURTHER, I WANT TO THANK GIL SAMBRANO AND HIS TEAM FOR PERFORMING THIS REVIEW. I WAS FORMERLY A REVIEW ADMINISTRATOR AND PROGRAM DIRECTOR AT THE NIH, AND THERE WAS A QUESTION EARLIER ABOUT THE REVIEW PROCESS AND PROGRAMS AT NIH. I COULD ADDRESS THAT IF THERE'S AN INTEREST. BUT I KNOW THAT IT'S VERY DIFFICULT TO FIND PANELS THAT CAN DO THIS JOB AND TO GET IT ACCOMPLISHED.

THAT SAID, THE NIH PROCESS INCLUDES A DISCUSSION OF SYNERGY. AND OFTEN THE CONSIDERATION ON A PROGRAM PROJECT IS IS THE WHOLE GREATER THAN THE SUM OF THE PARTS. AND IN THE PROPOSAL THAT WAS MENTIONED BY UCSF AND UCLA, I BELIEVE, THE IDEA WAS TO DISAGGREGATE THESE CENTERS AND REMOVE THE IDEA OF THE SYNERGIES. AND THIS TEAM REALLY HAS SIGNIFICANT SYNERGY. WE'VE BROUGHT TOGETHER ALL OF THESE PEOPLE FROM UCSD, STANFORD, UC SANTA CRUZ WITH THE GOAL OF PUTTING TOGETHER A CENTER THAT CAN ACTUALLY DO THE JOB THAT NEEDS TO BE DONE.

AND I ALSO SUPPORT THE IDEA OF EXPANDING THE COLLABORATIVE RESEARCH PROGRAM AS PERHAPS A MECHANISM FOR BRINGING THAT EXPERTISE TO THE WHOLE STATE. THANK YOU.

DR. PRIETO: OKAY. AGAIN, MR. HARRISON, DO YOU WANT TO GO AHEAD AND RESTATE AND WE'D VOTE.

MR. HARRISON: YES. THE MOTION IS TO ACCEPT THE STAFF RECOMMENDATION TO RETAIN CENTER-INITIATED PROJECT NO. 2 IN APPLICATION 6673.

MS. BONNEVILLE: STEVE JUELSGAARD.

DR. JUELSGAARD: AYE.

MS. BONNEVILLE: LAUREN MILLER.

MS. MILLER: AYE.

MS. BONNEVILLE: JOE PANETTA.

MR. PANETTA: AYE.

MS. BONNEVILLE: FRANCIS PRIETO.

DR. PRIETO: ABSTAIN.

MS. BONNEVILLE: ROBERT QUINT.

DR. QUINT: ABSTAIN.

MS. BONNEVILLE: JONATHAN THOMAS.

CHAIRMAN THOMAS: YES.

MS. BONNEVILLE: ART TORRES.

MR. TORRES: AYE.

MR. HARRISON: MOTION CARRIES BY A VOTE OF FIVE YES AND TWO ABSTENTIONS.

DR. PRIETO: I'VE BEEN ASKED FOR A SHORT BREAK. SO IF WE CAN RECESS FOR ABOUT TEN MINUTES, AND THEN ALL BE BACK PROMPTLY.

(A RECESS WAS TAKEN.)

DR. PRIETO: ALL RIGHT. IF WE'RE BACK AND CAN START AGAIN. WE'VE HAD A NUMBER OF DISCUSSIONS ABOUT HOW TO PROCEED AND WHAT OUR OPTIONS ARE HERE. SO I THINK J.T. IS INTERESTED IN MAKING A MOTION. I'D LIKE TO RECOGNIZE HIM AND WE CAN DISCUSS THAT. J.T.

CHAIRMAN THOMAS: THANK YOU, DR. PRIETO. SO WE'RE TRYING TO JUGGLE A LOT OF THINGS HERE. WE'VE OBVIOUSLY GOT A LOT OF VERY TALENTED FOLKS WHO HAVE SUBMITTED HERE, AND WE HAVE A TEAM THAT

RECEIVED THE TOP RECOMMENDATION THAT DOES HAVE TREMENDOUS EXPERTISE, GEOGRAPHIC DIVERSITY, ETC.; BUT, ON THE OTHER HAND, WE DO HAVE OTHER PROJECTS OUTSIDE OF THAT GROUP THAT HAVE CONSIDERABLE MERIT. WE'RE JUGGLING ALL OF THESE CONSIDERATIONS IN THE CONTEXT OF A $40 MILLION BUDGET. AND GIVEN THE DISCUSSIONS OF LAST DECEMBER AND SUBSEQUENT DISCUSSIONS, I DON'T BELIEVE ANYBODY ON THE BOARD HAS AN INTEREST IN GOING BEYOND THAT BUDGETED AMOUNT.

HOWEVER, HAVING SAID THAT, I WOULD LIKE TO SUGGEST A POTENTIAL SORT OF COMPROMISE OF SORTS, WHICH IS IF YOU TAKE THE NO. 1 RECOMMENDED GROUP WITH THE REINCLUSION OF THAT ONE CENTER-INITIATED PROJECT THAT WE JUST VOTED ON, THAT GETS THEM UP TO A TOTAL BUDGET OF ROUGHLY 33 MILLION. OF THAT 12 MILLION IS FOR THE COLLABORATIVE FUNDING COMPONENT.

AND BEFORE I CONTINUE, DR. SAMBRANO, JUST FOR EVERYBODY'S CLARIFICATION, BECAUSE I GUARANTEE NOT EVERYBODY KNOWS WHAT COLLABORATIVE FUNDING COMPONENT MEANS, IF YOU COULD JUST DESCRIBE WHAT THAT IS, AND THEN I'LL CONTINUE.

DR. SAMBRANO: RIGHT. SO ONE OF THE COMPONENTS OF ALL THE GENOMICS PROPOSALS WAS TO HAVE A COLLABORATIVE RESEARCH COMPONENT. AND THAT WAS A

COMPONENT WHICH ALLOWS, THROUGH A REVIEW PROCESS THAT IS SET UP, THE GENOMICS PROPOSALS FROM OTHER POTENTIAL COLLABORATORS FROM VARIOUS INSTITUTIONS. SO IT IS A MECHANISM BY WHICH, FOR EXAMPLE, A PROJECT THAT WAS PROPOSED IN A DIFFERENT APPLICATION COULD COME IN AND PARTICIPATE WITH THE THEN ESTABLISHED GENOMICS CENTER.

A LOT OF WHAT WAS ENVISIONED THERE WERE SMALL-SCALE PROJECTS, NOT OF THE SCALE THAT THE CENTER-INITIATED PROJECTS ARE. CENTER-INITIATED PROJECTS ARE ON THE RANGE OF ABOUT FIVE MILLION EACH. WE WERE ENVISIONING SOMETHING MUCH SMALLER SCALE THAN THAT THAT WOULD ALLOW MULTIPLE INSTITUTIONS AND MULTIPLE INVESTIGATORS TO TAKE ADVANTAGE OF THE RESOURCES THAT ARE DEVELOPED BY THIS GENOMIC CENTER. IT'S ESSENTIALLY THE CORE COMPONENT OF HOW IT REACHES OUT AND FUNCTIONS AS A RESOURCE.

AND SO IN THE APPLICATION THAT IS RANKED AT THE TOP, THAT COMPONENT HAS A BUDGET OF 12 MILLION.

CHAIRMAN THOMAS: OKAY. SO WHAT I WOULD LIKE TO PROPOSE IS WE HAVE 33 MILLION TO THE NO. 1 RECOMMENDED GROUP, THAT WE APPROVE THAT AWARD AND THAT WE ADD TO THE AWARD AN ADDITIONAL 7 MILLION TO

GET US TO A TOTAL OF 40, OUR BUDGETED AMOUNT. THAT WOULD -- THE ADDITIONAL SEVEN WOULD ALSO BE FOR COLLABORATIVE RESEARCH PROGRAMS. AND IF YOU TOOK THE ADDED SEVEN AND THE EXISTING TWELVE, YOU ADDED THAT TO A TOTAL OF 19 MILLION GOING TO COLLABORATIVE RESEARCH, I WOULD PROPOSE THAT WE TAKE TEN OF THAT AND GIVE A PRIORITY IN THE DECISION ON WHERE TO PUT THAT TO CENTER-INITIATED PROJECTS CURRENTLY IN THE OTHER GROUPS OUTSIDE OF THE ONE THAT I'M RECOMMENDING FOR FUNDING, AND NINE OF THAT WOULD GO TO THE SMALLER PROJECTS AS ORIGINALLY ENVISIONED THAT DR. SAMBRANO JUST DESCRIBED.

SO TO RECAP, I WOULD LIKE TO MAKE A MOTION TO APPROVE 6673 AS AMENDED BY THE PREVIOUS VOTED-ON MOTION, THAT WE ADD TO THAT AWARD AN ADDITIONAL 7 MILLION TO GET TO 40 TO GIVE US A TOTAL OF 19 MILLION FOR COLLABORATIVE RESEARCH, TEN OF WHICH IS TO GO TO CENTER -- TO GIVE A PRIORITY TO CENTER-INITIATED PROJECTS, WHICH WOULD MEAN THAT AT LEAST ANOTHER COUPLE OF THOSE THAT HAVE NOT BEEN FUNDED COULD POSSIBLY GET FUNDED IF THE GENOMICS CENTER DECIDED THEY WERE THE WINNING APPLICANTS, THE BALANCE TO GO TO THE SMALLER PROJECTS ENVISIONED ORIGINALLY BY THE RFP.

AND, MR. HARRISON, IF YOU CAN POSSIBLY

REPEAT THAT, THAT WILL BE VERY IMPRESSIVE.

DR. SAMBRANO: CAN I FIRST GIVE YOU JUST A LITTLE BIT MORE OF A PRECISE NUMBER BECAUSE IT IS NOT QUITE 7 MILLION THAT IT WOULD REQUIRE TO REACH THE 40 MILLION. IT'S ACTUALLY 6.67 MILLION. SO IT'S 6,672,928.

CHAIRMAN THOMAS: SO NOTED. FRIENDLY AMENDMENT ACCEPTED.

DR. TROUNSON: SO CAN I JUST ASK YOU -- SORRY, J.T. CAN I JUST ASK YOU THAT THOSE DECISIONS WOULD BE MADE BY THAT INDEPENDENT --

CHAIRMAN THOMAS: YES.

DR. TROUNSON: OKAY. SO UNDER THOSE CIRCUMSTANCES, I'D BE STRONGLY SUPPORTIVE OF WHAT YOU SUGGESTED. WE DID NOT TALK ABOUT IT, SO I'M JUST TELLING YOU THAT I THINK THAT THAT SOUNDS LIKE A VERY GOOD IDEA.

CHAIRMAN THOMAS: THANK YOU.

MR. TORRES: THAT ALSO INCLUDES, THAT'S ALSO IN THE RFA ALREADY, INCLUSION OF STAFF TO PARTICIPATE IN THAT DECISION-MAKING, CORRECT?

DR. SAMBRANO: CORRECT.

MR. TORRES: ALL RIGHT.

MS. WINOKUR: I'M NOT CLEAR ON WHO WOULD MAKE THE DECISION ON WHICH...

DR. YAFFE: IT STATES IN THE RFA THAT THE GENOMICS CENTER WILL SET UP A COMMITTEE WHICH WILL CONSIDER COLLABORATIVE -- PROPOSALS FOR COLLABORATIVE PROJECTS. AND THAT COMMITTEE NEEDS TO HAVE REPRESENTATION BY GENOMICS EXPERTS AND STEM CELL EXPERTS, AND CIRM STAFF WILL ALSO BE ON THAT COMMITTEE. WE'LL MONITOR ITS ACTIVITIES, WE'LL PARTICIPATE IN ITS ACTIVITIES, AND WE WILL REPORT BACK TO YOU ON EXPENDITURE OF FUNDS THROUGH THE COLLABORATIVE PROGRAMS.

CHAIRMAN THOMAS: WILL CIRM STAFF HAVE A VOTE IN THAT?

DR. YAFFE: ABSOLUTELY.

DR. PRIETO: YES, MR. JUELSGAARD.

DR. FINE: I'D LIKE TO ASK A QUESTION.

DR. PRIETO: WHO IS THIS?

DR. FINE: LEON FINE.

DR. PRIETO: I'M AFRAID I THINK YOU'RE NOT ABLE TO COMMENT ON THIS. I'M SORRY.

CHAIRMAN THOMAS: I THINK YOU'RE CONFLICTED, LEON. SORRY.

DR. PRIETO: MR. JUELSGAARD.

DR. JUELSGAARD: SO, J.T., WHAT EXACT PROBLEM ARE YOU TRYING TO SOLVE HERE BY THROWING MORE MONEY AT THIS?

CHAIRMAN THOMAS: IT'S NOT A PROBLEM I'M TRYING TO SOLVE. I AM TRYING TO ACKNOWLEDGE THAT THERE WERE SOME VERY HIGHLY RATED INDIVIDUAL CENTER-INITIATED PROJECTS IN THE THREE GROUPS THAT WE ARE NOT AWARDING THAT WOULD GIVE -- THIS WOULD HAVE THE OPPORTUNITY FOR THEM POTENTIALLY TO GET FUNDING UNDER THE PROGRAM.

DR. PRIETO: WHILE REMAINING WITHIN OUR ORIGINAL BUDGET.

DR. JUELSGAARD: BUT YOU USED THE WORD "POTENTIALLY," RIGHT?

CHAIRMAN THOMAS: YES.

DR. JUELSGAARD: SO THERE'S NO ASSURANCE THAT ANY OF THOSE PROJECTS, WHICH MIGHT BE REALLY GREAT PROJECTS, WILL EVER FIND THEIR WAY INTO THIS PROGRAM.

CHAIRMAN THOMAS: THAT'S CORRECT.

DR. JUELSGAARD: THAT'S A HYPOTHETICAL.

DR. PRIETO: WE WOULD -- PRIORITY WOULD BE GIVEN TO THOSE, BUT THERE'S NO ASSURANCE THAT ANY ONE PROJECT WOULD BE FUNDED BY US.

CHAIRMAN THOMAS: NOT BY US, BY THEM.

DR. PRIETO: OR BY THE CENTER WITH THE MONEY THAT WE'RE PROVIDING, BUT IT WOULD ALLOW FOR THE POSSIBILITY. THESE ARE MERITORIOUS PROJECTS.

THE WORKING GROUP FELT THAT THEY WERE.

DR. YAFFE: AND WE ALSO RESTRICT THE USE OF THOSE FUNDS. SO IT'S NOT THAT THE CENTER COULD TAKE THE FUNDS AND USE THEM FOR SOMETHING ELSE. THEY WOULD HAVE TO BE USED FOR COLLABORATIVE PROJECTS.

DR. JUELSGAARD: I UNDERSTAND THAT. THE REAL QUESTION IS SHOULD WE INVEST MORE MONEY IN GENOMICS PROJECTS, RIGHT, THAN CURRENTLY. SO I KNOW WE ESTABLISHED AN ALLOCATION. I HATE TO CALL IT A BUDGET BECAUSE I DON'T THINK IT WAS REALLY THAT. BUT WE SAID WE WOULD DEAL WITH UP TO $40 MILLION WORTH OF THESE. AND SO THAT MONEY, IF WE SPEND IT HERE, WON'T GET SPENT SOMEWHERE ELSE, RIGHT. SO WE HAVE A TRADE-OFF DECISION TO MAKE.

AND THE QUESTION I REALLY HAVE IS IS THAT THE BEST TRADE-OFF THAT WE CAN MAKE TO PUT IN THIS ADDITIONAL AMOUNT OF MONEY FOR GENOMICS EFFORTS AND NOT SEE IT GO TO SOME OTHER USE; I.E., CLINICAL TRIALS OR BASIC BIOLOGY OR WHATEVER ELSE MIGHT COME ALONG DOWN THE ROAD?

DR. TROUNSON: CLEARLY IT'S A TRADE-OFF. I MEAN HOW DO YOU EVALUATE THAT AGAINST SOME OTHER TRADE-OFF OR SOME OTHER INITIATIVE? THESE HAVE BEEN EVALUATED AS THE TOP-LINE PROJECTS AS BEING VERY

GOOD PROJECTS. ONE HOPES THAT THEY WOULD SUCCEED AND BE INITIATED THERE OR SOMEWHERE ELSE.

DR. PRIETO: I THINK, IF I CAN COMMENT, YOU'RE EVALUATING A PROJECT THAT'S BEEN EVALUATED AND GIVEN A CERTAIN RANKING AGAINST A HYPOTHETICAL. SO IT'S ALMOST IMPOSSIBLE.

DR. JUELSGAARD: BUT, FRANCISCO, AGAIN, THERE'S NO -- AT THIS POINT THERE'S NO ABSOLUTE ASSURANCE THAT ANY OF THE PROJECTS THAT YOU'RE TALKING ABOUT THAT ARE IN THESE PROPOSALS WILL BE APPROVED FOR THE USE OF THAT MONEY.

DR. PRIETO: NO, OF COURSE. I MEAN THERE'S ONLY -- ALL WE'RE DOING IS MAKING MORE MONEY AVAILABLE FOR SOME OF THESE PROJECTS.

DR. JUELSGAARD: MY POINT EXACTLY.

DR. PRIETO: SOME, BUT NOT ALL. I MEAN THERE'S --

DR. JUELSGAARD: FOR SOME PROJECTS.

DR. PRIETO: FOR SOME PROJECTS. I MEAN WE CAN'T OR WE HAVE DECIDED THAT WE CANNOT FUND ALL. WE'RE NOT GOING TO GO TO $160 MILLION.

CHAIRMAN THOMAS: RIGHT. NO. AND I WOULD ADD TO THAT, MR. JUELSGAARD, YOU HAVE A VERY VALID POINT, AS ALWAYS. IF IT DOES SO HAPPEN THAT THERE ARE TWO PROJECTS THAT COME IN THAT SOMEHOW MANAGE TO

GET FUNDED UNDER THIS PROCESS THAT AREN'T CURRENTLY HERE, THAT MEANS THAT THEY ARE EVEN BETTER PROJECTS THAN THOSE THAT HAVE BEEN EVALUATED VERY HIGHLY BY THE GRANTS WORKING GROUP. SO THAT WOULD SEEM TO BE A WIN FOR THE OVERALL PROCESS IF THAT WERE THE CASE.

THE QUESTION OF SHOULD WE BE PUTTING AN ADDITIONAL SIX PLUS MILLION INTO GENOMICS IS CERTAINLY A VALID QUESTION, BUT THAT IS A PRIORITIZATION QUESTION. I FEEL THAT THIS IS SUCH AN IMPORTANT PROJECT OVERALL, SUCH AN IMPORTANT INITIATIVE, THAT WE SHOULD GO TO OUR 40 MILLION THAT THE BOARD ALLOCATED AS THE MAXIMUM TO GIVE US THE BEST CHANCE OF GETTING THE BEST POSSIBLE PROJECTS FUNDED TO REALLY JUMP-START THE WHOLE THING.

MR. PANETTA: THANKS. I WOULD JUST ADD THAT BY DOING THIS, I THINK YOU ALSO EXTEND THE POSSIBILITY OF BRINGING ADDITIONAL MATCHING FUNDING IN THAT COULD GET US BEYOND THE DOLLARS THAT WE HAVE AVAILABLE TO DO EVEN MORE.

DR. PRIETO: OTHER BOARD COMMENT? PUBLIC COMMENT? OKAY. WOULD YOU LIKE TO -- ONE COMMENT. DR. SNYDER.

DR. SNYDER: I LIKE THE IDEA. I THINK IT'S A GREAT IDEA BECAUSE I THINK WE'RE HEARING REALLY GREAT PROJECTS. YOU KNOW, THERE'S A LOT OF

THE DETAILS TO WORK OUT BECAUSE HOW DO YOU ACTUALLY IMPLEMENT THIS? BUT THE PRINCIPLE IS A VERY GOOD ONE TO ME. SO I CERTAINLY LIKE IT.

DR. PRIETO: DR. LORING.

DR. LORING: I CAN'T LET HIM TALK AND NOT TALK AFTER HIM. THAT'S NOT THE REASON, J.T., REALLY. SO I LIKE THE IDEA OF COMBINING THESE THINGS, THE BEST OF EVERYTHING. I'M NOT -- I DON'T HAVE ANY INVESTMENT IN ADMINISTRATING THIS CENTER. THAT'S NOT THE FUN PART.

HOWEVER, WITH NO GUARANTEE, THE PROJECTS WE HAVE AS OUR CENTER-INITIATED PROJECTS ARE IN MANY CASES COMPETITIVE WITH ONES THAT YOU'RE ALREADY FUNDING. AND SO THAT MEANS THAT THE PROJECTS AS THEY ARE ARE UNLIKELY TO BE FUNDED UNDER THIS MECHANISM. DOES THAT MAKE SENSE? IN OTHER WORDS, THEY'RE ESSENTIALLY ON THE SAME SUBJECT. SO IT DOESN'T REALLY GIVE US ANY ADVANTAGE, I THINK. IN FACT, IT PUTS US SORT OF AT A DISADVANTAGE BECAUSE -- ART, YOU LOOK CONFUSED. I'M SORRY.

MR. TORRES: I'M NOT BECAUSE I DON'T THINK IT PUTS YOU AT A DISADVANTAGE.

DR. LORING: WELL, IF THEY HAVE A SINGLE CELL GENOMICS PROJECT, I HAVE A SINGLE CELL GENOMICS PROJECT, ARE THEY GOING TO BE CHOOSING TO FUND MY

SINGLE CELL GENOMICS PROJECT?

MR. TORRES: THAT'S UP TO A COLLABORATIVE EFFORT WITH STAFF.

DR. LORING: ONE WOULD HOPE, YES. ONE WOULD HOPE. BUT I THINK THE REALITY IS THAT'S PRETTY UNLIKELY.

DR. PRIETO: WELL, I THINK THE WAY THIS IS ENVISIONED, IT WOULD GO TO THIS COMMITTEE INCLUDING CIRM REPRESENTATION AND THEN --

DR. LORING: I UNDERSTAND. IF THERE IS SOME DIRECTION THAT REALLY TRIES TO BE INCLUSIVE, THEN, OF COURSE, THAT'S FINE. I THINK THAT WOULD BE GREAT.

DR. PRIETO: I THINK IT'S CLEAR THAT'S WHAT WE WANT.

ANY OTHER COMMENTS? IF NOT, MR. HARRISON, WOULD YOU LIKE TO RESTATE AND WE'LL CALL THE ROLL.

MR. HARRISON: AS I UNDERSTAND THE MOTION, IT'S TO APPROVE FUNDING FOR GENOMICS CENTER APPLICATION 6673, TO ADD $6,672,928 TO THE COLLABORATIVE FUNDING COMPONENT OF THE AWARD. AND OF THE 19 MILLION BUDGETED FOR COLLABORATIVE FUNDING, ALLOCATE 10 MILLION WITH A PRIORITY FOR FUNDING CENTER-INITIATED PROJECTS PROPOSED BY OTHER APPLICANTS THAT WERE RECOMMENDED FOR FUNDING BY THE

GRANTS WORKING GROUP.

DR. PRIETO: OKAY.

MS. BONNEVILLE: STEVE JUELSGAARD.

DR. JUELSGAARD: NO.

MS. BONNEVILLE: LAUREN MILLER.

MS. MILLER: YES.

MS. BONNEVILLE: JOE PANETTA.

MR. PANETTA: AYE.

MS. BONNEVILLE: FRANCISCO PRIETO.

DR. PRIETO: AYE.

MS. BONNEVILLE: ROBERT QUINT.

DR. QUINT: YES.

MS. BONNEVILLE: JONATHAN THOMAS.

CHAIRMAN THOMAS: YES.

MS. BONNEVILLE: ART TORRES.

MR. TORRES: AYE.

MR. HARRISON: MOTION CARRIES BY A VOTE OF SIX TO ONE.

DR. PRIETO: THANK YOU, EVERYONE.

CHAIRMAN THOMAS: OKAY. THANK YOU, EVERYBODY, FOR BEARING WITH US THROUGH THAT DISCUSSION.

DR. YAFFE: I WANTED TO NOTE THAT WE HAVE IN THE ROOM NOT ONLY SOME OF THE TOP GENOMICS EXPERTS IN CALIFORNIA, BUT SOME OF THE TOP GENOMICS

EXPERTS IN THE WORLD HERE. THEY WERE DRAWN INTO THIS ROOM BECAUSE OF YOUR EFFORTS. AND IF ONE OF THE GOALS OF THIS PROGRAM IS TO BRING CUTTING-EDGE GENOMICS TO STEM CELL BIOLOGY, WE'RE ALREADY SUCCEEDING BY INVOLVING THESE INDIVIDUALS. SO I WANT TO THANK YOU FOR YOUR CONSIDERATION OF THIS AND FOR YOUR APPROVAL.

CHAIRMAN THOMAS: THANK YOU, DR. YAFFE, FOR YOUR LEADERSHIP IN THIS DISCUSSION. DR. SAMBRANO AS WELL. ANOTHER VERY COMPLEX PRESENTATION VERY WELL HANDLED.

MS. WINOKUR.

MS. WINOKUR: I WANT TO SAY THAT I HAVE BEEN OVERWHELMED BY THE REALIZATION ON THIS PIECE OF PAPER OF THE QUALITY AND AMOUNT OF SCIENTIFIC BRILLIANCE THAT IS HERE IN CALIFORNIA AND THAT I TAKE PRIDE THAT CIRM WAS RESPONSIBLE FOR BRINGING A LOT OF IT HERE.

CHAIRMAN THOMAS: COULD NOT HAVE BEEN BETTER STATED.

(APPLAUSE.)

CHAIRMAN THOMAS: THANK YOU VERY MUCH.

OKAY. JUST A COUPLE OF ODDS AND ENDS LEFT.

DR. PRIETO: I JUST WANT TO MAKE ONE MORE

COMMENT AND GIVE OUR APPRECIATION TO DR. TROUNSON FOR BRINGING THIS IDEA FORWARD AND HELPING TO MAKE THIS A REALITY FOR CALIFORNIA.

MR. HARRISON: DR. PRIETO, JUST ONE HOUSEKEEPING MATTER. WE NEED TO TAKE A MOTION NOT TO FUND THE REMAINING APPLICATIONS SUBMITTED BY GENOMIC CENTER APPLICANTS.

DR. PRIETO: THANK YOU. YES. IF I COULD HAVE A MOTION NOT TO FUND THE REMAINING APPLICATIONS FOR GENOMIC CENTER.

CHAIRMAN THOMAS: SO MOVED.

DR. PRIETO: SECOND?

MR. TORRES: SECOND.

DR. PRIETO: IF WE COULD CALL THE ROLL.

MS. BONNEVILLE: STEVE JUELSGAARD.

DR. JUELSGAARD: AYE.

MS. BONNEVILLE: LAUREN MILLER.

MS. MILLER: AYE.

MS. BONNEVILLE: JOE PANETTA.

MR. PANETTA: AYE.

MS. BONNEVILLE: FRANCISCO PRIETO.

DR. PRIETO: AYE.

MS. BONNEVILLE: ROBERT QUINT.

DR. QUINT: YES.

MS. BONNEVILLE: JON THOMAS.

CHAIRMAN THOMAS: YES.

MS. BONNEVILLE: ART TORRES.

MR. TORRES: AYE.

DR. PRIETO: THANK YOU ALL.

DR. TROUNSON: SO, FRANCISCO, JUST I THINK IT IS A BIG MOMENT FOR US AND FOR ME, BUT ALSO FOR MY COLLEAGUES WHO REALLY, REALLY PUT IN A HUGE EFFORT, PARTICULARLY NATALIE DEWITT AND MICHAEL YAFFE, WHO REALLY SHOULDERED A LOT OF THE RESPONSIBILITY IN MOVING THIS FORWARD TO THIS END. AND I THINK THE OUTCOME IS THAT CALIFORNIA IS GOING TO BE INCREDIBLY RICH FROM THE GRANTING OF THIS. SO I WANT TO THANK THE WHOLE BOARD FOR ACTUALLY TAKING US ON THIS TRIP AND BELIEVING IN US AND THOSE SCIENTISTS. AND I THINK THE REWARDS WILL BE THE FANTASTIC WORK THAT WILL HAPPEN FROM THIS GROUP OF SCIENTISTS. SO I WANT TO THANK ALL THE BOARD MEMBERS AND ALL THE STAFF THAT HAVE BEEN INVOLVED IN THIS, PARTICULARLY NATALIE AND MICHAEL. THANK YOU ALL VERY MUCH.

(APPLAUSE.)

CHAIRMAN THOMAS: OKAY. SO UNDERSTAND THE ONLY THING WE HAVE LEFT IS THE MINUTES, WHICH --

MS. BONNEVILLE: VERY IMPORTANT.

CHAIRMAN THOMAS: YES. VERY IMPORTANT.

MR. TORRES: MOVE TO APPROVE.

DR. PRIETO: SECOND.

CHAIRMAN THOMAS: ARE WE ALLOWED TO VOTE ON THAT, MR. HARRISON? NO. OKAY.

MR. TORRES: NO CONFLICTS ON THE MINUTES.

CHAIRMAN THOMAS: WE JUST LOST OUR QUORUM, SO WE'LL HAVE TO -- WE HAVE TO CARRY OVER ACTION ON ITEM 15 TO OUR NEXT MEETING.

IS THERE ANY OTHER PUBLIC COMMENT ON ANYTHING OUT IN THE AUDIENCE? IF NOT, THAT CONCLUDES TODAY'S AGENDA. THANK YOU, EVERYBODY, FOR YOUR HARD WORK. WE LOOK FORWARD TO SEEING YOU NEXT IN MARCH.

(THE MEETING WAS THEN CONCLUDED.)

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

CLAREMONT HOTEL
41 TUNNEL ROAD
BERKELEY, CALIFORNIA
ON
JANUARY 29, 2014

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.

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