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: SHERATON HOTEL & MARINA
1580 HARBOR ISLAND DRIVE
BAY TOWER, BEL AIRE BALLROOM
SAN DIEGO, CALIFORNIA

DATE: JUNE 17, 2009
4:30 P.M.

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

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I N D E X

SAN DIEGO, CALIFORNIA; WEDNESDAY, JUNE 17, 2009

4:30 P.M.

CHAIRMAN KLEIN: ALL RIGHT. THANK YOU VERY MUCH. WE ARE IN THE WONDERFUL, BEAUTIFUL CITY OF SAN DIEGO, AND WE HAVE DR. BRENNER HERE.

DR. BRENNER: YOU'RE ALWAYS WELCOME ANY TIME, BOB.

CHAIRMAN KLEIN: YOU HEARD THAT. WE'RE ALWAYS WELCOME. SO DON'T HOLD BACK. COME EVERY WEEK.

WE HAVE A NUMBER OF ALTERNATES WITH US TODAY OR WILL BE WITH US TODAY. ELIZABETH FINI IS COMING IN A LITTLE LATER FOR DR. PULIAFITO. DR. KEN BURTIS JUST SWORE IN FOR DR. CLAIRE POMEROY. AND, OF COURSE, DR. PRICE IS HERE FOR DR. BIRGENEAU. DR. JACOB LEVIN IS HERE FOR DR. BRYANT, AND DR. ROME IS HERE FOR DR. LEVEY, AND DR. MILLIKEN IS HERE FOR DR. HAWGOOD. SO THANK YOU VERY MUCH FOR BEING HERE.

WITH THAT, I'D LIKE TO HAVE A PLEDGE OF ALLEGIANCE LED BY MELISSA KING.

(THE PLEDGE OF ALLEGIANCE.)

CHAIRMAN KLEIN: THANK YOU. AND MS. KING, IF YOU WILL CALL THE ROLL.

MS. KING: RICARDO AZZIZ. ROBERT PRICE

FOR ROBERT BIRGENEAU.

DR. PRICE: HERE.

MS. KING: FLOYD BLOOM.

DR. BLOOM: HERE.

MS. KING: DAVID BRENNER.

DR. BRENNER: HERE.

MS. KING: JACOB LEVIN FOR SUSAN BRYANT.

DR. LEVIN: HERE.

MS. KING: MARSHA CHANDLER. MARCY FEIT.

MS. FEIT: HERE.

MS. KING: MICHAEL FRIEDMAN. LEEZA GIBBONS. MICHAEL GOLDBERG. NANCY MILLIKEN FOR SAM HAWGOOD.

DR. MILLIKEN: HERE.

MS. KING: BOB KLEIN.

CHAIRMAN KLEIN: HERE.

MS. KING: SHERRY LANSING. LEONARD ROME FOR GERALD LEVEY.

DR. ROME: HERE.

MS. KING: TED LOVE.

DR. LOVE: HERE.

MS. KING: ED PENHOET. PHIL PIZZO. KEN BURTIS FOR CLAIRE POMEROY.

DR. BURTIS: HERE.

MS. KING: FRANCISCO PRIETO. ELIZABETH

FINI FOR CARMEN PULIAFITO. ROBERT QUINT. JOHN REED. DUANE ROTH.

MR. ROTH: HERE.

MS. KING: JOAN SAMUELSON. DAVID SERRANO-SEWELL. JEFF SHEEHY. JONATHAN SHESTACK. OSWALD STEWARD. AND ART TORRES.

MR. TORRES: HERE.

MS. KING: WE DON'T YET HAVE A QUORUM, BUT WE'RE EXPECTING TO SOMETIME SOON.

CHAIRMAN KLEIN: JEFF IS, I BELIEVE, ON THE PHONE. HE'S TRYING TO GET OFF HERE MOMENTARILY. AND WE HAVE TWO OR THREE ADDITIONAL MEMBERS WHO ARE ON THEIR WAY. WE HAVE SOME REPRESENTATIONS THAT THEY WILL BE HERE SHORTLY.

I WANT TO THANK JENNIFER PRYNE AND MELISSA KING FOR ASSEMBLING THIS DISTINGUISHED GROUP AGAIN IN A VERY NICE ENVIRONMENT HERE. NOT EVERY TIME YOU CAN GET A BREAK WHERE YOU CAN LOOK OUT AND SEE BOATS IN THE WATER, SO IT'S A VERY BEAUTIFUL ENVIRONMENT. I'D LIKE TO ALSO THANK LARRY HANDERHAN FOR HELPING US TO GET THIS ENTIRE MEETING TOGETHER.

NO MEMBERS ARE HERE BY PHONE. BUT THE PROCEEDINGS ARE BEING AUDIOCAST AND MADE AVAILABLE VIA THE INTERNET. AND MELISSA IS ESCORTING IN LEEZA GIBBONS. SO THANK YOU.

WE HAVE ON THE AGENDA TODAY CONSENT ITEMS, BUT WE'RE GOING TO WAIT ON THOSE UNTIL WE GET THROUGH THE CHAIRMAN AND THE PRESIDENT'S REPORT, AT WHICH TIME WE HOPE TO HAVE OUR QUORUM ASSEMBLED.

SO MOVING DIRECTLY INTO ITEM 6, THE CHAIRMAN'S REPORT, I WOULD LIKE TO RECOGNIZE IN THE FRONT ROW ON THE LEFT DR. CATRIONA JAMIESON FROM UC SAN DIEGO, WHO IT IS OUR PRIVILEGE TO HAVE HER AS A GUEST HERE TODAY AND FEATURED IN THE SPOTLIGHT TOMORROW WITH HER RESEARCH. IT IS TREMENDOUS THE RESEARCH SHE HAS PROCEEDED WITH AND THE BENEFITS TO PATIENTS.

HER FIRST -- THE FIRST HUMAN TRIAL IMPACT FOR RESEARCH FUNDED BY THIS AGENCY IS CATRIONA JAMIESON'S RESEARCH. IT'S A PHASE I TRIAL OF A JAK2 INHIBITOR FOR MYELOFIBROSIS, AN ACQUIRED BLOOD DISEASE THAT LEADS TO LEUKEMIA AND STROKES. THE PATIENTS I HAVE MET WHO HAVE COME THROUGH THAT TRIAL, EVEN THOUGH IT'S A PHASE I TRIAL, HAVE HAD REMARKABLE BENEFITS TO THEIR HEALTH, AND THEY HAVE BEEN REMOVED FROM BONE MARROW TRANSPLANT LISTS, A HIGH-RISK MEDICAL PROCEDURE THAT IS CRITICALLY EFFECTIVE WHEN NECESSARY WITH A COST OF OVER $120,000.

HER TRIALS INVOLVE THE BIOTECH COMMUNITY

IN SAN DIEGO, SPECIFICALLY TARGAGEN, A SAN DIEGO BIOTECH COMPANY. SHE'S GOING TO BE GIVING US SOME EXCITING INSIGHTS INTO THAT, BUT IT IS PHENOMENAL TO HAVE PATIENTS ALREADY BENEFITING FROM THE RESEARCH OF THIS AGENCY. THEY SAY THAT THE RESIDUAL OF THE DESIGN IS LUCK, AND I THINK WE HAVE A LITTLE LUCK AND A BRILLIANT SCIENTIST TO GUIDE OUR LUCK. SO THANK YOU, CATRIONA.

ON THE LARGER SCOPE OF THE AGENCY'S FUTURE, AS WE KNOW FROM A PRIOR MEETING, WE HAVE A SEGREGATED FUND THAT IS SUFFICIENT TO CARRY US THROUGH A LARGE PART OF NEXT YEAR. IT IS WITH TREMENDOUS EMPATHY THAT WE LOOK AT THE OVERALL STATE BUDGET PICTURE. AND AS YOU WILL SEE IN OUR BUDGET REPORT, EVEN WITH A MAJOR INCREASE IN SCIENTIFIC STAFFING, WE HAVE ACCOMPLISHED, WITH THE LEADERSHIP OF OUR PRESIDENT, DR. ALAN TROUNSON, TO HAVE OUR BUDGET BE SLIGHTLY BELOW LAST YEAR.

LOOKING FORWARD, THE PROSPECTS ARE FOR FOUR TO FIVE YEARS OF FINANCIAL STRESS FOR THE STATE OF CALIFORNIA AS IT TRIES TO RECOVER FROM THE CURRENT POSITION AND RESTRUCTURE THE REVENUE AND EXPENDITURE MISALIGNMENT IN THE STATE BUDGET.

I WOULD INDICATE THAT WE HAVE REMAINING $160 MILLION IN PRIVATE PLACEMENT AUTHORITY. WE

HAVE SOME STRONG INTEREST IN THAT PRIVATE PLACEMENT AUTHORITY WHICH COULD FURTHER AUGMENT THE FUNDING WE HAVE NOW IN HAND. AND WE BELIEVE THE AGENCY WILL BE IN A STRONG PERFORMANCE POSITION TO DELIVER FOR THE PEOPLE OF CALIFORNIA AND THE PATIENTS OF CALIFORNIA CERTAINLY THROUGH 2010 AND INTO 2011.

WE WILL NEED TO HAVE IN A FUTURE MEETING OF THE BOARD SOME STRATEGIC DISCUSSIONS OF FUTURE POSITIONING THAT CAN BE OF TREMENDOUS HELP IN LEVERAGING OUR FUNDS, INCLUDING POTENTIAL FEDERAL U.S. TREASURY LOAN GUARANTEES. THERE HAS BEEN A SUBSTANTIAL EXPANSION OF FEDERAL TREASURY LOAN GUARANTEE PROGRAMS GOING INTO THE ENERGY AREA BEYOND THE TRADITIONAL AREAS OF THE SBA AND HOUSING. THERE ARE ALSO AGRICULTURAL U.S. TREASURY GUARANTEES.

THE FEDERAL LOAN GUARANTEE FOR OUR PROGRAMS HAS THE BENEFIT THAT SINCE THOSE GUARANTEES WOULD GUARANTEE PRIVATE BANKS THAT COULD PARTICIPATE IN FUNDING PART OF OUR LOAN PORTFOLIO, WE WOULD BE IN A POSITION WHERE WE WOULD HAVE FUNDS THAT AROSE NOT FROM CALIFORNIA TAXPAYERS, BUT FUNDS THAT AROSE THROUGH THE BENEFIT OF FEDERAL TAXPAYERS ACROSS THIS COUNTRY. GIVEN THOSE FUNDS WERE NOT DERIVED FROM CALIFORNIA TAXPAYERS, THEY COULD AUGMENT OUR RESEARCH BUDGET AND OUR ABILITY TO FUND CLINICAL

TRIALS FOLLOWING AND ADVANCING THE WORK DONE IN RESEARCH, THE RESEARCH DONE IN CALIFORNIA WITH OUT-OF-STATE TRIALS WHICH WE CANNOT CURRENTLY FUND WITH OUR CURRENT PROPOSITION 71 FUNDS. SO THERE'S A STRATEGIC VALUE TO THIS BEYOND THE FACT THAT IT FURTHER LEVERAGES OUR CAPACITY.

IN ADVANCING OUR LOAN PROGRAM, THE FINANCE COMMITTEE MET IN THE LAST TEN DAYS, AND WE HAD A VERY GOOD, SOLID RESPONSE TO OUR REQUESTS FOR PROPOSALS FOR DELEGATED UNDERWRITERS. WE HAVE FIVE DIFFERENT INSTITUTIONS THAT MADE APPLICATIONS. THOSE NAMES HAVE BEEN MADE PUBLIC. AND THE FINANCE COMMITTEE WILL BE MEETING PROBABLY IN THE FIRST WEEK OF JULY TO TRY AND MOVE THIS FORWARD UNDER THE WATCHFUL EYE AND GUIDANCE OF THE LOAN TASK FORCE HEADED BY VICE CHAIR DUANE ROTH AND THE CHAIR OF THE FINANCE COMMITTEE, MICHAEL GOLDBERG.

IT HAS ALSO BEEN PART OF OUR CURRICULUM IN THE LAST 30 DAYS TO WORK WITH THE LITTLE HOOVER COMMISSION, AND WE HAVE HAD ACTUALLY A VERY PRODUCTIVE CALL WITH THEM IN THE LAST TWO WEEKS WHERE WE HAD AN IN-DEPTH DISCUSSION WITH THE STAFF. THE STAFF WAS VERY CLEAR THAT THEY THOUGHT THAT THE AGENCY WAS ONE OF THOSE STATE AGENCIES THAT HAD EXCEEDED ITS MISSION OBJECTIVES. AND IN ADDITION,

THEY REFERRED TO THE MASTERFUL BOARD STRUCTURE AND BOARD MEMBERS. SO I THINK THIS IS AN OPEN DIALOGUE THAT'S VERY HEALTHY.

I'M HAVING A MEETING NEXT TUESDAY WITH MEMBERS OF THE COMMISSION AND THEIR STAFF. AND WHILE THERE ARE DIFFERENCES OF OPINION ON STRUCTURE AND PROCESS, THERE ARE ALSO SOME VERY COMMON, I THINK, POINTS OF AGREEMENT ON THE QUALITY OF THE PERFORMANCE OF THIS AGENCY, ITS FINANCIAL DISCIPLINE, ITS SCIENTIFIC ACHIEVEMENTS, ITS ACHIEVEMENTS WITH THE MAJOR FACILITIES PROGRAM, AND THE LEVERAGE ACCOMPLISHED THERE WHICH THEY, SEVERAL COMMISSION MEMBERS, HAVE SAID WAS EXTRAORDINARY. AND WE HOPE THAT WE CAN LEARN FROM THEIR PERSPECTIVE WHILE HAVING SOME VERY RESPECTFUL DIFFERENCE OF OPINION ON STRUCTURE AND THE NUMBER OF BOARD MEMBERS THAT IT'S NECESSARY TO CARRY THIS VISION FORWARD.

I AM GOING TO END MY CHAIRMAN'S REPORT AT THIS POINT AND ASK THAT THE PRESIDENT GO THROUGH HIS REPORT, AGAIN AWAITING A COUPLE MORE MEMBERS TO COME INTO THE PUBLIC MEETING SO THAT WE CAN HAVE A QUORUM FOR ACTION STARTING WITH CONSENT ITEMS. DR. TROUNSON.

DR. TROUNSON: THANK YOU VERY MUCH, CHAIRMAN AND MEMBERS OF THE BOARD. SO I'LL JUST SEE

HOW WELL MY EYESIGHT WORKS FROM HERE. CHALLENGING FOR YOU TOO, I GUESS. SO AS USUAL, I'LL START ON THE SCIENCE. IF I MAY LOOK AT IT IF YOU DON'T MIND, IF THAT'S OKAY. PROBABLY THE MOST INTERESTING PAPER IN THE LAST MONTH WAS ONE ON FANCONI ANEMIA WHICH IS A DREADFUL DISEASE AFFECTING QUITE A LARGE NUMBER OF PEOPLE. IT'S A GENETIC DISEASE, AND THE PRIMARY PROBLEM HERE IS THAT EVEN GENE THERAPY WHEN IT'S BEEN TRIED DOESN'T WORK BECAUSE THE CELLS THAT YOU NEED TO TARGET ARE DESTROYED BY THE GENE THERAPY. GENE THERAPY DOESN'T WORK IN THESE PATIENTS. SO IF YOU WERE TRYING TO CORRECT THE DISEASE OF THE FANCONI ANEMIA, IT HASN'T WORKED TO DATE.

SO THERE'S A BIG GROUP OF PEOPLE INVOLVED IN THIS STUDY LED BY JUAN BELMONTE, WHO'S FROM THE SALK, BUT HOLDS A POSITION IN BARCELONA AT THE CENTER OF REGENERATIVE MEDICINE. AND HE WAS ONE OF THE PEOPLE THAT REALLY ASSISTED US CONNECT WITH THE SPANISH SCIENTISTS IN REGENERATIVE MEDICINE. HE'S A VERY SENIOR SCIENTIST AND ONE WHO'S KNOWN REALLY THROUGHOUT THE WORLD.

THIS PAPER WAS PUBLISHED IN *NATURE* THIS JUNE. AND WHAT THEY DID WAS THEY PREPARED SKIN BIOPSIES FROM PATIENTS WITH A VARIETY OF GENETIC MUTATIONS THAT ALL EXPRESS FANCONI ANEMIA, THE

GENETIC DISEASE. AND THEY CORRECTED THE GENE DEFECT BY USING A GENE THERAPY SYSTEM IN THE LABORATORY. SO THEY TOOK THESE CELLS, THESE SKIN CELLS, AND THEY USED THOSE CELLS IN A WAY TO CORRECT THOSE DISEASES BY USING A VIRAL INSERTION THAT'S NORMALLY USED FOR GENE THERAPY. OKAY. SO IT'S THE SKIN SAMPLES FROM THE PATIENTS THAT ARE TREATED IN THE LABORATORY.

THEN WHAT THEY DID AFTER THAT, THE GENETICALLY CORRECTED CELLS WERE REPROGRAMMED TO MAKE IPS CELLS. SO THEY TURNED THEM INTO THE EQUIVALENT OF EMBRYONIC STEM CELLS BY INSERTING THE TRANSCRIPTION FACTORS THAT MAKE THE SOMATIC CELLS, THE ADULT SOMATIC CELLS, MOVE TO THE EMBRYONIC STATE. SO NOW YOU'VE GOT THE EQUIVALENT OF EMBRYONIC STEM CELLS OF THE PATIENTS, OF THOSE PATIENTS, AND YOU'VE GOT THEM IN A STATE WHERE YOU CAN THEN DIFFERENTIATE THEM.

SO THEY DIFFERENTIATED THOSE CELLS INTO HEMATOPOIETIC PROGENITORS OF BOTH THE ERYTHROID AND MYELOID LINEAGES, AND THEY SHOWED THAT BOTH THE TYPES OF CELLS PRODUCED IN BOTH THE MYELOID AND THE ERYTHMOID LINEAGES WERE FUNCTIONAL CELLS, AND THEY SHOWED THAT IN CULTURE. AND THIS HAS REALLY BEEN QUITE DIFFICULT TO DO, BUT THEY SHOWED THAT IT WORKED. SO THEY'VE NOW GOT HEALTHY CELLS FROM THOSE

PATIENTS.

THERE'S NO HEALTHY CELLS OF THAT TYPE IN THE PATIENTS WITH FANCONI ANEMIA. SO THIS IS A WAY OF DERIVING HEMATOPOIETIC PROGENITORS, AND THEY CAN BE MAINTAINED IN A DISEASE-FREE PHENOTYPE IN THIS MANNER. SO IT'S A BEAUTIFUL PIECE OF RESEARCH, I THINK. IT'S A PROOF OF CONCEPT, IF YOU LIKE, THAT YOU CAN TAKE SOMEONE'S CELLS, YOU CAN MANIPULATE THE GENE BACK TO A NORMAL CONDITION, AND THEN YOU CAN MAKE THE CELLS DIFFERENTIATE INTO THE CELL TYPE THAT YOU'RE INTERESTED IN.

CLEARLY THERE'S A BIG STEP BETWEEN THERE AND THE CLINICAL TRIALS BECAUSE YOU'VE GOT TO USE THE DIFFERENTIATION SYSTEM THAT THEY USED IN THE HUMAN. THERE'S A CHALLENGE THERE. I DON'T NEED TO GO INTO IT, BUT IT'S A BIT CHALLENGING TO GET THAT TO WORK IN THE HUMAN, IN THE PATIENT. BUT, OF COURSE, THE OTHER THING IS THAT YOU'VE GOT TO BE CAREFUL ABOUT USING THOSE TRANSCRIPTION FACTORS IN THE WAY THEY USED THEM BECAUSE THEY USED THE SORT OF CONVENTIONAL METHODOLOGY WHICH LEAVES YOU SOME VIRUSES INTACT AND SOME C-MYC AND KLF FOR GENES WHICH ARE ASSOCIATED WITH CANCER.

NEVERTHELESS, THIS IS A BIG STEP THAT WAS ACKNOWLEDGED THROUGHOUT THE WORLD, AND IT'S COME

FROM OUR BACK DOOR HERE IN SAN DIEGO. SO I DIDN'T CHOOSE IT BECAUSE OF THAT REASON, BUT I CHOSE IT JUST BECAUSE IT WAS JUST A BEAUTIFUL PIECE OF RESEARCH WORK, AND IT SHOULD BE RECOGNIZED AS SOMETHING, I THINK, WILL BE REFERRED TO FREQUENTLY AS ONE OF THE STEPS IN THE SYSTEM FOR CELL THERAPIES.

SO THERE ARE JUST SOME PICTURES OF CELLS THAT THEY MADE. FANCONI ANEMIA IS A RELATIVELY COMMON GENETIC DISEASE. IT CAN'T BE CORRECTED BY VIRAL VECTOR GENE THERAPY, SO YOU CAN'T USE THE NORMAL VIRAL VECTOR SYSTEM TO CORRECT IT. AND THESE CORRECTED IPS CELLS OFFER A VERY ATTRACTIVE AVENUE TO CORRECT THE DISEASE. DEMONSTRATED PROOF OF CONCEPT IN VITRO IN THIS IMPORTANT STUDY. WHAT YOU ARE SEEING THERE IS SOME OF THE CELLS THAT THEY GREW. THEY MADE THEM INTO SKIN CELLS AND TURNED THEM INTO IPS CELLS, AND THEY'RE DOING THE KIND OF THINGS THAT YOU WANT THEM TO DO AND THEN LATER ON THE MATURE CELLS WILL FUNCTION AS WELL.

SO THE SECOND STUDY I WANTED TO POINT OUT TO YOU CAME OUT OF THE UC STUDIES THAT IRVINE PUBLISHED IN THE *JOURNAL OF NEUROIMMUNOLOGY* BY THE GROUP WORKING IN HANS KEIRSTEAD'S LABORATORY THERE. I THINK IT'S A SALIENT AND INTERESTING STUDY, AND

IT'S ONE I THINK IS WORTH DRAWING TO YOUR ATTENTION BECAUSE SOMETIMES YOU GET ALL THE GOOD STORIES AND SOMETIMES YOU DON'T GET THE ONES THAT ARE A BIT MORE COMPLICATED.

BUT IN THIS PARTICULAR STUDY, THEY WERE LOOKING AT DERIVING OLIGODENDROCYTES FROM HUMAN EMBRYONIC STEM CELLS. THE OLIGODENDROCYTES ARE THE CELLS WHICH PUT THE MYELIN SHEATHS BACK ON THE NEURONS. THESE ARE THE ONES THAT GERON ARE USING FOR THEIR STUDIES WITH SPINAL INJURY, AND THEY'RE BEING USED ON A RANGE OF CONDITIONS BECAUSE THESE ARE IMPORTANT CELLS THAT PUT THE PLASTIC BACK, IF YOU LIKE, ON THE ELECTRICAL WIRING.

NOW, THEY MADE THEM BECAUSE THIS WAS SOME OF THE WORK, ORIGINAL WORK, THAT WAS DONE BY THE KEIRSTEAD LABORATORY THERE. AND THEY'RE ABLE TO INTEGRATE AND REMYELINATE CENTRAL NERVOUS SYSTEM NEURONS IN MICE WITH A NEUROPATHOGENESIS RESEMBLING MULTIPLE SCLEROSIS. NOW, MS IS A COMPLICATED DISEASE. AND IF YOU MAKE IT IN -- SOME OF THE PARTS -- A STRONG PART OF THE SCIENTIFIC SOCIETY BELIEVES THAT IT IS VIRALLY BASED. IT'S A VIRAL CONDITION. AND, THEREFORE, YOU SHOULD STUDY IT IN A MODEL THAT IS INDICATIVE OF BEING A VIRAL CONDITION, SO THIS IS WHAT THEY DID.

THEY TRANSPLANTED THESE CELLS, AND THEY'RE ABLE TO SORT OF SURVIVE IN RECIPIENT MICE FOR TWO WEEKS EVEN WHEN TRANSPLANTED WITH IMMUNOSUPPRESSIVE REGIMES. SO THEY COULDN'T SURVIVE MORE THAN TWO WEEKS. TWO WEEKS WAS THEIR LIMIT, AND THEN NO KNOCKDOWN IN THIS PARTICULAR MODEL. SO EVEN THOUGH YOU IMMUNOSUPPRESS THE ANIMALS SO THAT THERE WAS ENOUGH IMMUNOSUPPRESSION THERE, THESE CELLS WERE LOST.

SO DESPITE THE ABSENCE OF THESE OLIGODENDROCYTE PRECURSOR CELLS, AT THREE WEEKS REMYELINATION AND REDUCED DEMYELINATION WERE SEEN AT THE SITE OF TRANSPLANTATION, SO SOMETHING WAS WORKING THERE. AND THAT'S INTERESTING BECAUSE IT'S PART OF THIS TROPHIC EFFECT OF HAVING THE CELLS IN THERE, BUT THERE WAS NONE OF THE HUMAN CELLS THAT THEY PUT IN. THEY'D ALREADY GONE. AND THE OLIGODENDROCYTES ARE KNOWN TO SECRETE A VARIETY OF NEUROTROPHIC FACTORS THAT AID IN RECOVERY, SUGGESTING A TROPHIC EFFECT OF THESE OPC'S, THESE OLIGODENDROCYTE PRECURSOR CELLS.

SO THE LONG TERM, AND THIS IS THEIR QUOTE FROM THEIR PAPER, THE LONG-TERM SURVIVAL OF HUMAN ALLOGRAFT TRANSPLANTS FACES SIGNIFICANT HURDLES IN NEUROLOGICAL DISEASES ASSOCIATED WITH ROBUST AND

WIDESPREAD NEUROINFLAMMATION. AND I THINK THAT IS A SALUTARY STORY, BUT WE GET A LOT OF GOOD STORIES, BUT HERE IS ONE WHICH THERE WAS SOME FUNCTIONAL REPAIR. BUT IT WAS -- THE CELLS WERE TRANSITORY, AND THEY WERE NOT THERE AFTER TWO WEEKS DESPITE GREAT CELLS, GOOD IMMUNOSUPPRESSION, BUT THINGS WERE LOST.

SO WE'VE GOT LOTS OF GOOD BASIC WORK TO DO STILL IN THIS AREA, I THINK. AND I THINK AS A MODEL FOR MS, THERE WILL BE A LOT OF PEOPLE PAYING ATTENTION TO THIS PAPER BECAUSE SOME OF THE NONVIRAL MODELS OF MS MAY WORK A LOT BETTER.

NEXT ONE, SO THE LONG-TERM SAFETY AND FUNCTION OF RETINAL PIGMENT EPITHELIUM FROM HUMAN EMBRYONIC STEM CELLS HAS NOW BEEN STUDIED BY A NUMBER OF GROUPS. AND I THOUGHT THIS PAPER THAT WAS PRODUCED AT THE OREGON HEALTH AND SCIENCE UNIVERSITY PUBLISHED IN *STEM CELLS*, AGAIN THIS MONTH, WAS A PRETTY INTERESTING PAPER AND IS BACKING UP MORE AND MORE STUDIES IN THIS AREA.

SO THE IMPORTANT -- A COUPLE REALLY IMPORTANT POTENTIAL APPLICATIONS FOR THESE CELLS TO REPAIR LOSS OF SIGHT. AND THE TWO DISEASES THAT THEY ARE MOST INTERESTED IN, I THINK, AT THE MOMENT ARE AGE-RELATED MACULAR DEGENERATION AND STARGARDT

DISEASE, WHICH IS AN UNTREATABLE FORM OF MACULAR DYSTROPHY. SO THESE CELLS ARE BEING LOST FROM THE RETINAL AREA, AND AS A RESULT YOU LOSE YOUR EYESIGHT, PARTICULARLY THE CENTRAL VISION. AND IT'S HAPPENING AS MOST OF US AGE. CHAIRMAN, AS I SAID, IT'S GETTING HARDER TO SEE THE SLIDES. YOU'LL KNOW IT'S TIME TO RETIRE ME WHEN I CAN'T READ THEM AT ALL.

WHAT THEY SHOWED THERE WAS LONG-TERM FUNCTIONAL RESCUE IN ANIMAL MODELS IN THE RAT AND IN THE MOUSE WITH HUMAN EMBRYONIC STEM CELL-DERIVED RETINAL PIGMENTED EPITHELIAL CELLS. THESE CELLS ARE RELATIVELY EASY TO GROW IN THE ROYAL COLLEGE SOCIETY RAT MODEL, WHICH IS A VERY WELL-KNOWN MODEL OF AGE-RELATED MACULAR DEGENERATION IN THE ELOV14 MOUSE, WHICH IS A MODEL FOR THE STARGARDT DISEASE. THESE SURVIVED SUBRETINAL TRANSPLANTATION FOR PROLONGED PERIODS; THAT IS, MORE THAN 220 DAYS. SO THIS IS A LOT LONGER THAN THE TWO WEEKS IN THE STUDY I JUST REPORTED TO YOU IN THE OLIGODENDROCYTES.

AND THESE CELLS SUSTAIN VISUAL FUNCTION AND PHOTORECEPTOR INTEGRITY IN A DOSE-DEPENDENT FASHION, WHICH IS REALLY IMPORTANT, WITHOUT TERATOMA FORMATION, IMPORTANT AGAIN, OR UNTOWARD PATHOLOGICAL REACTIONS. SO YOU'VE GOT NEAR NORMAL FUNCTIONAL

MEASUREMENTS WERE RECORDED AT MORE THAN 60 DAYS IN THE RATS. SO THESE RESULTS SUGGEST THAT THE HUMAN EMBRYONIC STEM CELLS COULD SERVE AS A POTENTIALLY SAFE AND INEXHAUSTIBLE SOURCE OF RETINAL PIGMENTED EPITHELIAL CELLS FOR EFFICACIOUS TREATMENT OF A RANGE OF RETINAL DEGENERATIVE DISEASES. SO IT'S A BIG PLUS AGAIN. IT'S ANOTHER GOOD STUDY STRONGLY IN SUPPORT OF THOSE THAT ARE COMING FROM LONDON AND COMING FROM CALIFORNIA. IT'S GOOD NEWS IN THAT DIRECTION.

THE WORK IN THE KIDNEY IS VERY COMPLEX AND FEW PEOPLE HAVE REALLY TAKEN UP STEM CELL WORK IN THE KIDNEY. KIDNEYS ARE TRANSPLANTED, AS YOU KNOW, QUITE FREQUENTLY. KIDNEY TRANSPLANTS ARE A PRETTY COMMON ORGAN TO BE TRANSPLANTED, AND THERE ARE A LOT OF PATIENTS WHO NEED TRANSPLANTS WHO ACTUALLY CAN'T GET THEM. SO THEY'VE BEEN LOOKING AT WHETHER HUMAN EMBRYONIC STEM CELLS CAN FORM KIDNEY PRECURSORS.

AND I BRING THIS ONE TO YOUR ATTENTION BECAUSE I THINK IT IS A VERY INTERESTING STUDY PUBLISHED IN *DIFFERENTIATION*, AGAIN JUNE, BY ALICE TARANTAL AND HER COLLEAGUES AT THE UC DAVIS. AND THEY WERE LOOKING AT THE MODELS IN THE MONKEY AND THE HUMAN AND HOW CLOSE THEY ARE BECAUSE IF YOU ARE GOING TO WORK ON KIDNEYS IN SPECIES THAT ARE GOING

TO BE USEFUL AS A MODEL FOR THE HUMAN, BEST YOU GET INTO PRIMATES AND WORK THERE.

AND I THINK WHAT SHE'S SHOWN IS THAT IT IS A GOOD MODEL. THE PRIMATE IS A GOOD MODEL FOR GENE EXPRESSION BASED ON BOTH HUMAN AND NONPRIMATE KIDNEY DEVELOPMENT. SO THEY WENT THROUGH AND LOOKED TO SEE WHAT ARE THE CELLS ACTUALLY PRODUCING IN TERMS OF MARKERS WHEN THEY DIFFERENTIATE. AND THEY FOUND THAT THEY'RE PRETTY MUCH COMMON IN THE MONKEY AND IN HUMAN. SO YOU COULD DIRECT THE DIFFERENTIATION AND YOU COULD SEE THAT YOU COULD GET THE SAME KIND OF RESPONSES THAT YOU WERE HOPING FOR IN BOTH SPECIES.

SO SPONTANEOUS DIFFERENTIATION REVEALED MARKERS OF THE METANEPHRIC MESENCHYME THAT INCREASED OVER TIME, WHICH IS IMPORTANT, FOLLOWED BY UPREGULATION OF KIDNEY PRECURSOR MARKERS. NOW, THIS IS VERY EARLY WORK. I HAVE TO SAY THAT. BUT IT'S A GOOD START IN AN AREA WHERE THERE REALLY HASN'T BEEN VERY GOOD STUDIES, IN MY OWN ESTIMATION.

SO THE STUDIES SHOW THAT MONKEY AND HUMAN KIDNEY DIFFERENTIATION MARKERS ARE SIMILAR AND USEFUL IN MODELING FOR HUMAN EMBRYONIC STEM CELL DIFFERENTIATION TRANSPLANTATION. SAYS NOTHING ABOUT HOW EFFECTIVE THEY MIGHT BE IN THE LONG TERM, BUT THEY'VE TAKEN THE INITIAL STEP AND THEY'RE INTO SOME

KIDNEY WORK. AND I THINK THAT'S A GOOD THING TO BE HAPPENING. I'M GLAD THAT THEY'RE WORKING IN THE MONKEY BECAUSE I THINK THAT'S ONE OF THE SPECIES THAT IS REALLY NECESSARY IN THIS AREA OF RENAL DISEASE.

SO I THINK THIS IS THE LAST ONE, AND IT'S REALLY MORE MOLECULAR BIOLOGY, BUT I THINK IT'S ANOTHER GREAT PAPER FROM THE GROUP AT UC DAVIS. AND IT'S C-MYC REGULATES EXPRESSION OF PLURIPOTENTIAL GENES IN NEUROBLASTOMA. SO C-MYC IS THOUGHT TO BE THE EVIL CHILD IN THE TRANSCRIPTION FACTORS THAT TURN THE ADULT SKIN CELLS OR WHATEVER ADULT CELLS THAT YOU'RE WORKING WITH INTO THE PLURIPOTENTIAL CELLS, OR THOSE LIKE EMBRYONIC STEM CELLS. C-MYC IS A VERY NASTY CANCER-ASSOCIATED GENE. AND SO IT HAPPENS TO BE ONE WHICH IS BEING USED FREQUENTLY TO MAKE THE IPS CELLS, AND, OF COURSE, PUTS UP RED FLAGS FOR EVERYBODY, PARTICULARLY REGULATORY AGENCIES AND SO FORTH, OF HAVING THAT GENE AROUND.

BUT IT'S INTERESTING BECAUSE IT IS INVOLVED IN CANCER, AND IT IS INVOLVED IN TURNING THE CELLS BACK INTO PLURIPOTENTIAL STATE. SO I THINK THE MESSAGE HERE, IT WAS REALLY A VERY NICE PIECE OF WORK, AND IT SHOWED THAT THE MECHANISMS IN WHICH C-MYC WORKS, AND THIS IS N C-MYC AS THE C-MYC,

BUT THEY'RE VERY CLOSELY ASSOCIATED GENES. THIS PARTICULAR GENE IS REALLY PART OF A CASCADE THAT IS NOT ONLY RESPONSIBLE FOR MAKING BAD CELLS LIKE A GLIOBLASTOMA OR NEUROBLASTOMA, BUT IT IS ALSO IN A SITUATION WHERE IT IS ONE OF THE CELLS RESPONSIBLE FOR MAINTAINING THE VERY UNDIFFERENTIATED STATE.

SO IF YOU LOOK AT HOW THAT GENE WORKS, YOU GET A LOT OF LOOK-IN ON HOW TO MAKE PLURIPOTENTIAL CELLS, BUT YOU GET ALSO A GOOD SIGHT LOOK INTO HOW IT'S MAKING THESE NEUROBLASTOMAS OR THESE NASTY CANCERS.

SO HERE WE'RE INTERESTED IN BOTH CANCER AND IN REGENERATIVE MEDICINE, AND IT'S BEEN CLEAR THAT THE AGENCY HAS BEEN INTERESTED IN THIS. AND THIS IS A VERY NICE LINKAGE REPORT BY THE GROUP AT DAVIS. AND I THINK IT WAS WORTH BRINGING IT TO YOUR ATTENTION BECAUSE I ENJOYED READING THE PAPER.

THERE'S ONE MORE. I'M SORRY. I THOUGHT THAT WAS THE END OF THE LAST ONE. BUT GENERATION OF T-CELLS FROM HUMAN EMBRYONIC STEM CELLS HAS BEEN A DIFFICULTY. IT HAS BEEN A PROBLEM TO GET T-CELLS OUT. SO HERE'S A STUDY FROM GHENT IN BELGIUM BY THE GROUP THAT WAS PUBLISHED IN THE *JOURNAL OF IMMUNOLOGY* SHOWING THAT THEY CAN MAKE T-CELLS FROM HUMAN EMBRYONIC STEM CELLS. AND A VERY NICE, CLEVER

WAY OF DOING IT FROM PICKING UP THE CELLS, THE HEMATOPOEITIC PRECURSOR CELLS PRESENT IN A ZONE, A CERTAIN ZONE, WHEN YOU GROW YOUR EMBRYONIC STEM CELLS ON A CO-CULTURED CELL LINE CALLED OP 9.

SO YOU CAN MAKE T-CELLS. THIS IS PROBABLY GOING TO BE IMPORTANT IN DUE COURSE FOR DISEASES LIKE HIV BECAUSE OBVIOUSLY T-CELLS ARE AN IMPORTANT CELL TO REFRESH IN THAT PARTICULAR CONDITION.

SO THERE'S BEEN A CONCERN THAT WE COULDN'T MAKE THE T-CELLS. THIS PAPER SHOWS YOU CAN MAKE THE T-CELLS. THERE'S BEEN ANOTHER PAPER THAT SHOWED IT AS WELL. SO NOW WE GOT TWO PAPERS SHOWING WE CAN GET T-CELLS UP, AND SO I'M FEELING A LOT BETTER ABOUT THAT PARTICULAR PART OF IT BECAUSE WE'VE GOT TO GET THESE HUMAN EMBRYONIC STEM CELLS TO PROPERLY REFUNCTION IN SOME OF THE DISEASES, PARTICULARLY DISEASES WHERE T-CELLS HAVE BEEN REALLY UNDER ATTACK. THEN WE'VE GOT TO BE ABLE TO GET MATURE T-CELLS, AND THEY SHOWED THAT YOU COULD DO THAT IN THIS PAPER. SO I LIKED IT AS WELL. IT FITS NICELY FOR WHERE WE'RE GOING.

SO WE'VE GOT A NEW MEMBER OF STAFF IN THE GRANTS MANAGEMENT SPECIALIST. SO ELENA COMES FROM THE WOMEN'S FOUNDATION, AND WE'RE REALLY PLEASED TO HAVE TO HER. IN THE GRANTS MANAGEMENT AREA, WE'VE

HAD A COUPLE OF PEOPLE MOVE ON TO OTHER POSITIONS AS THEY DO. WE HAVE YOUNG PEOPLE MOVING THROUGH OUR ORGANIZATION THAT GO OFF AND GET ANOTHER VERY GOOD JOB. SO WE'RE VERY HAPPY TO HAVE ELENA JOIN US. THIS PART OF THE ORGANIZATION IS THE REAL ENGINE PART OF US MAKING GRANTS MANAGEMENT REALLY FUNCTION.

TALKING ABOUT THE NATIONAL LINKAGES, THE TWO WE'VE BEEN TALKING TO YOU ABOUT, INTERNATIONAL LINKAGES, SO I WANTED TO JUST FOCUS, GIVE YOU SOME INFORMATION ON THE FOCUS THAT IS WITHIN THE NATIONAL BORDERS. AND, OF COURSE, WITH PRESIDENT OBAMA GIVING US A MUCH MORE RECEPTIVE TIME FOR WORKING TOGETHER, AND IT'S CLEAR FROM EVERYTHING THAT HE SAYS THAT HE WANTS THAT, SO THE FDA HAS BEEN TERRIFIC. AND I'VE HAD ELONA BAUM WORKING WITH THE FDA NOW, AND WE'VE GOT PROPOSALS THAT ARE NOW IN THAT ORGANIZATION IN THEIR EXECUTIVE BEING LOOKED AT FOR CONSORTIA OR LIAISON UPDATE MEETINGS ON STEM CELL SCIENCE, QUALITY CONTROL, AND RISK MANAGEMENT.

AND I THINK THIS IS WHAT WE WERE LOOKING FOR. I KNOW DUANE ROTH WAS ONE WHO HAD BEEN CONCERNED LAST YEAR, PERHAPS EVEN THE YEAR BEFORE, THAT THERE WAS NOT GOOD CONNECTIONS THERE. I THINK THE REST OF THE COMMUNITY WHO ARE INTERESTED IN GETTING THESE TREATMENTS OUT INTO THE CLINIC HAVE

REALLY WANTED TO CONNECT. AND WE'RE ABLE TO DO THAT NOW. AND I'M HOPING THAT WITH ELONA TO DO A LITTLE BIT MORE NEGOTIATION THERE, I THINK WE WILL HAVE A VERY REGULAR WAY TO TALK TO FDA.

NIH MEETINGS, WE'RE WORKING ON HARMONIZATION OF OUR INTERESTS IN TERMS OF COLLABORATION. AND I THINK THAT'S ALSO BECOMING NOW POSSIBLE. THERE ALWAYS SEEM TO BE A LOT OF HURDLES IN THAT ASSOCIATION, BUT THEY'RE COMING DOWN ONE BY ONE. AND I THINK WE'RE MAKING GOOD PROGRESS AGAIN. AND IT'S THE PATIENCE OF ELONA IS HELPING US WITH THE HELP BECAUSE BOB AND I MET WITH NIH SOME TIME AGO. GREAT MESSAGES, BUT THEN YOU'VE GOT TO ACTUALLY MAKE SURE THAT IT THEN CONTINUES INTO SOMETHING THAT WE CAN RECOGNIZE AS BEING USEFUL. AND I THINK THAT'S NOW HAPPENING.

THE STATE STEM CELL AGENCIES, WE ARE ALSO CONNECTING WITH THEM. NANCY KOCH HAS BEEN PARTICULARLY HELPFUL WITH MARIE CSETE AND ALSO GEOFF LOMAX IN HELPING US BEGIN THE CONNECTIONS WITH THE STATE AGENCIES. AND THESE ARE THE AGENCIES THAT HAVE GOT STEM CELL INTERESTS IN THEM. AND WE'RE UNDER WAY WITH DISCUSSIONS FOR POTENTIAL COLLABORATION WITH SEVERAL OF THESE STATES.

SO THIS IS EARLY DAYS, BUT EVERYTHING THAT

WE'VE HEARD FROM THOSE STATES THAT WE'VE APPROACHED, IT'S A SMALL NUMBER OF THEM AT THE MOMENT, BUT VERY ENCOURAGING, WANT TO WORK TOGETHER, HOW CAN WE ASSIST EACH OTHER IN DELIVERING THIS NEW MEDICINE. SO JUST AS WE HAD A VERY STRONG CONNECTION WITH OUR INTERNATIONAL COLLEAGUES, WE'RE GETTING THEM NOW FROM OUR NATIONAL COLLEAGUES. AND I THINK THAT'S A TERRIFIC MOVEMENT FOR ALL OF US BECAUSE THE OUT-OF-CALIFORNIA COMPONENT ALWAYS REMAINS CHALLENGING FOR US TO DELIVER ON BECAUSE THERE ARE COMPONENT PARTS OF WHAT WE DO THAT ARE NOT ALL INSIDE -- NOT EVERYTHING THAT'S ABSOLUTELY BRILLIANT IS IN CALIFORNIA. MOSTLY IT IS, BUT NOT EVERYTHING.

SO THIS HELPS ALL OF THAT, AND I THINK IT ALSO WILL HELP US DELIVER ON OUR MISSION OF GETTING THESE INTO THE CLINIC AS SOON AS POSSIBLE.

SO THE PRIORITIES THAT I'VE BEEN WORKING ON, AGAIN, THE LIST OF THINGS THAT I SPEND MY TIME ON A LOT IN THE LAST MONTH. ISSUES RAISED BY CIRM IP REGS AND LOANS FOR COMPANIES. WE'VE GOT INTO THIS SPACE BECAUSE WE'RE CONNECTED NOW WITH COMPANIES. THEY'VE GOT A LOT OF QUESTIONS. IT'S GONE BACK AND FORTH, PARTICULARLY WITH OUR GENERAL COUNSEL AND COLLEAGUES, LAWYERS IN-HOUSE. SO THERE HAVE BEEN MEETINGS WITH BOB, MYSELF, AND OTHERS, YOU

KNOW, DUANE'S BEEN PART OF THIS, AND IT'S BEEN A REAL MIXTURE, BUT I THINK WE'RE GETTING BETTER AGREEMENTS NOW. IT'S OUR ABILITY TO BE ABLE TO TALK TO THESE PEOPLE AND SAYING, WELL, WE'RE NOT ROCK SOLID. IF WE CAN MANEUVER IT A BIT TO ACCOMMODATE YOU, WILL YOU BE RIGHT. IT'S NORMALLY THE WAY. THAT'S PRETTY MUCH THE WAY BUSINESS WORKS. GIVE US A LITTLE BIT OF ROOM, AND WE'LL WORK OUT HOW TO BE ACCOMMODATING ON BOTH SIDES.

THE MAJOR FACILITIES PROGRAM, WE'RE NEARLY COMPLETED THAT PROCESS. IN A WAY THERE HAVE BEEN A COUPLE OF THINGS THAT HAVE BEEN PROBLEMATIC. WE'RE WORKING OUR WAYS TOWARDS THE END OF THOSE, AND SO I THINK THERE'S ONLY TWO PROGRAMS THAT ARE NOT ABSOLUTELY FINALIZED AND GOING FORWARD, BUT THEY'RE SO CLOSE, THAT I DON'T THINK THERE'S ANY REAL PROBLEMS LEFT IN THEM. IT'S VERY MINOR ISSUES THAT WE'RE NOW DEALING WITH, VERY, VERY MINOR. AND JOHN ROBSON HAS BEEN A TOWER OF STRENGTH IN DOING THIS ALONG WITH OTHER STAFF THERE. IT'S BEEN JUST A NECESSITY TO KEEP ON AND ON AND ON AT IT.

WE'RE DEVELOPING NETWORKS IN U.S. SCIENCE AND INDUSTRY BECAUSE THAT'S WHAT WE'VE REALLY GOT TO DO NOW. WE'VE GOT TO ACTUALLY MAKE OURSELVES NETWORKED RIGHT ACROSS THE SPACE. I'M ABSOLUTELY

CONVINCED THAT WE'VE GOT TO BE CONNECTED TO BIOTECH INDUSTRIES AND TO THE PHARMA INDUSTRY, WHO ARE BACKING UP TO THIS SPACE IN VERY MAJOR WAY. AND SO NOW PFIZER, JOHNSON & JOHNSON, THESE KIND OF COMPANIES ARE STEM CELL COMPANIES, AND THEY'VE GOT STEM CELL COMPONENTS IN THEM. I THINK THAT'S GREAT NEWS. AND THEY'RE WANTING TO WORK TOGETHER WITH US, SO WE'RE JUST TRYING TO FIGURE OUT HOW THAT CAN BE ACCOMMODATED WITHOUT SORT OF MESSING WITH HOW WE'RE GOING FORWARD, BUT ENABLING, HOW CAN WE ENABLE US TO DELIVER ON OUR PRODUCTS AND ON THE NEED INTO THE CLINIC. AND WE'RE GETTING THERE. IT'S TERRIFIC. I THINK THERE'S A VERY GOOD DIALOGUE SET UP THERE.

WE'VE BEEN TALKING TO CALIFORNIA SCIENTISTS ON ISSUES RELATING TO CIRM. WE'VE GOT GREAT FEEDBACK FROM THEM IN MANY RESPECTS, ENDORSEMENT OF WHAT WE'RE DOING, BUT ALSO SOME CRITIQUE, WHICH WE'VE TAKEN BACK IN-HOUSE AND SAYS, OKAY, WE'LL REPORT THAT TO THE ICOC AS WE MOVE FORWARD.

THE BUDGET PLANNING HAS BEEN CHALLENGING BECAUSE THE FIRST TIME I SAW THE BUDGET, IT WASN'T ANY GOOD TO ME. I WANTED TO BRING YOU A BUDGET THAT WAS UNDER LAST YEAR'S BUDGET. WE'VE WORKED OUR WAY. WE'VE REMOVED REALLY ALL OF THE FAT OUT OF THE

BUDGET. ALL OF THE THINGS THAT ARE REALLY NOT ABSOLUTELY CRITICAL HAVE GONE OUT. AND IF THERE'S REALLY ANY NEED FOR US TO ASK YOU FOR FURTHER CONSIDERATION IN THE YEAR IN TERMS OF DOING SOMETHING, WE'D RATHER COME BACK TO YOU AND SAY, WELL, LOOK, THERE'S AN IMPORTANT ITEM THAT WE TOOK OUT, BUT WE MIGHT NEED TO HAVE THIS CONSIDERED AND WE'LL BRING IT FORWARD.

BUT RIGHT NOW THE BUDGET, AS BOB SAID, HAS GONE UNDER LAST YEAR DESPITE THE INCREASE IN THE NUMBER OF STAFF. SO WE FEEL COMFORTABLE THAT YOU WILL BE ALL RIGHT WITH THAT, BUT LET'S WAIT AND SEE WHEN IT'S PROVIDED FOR YOU. BUT THE STAFF HAVE WORKED REALLY HARD ON THAT. AND THANKS TO MARGARET AND TO JOHN PARTICULARLY IN DOING THAT.

CONTINUED DEVELOPMENT OF PROGRAMS, CIRM AWARDS FOR EXCEPTIONAL SCIENTISTS, I WANT TO SEE IF WE CAN MOVE THIS FORWARD. I'D LIKE TO TALK TO MEMBERS OF THE SUBCOMMITTEE. HOPEFULLY YOU MIGHT GET TIME, THE BOARD SUBCOMMITTEE, THAT ARE HERE, TO SEE WHERE WE GO. WE'VE TALKED TO THE HOWARD HUGHES, WHICH WAS A VERY INTERESTING DISCUSSION, JOHN AND I.

I CHAIRED THE SWEDISH RESEARCH COUNCIL MAJOR FACILITIES GRANTS, AND I THOUGHT THAT WAS INCREDIBLY INTERESTING WHERE IS SWEDEN GOING,

PARTICULARLY WITH NEURODEGENERATIVE DISORDERS, DIABETES, AND SO ON. THEY'RE DOING SOME FANTASTIC WORK THERE AND VERY KEEN TO LINK UP WITH US. AND I WAS VERY IMPRESSED IN THE WAY THEIR INSTITUTIONS HAVE GOT A WAY OF FEEDING GOOD IDEAS INTO THE COMMERCIAL SYSTEM. I HAVEN'T SEEN IT AS WELL ORGANIZED ANYWHERE ELSE IN THE WORLD. AND I THOUGHT CALIFORNIA WOULD PROBABLY BE AT THE TOP OF THE TREE ON THAT. I THINK SWEDEN HAS REALLY GOT A TERRIFIC SYSTEM. WE MIGHT LEARN SOMETHING FROM IT. BUT IT WAS VERY INTERESTING.

SET UP DIALOGUE, AS I SAID, WITH MAJOR PHARMACEUTICAL INTERESTS, AND WE HAD THE CIRM-VICTORIAN GOVERNMENT JOINT FUNDING OF EARLY TRANSLATIONAL GRANTS, WHICH INVOLVED SOME OF US AT THE BIO MEETING.

SO UPCOMING GRANTS REVIEWS, BASIC BIOLOGY I WE'VE DONE IN JUNE. SO THIS IS JUNE, SO IT'S THIS MONTH, NEXT WEEK, I THINK. SO THESE COME ROUND QUICKLY. AND OUR DISEASE TEAMS I, THE REVIEW WILL BE DONE IN SEPTEMBER.

THE DISEASE TEAM RESEARCH AWARDS THAT ARE INVITED TO COME FORWARD, WE INVITED -- 32 PRELIMINARY APPLICATIONS WERE INVITED, EIGHT, THE TOTAL APPLICATIONS WITH PI OR CO-PI AT FOR-PROFIT

INSTITUTIONS. SO EIGHT OF THOSE 32 HAD A COMMERCIAL PARTNER OR WERE LED BY A COMMERCIAL INSTITUTION. AND 28 WERE NONPROFIT WITH 13 INSTITUTIONS INVOLVED. NINE DESIGNATED INTERNATIONAL COLLABORATIVE FUNDING PARTNERS, NINE OF THE 32. AND THERE WAS EVIDENCE OF NEW PARTNERSHIPS, COLLABORATIONS WITHIN CALIFORNIA, FORMED. THAT'S WHAT WE WANTED TO DO, CREATE NEW PARTNERSHIPS, AND THAT'S EVIDENCED BY THE GROUPS GETTING TOGETHER. THE HUMAN EMBRYONIC STEM CELLS, IPS CELLS, AND ADULT STEM CELLS ALL WELL REPRESENTED AND A DIVERSITY OF THERAPEUTIC APPROACHES.

SO THE DISEASES INCLUDE AUTOIMMUNE DISEASE, CANCER, CARDIOVASCULAR DISEASE, DIABETES, EYE DISEASE, HEMATOPOIETIC DISORDERS, HIV/AIDS, LIVER DISEASE, MUSCULOSKELETAL DISEASES, NEUROLOGICAL DISORDERS AND INJURY, AND PERIPHERAL VASCULAR DISEASE AND TISSUE REPAIR. SO A LOT FOR US TO COME UP WITH IN THE GRANTS WORKING GROUP. I THINK THEY'RE TERRIFIC, THOSE APPLICATIONS, AND WELL WORTH THE CONSIDERATION. SO GOING TO BE HARD JOB AT THE GRANTS WORKING GROUP, BUT IT SHOULD BE INTERESTING, REALLY INTERESTING.

UPCOMING RFA'S, BASIC BIOLOGY II, POSTED IN AUGUST. THE RFA WILL BE POSTED IN AUGUST. STEM CELLS AND IMMUNOLOGY WILL COME TO US, ICOC, CONCEPT

CLEARANCE IN AUGUST AND POST THE RFA, WE HOPE, IN THE FOURTH QUARTER. AND WE'RE BACK TO EARLY TRANSLATIONAL II GRANTS. THE CONCEPT CLEARANCE IN THE DECEMBER MEETING FOR THE ICOC, AND WE WILL POST THE RFA IN FEBRUARY.

THE CONFERENCE GRANT PROGRAM, I THOUGHT I NEEDED TO UPDATE YOU ON THIS BECAUSE I MEANT TO, SO THAT'S WHY I SHOULD. BUT YOU ALLOCATED UP TO 300,000 PER YEAR TO NONPROFIT ORGANIZATIONS FOR CONFERENCE GRANTS. THE MAXIMUM AWARD, THE LESSER OF 50,000 OR 50 PERCENT OF BUDGET. TO DATE WE'VE AWARDED FIVE GRANTS THAT TOTAL APPROXIMATELY $100,000. AND THE APPROXIMATE NUMBER OF ATTENDEES AT THOSE CONFERENCES IS ABOUT 800.

THERE IS A CONFERENCE GRANT AWARD SUMMARY IN YOUR FOLDER. SO PLEASE HAVE A LOOK AT THAT, BUT IT TELLS YOU A LITTLE BIT MORE. WE HAVE A PARAGRAPH SUMMARY FOR EACH ONE OF THOSE FIVE THAT HAVE BEEN HAD. WE'VE GOT SOME TERRIFIC INPUT FROM THEM. THEY WERE VERY PLEASED. I GUESS ALL THE CONFERENCES THAT YOU HAVE PEOPLE ARE PLEASED, BUT THEY WERE VERY PLEASED WITH THE OUTCOMES. AND WE HEARD FROM STAFF WHO ATTENDED SOME AND OUR COLLEAGUES WHO HAVE BEEN AT SOME THAT THEY WERE JUST FABULOUS. SO REALLY GREAT, AND SO WE'RE STILL MOVING FORWARD LOOKING TO

SEE IF WE CAN FIND MORE OF THESE CONFERENCES TO SUPPORT WITHIN CALIFORNIA.

WE'RE HOPING TO KEEP IT WIDE ENOUGH TO COVER MOST OF OUR BRIEFS IF IT'S POSSIBLE IN EACH OF 12 MONTHS.

SO THESE WERE THE CONFERENCES THAT WERE SUPPORTED. AND, AGAIN, THEY'RE SUMMARIZED IN THIS ONE PAPER, SO I DON'T THINK I'LL SPEND MORE TIME. YOU WILL SEE IT'S ONLY ONE AT 30,000 AND THERE'S SOME AT 11,000, 8,000, AND SO ON. SO IT DEPENDED ON WHAT THEY APPLIED FOR, AND THEN REALLY HOW MUCH STEM CELL-RELATED MATERIAL WAS INVOLVED AND HOW MUCH OF A DRAW IT WAS ON THE PEOPLE WHO WOULD BE REALLY INTERESTED FROM OUR POTENTIAL GRANTEES.

SO IF I CAN HAND OVER TO MARIE CSETE TO REPORT TO YOU ON WORKSHOPS, AND THEN SHE WILL ALSO REPORT TO YOU ON THE PROGRESS REPORTS.

DR. CSETE: VERY RECENTLY, ON JUNE 8TH AND 9TH, HAD A REALLY EXCITING WORKSHOP BETWEEN JAPANESE SCIENTISTS AND CALIFORNIA SCIENTISTS SPONSORED BY CIRM AND BY JAPAN SCIENCE AND TECHNOLOGY AGENCY, WHO RECENTLY DEVELOPED A LONG-TERM COLLABORATION WITH US. AND AS A TESTAMENT TO THE COMMITMENT OF THE JAPANESE, THEY SENT 15 JAPANESE SCIENTISTS AS WELL AS FOUR PEOPLE FROM JST ITSELF, THREE SCIENTISTS AND

AN ADMINISTRATIVE PERSON, WHICH IS A BIG COMMITMENT.

AND WE DIVIDED THE PANELS INTO NEUROBIOLOGY, DISEASE MODELS, NEW TECHNOLOGIES, REPROGRAMMING, AND AGING. AMY CHUNG HAD THE VERY GOOD IDEA OF SEATING PEOPLE BY THEIR PANELS. AND SURE ENOUGH, WE SAW DISEASE -- WE SAW TEAMS BEING FORMED ON THE SPOT. AND ALSO AS I TALKED TO A LOT OF THE JAPANESE SCIENTISTS AFTERWARDS ABOUT OTHER COLLABORATORS IN THIS STATE WHO WEREN'T AT THE MEETING, AND I KNOW OF THREE TEAMS THAT HAVE ALREADY FORMED BASED ON THOSE CONVERSATIONS. SO THE JAPANESE HAVE COMMITTED ALREADY TO PARTICIPATION IN BASIC BIOLOGY, THE ONE THAT WILL BE POSTED IN AUGUST.

THE TECHNICAL CONTENT OF THIS MEETING WAS EXTRAORDINARY, AND THEY'VE ALSO EXPRESSED INTEREST IN PARTICIPATING IN AN IMMUNOLOGY GRANT AS A RESULT OF THE JST-CIRM WORKSHOP.

I WANT TO THANK DR. MICHAEL YAFFE, WHO HELPED ME ORGANIZE THAT WORKSHOP.

WE ALSO HAD AN AUTISM WORKSHOP A FEW WEEKS BACK, AND THIS WAS ALSO REALLY SUCCESSFUL IN BRINGING CLINICIANS AND BASIC SCIENTISTS AND EVEN EPIDEMIOLOGISTS TO THE SAME ROOM TO EXCHANGE IDEAS. WE CONDUCTED THIS ONE A LITTLE BIT DIFFERENTLY IN

THAT WE DID HAVE EXPERT PANELS THAT WERE DOMAIN EXPERTISE DISEASE BASED. BUT AT THE END OF THE WORKSHOP, WE ALSO HAD BREAKOUT SESSIONS WHERE WE DIVIDED ALL THE ATTENDEES INTO GROUPS AND ASKED THEM TO COME UP WITH RECOMMENDATIONS FOR AN IDEALIZED RESEARCH AGENDA AND HELP US TO FIGURE OUT WHERE CIRM MIGHT PLAY A ROLE HERE.

THIS IS WORK THAT'S VERY MUCH IN THE BASIC STAGE, BUT THE ADVENT OF IPS CELLS HAS REALLY ALLOWED US TO THINK ABOUT A REACH-IN WITH STEM CELL SCIENCE THAT WASN'T THERE UP UNTIL JUST A FEW YEARS AGO.

AN OVERWHELMING RECOMMENDATION THAT CAME FROM THE BREAKOUT SESSIONS WAS THAT THERE SHOULD BE WIDE COLLECTION OF IPS CELLS FROM MANY DIFFERENT PATIENTS WITH THIS DISORDER COVERING THE RANGE OF PHENOTYPES. AND YOU CAN SEE SOME OF THE SUBRECOMMENDATIONS THERE. THEY ALSO CAME BACK TO US RECOMMENDING OTHER CRITICAL RESEARCH NEEDS NOW WHERE CIRM MAY OR MAY NOT BE ABLE TO HAVE REACH-IN, BUT THEY FEEL THAT THERE'S STILL FUNDAMENTAL EFFORTS NEEDED INTO THE BASIC ETIOLOGY, WHICH IS STILL ARGUED ABOUT, ALTHOUGH FOCUSING MORE ON THE SYNAPSE NOW AND THE TIME COURSE OF THE DISEASE.

AND IT WAS VERY IMPORTANT THAT NOW THAT

THERE ARE STANDARDIZED DIAGNOSTICS, THAT THESE GET OUT INTO THE CLINICAL COMMUNITY SO THAT AS STUDIES ARE BEING DONE AND PATIENTS ENROLLED TO GIVE CELLS, FOR EXAMPLE, THAT THERE'S A STANDARDIZED METRIC OF DIAGNOSTIC TESTS THAT ARE QUANTITATIVE THAT CAN BE REFERRED TO WHEN THE CELLS ARE STUDIED.

AND IT IS REALLY CRITICAL THAT SOME ACCESS TO TISSUE BE PROVIDED. SO OBVIOUSLY THESE KIDS DON'T DIE OFTEN, AND SO BRAIN SAMPLES FROM AUTISTIC CHILDREN TO LOOK AT MORE GLOBAL BRAIN STRUCTURE AND FUNCTION ARE NOT AVAILABLE TO RESEARCHERS. EACH ONE THAT DOES BECOME AVAILABLE, WE HEARD ABOUT STUDIES WHERE JUST THREE BRAINS GAVE REALLY QUITE INTERESTING POTENTIAL INSIGHTS AND HYPOTHESES TO BE TESTED.

SO I DIDN'T KNOW I WAS GOING TO TALK ABOUT THIS ONE, BUT YES.

CHAIRMAN KLEIN: DR. CSETE, BEFORE YOU GO ON TO THE NEXT ONE, I'D JUST LIKE TO SAY THERE WAS A TREMENDOUS AMOUNT OF ENTHUSIASM ON THE AUTISM WORKSHOP. IT WAS, IN ADDITION TO THE SCIENTIFIC REPRESENTATIVES THERE, DR. LOUIS VISMARA FROM THE STATE SENATE ATTENDED. HE IS WORKING WITH DARRELL STEINBERG ON A POTENTIAL COLLABORATION. ART TORRES, OUR VICE CHAIR, IS WORKING WITH HIM. WE'VE

IDENTIFIED A POTENTIAL STRUCTURE UNDER WHICH PERHAPS SOME 63 FUNDS COULD POTENTIALLY BE USED TO AUGMENT OUR FUNDS FOR SPECIFIC RESEARCH ON AUTISM AND POTENTIALLY EPILEPSY, WHICH HAS SOME OVERLAP.

IT'S AN AREA WHERE CALIFORNIA IN PARTICULAR HAS INCREASING CASELOADS AT A VERY DISPROPORTIONATE AND THUS FAR UNEXPLAINED RATE. SO IT IS AN INTERESTING SPECIAL POTENTIAL FOR US FOR AUGMENTED FUNDING TO DEAL WITH THIS AREA WHICH IS CERTAINLY A CUTTING EDGE AREA. AND WE THANK YOU, DR. CSETE, FOR REALLY LEADING THAT EFFORT.

AND I BELIEVE THAT WE HAD AT THAT A SCIENTIFIC OFFICER WHO RETIRED AT THAT CONFERENCE, DR. ASHA NIGH, WHO WAS INSTRUMENTAL AS WELL IN, I THINK, SUPPORTING YOUR EFFORT TO ORGANIZE THAT WORKSHOP.

DR. CSETE: SO THIS WORKSHOP DIDN'T GO THROUGH THE USUAL WORKSHOP ROUTE. AND I THINK IT'S IMPORTANT TO UNDERSTAND THE GENESIS OF THIS. WE HAVE PEOPLE OUT IN THE COMMUNITY NOW WORKING ON ESCRO COMMITTEES THAT HELP FACILITATE THE RESEARCH THAT WE FUND. AND THIS IS A VOLUNTEER EFFORT LARGELY BY FACULTY. AND THEY WERE ORIGINALLY THINKING ABOUT APPLYING FOR A CONFERENCE GRANT TO TALK ABOUT BEST PRACTICES IN THIS AREA. WHEN THEY

REALIZED THAT THERE WERE MATCHING FUNDS AND NO FUNDS ARE REALLY GIVEN TO SUPPORT THESE KINDS OF COMMITTEES, THEY FELT KIND OF BOXED IN AND APPROACHED ME ABOUT THIS.

SO GEOFF LOMAX AND I DECIDED THAT WE WOULD ORGANIZE THIS AND BRING THE VARIOUS PEOPLE OUT THERE IN THE FIELDS DOING THE GRUNT WORK ON THESE ESCRO COMMITTEES TOGETHER. THIS WILL BE CONDUCTED AT THE AIRPORT IN THE MUSEUM IN THE SAN FRANCISCO AIRPORT ON JUNE 30TH AND JULY 1ST. AND WE'RE ASKING THE PEOPLE WHO COME TO BRING PROBLEMS THAT THEY'VE ENCOUNTERED SO THAT THERE CAN BE SORT OF A COMMUNITY DISCUSSION ABOUT WAYS TO OVERCOME THESE PROBLEMS. AND WE ALSO HAVE A GUEST SPEAKER COMING, DR. SCHIEFFER FROM THE UNIVERSITY OF WISCONSIN, WHO WAS THE AUTHOR OF THE PAPER LOOKING AT THE PROVENANCE OF THE NIH LINES AND FINDING THAT SOME OF THE NIH LINES WERE ACTUALLY NOT DERIVED ACCORDING TO MODERN ETHICAL STANDARDS.

SO I THINK IT'S GOING TO BE VERY LIVELY, AND I'M HOPING THAT THE EXPERIENCED ESCRO COMMITTEES WILL BE GIVING THEIR WISDOM DOWN TO THE LESS EXPERIENCED ESCRO COMMITTEES. AS WE'VE GONE AROUND THE STATE TO DO SITE VISITS, GEOFF LOMAX HAS DONE A LOT OF THESE, AND I ACCOMPANIED ON ONE RECENTLY,

WE'VE BEEN ENCOURAGING ALL OF THE INSTITUTIONS TO SEND REPRESENTATIVES. AND PRETTY MUCH ALL OF OUR MAJOR INSTITUTIONS WILL BE REPRESENTED.

THIS WILL ALSO BE IMPORTANT, I THINK, FOR MEMBERS OF THE STANDARDS WORKING GROUP TO ATTEND.

MR. SHEEHY: IT'S NOT A QUESTION. I JUST WANTED TO COMMEND MARIE AND ALAN AND THE SCIENTIFIC STAFF. I ATTENDED, IN FACT, ALL THREE WORKSHOPS WE TALKED ABOUT TODAY. AND NOT ONLY ARE THEY IMPRESSIVE FOR THE BREADTH AND DEPTH OF SCIENTIFIC KNOWLEDGE THAT'S PRESENTED, BUT ALL OF THEM COME OUT WITH MEASURABLE IMPACTS.

THE IMMUNOLOGY WORKSHOP IS GOING TO LEAD TO AN IMMUNOLOGY RFA, AS WE'VE SEEN FROM ALAN'S PRESENTATION. THE ONE WITH THE JAPANESE, TEAMS ARE FORMING. AND THE AUTISM ONE WAS REALLY BREATHTAKING. I MEAN FOR A DISEASE THAT IS REALLY EPIDEMIC IN CALIFORNIA RIGHT NOW, IT WAS GREAT FOR THAT COMMUNITY TO COME TOGETHER AND HEAR THE LATEST SCIENCE AND FOR THESE TYPES OF RELATIONSHIPS WITH DR. VISMARA, THE CONNECTION WITH THE SENATE SELECT COMMITTEE ON AUTISM, WHICH IS CHAIRED BY SENATOR STEINBERG. WE WILL BE ABLE TO PLAY A ROLE IN ADDRESSING ONE OF THE MAJOR PUBLIC HEALTH EPIDEMICS IN CALIFORNIA RIGHT NOW.

SO I JUST WANT TO REALLY COMMEND STAFF FOR DOING THESE WORKSHOPS, PULLING THEM TOGETHER. THEY'RE A LOT OF WORK, I'M SURE, BECAUSE YOU'RE BRINGING PEOPLE FROM ALL OVER THE WORLD. AND THEY REALLY ARE AN IMPRESSIVE FEATURE OF OUR OPERATION.

CHAIRMAN KLEIN: ART TORRES.

MR. TORRES: I WANTED TO ADD TO THAT COMMENT BECAUSE I ATTENDED THOSE WORKSHOPS AS WELL. TO, MARIE, THANK YOU SO MUCH FOR PROVIDING THOSE OVERVIEWS. AND ALSO TO DON GIBBONS WHO PROVIDED A LAYPERSON'S OVERVIEW OF THESE WORKSHOPS.

EACH OF THESE REPORTS WERE SENT TO EVERY MEMBER OF THE AUTISM SENATE COMMITTEE AND EVERY MEMBER OF THE SENATE AND ASSEMBLY HEALTH COMMITTEES. WE ALSO SENT THEM AND WILL BE SENDING THE REPORT ON THE JAPANESE WORKSHOP WHICH YOU PROVIDED FOR ME AS WELL, WHICH WE WILL GET TO THEM.

AND WE HAVE ALSO STARTED A NEW PRACTICE AT THE INSTITUTE TO MAKE SURE THAT EACH MEMBER OF THE LEGISLATURE RECEIVES OUR NEWS SUMMARY SO THAT THEY KNOW DIRECTLY WHAT THIS HAS BEEN -- WHAT OUR ORGANIZATION HAS BEEN DOING. AND IT'S SOMETHING THAT DUANE AND I HAVE TALKED ABOUT AT LENGTH, AND, OF COURSE, THE CHAIRMAN AND PRESIDENT, TO MAKE SURE THAT WE PROVIDE THESE COMMUNICATIONS SO THAT PEOPLE

KNOW THE TREMENDOUS EFFORTS THAT OUR SCIENTIFIC TEAM AND INSTITUTE AND PEOPLE OUTSIDE AND THIS BOARD HAVE BEEN SUPPORTIVE OF SO THAT THEY KNOW THAT THERE IS A RECORD HERE THAT NEEDS TO BE ARTICULATED TO THE POLICYMAKERS IN SACRAMENTO AND IN WASHINGTON AS WELL.

DR. CSETE: I GUESS THE LAST THING I'M SUPPOSED TO SPEAK ABOUT IS OUR MECHANISM FOR LOOKING AT PROGRESS REPORTS. AND THE FIRST OPPORTUNITY WE HAD TO AGGREGATE DATA ON THIS WAS FOR THE SEED GRANTS, WHICH ARE NOW MORE OR LESS IN THEIR SECOND YEAR OF FUNDING FOR MOST OF THE INVESTIGATORS. AND AS A REMINDER, I THINK ALL THE WAY BACK A FEW YEARS, THIS WAS A GRANT PROGRAM DESIGNED TO DEVELOP HUMAN EMBRYONIC STEM CELL BIOLOGY IN THE STATE. AND SINCE IT WAS EARLY, IT WAS MORE IDEA BASED RATHER THAN PRELIMINARY DATABASED, AND WE REALLY HOPED TO ATTRACT NONSTEM CELL BIOLOGISTS TO THE FIELD AS WELL AS CELL AND DEVELOPMENTAL BIOLOGISTS WHO WERE WORKING PERHAPS ON OTHER STEM CELLS, BUT HAD NOT DONE HUMAN EMBRYONIC STEM CELL WORK.

AS SUCH, THE SEED GRANTS WERE ACKNOWLEDGED TO BE RATHER HIGH RISK, HIGH GAIN. AND I WAS INVOLVED IN THE SEED GRANTS AS A REVIEWER. SO I HAVE INSIGHT INTO THE PROCESS FROM THE BEGINNING

EVEN BEFORE I CAME HERE TO CIRM. AND I HAVE TO SAY THAT THE OVERWHELMING MESSAGE I WANT TO LEAVE YOU WITH HERE IS THAT DESPITE A SLOW START, THAT WAS THE BUMP IN THE ROAD, THAT THE SEED'S ARE REALLY OVERWHELMINGLY SUCCESSFUL. AND WE LOOKED THIS WEEK TO FIND THAT THERE ARE ALREADY 64 PAPERS COMING OUT OF THE SEED PROGRAM EVEN THOUGH, AGAIN, THESE WERE NEW INVESTIGATORS IN THIS FIELD.

SO IT IS IMPORTANT ALSO, THANKS TO BETTINA, TO REMIND YOU THAT PROGRESS REPORTS ARE NOT JUST PROGRESS REPORTS, AND THIS HAS BEEN AN EDUCATION FOR BOTH THE SCIENCE OFFICE AND FOR OUR SCIENTISTS, THAT THEY REALLY SERVE AS A FOCUS OF A WAY THAT THE SCIENCE OFFICERS AND OUR GRANTEES CAN HAVE A POINT OF COMMUNICATION. AND IT ALSO ALLOWS US TO GET A HEADS UP ON WHERE THE DATA IS, ON WHAT PAPERS ARE BEING SUBMITTED, ON POTENTIAL PATENTS THAT ARE COMING OUT. AND ALSO WHEN WE DISCUSS THE PROGRESS REPORTS IN THE SCIENCE OFFICE MEETING, IT ALLOWS US TO MATCH SCIENTISTS FROM OUR INDIVIDUAL PORTFOLIOS WITH OTHER SCIENTISTS WHOSE PROGRESS WE'RE HEARING ABOUT IN THE MEETING.

IN GENERAL, I HAVE TO SAY THAT I'VE GOTTEN A LOT OF POSITIVE FEEDBACK FROM OUR PI'S ABOUT THE INTERACTIONS WITH OUR SCIENCE OFFICERS AND OUR

GRANTEES.

SO THIS IS THE PROCESS THAT WE'VE SORT OF COME TO. AND I'VE CONDENSED A VERY COMPLEX DIAGRAM THAT HAS ARROWS GOING OUT EVERY WHICH WAY. AND ON THE RIGHT, YOU HAVE A LOT OF GOLD STARS. AND THE GOLD STARS IS WHAT USUALLY HAPPENS. ON THE LEFT I PUT SYMBOLS SHOWING HOW MUCH COMMUNICATION HAPPENS AT EACH ONE OF THESE STEPS.

SO FOR THE VAST MAJORITY OF THE PROGRESS REPORTS, THINGS LOOK GOOD, AND WE GENERATE AN NGA WITH THE NEXT YEAR'S FUNDING ON THE SEED GRANTS. BUT WHAT I'M SHOWING YOU IN THE MIDDLE IS WHAT HAPPENS WHEN WE RECEIVE A PROGRESS REPORT THAT'S NOT SATISFACTORY. SO WE DID RECEIVE SOME WHERE WE SAW THAT THE PROJECTS WERE NOT ADVANCING. THEY WERE SLOW. THE VAST MAJORITY WERE THOSE GOLD STARS THAT, YOU KNOW, WENT RIGHT BACK FOR THE SECOND YEAR OF FUNDING.

IN GENERAL, I HAVE TO SAY IT WAS SLOW PROGRESS. IT WASN'T BAD PROGRESS. AND IT ALLOWED US TO IDENTIFY SOME ISSUES THAT ARE, I THINK, ENDEMIC WITH A NEW AGENCY AND NEW IDEAS. INSTITUTIONS HAD TROUBLE GETTING LINES FOR THEIR INVESTIGATORS. PEOPLE HAD TROUBLE HIRING POST DOCS WHO WERE ABLE TO DO THE WORK. WE HAD TROUBLE

GETTING SOME OF THE NGA'S OUT THE DOOR FOR VARIOUS REASONS. SO RIGHT AWAY, BY HAVING A COMMUNICATION WITH THE PI AFTER THE PROGRESS REPORT WAS IN, WE COULD HELP THEM. WE COULD INTERVENE AND MAKE THE RIGHT CALLS TO TRY TO GET AND KICK START THESE PROGRAMS.

WHEN THERE WAS INSUFFICIENT DATA FOR US TO JUDGE HOW MUCH WORK HAD BEEN DONE, THE SCIENCE OFFICER WOULD REQUEST SUPPLEMENTAL DATA. THAT OFTEN REQUIRED A COUPLE OF PHONE CALLS AND A COUPLE OF EXCHANGES OF E-MAIL BECAUSE, AGAIN, WE WERE INTERESTED IN HEARING WHAT PEOPLE WOULD NORMALLY NOT SEND IN AS A PROGRESS REPORT. DIFFICULTY GETTING CELL LINES GROWN, DIFFICULTY DOING CERTAIN KINDS OF EXPERIMENTS SO THAT WE COULD SEE COMMON FEATURES ACROSS OUR SEED GRANTEES AND ALLOW THEM TO HELP EACH OTHER.

WHEN THE SUPPLEMENTAL DATA SUGGESTED THAT THERE WAS STILL INSUFFICIENT PROGRESS, I WOULD LOOK AT THE REPORT, AND WE ALSO HAD DISCUSSIONS WITH THE ENTIRE SCIENCE OFFICE. AT THAT POINT, IF WE COULDN'T COME TO A WAY TO JUMP START A PROJECT, WE WOULD HAVE A CONFERENCE CALL WITH THE PI, AND AT THIS POINT WE'D BRING IN THE INSTITUTIONAL OFFICIAL AS WELL, THE SCIENCE OFFICER WHO HAS THIS PI IN

THEIR PORTFOLIO, AND I, AND WE WOULD HAVE ANOTHER CALL TO TRY TO GET THIS PROGRAM BACK ON TRACK. AND VERY OFTEN WHAT THAT MEANT WAS THAT WE MADE A PLAN WITH THE INVESTIGATOR TO GIVE THEM SOME MORE TIME SO THAT THEY COULD GENERATE SOME DATA AND TRY TO PICK UP WHERE THE PROGRESS WAS SLOW.

SO THE TIME DIFFERED DEPENDING ON THE PROBLEMS THAT WERE THERE, HIRING PROBLEMS, FOR EXAMPLE. IF AFTER THIS TIME PERIOD ANOTHER SUPPLEMENTAL PROGRESS REPORT COMES IN AND THERE WAS INADEQUATE PROGRESS, WE DECIDED THAT WE WOULD NOTIFY THE INVESTIGATOR THAT THE PROJECT JUST DIDN'T SEEM TO BE GOING ANYWHERE, THAT THERE WAS NO REAL PLAN TO GET IT BACK ON TRACK AND THAT THERE WAS A POTENTIAL FOR TERMINATION.

AGAIN, THE AOO'S WERE ALL INVOLVED IN THIS AS WELL. AND IF THERE WAS NO RESPONSE WITHIN TWO WEEKS TO THAT POTENTIAL TERMINATION LETTER, THEN THE GRANT WAS TERMINATED AND THE SECOND YEAR'S FUNDING WAS NOT ADVANCED.

SO WHAT DID WE LEARN FROM THIS PROCESS? WE LEARNED THAT IT'S CRITICAL FOR US TO BE WORKING WITH THE PI'S TO KEEP THE GRANTS ON TRACK AND HOW APPRECIATIVE THE PI'S ARE WHEN WE DO WORK WITH THEM TO KEEP THEM ON TRACK. BY THE WAY, WE ALSO FOUND

SEVERAL GRANTS THAT WOULD NOT HAVE GONE ON BECAUSE THE INVESTIGATOR WAS INTERESTED IN NOT PURSUING THE ORIGINAL GOAL OF THE RESEARCH AND WAS GOING TO DROP THE WORK. AND WE FELT THAT THESE AREAS WERE SO CRITICAL FOR THE IDEAS THAT WERE PART OF THE SEED PROGRAM, THAT WE FOUND OTHER INVESTIGATORS WHO WERE CO-PI'S OR RELATED TO THE GRANT TO TAKE OVER AND WORKED WITH THESE NEW INVESTIGATORS AND FOUND MENTORSHIP TO KEEP THAT WORK GOING.

SO IT WENT IN BOTH DIRECTIONS. WE SAW ADEQUATE PROGRESS WHERE THE GRANTS WOULD NOT HAVE GONE ON HAD WE NOT INTERVENED. AND I THINK THAT THIS IS A VERY INTERIM REPORT FOR YOU BECAUSE THE FINAL SUCCESS OF THE SEED'S WILL BE SEEN OVER THE NEXT YEAR WHEN THE FINAL REPORTS COME BACK.

WE KNOW THAT PAPERS ARE GOING OUT. WE KNOW THAT RESEARCH IS PROCEEDING APACE NOW, I THINK MUCH TO THE EFFORT OF EACH OF THE INDIVIDUAL SCIENCE OFFICERS WHO WORKED VERY CLOSELY WITH THE GRANTEES. BUT IT WILL BE IMPORTANT TO EVALUATE HOW MANY NEW LABS WERE BROUGHT INTO HUMAN EMBRYONIC STEM CELL AND PLURIPOTENT STEM CELL RESEARCH. AND I SHOULD ALSO SAY THAT A LOT OF THE INVESTIGATORS LEFT TO THEIR OWN DEVICES WOULD HAVE STOPPED WHAT THEY WERE DOING WITH THEIR SEED GRANTS AND SIMPLY GONE ON TO DERIVE

IPS CELLS, AND WE WOULD HAVE HAD NO PORTFOLIO HAD WE BEEN ACTIVELY MANAGING THE GRANTS.

BUT MOST IMPORTANTLY, THE SUCCESS OF THIS PROGRAM WILL BE DETERMINED ON HOW THESE INVESTIGATORS GO INTO OTHERS OF OUR PROGRAMS AND OTHER LARGE-SCALE FUNDED GRANTS WITH THE WORK THAT WAS DEVELOPED FROM THE SEED. AND WE ALREADY HAVE SUCCESS IN THAT AREA. WE'RE SEEING THAT ONE SEED GRANTEE CONTINUED ON AND GOT AN EARLY TRANSLATION AWARD FROM CIRM LAST MONTH.

SO OVERALL WE'VE HAD ENORMOUS SUCCESS, I THINK, WITH THE SEED PROGRAM, AND WE'RE STILL IN THE MIDDLE OF IT. AND WE'VE LEARNED A LOT ABOUT PROCESS THAT WILL HELP US TO BE MANAGING LARGER SCALE PROJECTS AND TO WORK WITH OUR INVESTIGATORS IN A REALLY POSITIVE WAY.

CHAIRMAN KLEIN: SO, DR. CSETE, WILL YOU REMIND US THE NUMBER OF SEED GRANTS ORIGINALLY AWARDED?

DR. CSETE: SEVENTY-FOUR.

CHAIRMAN KLEIN: SO 74 GRANTS, AND WE'VE SEEN 62 OR 63 PAPERS AT THIS POINT.

DR. CSETE: SIXTY-FOUR PAPERS.

CHAIRMAN KLEIN: SO A VERY HIGH LEVEL OF PRODUCTIVITY. THANK YOU VERY MUCH. DR. BLOOM.

DR. BLOOM: THIS KIND OF NURTURING INTERACTIVE RELATIONSHIP WITH THE PI'S IS ABSOLUTELY UNIQUE IN THE GRANT WORLD. AND SO I THINK IT'S A WONDERFUL THING THAT YOU'VE INSTITUTED. IT'S GOING TO BE A TREMENDOUS AMOUNT OF ADDITIONAL WORK ON YOUR STAFF TO BE ABLE TO DO THAT, BUT IT'S HIGHLY COMMENDABLE, AND IT'S GOING TO MAKE THE DIFFERENCE BETWEEN SUCCESS OR FAILURE, PARTICULARLY FOR THESE INTERMEDIATE LEVEL OF SUCCESSFUL EARLY EXPERIMENTS WHERE THEY HAVE TO BE ENCOURAGED TO GO ON AND PUSH. SO IT'S A WONDERFUL THING YOU'VE DONE.

DR. AZZIZ: I JUST WANT TO ECHO THAT, FOR STARTERS. I THINK IT TAKES A TREMENDOUS AMOUNT OF WORK TO HELP THESE INVESTIGATORS FORWARD. AGAIN, PRESUMABLY, THEY ARE ALSO VERY APPRECIATIVE OF YOUR EFFORTS.

OF THE 74 APPLICATIONS, HOW MANY -- YOU SPOKE ABOUT THE PROCESS THAT YOU ARE GOING THROUGH. HOW MANY HAVE BEEN TERMINATED FOR NONPRODUCTIVITY?

DR. CSETE: THREE.

DR. AZZIZ: THREE OF THE 74. THANK YOU.

CHAIRMAN KLEIN: OKAY. ANY ADDITIONAL BOARD COMMENT? THANK YOU VERY MUCH, DR. CSETE.

DR. TROUNSON, IS THE PRESIDENT'S REPORT CONCLUDED?

DR. TROUNSON: YES, IT IS. THANK YOU VERY MUCH.

CHAIRMAN KLEIN: WE'RE GOING TO TAKE A TEN-MINUTE BREAK AND THEN WE'LL RECONVENE.

(A RECESS WAS TAKEN.)

CHAIRMAN KLEIN: ALL RIGHT. WE'RE GOING TO RECONVENE. WE'RE GOING TO START ON THE ITEM NO. 8, CONSIDERATION OF FUNDING FOR APPROVAL OF THE RESEARCH TRAINING PROGRAM AWARDS. AND I WOULD REMIND EVERYONE, AS WE WILL DISCUSS DURING THE SESSION, THERE'S SOME -- IT'S OVER 200 PAPERS THAT HAVE BEEN PRODUCED, SCIENTIFIC PAPERS THAT HAVE BEEN PRODUCED BY THE SCHOLARS ON THE TRAINING PROGRAM. WE NEED TO, OF COURSE, REALLY MASTER OUR COMMUNICATIONS PROGRAM SO THAT THE GENERAL PUBLIC UNDERSTANDS EACH OF THESE SCIENTIFIC PROGRAMS INCREMENTALLY ADDS TO THE KNOWLEDGE THAT WILL HELP US IDENTIFY AND DRIVE THERAPIES FORWARD.

SO EACH OF THESE REPRESENTS INCREMENTAL KNOWLEDGE THAT IS KEY TO OUR MISSION. AND THOSE CONTRIBUTIONS IN THE AGGREGATE ARE EXTREMELY IMPRESSIVE. THE PRODUCTIVITY OF THIS PROGRAM AT 16 DIFFERENT INSTITUTIONS IS VIRTUALLY UNPRECEDENTED.

DR. SAMBRANO.

DR. SAMBRANO: THANK YOU. MR. CHAIR,

MEMBERS OF THE BOARD, AND MEMBERS OF THE PUBLIC, I AM BRINGING FOR YOUR CONSIDERATION THE FUNDING OF ALREADY APPROVED CIRM RESEARCH TRAINING PROGRAM II APPLICATIONS. JAMES, NEXT SLIDE, PLEASE.

CHAIRMAN KLEIN: LARRY, COULD YOU ASK THE BOARD MEMBERS WHO ARE NOT HERE TO PLEASE RECONVENE. EXCUSE ME, DR. SAMBRANO.

DR. SAMBRANO: TO GIVE YOU SOME BACKGROUND ON THIS ITEM, IN MARCH 2009 THE BOARD APPROVED 15 APPLICATIONS INTENDING TO CONTINUE WHAT HAS BEEN A VERY SUCCESSFUL GRANT PROGRAM THAT ORIGINALLY BEGAN IN 2006 WITH OUR VERY FIRST RFA. HOWEVER, THE BOARD HAS ALSO DECIDED TO DEFER FUNDING FOR 12 MONTHS DUE TO UNCERTAINTY IN ACCESSING BOND FUNDS. THE APPROVED APPLICANTS WERE, AS A RESULT, GIVEN A CHOICE TO EITHER SELF-FUND AND BE REIMBURSED 12 MONTHS LATER OR SIMPLY BEGIN THE AWARD IN 12 MONTHS, WHICH FOR MOST WOULD MEAN HALTING THEIR PROGRAM FOR A YEAR'S TIME.

I DO POINT OUT TO YOU THAT 14 OUT OF THE 15 APPROVED APPLICATIONS ARE FROM INSTITUTIONS THAT ARE CONTINUING AN ALREADY ESTABLISHED CIRM TRAINING PROGRAM.

IN MAY OF 2009, THANKS TO THE GREAT EFFORT OF THE CHAIRMAN AND HIS STAFF, RECENT BOND SALES

WERE SUCCESSFUL AND HAVE ALLOWED CIRM TO MOVE FORWARD WITH FUNDING OF APPROVED PROGRAMS. SO TODAY WE ARE ASKING THAT YOU CONSIDER RESUMING FUNDING OF THE 15 PROGRAMS WHICH, AS YOU KNOW, HAVE BEEN DESIGNED TO TRAIN INDIVIDUALS FROM A DIVERSE SCIENTIFIC BACKGROUND IN STEM CELL BIOLOGY AND REGENERATIVE MEDICINE AT THREE BASIC LEVELS, THE PREDOCTORAL, POSTDOCTORAL, AND CLINICAL FELLOWS.

IT'S ALSO MEANT TO EXPAND THE OVERALL POOL OF RESEARCHERS WHO ARE GOING TO LEAD AND CONDUCT STEM CELL RESEARCH IN CALIFORNIA IN THE FUTURE AND ALSO TO DIRECTLY SUPPORT, THROUGH THE TRAINING ACTIVITIES, BASIC TRANSLATIONAL AND PRECLINICAL RESEARCH.

WE ARE ALSO IN THE FORTUNATE POSITION WHERE WE CAN NOW LOOK UPON THE LAST THREE YEARS THAT CIRM HAS SUPPORTED THE FIRST TRAINING GRANT PROGRAM AND SEE THE REAL IMPACT AND IMPORTANCE TO OUR MISSION THAT THESE PROGRAMS BRING. WE KNOW THAT NOT ONLY DO THESE PROGRAMS ACHIEVE THESE OBJECTIVES, BUT THEY ALSO HAVE A TREMENDOUS IMPACT ON ADVANCING STEM CELL RESEARCH AND STRENGTHENING THE STEM CELL SCIENTIFIC COMMUNITY IN CALIFORNIA.

OVER THE LAST THREE YEARS, THE TRAINING GRANTS HAVE SUPPORTED 279 CLINICAL FELLOWS,

POSTDOCTORAL FELLOWS, AND PREDOCTORAL STUDENTS ACROSS 219 DISTINCT LABORATORIES IN CALIFORNIA. THE TRAINEES HAVE PRODUCED 221 PUBLICATIONS, WHICH REPRESENT GREATER THAN TWO-THIRDS OF THE PUBLICATIONS GENERATED THUS FAR WITH CIRM SUPPORT.

AND ALTHOUGH IT IS STILL EARLY TO ASSESS OUTCOMES, WE KNOW THAT MANY TRAINEES HAVE MOVED ON TO IMPRESSIVE FACULTY AND INDUSTRY POSITIONS IN STEM CELL RESEARCH. MANY ALSO WITH M.D. DEGREES ARE PRACTICING MEDICINE WITH AN INTIMATE KNOWLEDGE OF STEM CELLS AND THEIR POTENTIAL, AND MANY HAVE MOVED ON TO CONTINUE TRAINING AT TOP STEM CELL RESEARCH LABORATORIES.

WHAT I THINK MIGHT BE PERHAPS MOST IMPRESSIVE ABOUT THE TRAINING PROGRAMS IS THAT THEY HAVE CATALYZED THE DEVELOPMENT AND MAINTENANCE OF A ROBUST STEM CELL COMMUNITY AT THE HOST INSTITUTIONS. THE PROGRAM THROUGH ITS COURSES, SEMINARS, MENTORING ACTIVITIES BRINGS TOGETHER MANY FACULTY IN A VARIETY OF WAYS THAT SPUR INCREASED COLLABORATION AND COMMUNITY. AND THIS HAS, IN TURN, ENHANCED THE RECRUITMENT OF TOP STUDENTS IN WHAT IS A VERY COMPETITIVE PROGRAM AND ALSO ATTRACTED FACULTY FROM OUTSIDE THE STATE TO JOIN THIS EMERGING COMMUNITY. IT IS ITSELF A VERY EFFECTIVE RECRUITMENT AND

RETENTION TOOL FOR THESE INSTITUTIONS.

FINALLY, THE RESEARCH THAT WE SUPPORT VIA THIS PROGRAM ALSO CLEARLY SYNERGIZES WITH OTHER CIRM-FUNDED PROGRAMS TO ACCELERATE RESEARCH AND GENERATE NEW IDEAS. JUST AS AN EXAMPLE, AND I THINK THIS WAS ALLUDED TO BEFORE, WE KNOW THAT WORK PERFORMED BY TWO CIRM SCHOLARS AND A SEED AWARD HAVE CONTRIBUTED TO THE TESTING OF A DRUG CURRENTLY IN PHASE I CLINICAL TRIALS.

AND SO IT IS CLEAR THAT WE HAVE BUILT A MOMENTUM AND A CRITICAL FOUNDATION WITH THESE TRAINING PROGRAMS. WE, THEREFORE, FEEL IT'S IMPORTANT THAT FUNDING FOR THESE PROGRAMS RESUME AS SOON AS POSSIBLE RATHER THAN WAITING UNTIL NEXT YEAR AS NOT TO LOSE THE BENEFITS OF THIS MOMENTUM AND PRESERVE CONTINUITY FOR THE COMMUNITY OF SCIENTISTS THAT IT HAS CREATED. THE LEADERS THEMSELVES OF STEM CELL PROGRAMS AT THESE TRAINING INSTITUTIONS HAVE UNEQUIVOCALLY AND UNANIMOUSLY STATED TO CIRM THE IMPORTANCE OF FUNDING THESE PROGRAMS WITHOUT DELAY TO SUSTAIN THE ADVANCEMENT OF THEIR RESEARCH.

AND SO, THEREFORE, CIRM REQUESTS THAT THE ICOC CONSIDER APPROVAL OF FUNDING OF THE APPROVED APPLICATIONS FOR CIRM TRAINING PROGRAM II STARTING ON JULY 1 OF THIS YEAR INSTEAD OF THE PROJECTED

START DATE OF APRIL 1, 2010.

CHAIRMAN KLEIN: THANK YOU VERY MUCH, DR. SAMBRANO. NOW, ARE WE GOING TO AT THIS POINT HAVE ADDITIONAL SPEAKERS TO THIS SUBJECT? IS THAT YOUR INTENT, DR. TROUNSON?

DR. TROUNSON: WELL, I THINK THERE ARE MEMBERS OF THE PUBLIC HERE, CHAIR, WHO COULD SPEAK TO THAT IF YOU INVITE THEM, THE MEMBERS OF THE PUBLIC. I WOULD SAY JUST ENDORSE THE VIEW THAT ALL OF THE STEM CELL PROGRAM LEADERS, BUT ALSO ALL OF THE TRAINING PROGRAM HEADS HAVE ALL REQUESTED OF US UNANIMOUSLY THAT THEY WANT THIS TO GO AHEAD. AND SO WE FEEL THAT'S IMPORTANT TO GIVE YOU THAT INFORMATION.

CHAIRMAN KLEIN: RIGHT. SO WHILE I NORMALLY WOULD TAKE THE COMMENTS FROM THE PUBLIC TOWARDS THE END OF THE DISCUSSION, HERE, BECAUSE IT CONTRIBUTES TO THE FOUNDATION OF A BROADER SUBJECT NOT ADDRESSING NECESSARILY ANY PARTICULAR PLEA FROM AN INDIVIDUAL INSTITUTION, BUT RATHER EXAMPLES OF WHAT INSTITUTIONS HAVE ACHIEVED THAT CONTRIBUTE TO THE OVERALL CONCEPT OF THIS PROGRAM, I'M GOING TO ASK IF MEMBERS OF THE AUDIENCE WHO HAVE PARTICIPATED IN THIS WOULD LIKE TO CONTRIBUTE THEIR THOUGHTS AT THIS TIME. I THINK CATRIONA JAMIESON HAS RAISED HER

HAND. DR. JAMIESON, WOULD YOU LIKE TO START?

DR. JAMIESON: THANK YOU VERY MUCH. I'M THE DIRECTOR OF THE STEM CELL RESEARCH PROGRAM AT THE MOORES UCSD CANCER CENTER AND HERE ON BEHALF OF THE SANFORD CONSORTIUM FOR REGENERATIVE MEDICINE. AND I'M GOING TO BE INTRODUCING SOME OF MY PATIENTS TO YOU TOMORROW WHEN I TALK ABOUT WHY WHAT YOU ARE DOING IS SO IMPORTANT.

AND I THINK THAT WHAT I DIDN'T UNDERSTAND WHEN CIRM STARTED AS A FUNDING ORGANIZATION WAS WHY YOU FOCUSED ON THE TRAINING PROGRAM FIRST. AND YOU REALLY FOCUSED ON FUNDING TALENT AND THAT STEM CELL BIOLOGY IS NOT JUST A SET OF TOOLS. IT'S A FIELD, AND IT AFFECTS HOW WE LOOK AT HUMAN DISEASE, AFFECTS HOW WE TREAT HUMAN DISEASE. AND MY THREE PATIENTS WILL TELL YOU THAT TOMORROW.

SO I WAS FORTUNATE ENOUGH TO GET A SEED GRANT AND ALSO TO HAVE TWO PEOPLE IN MY LAB THAT ARE PHYSICIAN/SCIENTISTS THAT WERE FUNDED THROUGH THIS TRAINING PROGRAM WHO WOULDN'T HAVE HAD THE OPPORTUNITY TO BE FUNDED AT THIS LEVEL AND REALLY DEVELOP THEIR SKILLS. BECAUSE AS DR. BLOOM KNOWS, IN SCIENCE QUITE FREQUENTLY THE MORE EXPERIENCED YOU ARE, THE HARDER IT IS TO GET FUNDING AS YOU GO ON IN YOUR POSTDOC YEARS, BUT PARTICULARLY FOR PHYSICIANS.

DR. BRENNER KNOWS THIS. A LOT OF PEOPLE HAVE HAD CHALLENGES AS THEY GO ON IN THEIR FUNDING, AND THEY NEED TO GET THAT MOTIVATION. THEY NEED TO BE TOLD, YES, THIS IS IMPORTANT.

THIS IS ONE OF THE ONLY PROGRAMS THAT I KNOW OF THAT TAKES THIS SERIOUSLY, FUNDING PHYSICIAN/SCIENTISTS, FUNDING SCIENTISTS THAT ARE MORE ADVANCED IN THEIR TRAINING. AND IT'S THAT KIND OF SKILL SET THAT'S REQUIRED TO DO THIS VERY COMPLEX EMBRYONIC STEM CELL BIOLOGY ALL THE WAY FROM THE BENCH TO THE BEDSIDE AND, AS WE'RE LEARNING, BACK AGAIN BECAUSE WE LEARN A LOT FROM OUR PATIENTS. AND WE'D LIKE TO GO BACK TO OUR LABS AND SEE IF WE CAN DO THINGS EVEN BETTER.

SO I CAN'T UNDERSCORE HOW IMPORTANT THE TRAINING GRANT IS. I THINK GILL SAID IT VERY WELL. I THINK, ALAN, YOU'VE DONE A TREMENDOUS JOB OF PUTTING THIS TOGETHER. MARIE, JUST THE WHOLE TEAM APPROACH IS VERY INSPIRING. IT KEEPS US GOING IN OUR LABS AND IN OUR CLINICS. BUT WITHOUT THESE TRAINEES, WE WOULDN'T BE ANYWHERE. IT'S THEIR TALENT THAT KEEPS US GOING. THEY'RE THE NEXT GENERATION.

SO I'D LIKE TO INTRODUCE JENNIFER BRASWELL, IF I COULD, BECAUSE SHE'S ACTUALLY BEEN

INCREDIBLY PATIENT AND RUNS OUR TRAINING PROGRAM, AND THE TRAINEES ARE INSPIRED BY HER.

MS. BRASWELL: THANK YOU VERY MUCH, CATRIONA. AND THANK YOU VERY MUCH TO ALL THE MEMBERS OF THE BOARD AND TO MY SON, AARON BRASWELL, WHO'S WITH US HERE TONIGHT SUPPORTING MOM AND SUPPORTING STEM CELL EFFORTS IN THE STATE.

REPRESENTING THE UNIVERSITY OF CALIFORNIA SAN DIEGO STEM CELL PROGRAM, I'D LIKE TO IMPRESS UPON THE CIRM ICOC THE CRITICAL IMPORTANCE OF FUNDING THE APPROVED CIRM RESEARCH TRAINING PROGRAM II AWARDS. I'M SPEAKING FOR LARRY GOLDSTEIN, THE PROGRAM DIRECTOR AT UCSD, WHO WENT HOME SICK AND COULD NOT BE HERE HIMSELF. HE SENDS HIS DEEP APOLOGIES BECAUSE THIS TOPIC IS OF ESSENTIAL IMPORTANCE TO ALL OF US.

THE FIRST THREE YEARS OF THE UCSD CIRM STEM CELL SCIENCE, BIOMEDICINE, AND ETHICS HAVE BEEN AN UNQUALIFIED SUCCESS. WE HAVE SUPPORTED 29 TRAINEES, CONTRIBUTED TO THE SCIENTIFIC ADVANCEMENT OF THE STATE, AND BUILT THE FOUNDATION FOR FUTURE EXCELLENCE IN BIOLOGY, MEDICINE, AND ATTAINMENT OF CURES FOR THE STATE OF CALIFORNIA AND FOR THE WORLD.

TWO CIRM CLINICAL FELLOW TRAINEES, EDWARD KAVALERCHIK, M.D., AND KIM-HIEN DAO, DO, PH.D., ARE

INVOLVED IN THE TARGEGEN JAK2 INHIBITOR CLINICAL TRIAL.

OUR CIRM TRAINEES ARE PUBLISHING HIGH IMPACT PAPERS, GETTING THE EXCELLENT JOBS, AND BECOMING FACULTY MEMBERS. TEN PAPERS HAVE RESULTED FROM THIS RESEARCH IN THE LAST TWO YEARS, ESSENTIAL CONTRIBUTIONS IN BASIC STEM CELL SCIENCE AND CLINICAL APPLICATIONS IN CANCER AND IN DIABETES RESEARCH. PAPERS HAVE BEEN PUBLISHED IN TOP JOURNALS, SUCH AS *STEM CELLS*, *NATURE*, *NATURE BIOTECH*, *CELL STEM CELL*, *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES*, *EXPERIMENTAL DIABETES RESEARCH*, *CANCER CELL*, AND THE *JOURNAL OF CLINICAL ONCOLOGY*.

LOUISE C. LAURENT, M.D., PH.D., CO-AUTHORED PAPERS IN *NATURE* AND IN *STEM CELLS* AND IS CURRENTLY FUNDED ON A K12 CLINICAL RESEARCH AWARD. SHE WAS PROMOTED TO ADJUNCT ASSISTANT PROFESSOR IN REPRODUCTIVE MEDICINE AT UCSD. SHE MAINTAINS INDEPENDENT RESEARCH AND CLINICAL RESPONSIBILITIES AND SERVES IN JEAN LORING'S LAB AT SCRIPPS RESEARCH INSTITUTE.

AND EDWARD KAVALERCHIK, M.D., CO-AUTHORED A REVIEW IN *JOURNAL OF CLINICAL ONCOLOGY* AND A PAPER IN *STEM CELL*.

KIM-HIEN DAO, D.O., PH.D. CO-AUTHORED TWO

PAPERS, ONE IN *CANCER CELL*, AND SHE'S BEEN OFFERED A FACULTY POSITION AT OREGON HEALTH SCIENCES UNIVERSITY.

BRIAN OH, PH.D., IS THE FIRST AUTHOR ON A *PNAS* PAPER ON NANOTUBE SURFACES IN GUIDED DIFFERENTIATION.

JUSTIN VOOG, A PREDOCTORAL FELLOW, CO-AUTHORED A PAPER IN *NATURE* ON GERM LINE STEM CELL NICHES. AFTER HE RECEIVES HIS PH.D. DEGREE THIS MONTH, JUSTIN WILL COMPLETE HIS M.D., CREATING HIS CAREER AS A PHYSICIAN/SCIENTIST IN REGENERATIVE MEDICINE.

TWO OTHER CLINICAL FELLOWS, CARLA DEMETERCO, M.D., AND PAULINA ORDINEZ, M.D., WILL JOIN THE UCSD FACULTY AFTER THEIR CIRM TRAINEESHIPS AS PHYSICIANS WHO WILL BRING THEIR RESEARCH ON STEM CELLS TO THEIR PRACTICE AS PHYSICIANS AND TO THEIR ROLES AS TEACHERS OF FUTURE DOCTORS AND RESEARCHERS.

OF FAR GREATER IMPACT IS THE CONTEXT IN WHICH THESE INDIVIDUAL ACCOMPLISHMENTS OCCUR. THE CIRM RESEARCH AND TRAINING GRANT HAS NOT ONLY SUPPORTED INDEPENDENT RESEARCH IN LABORATORIES THAT FOCUSED ON STEM CELL RESEARCH AND THERAPEUTICS, BUT HAS ALSO LED TOP LABS INTO NEW DIRECTIONS BY OFFERING OPPORTUNITIES TO INNOVATIVE RESEARCHERS

WHOSE UNIQUE INTEREST IN STEM CELLS COMPLEMENTS EXISTING STUDIES.

ON BEHALF OF UC SAN DIEGO, OUR TRAINEES, OUR STUDENTS, PHYSICIANS, TECHNICIANS, PATIENTS, FAMILIES, AND COMMUNITY MEMBERS, WE STRONGLY URGE YOU TO FUND THESE TRAINING GRANTS THAT HAVE SUCH FAR-REACHING EFFECTS ON THE FUTURE OF REGENERATIVE MEDICINE. THANK YOU VERY MUCH.

I ALSO NEED TO SAY I'M JENNIFER BRASWELL, PROGRAM ADMINISTRATOR FOR THE UC SAN DIEGO STEM CELL PROGRAM. THANK YOU.

CHAIRMAN KLEIN: THANK YOU VERY MUCH, JENNIFER, AND THANK YOU FOR YOUR WORK AND DR. CATRIONA JAMIESON'S WORK. ARE THERE OTHER MEMBERS OF THE PUBLIC REPRESENTING PROGRAMS WHO WOULD LIKE TO SPEAK? YES.

UNIDENTIFIED SPEAKER: I'M A STEM CELL SCIENTIST JUST REPRESENTING MYSELF. I HAVE SOME QUESTION HERE. ALTHOUGH THE TRAINING GRANT IS EXTREMELY IMPORTANT, I MEAN, FOR STEM CELL -- FOR THIS FIELD, BUT NOBODY HAS EVER REALLY SPECIFIED WHAT KIND OF AREA THEY GOING TO TRAIN. FOR I UNDERSTANDING, PROPOSITION 71 IS FOR HUMAN EMBRYONIC STEM CELLS. THERE ARE MANY TYPE OF STEM CELLS. YOU CAN EVEN START STEM CELL IN FLIES, IN MICE, BUT A

REALLY CRITICAL AREA INTERESTING FOR US IS HUMAN EMBRYONIC STEM CELLS. THAT'S THE ONE WHICH IS REALLY CONTROVERSIAL, DON'T HAVE FUNDING, AND CAN REALLY GO TO PATIENTS.

SO I AM A SCIENTIST, SO I DO UNDERSTAND MOST OF THE UNIVERSITY OR INSTITUTE DO NOT HAVE THE EXPERTISE OF PEOPLE REALLY WORK ON HUMAN EMBRYONIC STEM CELL TO DO THIS TRAINING. SO IF YOU DON'T HAVE PEOPLE TO TRAIN PEOPLE WHO CAN REALLY WORK ON HUMAN EMBRYONIC STEM CELLS, A TRAINING PROGRAM IS CRITICAL; BUT IF YOU DON'T HAVE PEOPLE TO TRAIN THEM, SOUNDS LIKE YOU GIVE THEM MONEY, IT WILL BE LIKE FREE FOR THE INSTITUTION.

SO CAN THOSE INSTITUTION PROVIDE A LITTLE BIT MORE DETAIL ABOUT THE TRAINING PROGRAM? HOW IS IT GOING TO TRAIN THOSE PEOPLE? WHERE THEY GET THE EXPERTISE TO TRAIN THEM? THAT'S WHAT I WOULD LIKE TO KNOW.

SECOND QUESTION IS ALSO WE UNDERSTAND CIRM IS A STEM CELL AGENCY FOR THE STATE TO DISTRIBUTE PROPOSITION 71 MONEY FOR DOING RESEARCH ON HUMAN EMBRYONIC STEM CELLS, BUT THAT'S NOT THE CASE ACCORDING TO THE DIRECTOR OF THE GRANT. MOST OF THE GRANT, YOU CAN FIND IT ON CIRM WEBSITE, IS NOT ON HUMAN EMBRYONIC STEM CELLS. A LOT OF GRANT ACTUALLY

WENT TO MICE OR FLY STEM CELLS. WHY IS THAT CASE? DO YOU REALLY HAVE A FOCUS ON THIS PARTICULAR TYPE OF STEM CELLS?

FOR THAT REASON I THINK THERE ARE A FEW GAPS. ONE THING IS IN ORDER TO TRAIN THESE PEOPLE, WE DO NEED TO HAVE PEOPLE TO TRAIN THEM. SO THE GAP NO. 1 IS WHERE WE SHOULD GET THE UNIVERSITY OR INSTITUTE TO GET BASIC EXPERTISE FOR PEOPLE WORKING ON HUMAN EMBRYONIC STEM CELLS TO TRAIN THE NEXT GENERATION OF THE STUDENTS.

FOR CIRM, TRAINING GRANT IS CRITICAL, BUT ALSO THERE ARE OTHER AREAS THAT STUDENTS PROVIDE, KIND OF ESTABLISH A PACKAGE FOR RECRUITING FACULTY TO WORK ON HUMAN EMBRYONIC STEM CELLS, TO PROVIDE LIKE A RESEARCH (UNINTELLIGIBLE) SO THEY CAN CONTINUE THEIR RESEARCH.

FROM MY OWN EXPERIENCE, I HAVE BEEN WORKING ON HUMAN EMBRYONIC STEM CELLS SINCE 2003. WE HAVE DONE -- I THINK MY DISCOVERY IS VERY INTERESTING. WHAT WE HAVE DONE IS WE ACTUALLY HAVE A CONDITION TO DERIVE NEW HUMAN EMBRYONIC STEM CELL LINES UNDER (UNINTELLIGIBLE) CONDITION AND WE CAN TURN THE CELLS INTO NEURON EXCLUSIVELY VERY EFFICIENTLY OR INTO CARDIOMYOCYTE.

I HAVE FUNDING FOR FIVE YEARS, SUPPOSED TO

GUARANTEE I GO ON TO CONTINUE DOING RESEARCH ON THIS FIELD, WHICH I COULD NOT CONTINUE IN UCSD BECAUSE I COULD NOT GET A SPACE. THAT WAS -- I HAVE LETTER FROM THE CHAIR SAY THEY COULD NOT PROVIDE A SPACE.

THE AREA FOR -- ONE SENATOR SAY THAT WE NEED TO TRAIN PEOPLE TO WORK ON THIS FIELD OR AREA, AND I DO NOT UNDERSTAND WHY THEY COULD NOT FOR PEOPLE RESEARCH, CONTINUE DOING THIS RESEARCH.

ALSO I DO UNDERSTAND IS SINCE THIS IS A REALLY CRITICAL AREA, I MEAN, JUST SUGGESTIONS, MIGHT BE GOOD FOR, LIKE, THERE'S A MAIN DEPARTMENT. THIS IS A NEW AREA BECOME CRITICAL INTERESTING. MIGHT BE GOOD TO START SOME STEM CELL DEPARTMENT. A LOT OF AREA FOR PUBLIC --

CHAIRMAN KLEIN: SO I THINK --

UNIDENTIFIED SPEAKER: JUST ONE MORE MINUTES. I THINK FOR PUBLIC IS MORE INTERESTING IN HOW TO BRING THE RESEARCH DISCOVERY ON HUMAN EMBRYONIC STEM CELLS TO THERAPY. SO IN TERM OF THE TRANSLATED DISCOVERIES, I FEEL THE BUSINESS ENTITY MAY BE MORE APPROPRIATE TO DO IT. SO I REALLY DON'T UNDERSTAND WHY CIRM HAS NOT PROVIDED ANY SUPPORT GRANT FOR THAT AREA. YOU OUGHT TO BE MORE EASY TO --

CHAIRMAN KLEIN: ALL RIGHT. I THINK WE

UNDERSTAND THOSE QUESTIONS, AND I THINK DR. CSETE --

UNIDENTIFIED SPEAKER: THANK YOU VERY MUCH.

CHAIRMAN KLEIN: -- IS GOING TO ADDRESS THE QUESTIONS.

DR. CSETE: I'M HAPPY TO STEP OUTSIDE AND TAKE THESE OFF LINE BECAUSE THEY ARE REALLY OFF POINT TO THE TRAINING PROGRAMS. NONETHELESS, I THINK IN THERE THERE WAS SUPPORT FOR THE TRAINING PROGRAMS.

I JUST WANT TO REMIND THE SPEAKER THAT WE'RE THE CALIFORNIA INSTITUTE OF REGENERATIVE MEDICINE, NOT THE CALIFORNIA INSTITUTE OF HUMAN EMBRYONIC STEM CELLS, AND OUR PROGRAMS ARE REALLY DESIGNED TO GET REGENERATIVE MEDICINE MOVED FORWARD. I'LL BE HAPPY TO TALK TO YOU ABOUT YOUR OTHER ISSUES OUTSIDE.

CHAIRMAN KLEIN: MAYBE GILL COULD JUST ADDRESS, FOR THE BENEFIT OF THE PUBLIC RECORD, AND THIS IS A BROADCAST PROGRAM, FUNCTIONALLY THE TYPE OF TRAINING, WHO IS PROVIDING THE TRAINING SO THAT THE PUBLIC TRANSCRIPT REALLY ANSWERS THAT BROAD QUESTION.

DR. SAMBRANO: RIGHT. SO THE TRAINING IS HANDS-ON RESEARCH EXPERIENCE. THIS OCCURS UNDER THE

MENTORSHIP OF FACULTY WHO ARE EXPERTS IN STEM CELL BIOLOGY BROADLY DEFINED TO INCLUDE ADULT THROUGH HUMAN EMBRYONIC STEM CELL WORK. IT ALSO INCLUDES AS PART OF THE PROGRAM COURSEWORK THAT TEACHES THE TRAINEES NOT ONLY ABOUT STEM CELL BIOLOGY AS A WHOLE, BUT ALSO PROVIDES A COURSE FOR ETHICS, SOCIAL AWARENESS OF STEM CELL BIOLOGY AND ITS EFFECTS. SO IT'S A BROAD PROGRAM LED BY KEY FACULTY IN STEM CELL BIOLOGY ACROSS CALIFORNIA.

CHAIRMAN KLEIN: ALL RIGHT, DR. SAMBRANO. ARE THERE ANY OTHER MEMBERS HERE REPRESENTING INSTITUTIONS THAT HAVE DIRECT EXPERIENCE WITH THE PROGRAMS WE'RE CONSIDERING? THANK YOU. AND I WILL CALL AT THE END OF THIS FOR GENERAL PUBLIC COMMENT.

BUT, ART, DID YOU HAVE A MOTION YOU WANTED TO MAKE WHILE WE PUT CONSIDERATION OF THIS FUNDING FOR JULY 1ST ON THE TABLE?

MR. TORRES: YES. FIRST OF ALL, I WANT TO THANK THE GOVERNOR AND THE DEPARTMENT OF FINANCE AND OUR STATE TREASURER, BILL LOCKYEAR, FOR HELPING THE CHAIR AND THIS INSTITUTE TO GET THOSE PUBLIC FUNDS THAT WE NEED SO BADLY BECAUSE IT'S BEEN A VERY BIPARTISAN APPROACH IN SACRAMENTO WITH GOVERNOR SCHWARZENEGGER AND TREASURER LOCKYEAR IN WORKING WITH US.

DOES THIS INCLUDE THE BRIDGES PROGRAM AS WELL?

DR. SAMBRANO: THIS DOES NOT INCLUDE THE BRIDGES PROGRAM.

MR. TORRES: THIS IS JUST THE TRAINING PROGRAM. I MOVE THAT WE ADOPT THE RECOMMENDATION OF CIRM TO FUND THESE TRAINING PROGRAMS. AND I CANNOT OVEREMPHASIZE HOW IMPORTANT THESE PROGRAMS ARE. AND ONCE WE APPROVE THESE PROGRAMS, WE WILL SEND A LETTER TO EACH OF THE LEGISLATORS WHERE THESE SPECIFIC TRAINEES WILL RESIDE IN THEIR DISTRICTS SO THAT THEY KNOW WHAT'S GOING ON FROM THIS PERSPECTIVE BECAUSE THIS IS THE NEXT GENERATION. AND I'M VERY PROUD OF THE FACT TO BE PART OF IT.

CHAIRMAN KLEIN: AS I'M UNDERSTANDING YOUR INTENT, MR. TORRES, YOUR INTENT IS TO HAVE US MAKE THAT FUNDING NOW CURRENT AS OF JULY 1ST --

MR. TORRES: CORRECT.

CHAIRMAN KLEIN: -- TO REPLACE THE PRIOR PROGRAM OF DEFERRAL.

MR. TORRES: CORRECT.

CHAIRMAN KLEIN: IS THERE A SECOND TO THAT MOTION?

DR. LOVE: SECOND.

CHAIRMAN KLEIN: SECOND FOR DR. LOVE. AND

I'D LIKE TO WELCOME OUR ESTEEMED MEMBER JOAN SAMUELSON, WHO FOR THIS PARTICULAR MOTION MAKES OUR QUORUM. AND WE WILL EXPLAIN OUR QUORUM AND OUR VOTES OF WHO'S QUALIFIED AT THIS TIME BEFORE WE HAVE PUBLIC DISCUSSION OF THE BOARD MEMBERS. SO, MR. HARRISON, COULD YOU INDICATE WHICH MEMBERS OF THE BOARD CAN PARTICIPATE IN THIS DISCUSSION GIVEN THAT A NUMBER OF THEM ARE FROM INSTITUTIONS WHICH HAVE PROGRAMS.

MR. HARRISON: THIS IS A RATHER UNUSUAL SITUATION BECAUSE THIS MOTION APPLIES TO GRANTS THAT THE BOARD HAS PREVIOUSLY APPROVED, BUT AS TO WHICH THE BOARD DECIDED TO DEFER FUNDING. IN OTHER WORDS, THOSE MEMBERS WHO HAVE AN INTEREST IN AN INSTITUTION THAT HAS BEEN APPROVED FOR FUNDING CANNOT PARTICIPATE IN THIS VOTE.

DR. PRICE: CAN WE SPEAK AGAINST IT?

MR. HARRISON: YOU MAY NOT. THE MEMBERS WHO MAY PARTICIPATE IN THIS DISCUSSION AND VOTE ARE MEMBERS GIBBONS, KLEIN, LOVE, QUINT, ROTH, SAMUELSON, SERRANO-SEWELL, SHESTACK, AND TORRES. AND AS THE CHAIR SAID, WITH MEMBER SAMUELSON, WE DO HAVE A QUORUM ON THIS PARTICULAR MOTION.

CHAIRMAN KLEIN: YES, THANK YOU. AND SO JOAN SAMUELSON.

MS. SAMUELSON: I JUST HAVE A QUESTION. THERE MAY HAVE ALREADY BEEN DISCUSSION ABOUT THIS. IS THERE ANY DATA ON TO WHATEVER EXTENT THERE'S OVERLAP BETWEEN THE PEOPLE WHO WOULD PARTICIPATE IN A TRAINING GRANT AND THOSE WHO ARE ALREADY OR WILL BE PARTICIPATING IN RESEARCH, STEM CELL RESEARCH, THROUGH OTHER CIRM-FUNDED PROGRAMS LIKE BASIC SCIENCE AND SO ON?

CHAIRMAN KLEIN: SO THERE WAS DIRECT TESTIMONY FROM CATRIONA JAMIESON THAT WITHIN HER OWN LAB HER FIRST FUNDING CAME FOR A POST-DOC; IS THAT CORRECT?

DR. SAMBRANO: THEY WERE BOTH CLINICAL FELLOWS.

CHAIRMAN KLEIN: BOTH CLINICAL FELLOWS WHO PARTICIPATED AS CIRM SCHOLARS, AND THEN SUBSEQUENTLY SHE GOT A SEED GRANT. SO IT WAS A COMPLEMENTARY RELATIONSHIP, BUT SHE WAS ABLE TO MOVE THIS FORWARD INITIALLY WITH THE HELP OF THIS FUNDING. IT WAS ALSO TESTIMONY THAT A NUMBER OF THESE INDIVIDUALS WHO WERE CIRM SCHOLARS HAVE NOW MOVED FORWARD. ONE OF THEM HAS RECENTLY OBTAINED A TRANSLATIONAL GRANT TO BRING THEIR WORK FORWARD DOWNSTREAM TO TRY AND GET A CANDIDATE FOR A THERAPY DEVELOPMENT.

MS. SAMUELSON: THAT'S GREAT. AND THAT'S

REALLY THE UNDERLYING REASON FOR MY QUESTION. I'M WONDERING WHETHER THE OTHER PROGRAMS THAT WE'RE FUNDING MIGHT NOT BE PERFORMING THE TRAINING FUNCTION, AND AT THIS POINT WE REALLY WOULDN'T NEED AN ADDITIONAL TRAINING GRANT PER SE BECAUSE THE TRAINING IS GOING ON ROBUSTLY THROUGH THE OTHER PROGRAMS.

CHAIRMAN KLEIN: SO PART OF THE TESTIMONY WE'VE HEARD, AND I'LL CALL ON THE STAFF TO AUGMENT THIS, IS THAT OF THE 179 INDIVIDUALS WHO HAVE PARTICIPATED IN OUR FELLOWSHIP PROGRAMS, IT'S LED TO 221 -- ACTUALLY IT WAS 279 INDIVIDUALS, I THINK, WHO HAVE PARTICIPATED.

DR. SAMBRANO: THAT'S CORRECT. THERE WAS 221 PUBLICATIONS THAT HAVE BEEN GENERATED THROUGH TRAINEES, AND THESE REPRESENT TWO-THIRDS OF ALL THE PUBLICATIONS THAT CIRM HAS SUPPORTED. SO THEY REPRESENT MORE THAN THE LARGE BULK OF PUBLICATIONS.

SO THE OTHER ADVANTAGES THAT MANY OF THESE TRAINEES, THEY ENTER LABORATORIES THAT AREN'T NECESSARILY CURRENT GRANTEES, NOT NECESSARILY ALREADY ON SEED, COMPREHENSIVE, AND SUCH, AND THEY OFFER THE OPPORTUNITY TO THOSE FACULTY AND THOSE MENTORS TO GENERATE NEW IDEAS THAT MAY LATER COME TO US AS GRANT APPLICATIONS OR AS FULLY FUNDED GRANTS.

CHAIRMAN KLEIN: I THINK, GILL, TOO THE OTHER PART OF HER QUESTION --

UNIDENTIFIED SPEAKER: (INTERRUPTION).

CHAIRMAN KLEIN: EXCUSE ME. YOU'RE NOT -- YOU DON'T HAVE THE STAND HERE. SO THE OTHER PART OF HER QUESTION WAS THIS IS A UNIQUE FUNCTION IN SERVING AS THE ENTRY GATEWAY TO RECRUIT MAJOR TALENT TO THE FIELD, BOTH PHYSICIAN/SCIENTISTS. AND THE TESTIMONY WAS THAT PHYSICIAN/SCIENTISTS, AS THEY MOVE DOWNSTREAM, THIS IS ONE OF THE FEW PROGRAMS WHERE THEY CAN GET ADDITIONAL FUNDING TO ADVANCE THEIR CAREER TO THE POINT THAT THEY CAN COME IN AS PI'S. SO IT'S RECRUITING MAJOR TALENT WHICH HAS BEEN HIGHLY PRODUCTIVE TO THE FIELD.

MS. SAMUELSON: SO ARE THOSE THAT WOULD BE FUNDED BY THIS PROGRAM NOT ELIGIBLE FOR THE OTHERS OR IN LABS THAT CAN'T COMPETE?

CHAIRMAN KLEIN: THEY WOULDN'T BE AT A POINT IN THEIR CAREER THAT THEY WOULD BE PI'S.

MS. SAMUELSON: BUT ARE THEY IN LABS WHERE THERE MAY BE PI'S?

CHAIRMAN KLEIN: THE PI'S ARE THERE TRAINING THEM ON RESEARCH WHILE THEY ARE ADVANCING THEIR CAREERS.

MS. SAMUELSON: RIGHT. RIGHT. RIGHT.

OKAY.

DR. SAMBRANO: IT PROVIDES A MECHANISM FOR SUCH INDIVIDUALS TO BECOME INDEPENDENT INVESTIGATORS. AND SO AS A RESULT, YOU'RE INCREASING THE NUMBER OF SCIENTISTS WHO ARE THEN CONDUCTING AND LEADING RESEARCH WITHIN CALIFORNIA.

CHAIRMAN KLEIN: DR. OLSON, DID YOU WANT TO MAKE A SUPPLEMENTAL COMMENT?

DR. OLSON: I WAS JUST GOING TO ELABORATE THAT THE TRAINING PROGRAM FUNDS A BROADER SCOPE OR A VERY BROAD SCOPE OF RESEARCH. IN SOME CASES, PARTICULARLY AS WE MOVE TO SOME OF THESE VERY TRANSLATIONAL, VERY FOCUSED-TYPE APPLICATIONS, THE KINDS OF WORK THAT A PREDOCTORAL STUDENT OR A POSTDOCTORAL STUDENT NEEDS TO BE ABLE TO DO TO ADVANCE IN THEIR CAREER AS AN INDEPENDENT RESEARCHER IS THE, YOU KNOW, THE NEW IDEA, THE EXPLORING THE NEW RESEARCH IDEA. AND THE TRAINING PROGRAM PROVIDES A VENUE FOR THOSE IDEAS THAT THEN LEAD TO THE NEW INVENTIONS AND POSSIBLY THE NEW THERAPIES OF TOMORROW.

CHAIRMAN KLEIN: THANK YOU.

MR. ROTH: SO I'M GOING TO SUPPORT THAT WE DO THIS, BUT I HAVE A QUESTION ON THE BUDGET. THIS IS INCLUDED IN THE FUNDING THAT WE ANTICIPATE

THROUGH THE END OF 2010?

DR. ROBSON: THE LAST PROJECTIONS THAT WE DID, THIS WAS INCLUDED, BUT IT WAS WITH A DELAY, WASN'T STARTING UNTIL NEXT SPRING. IF WE LOOK AT THE DIFFERENCE, IT'S A BIT COMPLICATED BECAUSE, IF YOU REMEMBER, WE ALLOWED SOME INSTITUTIONS TO SELF-FUND FOR A YEAR. AND IF THEY CHOSE TO DO THAT, WE WOULD PAY THEM RETROACTIVELY FOR A YEAR. FIVE OF THE INSTITUTIONS CHOSE TO DO THAT.

SO AS FAR AS OUR CASH-FLOW PROJECTIONS, SAY, TO THE END OF 2010 IS CONCERNED, THEY'RE STARTING NOW BECAUSE THEY WILL BE PAID FOR THIS YEAR NEXT YEAR.

MR. ROTH: BUT THE ANSWER IS --

DR. ROBSON: SO IF WE INCLUDE EVERYTHING IN HERE NOW, IT WOULD COST US ABOUT AN EXTRA $9 MILLION BETWEEN NOW AND DECEMBER 31, 2010, IF WE STARTED NOW AS OPPOSED TO NEXT SPRING.

MR. ROTH: AND THOSE FUNDS ARE AVAILABLE?

DR. ROBSON: YES.

MR. ROTH: THAT'S THE POINT. TO ME THIS IS ONE THAT WE DELAYED WHEN WE WERE IN THE MIDDLE OF NEVER NEVERLAND. AND I THINK WE'VE COME THROUGH THAT NOW. WE HAVE THE MONEY. IT'S A COMMITMENT THAT WE MADE. I THINK THERE'S VERY GOOD ARGUMENTS

THAT THIS PROGRAM HAS BEEN HIGHLY SUCCESSFUL, SO I THINK WE SHOULD MOVE AHEAD AND GET THESE GUYS FUNDED.

CHAIRMAN KLEIN: ADDITIONAL BOARD COMMENT? IS THERE ADDITIONAL PUBLIC COMMENT? ANYONE WHO HAS NOT SPOKEN AT THIS TIME? OKAY.

I'M GOING TO CALL THE QUESTION. WE WILL HAVE A ROLL CALL HERE TO MAKE SURE WE HAVE A GOOD PUBLIC RECORD THAT ONLY THOSE WHO DID NOT HAVE ANY CONFLICT VOTED ON THIS ITEM.

MS. KING: I WILL CALL ONLY THOSE MEMBERS WHO CAN VOTE ON THIS ITEM.

LEEZA GIBBONS.

MS. GIBBONS: YES.

MS. KING: BOB KLEIN.

CHAIRMAN KLEIN: YES.

MS. KING: TED LOVE.

DR. LOVE: YES.

MS. KING: DUANE ROTH.

MR. ROTH: YES.

MS. KING: JOAN SAMUELSON.

MS. SAMUELSON: YES.

MS. KING: AND ART TORRES.

MR. TORRES: AYE.

MR. HARRISON: MOTION CARRIES.

(APPLAUSE.)

DR. TROUNSON: CHAIR, THANK YOU VERY MUCH. I THINK WHEN WE SAT DOWN JUST RECENTLY WITH THE PRIMARY LEADERS IN CALIFORNIA IN THE STEM CELL PROGRAMS, THEY VERY MUCH HOPED THAT THIS WOULD HAPPEN. AND BECAUSE THEY MET, THEY REALLY DID SEE IT AS THE MORTAR FOR THE WORK THAT THEY'RE DOING, THE MORTAR THAT HOLDS IT ALTOGETHER. SO I THINK YOU HAVE DONE THEM A TREMENDOUS FAVOR. AND FOR ALL OF THEM THAT ARE NOT HERE, I THINK WE WANT TO THANK YOU FOR MAKING THAT DECISION.

CHAIRMAN KLEIN: ALL RIGHT. THANK YOU. AND BEFORE WE START THIS NEXT ITEM, MELISSA KING, IF YOU COULD INDICATE WHAT IS OUR DINNER SCHEDULE TONIGHT? JENNA PRYNE, WHAT IS OUR DINNER SCHEDULE TONIGHT?

MS. PRYNE: I ONLY NEED TO GIVE THE KITCHEN TEN MINUTES.

CHAIRMAN KLEIN: COULD YOU GIVE THEM AN ALERT ON THE QUICK GOURMET, PLEASE?

AND I WOULD LIKE TO ASK THAT THE SCIENCE TEAM, DR. TROUNSON, BRING US UP TO SPEED ON ITEM NO. 9.

DR. TROUNSON: ROSA IS GOING TO PROVIDE THIS FOR YOU, CHAIR, IF SHE MAY.

DR. CANET-AVILES: MR. CHAIRMAN, BOARD MEMBERS, STAFF, AND MEMBERS OF THE AUDIENCE AND GUESTS, I WOULD LIKE TO PRESENT TO YOU FOR YOUR CONSIDERATION THE EARLY TRANSLATIONAL AWARD APPLICATIONS THAT WERE PLACED IN TIER 2 IN THE LAST ICOC MEETING. THIS IS AGENDA ITEM NO. 9 IN YOUR BINDERS.

JUST TO REMIND YOU, THE PURPOSE OF THE EARLY TRANSLATIONAL AWARDS IS TO PROVIDE FUNDING TO ENSURE THAT PROMISING DISCOVERIES IN STEM CELL RESEARCH CAN BE TRANSLATED INTO POTENTIAL STEM CELL BASED-CURES, THERAPIES, AND DIAGNOSTICS FOR THE BENEFIT OF PATIENTS.

SPECIFICALLY, THIS AWARD WAS DESIGNED TO SUPPORT TWO CATEGORIES OF RESEARCH. THE FIRST KEY OBJECTIVE WAS TO ADDRESS THE RESEARCH THAT RESULTS IN A DEVELOPMENT CANDIDATE THAT MEETS AN UNMET MEDICAL NEED. AND THE SECOND OBJECTIVE WAS TO FIND SOLUTIONS TO BOTTLENECKS TO EFFECTIVE TRANSLATION OF CELL THERAPIES THAT COULD ALLOW THE MORE RAPID ADVANCEMENT OF DISCOVERIES IN STEM CELL BIOLOGY TO THE IDENTIFICATION OF BETTER DEVELOPMENT CANDIDATES FOR CLINICAL TESTING.

NOW, IN THE LAST ICOC MEETING YOU APPROVED THE APPLICATIONS THAT WERE PLACED IN TIER 1 BY THE

GRANTS WORKING GROUP. THE INITIAL TARGET, AS YOU CAN SEE, THE INITIAL TARGET NUMBER OF APPLICATIONS AND BUDGET APPROVED BY YOU INITIALLY WAS A TOTAL OF $60 MILLION IN TOTAL COST FOR TEN GRANTS WITH NO MORE THAN SIX MILLION TOTAL PER GRANT.

AT THE APRIL ICOC MEETING, 15 APPLICATIONS WERE APPROVED FOR FUNDING WITH A TOTAL OF $67.7 MILLION, A NUMBER THAT WAS SUPERIOR TO THE $60 MILLION INITIALLY TARGETED.

THE APPLICATIONS THAT WERE PLACED IN TIER 2 CATEGORY ARE RECOMMENDED FOR FUNDING IF FUNDS ARE AVAILABLE. THESE ARE FOR CONSIDERATION IN THIS MEETING TODAY. THERE ARE A TOTAL OF 12 APPLICATIONS AND WE'LL NEED AN ADDITIONAL BUDGET OF ABOUT $58 MILLION.

BEFORE THE NEXT CONSIDERATIONS, CIRM STAFF WOULD LIKE TO REMIND YOU THAT ANOTHER RFA FOR EARLY TRANSLATIONAL RESEARCH, AS DR. TROUNSON PRESENTED EARLY THIS AFTERNOON, IS PLANNED TO BE BROUGHT TO YOU FOR CONCEPT APPROVAL AT THE END OF THIS YEAR. THIS WILL BE GIVING THE APPLICANTS IN TIER 2 ANOTHER CHANCE TO APPLY AGAIN FOR THIS TYPE OF AWARD.

JUST AS ANOTHER SIDE REMINDER, THE APPLICATIONS FOCUSED RESEARCH LEADING TO A DEVELOPMENT CANDIDATE WERE A PRIORITY FOR THIS

AWARD, AND BOTH CATEGORIES, BOTTLENECKS AND DEVELOPMENT CANDIDATES, ARE EQUALLY REPRESENTED IN BOTH TIERS 1 AND 2.

SO, MR. CHAIRMAN, WITH THIS SLIDE, I'M ENDING MY PRESENTATION. IF YOU WISH, I WILL PROJECT THE RANKING TIER 2 GRANTS ON THE SCREEN FOR YOUR DISCUSSION.

CHAIRMAN KLEIN: IF YOU WILL PLEASE PROCEED WITH THAT. ALL RIGHT. AND CAN WE ALSO REFRESH THE RECOLLECTION OF THE BOARD? THERE WAS A DISCUSSION ON THIS TIER OF A PARTICULAR APPLICATION WHERE THERE HAD BEEN A SUBSTANTIAL SPLIT IN THE VOTES. NORMALLY THAT COULD HAVE LED TO A MINORITY REPORT; BUT, IN FACT, THE LEAD REVIEWER LEFT BEFORE MINORITY REPORTS WERE TALLIED. AND COULD YOU REMIND US OF THE GRANT AND DESCRIBE FOR US THE CHARACTER OF THAT GRANT AND THE ARGUMENTS THAT ARE MADE FOR AND AGAINST THAT PARTICULAR APPLICATION?

DR. CSETE: YOU MIGHT RECALL THAT DURING THE LAST -- IT IS 1232. DURING THE LAST ICOC MEETING, I DID ADVOCATE FOR THIS GRANT BECAUSE IT WAS UNIQUE IN THE PORTFOLIO OVER TIME OVER ALL GRANTS THAT WE RECEIVED. IT'S FROM AN AGENCY THAT DEVELOPS MOUSE MODELS AND SUPPLIES MICE TO INVESTIGATORS, ONE OF THE LARGEST AND BEST AGENCIES

IN THE WORLD.

AND THE PROPOSAL BASICALLY WAS TO CROSS WELL-CHARACTERIZED MODELS OF MOUSE DISEASE WITH IMMUNOSUPRESSED MICE TO FACILITATE ANALYSIS OF HUMAN CELL TRANSPLANTS INTO THESE MOUSE MODELS OF DISEASE. THERE WAS CONSIDERABLE ENTHUSIASM FROM THE GRANTS WORKING GROUP ABOUT THIS. AND THE MAJOR NEGATIVE THAT CAUSED SOME PEOPLE TO SCORE VERY LOW WAS THAT THEY DOUBTED THAT THERE WAS A MARKET AMONG OUR GRANTEES FOR THESE PARTICULAR MOUSE MODELS. AND THEY WERE JUST CONCERNED THAT IT WASN'T WORTH THE INVESTMENT BECAUSE THE MARKET WASN'T THERE.

I'M GOING TO STEP AWAY A LITTLE BIT FROM WHAT WE USUALLY DO. AND I SHOULD SAY THAT SINCE THE LAST WORKING GROUP MEETING, SPECIFICALLY WHEN WE WERE AT THE ISCT MEETINGS AND A COUPLE OF OTHER MEETINGS I'VE ATTENDED, I HEARD INVESTIGATORS BEMOANING THE FACT THAT THESE MODELS ARE VERY DIFFICULT TO MAKE IN THEIR OWN HANDS AND THAT AVAILABILITY OF THEM, THE LACK OF AVAILABILITY OF THEM HAS SLOWED RESEARCH. SO I WOULD ENCOURAGE YOUR CONSIDERATION OF THIS REALLY UNIQUE APPLICATION.

DR. TROUNSON: CHAIR, JUST TO IN TERMS OF THE SPLIT VOTE, THERE WAS CLEARLY ONE THAT WAS -- THE PRIMARY REVIEW WAS AT 80 AND THE OTHER TWO

SUPPLEMENTARY REVIEWERS WHO GAVE THE AWARDS, THE MARKS WERE DOWN AT 50, TWO AT 50, ONE AT 80. AND IT SEEMED TO ME THAT, FROM THE REVIEWERS' CONCERNS, THOSE THAT HAD THE 50 MARKS -- AND I JUST WANT TO MAKE SURE THAT YOU UNDERSTAND WHAT THEIR CONCERNS WERE -- THEY SAID THAT THE IMMUNE COMPROMISED MICE, THEY WERE GOING TO MAKE IMMUNE COMPROMISED MICE SO THAT YOU COULD DO THE TRANSPLANTS OF THE HUMAN CELLS. THOSE IMMUNE COMPROMISED MICE WERE NOT A GOOD MODEL FOR HUMAN CONDITION WHERE YOU HAVE AN INTACT IMMUNE SYSTEM, AND THAT THEY WOULDN'T BE RECOGNIZED AS BEING SUITABLE AS AN APPROPRIATE MODEL, PARTICULARLY WHERE MANY OF THE CONDITIONS THAT THEY WERE TALKING ABOUT REQUIRED AN IMMUNE SYSTEM TO BE PRESENT. SO THAT'S WHAT DREW THEIR NUMBERS DOWN TO THE 50, AT LEAST IN THEIR WRITTEN RESPECT.

NOW, AS MARIE SAID, THERE'S A NEED, I THINK, FOR THESE ANIMALS. AND IT SORT OF PRECEDES IN A WAY THE NEED FOR OTHER APPROPRIATE MODELS FOR TESTING FOR PRECLINICAL STUDIES THAT YOU HAVE AN APPROPRIATE MODEL WHERE YOU CAN ACTUALLY LOOK IN AN IMMUNE COMPROMISED ANIMAL EVEN THOUGH YOU MAY HAVE TO TEST IN AN IMMUNE INTACT ANIMAL LATER ON TO SEE IF IT'S APPROPRIATE TO BRING IT TO THE CLINIC.

SO I HOPE YOU MIGHT JUST UNDERSTAND THEIR CONCERNS OF THOSE TWO REVIEWERS. JUST THAT'S WHY THEY WENT DOWN TO THEIR LOW 50S. I WASN'T HERE FOR THE DISCUSSION, BUT THAT'S WHAT THEY WROTE.

CHAIRMAN KLEIN: SO MY UNDERSTANDING IS, IN FACT, THE PEER REVIEW GROUP SPLIT. AND SO THERE WERE -- I WAS THAT THE SESSION. THERE WERE A GROUP OF SCORES CLEARLY IN THE FUNDING RANGE AND A GROUP THAT WERE NOT IN THE FUNDING RANGE BECAUSE OF DIFFERENT PHILOSOPHY ABOUT THE UTILITY OF THIS MODEL. BUT WE ALSO HEARD TESTIMONY IN THE PRIOR SESSION FROM DR. FRIEDMAN AND COMMENTS FROM DR. PENHOET THAT, IN FACT, THERE WERE SOME SIGNIFICANT VALUE AND LEAD-TIME OF HAVING THESE MODELS AVAILABLE TO ADVANCE SCIENTIFIC STUDIES.

JEFF SHEEHY, AS VICE CHAIR OF THE GRANTS WORKING GROUP, WOULD YOU LIKE TO MAKE SPECIFIC COMMENT?

MR. SHEEHY: WELL, IN TERMS OF THE UTILITY OF IMMUNOCOMPROMISED MICE, I JUST WOULD LIKE TO NOTE THAT THE ONE WHO GAVE IT THE HIGH SCORE WAS ONE OF THE -- IS ONE OF THE LEADING IMMUNOLOGISTS. SO FROM WHAT I KNOW OF THIS INDIVIDUAL'S WORK IS ONE OF THE LEADING LIGHTS ON TRYING TO FIGURE OUT HOW TO PUT HUMAN EMBRYONIC STEM CELLS INTO PEOPLE AND GETS

CITED ALMOST EVERY TIME I TURN AROUND.

SO SHE -- I DON'T WANT TO PROVIDE TOO MUCH INFORMATION, BUT THIS PARTICULAR INDIVIDUAL WAS EXTREMELY ENTHUSIASTIC, AND THAT THERE WERE OTHER MEMBERS OF THE WORKING GROUP WHO WERE EXTREMELY ENTHUSIASTIC ABOUT THIS GRANT AS WELL. I DO THINK ON ONE HAND -- TO SOME DEGREE, THIS DID BOIL DOWN TO UTILITY. IF PEOPLE THOUGHT THAT THEY THEMSELVES WOULD USE IT OR PEOPLE IN THEIR LABS WOULD USE SOMETHING LIKE THIS, THEN THEY WERE EXTREMELY ENTHUSIASTIC.

I DO REMEMBER ONE COMMENT FROM ONE REVIEWER WHO WAS -- OR ONE MEMBER OF THE WORKING GROUP WHO WAS NOT SO ENTHUSIASTIC SAID, "I MAKE ALL MY OWN MICE." BUT I THINK -- AND I'M NOT GOING TO USE SOMEBODY ELSE'S. AND I'M NOT A COMPLIANCE PERSON, BUT HAVING STANDARDIZED ANIMAL MODELS SEEM TO BE VERY USEFUL FOR GETTING REPRODUCIBLE RESULTS TO GET INTO THE CLINIC TO GET PEOPLE TO SUPPORT -- TO GET FDA SUPPORT FOR YOUR FINDINGS.

SO I DO THINK THAT THIS IS PROBABLY ONE OF THE STARKEST BREAKS THAT I'VE SEEN, AND I'VE BEEN AT EVERY REVIEW SESSION, WHERE THERE WAS SUCH A CLEAR-CUT DIFFERENCE OF OPINION. I DO THINK, AS DR. CSETE HAS SAID, IF THIS IS SOMETHING THAT THE

COMMUNITY WILL USE, THEN WE CAN PLAY AN INVALUABLE ROLE, ESPECIALLY IN THIS TRANSLATIONAL SPACE, BY SUPPORTING THIS APPLICATION. WE CAN BE A RESOURCE FOR THE ENTIRE COMMUNITY.

CHAIRMAN KLEIN: I'M GOING TO CALL ON DR. CSETE FOLLOWED BY DR. LOVE AND DR. AZZIZ. AND, DUANE, DID YOU HAVE A COMMENT AS WELL?

DR. CSETE: JUST QUICKLY, I DIDN'T WANT TO UNDERESTIMATE WHAT THEY WERE TRYING TO PROVIDE. IN ADDITION TO JUST BREEDING THE ANIMALS, THEY WERE REALLY CHARACTERIZING THE MODELS, SO BEHAVIORAL ASSAYS IN THE NEUROLOGIC DISEASE MODELS QUANTITATIVELY, SO THAT THAT WOULD BE PART OF THE HAND-OFF TO THE INVESTIGATORS.

SO YOU CAN IMAGINE MANY PEOPLE COMING INTO THE FIELD WHO ARE NOT NEUROBIOLOGISTS WHO WOULD LIKE THAT FOR THE DIABETIC ANIMALS, CHARACTERIZING THE BLOOD WORK AND HANDING THAT OFF AS A BACKGROUND AS WELL.

FINALLY, I THINK THIS IS AN AGENCY, THE APPLICANT AGENCY IS ONE THAT WOULD FLEXIBLY MEET THE NEEDS OF OUR GRANTEES IF A MODEL THAT THEY DON'T HAPPEN TO NAME IN THE GRANT WAS SOMETHING THAT WAS REQUIRED BY THE INVESTIGATORS.

DR. LOVE: I'VE GOT TWO QUESTIONS. AND,

MARIE, YOU MAY BE THE BEST ONE TO ANSWER BOTH OF THEM. THE FIRST QUESTION RELATED TO, I BELIEVE, A DISCUSSION THAT WE HAD AT THE LAST MEETING ABOUT A NUMBER OF THE GRANTS THAT WE FUNDED MIGHT LIKELY BE PARED DOWN IN TERMS OF THE FUNDING LEVEL. SO I WAS CURIOUS TO UNDERSTAND IF WE HAD MADE ANY PROGRESS THERE, AND THAT KIND OF RELATES TO THE OVERALL ISSUE OF HOW MUCH MONEY WE HAVE.

DR. CSETE: PAT OLSON HAS BEEN LEADING THE CHARGE HERE. WE'VE BEEN QUERYING THE INVESTIGATORS TO PROVIDE GREAT DETAIL ABOUT THEIR BUDGETS. AND WE DIDN'T FIND AS MUCH SAVINGS AS MR. KLEIN MIGHT HAVE HOPED. THE MAXIMUM SAVINGS WE HAVE IDENTIFIED IS .9 MILLION.

DR. LOVE: WE'RE STILL ABOUT 66.

CHAIRMAN KLEIN: OKAY. AND DR. AZZIZ.

DR. LOVE: SECOND QUESTION RELATED TO WHAT I THOUGHT I HEARD AT THE BEGINNING OF THIS DISCUSSION. THAT IS, THAT THERE WILL BE ANOTHER ROUND OF GRANTS OF THIS NATURE COMING TOWARD THE END OF THE YEAR. SO I JUST WANTED TO JUST KIND OF ASK -- AND THAT SEEMED TO KIND OF GENERALLY SPEAK TO THIS WHOLE TIER. I JUST WANTED TO ASK KIND OF THE URGENCY OF THIS PARTICULAR GRANT VIS-A-VIS THAT DISCUSSION THAT WE'LL BE COMING AROUND TO THIS AGAIN

IN SIX MONTHS OR SO ANYWAY.

DR. CSETE: WELL, THE IDEA OF HAVING A SET OF CORE GRANTS THAT WE REPEAT ON A REGULAR CYCLE WAS EXACTLY THIS. GRANTS THAT HOLD PROMISE, BUT ARE NOT QUITE READY CAN TAKE THE COMMENTS FROM THE EXECUTIVE SUMMARIES, MAKE A BETTER GRANT, COME BACK WITH A MORE FEASIBLE PROGRAM THAT CAN BE DONE IN THE SHORT TIMEFRAME OF EARLY TRANSLATION, AND BE DELAYED BY A YEAR, YES, BUT COME BACK WITH A STRONGER PRODUCT.

DR. TROUNSON: JUST IN ADDITION, NORMALLY THE RESEARCH GRANTS MIGHT HAVE BEEN IMPROVED BY HAVING A LITTLE TIME. IN THIS PARTICULAR CASE IT WOULDN'T CHANGE ESSENTIALLY BECAUSE IT'S A PRODUCTION PROGRAM. SO YOU EITHER BELIEVE IN IT OR YOU DON'T. SOME PEOPLE WON'T AND SOME PEOPLE WILL. I THINK IT'S NOT GOING TO ACTUALLY CHANGE. IT WON'T BE A BETTER GRANT IN MY MIND BY WAITING. WHEREAS, CERTAINLY OTHER -- THE OTHER PROJECTS HERE MAY WELL BENEFIT FROM HAVING SOME ADDITIONAL TIME.

CHAIRMAN KLEIN: SO I'M GOING TO GO TO DR. AZZIZ. AND, DR. LOVE, THE CONCEPT APPROVAL AT THE END OF THIS YEAR WOULD BRING IT BACK TO OUR BOARD ABOUT THIS TIME NEXT YEAR. SO WE'D ESSENTIALLY LOSE A YEAR ON THESE MODELS. AND WHAT IS THE VALUE OF THOSE MODELS TO MOVE LARGE NUMBERS OF GRANTS

FORWARD.

DR. AZZIZ: SO THE FIRST QUESTION I HAD ACTUALLY WAS JUST ANSWERED BY ALAN, WHICH IS REALLY IS THIS SOMETHING THAT NEEDS TO GO BACK TO THE COMPANY AND WE NEED TO TWEAK THE MODEL, OR IS THIS JUST THE WAY THE MODEL IS, AND THERE IS NO REAL NEGOTIATION. WHAT YOU'RE TELLING ME IS THAT THERE IS REALLY, IT'S EITHER THIS MODEL OR SOMETHING ELSE.

THE SECOND QUESTION, AND, AGAIN, I JUST NEED A LITTLE BIT OF CLARIFICATION, WHAT WAS OUR FUNDING RATE? HOW MANY OF THE TOTAL APPLICATIONS IN THE FIRST ROUND DID WE FUND? I DON'T RECALL. AND THEN, AGAIN, A RESTATEMENT OF THE FUNDING QUESTION, THE MONIES FOR THIS PROGRAM. I THINK WE TALKED ABOUT $900,000 A MINUTE AGO, BUT I JUST WANT TO MAKE SURE THAT I WAS CLEAR ON WHERE WE STAND IN THAT REGARD.

DR. CSETE: SO 15 OUT OF 73.

DR. AZZIZ: FIFTEEN OUT OF 73, SO ABOUT A 20 PERCENT OR SO ROUGHLY FUNDING RATE. GOOD. PROGRAM FROM A FISCAL POINT OF VIEW?

DR. CSETE: AS DR. CANET-AVILES SHOWED YOU, YOU APPROVED, WHEN THE CONCEPT APPROVAL CAME BEFORE THE BOARD, A $60 MILLION BUDGET FOR THIS. RIGHT NOW WHAT YOU APPROVED IN THOSE 15 GRANTS FROM

TIER 1 IS BUDGETED FOR $67.7 MILLION, SO CONSIDERABLY OVER BUDGET.

CHAIRMAN KLEIN: AND DR. AZZIZ, JUST TO BRING THIS DOWN TO THE NUMBERS WE DEAL WITH, IF THIS IS A QUALITY GRANT THAT WILL CONTRIBUTE TO OUR MISSION, OUR CONSTRAINT IS A CASH FLOW CONSTRAINT BECAUSE WE'RE WAY BELOW OUR AUTHORIZED LEVELS OF FUNDING. SO WITHIN THE STUDY PERIOD, DR. ROBSON, THE QUESTION IS IF THIS GRANT WERE TO BE APPROVED, HOW MUCH WOULD IT INCREASE THE FUNDING REQUIREMENTS WITHIN OUR FINANCIAL STUDY PERIOD THROUGH THE END OF 2010?

DR. ROBSON: WELL, I DIDN'T PREPARE THAT IN ADVANCE, BUT LOOKING AT THIS AS A GRANT OF 3.8 MILLION; IS THAT CORRECT?

DR. SAMBRANO: YES.

DR. ROBSON: 3.8 MILLION OVER THREE YEARS, IF IT WAS FUNDED NOW FOR A YEAR AND A HALF, IT WOULD BE ABOUT HALF THAT AMOUNT, SO IT WOULD BE 1.9 MILLION WOULD BE ADDED TO OUR CASH-FLOW RESPONSIBILITY BETWEEN NOW AND THE END OF 2010.

CHAIRMAN KLEIN: RIGHT. AND WHAT IS THE DOLLAR AMOUNT OF OUR CURRENT CUSHION IN FUNDING THAT WE HAVE ACTUALLY FUNDED EXCLUDING THE EXTRA 160 MILLION IN PRIVATE PLACEMENT AUTHORITY? THOSE

AREN'T IN THE BANK. YOU CAN'T COUNT THOSE AS AVAILABLE.

DR. ROBSON: SO WHAT WE HAVE NOW, INCLUDING WHAT YOU'VE JUST DECIDED ABOUT TRAINING II, I THINK WE WILL HAVE A CUSHION OF ABOUT $7 MILLION AT THE END OF DECEMBER 31, 2010.

CHAIRMAN KLEIN: THANK YOU.

MR. ROTH: SO I'M SITTING HERE LISTENING TO THIS CONVERSATION, AND I HAVE MAYBE THREE THOUGHTS. ONE IS WHAT WE JUST DISCUSSED, THAT WE HAD A BUDGET; WE EXCEEDED THAT BUDGET. TWO, THERE'S GOING TO BE ANOTHER ROUND NOT TOO FAR IN THE DISTANCE. AND PERHAPS THREE AND MOST IMPORTANTLY, THE ARGUMENT THAT THIS IS A COMMERCIAL COMPANY, THAT THERE'S A NEED. AND THE QUESTION IS REALLY IF WE DON'T FUND IT, IS IT NOT GOING TO HAPPEN, OR HAVE THEY RECOGNIZED THERE'S A MARKET OPPORTUNITY HERE TO BUILD THESE MODELS? THAT'S WHAT THEY DO FOR A BUSINESS, I WOULD PRESUME.

CHAIRMAN KLEIN: THIS IS A NONPROFIT ENTITY.

MR. ROTH: OKAY. IT IS A NONPROFIT ENTITY?

CHAIRMAN KLEIN: THAT PRODUCES THESE DISEASE MODELS THROUGHOUT THE WORLD.

MR. ROTH: I HEARD EARLIER IT'S A COMMERCIAL ENTITY.

DR. TROUNSON: IT'S A NOT-FOR-PROFIT, DUANE.

MR. ROTH: SO THE MODEL WON'T EXIST WITHOUT THE FUNDING.

DR. TROUNSON: SOME OF IT MAY BE MADE, BUT I DON'T THINK TO THE EXTENT THAT HAS BEEN PROPOSED IN THIS. SO THERE WOULD BE CERTAINLY SOME INTEREST IN PROVIDING THE SCIENTISTS WITH IT. SO IT WOULD BE -- THERE WOULD BE SOME DONE, BUT NOT TO THE EXTENT TO WHICH IT'S PROPOSED.

SO I THINK THIS COMPANY HAS TO BREAK EVEN BECAUSE IT'S THE JACKSON LABORATORIES FROM BAR HARBOR, SO THEY HAVE TO BREAK EVEN FROM INPUTS AND OUT. SO IT IS WHAT IT IS, AND THEY CAN DO WHAT THEY CAN.

MR. ROTH: WELL, IN THAT LIGHT, I'M -- I'M RELUCTANT. AND I DON'T KNOW HOW I'M GOING TO VOTE IF THIS GRANT COMES FORWARD, BUT I'M RELUCTANT TO OPEN UP A DECISION THAT I THINK WE'VE LARGELY ALREADY REACHED. THERE WERE A COUPLE MORE GRANTS IN HERE THAT I KNOW OTHERS WANTED TO ADVOCATE FOR. BUT MY FEELING IS THAT UNLESS THERE'S A REALLY COMPELLING ARGUMENT THAT THERE'S SCIENTIFIC SUPPORT

AROUND THIS TABLE, UNANIMOUS SCIENTIFIC SUPPORT, THAT WE NEED TO DO THIS, THAT WE SHOULD DELAY IT.

CHAIRMAN KLEIN: OUR NORMAL STANDARD IS NOT UNANIMOUS. JEFF SHEEHY.

MR. SHEEHY: AND, AGAIN, I HAVE THE PRIVILEGE OF BEING IN THE GRANTS WORKING GROUP DISCUSSION. THE PROBLEM IS NOW THAT THE COMPANY -- THE NONPROFIT ENTITY IS OUT THERE IS THAT THERE'S PROBABLY NEVER GOING TO BE A REALLY GOOD FIT. THERE'S PROBABLY NEVER GOING TO BE A REALLY GOOD FIT IN THIS ENTITY.

THEY PROVIDE A RESOURCE. THEY'RE A NONPROFIT ENTITY. WE NEED TO MAKE THE DECISION WHETHER WE WANT TO MAKE THIS PART OF THE RESOURCES THAT WE WISH TO PROVIDE TO THE COMMUNITY. CLEARLY THERE'S A SENSE THAT PROVIDING THIS RESOURCE IS AN IMPORTANT INFRASTRUCTURE COMPONENT OF TRANSLATIONAL RESEARCH AND EMBRYONIC STEM CELL RESEARCH. AND THE QUESTION IS IS WHETHER -- I MEAN FROM MY PERSPECTIVE, THIS WILL SAVE THE ENTIRE FIELD TIME AND MONEY, WHICH ULTIMATELY SAVES US TIME AND MONEY. BUT THIS IS NOT, AS ALAN SAID, SOMETHING THAT WE CAN PUT DOWN THE ROAD AND THEY'RE GOING TO SUDDENLY HAVE A BETTER PROPOSAL. THIS IS REALLY A RESOURCE. AND WHETHER WE SEE OURSELVES AS MERELY FUNDING

INDIVIDUAL SCIENTIFIC PROJECTS AT INDIVIDUAL INSTITUTIONS OR WHETHER WE WANT TO OCCASIONALLY TAKE A LARGER PERSPECTIVE AND PROVIDE GENERALIZED RESOURCES THAT ARE AVAILABLE TO THE ENTIRE COMMUNITY OF STEM CELL RESEARCHERS IN CALIFORNIA.

WE'RE THE ONLY ONES THAT ARE ABLE TO DO THAT. STANDARDIZED ANIMAL MODELS ARE VERY IMPORTANT, I'VE BEEN LED TO UNDERSTAND, AND I THINK THE PEOPLE WHO HAVE TALKED ABOUT THIS HAVE BEEN VERY COMPELLING IN TERMS OF MOVING TRANSLATIONAL RESEARCH. THIS IS A VERY IMPORTANT ROLE WE CAN PLAY.

AND THERE'S -- TO MY MIND IT'S KIND OF LIKE NOW OR NEVER AND MAYBE WE OUGHT -- AND I THINK THE REAL DECISION IS DO WE WANT TO PROVIDE SOME OF THESE GLOBAL RESOURCES FOR THE COMMUNITY WHEN THESE OPPORTUNITIES COME BEFORE US, OR DO WE JUST WANT TO FUND INDIVIDUAL SCIENTISTS. I PERSONALLY THINK THAT THIS CAN BE A VERY VALUABLE ROLE ALONG WITH THE WORKSHOPS THAT WE DO WHERE WE PROVIDE A MORE COMMUNITYWIDE RESOURCE THAT CAN BE USED BY ALL.

CHAIRMAN KLEIN: I'M GOING TO CALL ON DR. BURTIS. EXCUSE ME. WE CAN'T BECAUSE WE HAVE AN ISSUE THERE.

SO LET ME ASK THIS QUESTION. MY

UNDERSTANDING FROM STAFF IS THAT THERE ARE FIVE TO SEVEN OR MORE DISEASE AREAS THAT THESE LINES WERE DESIGNED TO ADDRESS; IS THAT CORRECT?

DR. CSETE: I DON'T RECALL THE ORIGINAL NUMBER. I CAN LOOK IN THE APPLICATION, BUT MY POINT THAT I MADE BEFORE IS THAT THIS READS LIKE A GRANT WHERE OUR GRANTEES CAN EXPRESS THE NEED AND THE MODEL WOULD BE MADE. THAT'S WHAT WE WOULD BE FUNDING. SO THEY PICKED WHAT THEY THOUGHT THE COMMON NEEDS WERE BASED ON LOOKING THROUGH OUR WEBSITE AND SEEING WHAT KINDS OF GRANTS WE HAD FUNDED, SO IT WAS A PARKINSON'S DISEASE, A TYPE 1 DIABETES, AND AN MS MODEL THAT I RECALL, SEVEN. SO SEVEN MODELS ALTOGETHER.

BUT I THINK THAT THE POINT IS THAT THIS IS THE AGENCY THAT KNOWS HOW TO DO THIS. AND WE COULD WORK WITH THEM BASED ON THE NEEDS OF OUR GRANTEES.

CHAIRMAN KLEIN: OKAY.

DR. PRICE: ARE THERE CONFLICTS?

MR. HARRISON: YES, BUT YOU'RE NOT IN CONFLICT.

CHAIRMAN KLEIN: DR. PRICE, WOULD YOU LIKE TO MAKE A COMMENT?

DR. PRICE: YEAH. I THINK MUCH OF THE DISCUSSION HAS, TO MY MIND, BEEN SOMEWHAT BESIDE THE

POINT. TO SEEMS TO ME THE CENTRAL POINT IS RIGHT HERE AT THE TOP OF THE GRAPH, RECOMMENDED FOR FUNDING IF FUNDS ARE AVAILABLE. SO THAT, TO ME, IS THE CRUCIAL QUESTION. ARE FUNDS AVAILABLE FOR THIS OR ANY OTHER?

CLEARLY FROM WHAT WAS JUST SAID A MOMENT AGO ABOUT WHAT WE WOULD HAVE IN RESERVE IN THE END OF 2010, THERE CERTAINLY AREN'T FUNDS AVAILABLE TO FUND VERY MANY OF THESE; THAT IS, IF WE WANT TO FUND BASIC BIOLOGY AND IMMUNOLOGY AND DISEASE TEAMS AND SO ON; IS THAT CORRECT?

DR. ROBSON: LET ME JUST CLARIFY THAT THE $7 MILLION I SAID WOULD BE OUR CUSHION, THAT IS WITH THE ASSUMPTION THAT YOU WOULD FUND DISEASE TEAMS AT 210 MILLION, BASIC BIOLOGY I AT 30 MILLION, AND BASIC BIOLOGY II AT 30 MILLION. THOSE ARE THE ASSUMPTIONS THAT WE WORKED WITH. THAT'S WHAT YOU HAD CONCEPT APPROVED.

DR. PRICE: I UNDERSTAND, BUT THE ENTIRE HISTORY OF THIS INSTITUTE, WE'VE ALWAYS WANTED TO SPEND MORE THAN WE BUDGETED FOR. SO I DON'T THINK WE HAVE A PROBLEM. WE'RE NOT GOING TO UNDERFUND THOSE, AND SO I THINK IT'S A SAFE ASSUMPTION TO SAY THAT THOSE FIGURES ARE THE ONES MINIMALLY THAT WE'RE GOING TO WORK WITH. SO I DON'T KNOW IF A MOTION IS

IN ORDER, BUT GIVEN THAT, I WOULD SAY --

CHAIRMAN KLEIN: WELL, WE HAVEN'T HAD AN EXECUTIVE SESSION.

DR. PRICE: WE HAVE TO HAVE AN EXECUTIVE SESSION FIRST.

CHAIRMAN KLEIN: THAT'S RIGHT. AND IN RESPONSE TO YOUR POINT, WE HAVE AN ADDITIONAL $160 MILLION AUTHORIZED IN THIS PERIOD. WE HAVEN'T RAISED THOSE FUNDS. WE CONSERVATIVELY SET OUR POSITION TO SET A BUDGET THAT GOES THROUGH 2010. WE HAVE SEVERAL HUNDRED MILLION THAT WE HAVE NOT ACCESSED THAT IS ALREADY AUTHORIZED, BUT WE HAVE NOT TAKEN IT TO THE FINANCE COMMITTEE FOR THE STATE FOR THIS AGENCY TO GET ADDITIONAL AUTHORIZATION FOR ACTUALLY ISSUING THOSE BONDS BEYOND THE 160 ADDITIONAL MILLION.

DR. PRICE: I UNDERSTAND. I UNDERSTAND YOU'RE A MUSICIAN, BOB. MAYBE WE SHOULD JUST RELY ON THE FACT THAT YOU'RE GOING TO BE ABLE TO DO THAT.

CHAIRMAN KLEIN: THE POINT THAT I WOULD MAKE IS THAT CERTAINLY IN THE NEXT 12 MONTHS WE NEED TO BE VERY CONSERVATIVE ABOUT FUNDING WITHIN THE CASH WE HAVE ON HAND. WE'VE ACTUALLY BEEN MORE CONSERVATIVE AND BUDGETED CASH ON HAND FOR 18 MONTHS. BUT WE DO HAVE AUTHORIZATION AND WE DO HAVE

INTEREST IN, IN FACT, PURCHASING OUR PRIVATE PLACEMENTS. SO I DO THINK IT'S APPROPRIATE TO THINK ABOUT VALUE TO THE MISSION, QUALITY OF THE CONTRIBUTION. AND WHILE -- BUT I CERTAINLY WOULDN'T BE ONE TO SAY THAT YOU NEED TO ARTIFICIALLY LIVE WITH A SPECIFIC DOLLAR AMOUNT IF YOU'RE STAYING RELATIVELY CLOSE TO THAT AND THERE'S COMPELLING SCIENCE.

DR. AZZIZ: I'M ACTUALLY VERY HAPPY TO HEAR YOU TALK ABOUT WE NEED TO BE PRUDENT WITHIN OUR CASH FLOW REGARDLESS OF OBVIOUSLY THE LIMIT THAT WE ARE ALLOWED TO SPEND BECAUSE OBVIOUSLY WE DON'T HAVE THE MONEY. THE REAL QUESTION IS ONE OF PROCEDURE.

WE'VE ALREADY HAD AN EXECUTIVE SESSION FOR THESE GRANTS. THESE HAVE BEEN REVIEWED, DISCUSSED, AND SO ON AND SO FORTH. SO I'M UNCLEAR AS TO WHY WE NEED TO HAVE ANOTHER EXECUTIVE SESSION ABOUT THE SAME GRANTS. I APPRECIATE THAT THERE IS A PROCEDURAL ISSUE, BUT WE DID GO THROUGH THIS. THESE HAVE ACTUALLY BEEN REVIEWED IN EXECUTIVE SESSION. SO JUST FROM A POINT OF VIEW OF TIME MANAGEMENT, I'M NOT SURE THAT THAT IS NECESSARY SINCE THAT IS ALREADY ON THE RECORD AND HAS BEEN PERFORMED.

CHAIRMAN KLEIN: SO THE ISSUE IS ONE OF FAIRNESS TO THE GROUP. WE HAVE A SIGNIFICANT

DIFFERENCE BETWEEN THE PEOPLE THAT WERE IN THE PRIOR EXECUTIVE SESSION AND THE PEOPLE WHO ARE HERE TODAY. THE PEOPLE THAT ARE HERE TODAY DESERVE THE SAME ABILITY TO GO THROUGH AN EXECUTIVE SESSION AND ASK THEIR QUESTIONS AS THE PEOPLE WHO WERE THERE IN THE LAST SESSION WHO MAY HAVE HAD THE OPPORTUNITY TO DO SO.

SO IT IS OUT OF DESIRE FOR FAIRNESS TO ADDRESS ANY PROPRIETARY SCIENTIFIC QUESTIONS FOR THOSE WHO WERE NOT PRESENT AT THE LAST SESSION. WE ARE GOING TO DO IT DURING DINNER IN ANY CASE, SO HOPEFULLY WE WILL EFFECTIVELY USE THE TIME.

DR. TROUNSON: I THINK ONE OF THE KEYS TO THIS PARTICULAR PROJECT IS THAT, AS RICARDO HAS SAID, THIS PROJECT IS NOT GOING TO GET BETTER IN TERMS OF IT COMING FORWARD AGAIN. SO IT IS ALSO, I THINK, AIMED AT THE VERY EARLY PART OF THE PROOF OF CONCEPT. AS I TOLD YOU WITH MS, IF YOU PUT A VIRAL AGENT IN THERE, YOU WILL GET A DIFFERENT READOUT. SO YOU WILL HAVE TO PUT THE IMMUNE SYSTEM IN AT SOME STAGE TO GET THE READOUT BEFORE GOING TO THE PATIENTS.

ONE WOULD ARGUE THAT THIS IS AN EARLY ROADBLOCK, AN ISSUE WHICH NEEDS TO BE ADDRESSED EARLY ON. AND THIS IS EARLY COMPARED TO 12 MONTHS

TIME. AND THE PROJECT IS NOT GOING TO GET BETTER BECAUSE IT'S VERY SPECIFICALLY AIMED AT THOSE IMMUNE COMPROMISED ANIMALS FOR WHICH THEY WILL DEVELOP THE BEST APPROPRIATE MODEL. SO I THINK IF YOU THINK ABOUT THIS PROJECT, IT MIGHT BE DIFFERENT TO SOME OF THE OTHERS BECAUSE THEY MAY IN TIME BE MUCH IMPROVED BY HAVING A WHILE TO MATURE. GOOD WINE, GOOD CHEESE. RICARDO, YOU UNDERSTAND THIS.

DR. AZZIZ: SOME THINGS DO GET BETTER. MOST OF US DO NOT.

DR. TROUNSON: IN THIS PROJECT IT'S NOT -- IT'S CLEARLY NOT ONE OF THOSE. SO MAYBE YOU OUGHT TO THINK ABOUT THIS ONE A LITTLE DIFFERENTLY PERHAPS THAN THE OTHERS. AN EARLIER STAGE MIGHT BE BENEFICIAL AND IT'S NOT GOING TO NECESSARILY GET BETTER.

DR. LEVIN: THIS IS NOT A FIELD THAT I HAVE A WHOLE LOT OF EXPERIENCE WITH, BUT IT DOES SEEM TO ME THAT THIS PRESENTS A UNIQUE OPPORTUNITY FOR CIRM. CLEARLY THE STAFF IS IN SUPPORT OF THIS, AND THEY DO HAVE MORE INSIGHT AND EXPERIENCE WITH THIS PARTICULAR. AND THIS IS WE'VE TALKED AS A BOARD ABOUT INVESTING IN GENERAL RESOURCES FOR THE FIELD, THINGS LIKE GMP FACILITIES, AND THAT THERE'S A GOOD POSSIBILITY THAT SOMETHING LIKE THIS CAN

PRESENT A UNIQUE RESOURCE FOR THE ENTIRE FIELD THAT COULD POTENTIALLY EVEN LOWER THE COST OF FUTURE GRANTS BY PROVIDING THEM THE IMMUNOCOMPROMISED MICE THAT THEY OTHERWISE WOULD NEED TO GENERATE IN THEIR LABS AND PERHAPS ACCELERATING RESEARCH IN THAT REGARD. AND I DON'T SEE THAT THERE IS REALLY ANOTHER MECHANISM THAT IT WOULD HAPPEN IF WE DON'T FUND IT, SO IT MIGHT BE WORTH CONSIDERING SORT OF SEPARATELY.

WE, OF COURSE, ALWAYS DO HAVE THE OPTION LATER OF REDUCING THE CONCEPT PROPOSAL FOR THE SECOND EARLY TRANSLATIONAL AWARDS THAT HASN'T EVEN COME BEFORE THE BOARD, SO WE COULD JUST ALLOCATE LESS TO THEM IF WE REALLY ARE THAT CONCERNED ABOUT THE OVERALL BUDGET.

CHAIRMAN KLEIN: THANK YOU. DR. LOVE AND ANYONE ELSE DOWN THERE? DR. LOVE AND THEN WE'RE GOING TO GO TO FLOYD BLOOM, AND THEN WE'RE GOING TO ASK IF ANYONE WANTS TO DISCUSS, PRIOR TO THE EXECUTIVE SESSION, OR BRING UP ANY OTHER GRANT, OTHERWISE WE'RE GOING INTO DINNER AND EXECUTIVE SESSION, COME BACK, DISCUSS WHAT OTHER GRANTS MEMBERS WANT TO BRING FORWARD, IF THERE ARE ANY OTHERS, AND THEN WE'RE GOING TO TAKE PUBLIC COMMENT. SO THAT'S THE AGENDA. DR. LOVE.

DR. LOVE: SO I HAVE ONE QUESTION, AND IT KIND OF FEEDS OFF SOMETHING THAT DR. LEVIN JUST SAID, WHICH IS I'M VERY IMPRESSED AND INFLUENCED BY THE STAFF'S POSITION. AND SO -- BUT THE ONE THING I WANT TO PROBE JUST A LITTLE BIT MORE ON IS WHY INTRINSICALLY DO WE THINK THAT IF WE ARE SPLIT OVER WHETHER OR NOT THIS IS REALLY GOING TO BE A USEFUL MODEL SCIENTIFICALLY, THAT IN 12 MONTHS TIME THERE COULD NOT BE A BETTER SET OF MODELS IN FRONT OF US. THAT INTRINSICALLY JUST DOESN'T QUITE SEEM OBVIOUS TO ME THAT THERE'S NO WAY.

CHAIRMAN KLEIN: DR. LOVE, THE QUESTION IN THE PEER REVIEW WAS NOT WHETHER THERE WAS ANOTHER SET OF MODELS. THE QUESTION WAS RAISED WHETHER PEOPLE COULD DEVELOP THEIR OWN MODELS OR BENEFIT FROM THIS AS A STANDARDIZED SET OF MODELS WHERE PEOPLE COULD COMPARE RESULTS ON A CONSISTENT CHARACTERIZED MODEL. SO THE QUESTION WAS NOT WHETHER -- THE MODEL WAS THOUGHT TO BE HIGH QUALITY. THAT WAS NOT THE QUESTION. IT WAS JUST A DIFFERENCE IN PHILOSOPHY.

DR. CSETE: SO TWO ISSUES, TED. WHETHER IT WOULD ACCELERATE PEOPLE DOING THE NECESSARY PRECLINICAL KINDS OF STUDIES THAT THEY HAVE TO DO TO ADVANCE THEIR WORK IF SOMEONE ELSE MADE THE MODELS

FOR THEM, AND ALSO WHETHER IT WOULD FACILITATE CROSSTALK BETWEEN LABS WHO ARE WORKING ON THE SAME MODELS BECAUSE THE MOST RIGOROUS STANDARDS IN HAVING THE MODELS WERE DONE BY THE PEOPLE WHO REALLY KNOW HOW TO HANDLE MICE AND WERE HANDING IT OFF TO MULTIPLE LABS.

THOSE WERE THE TWO REAL STRENGTHS THAT WON'T CHANGE WITH TIME EVEN THOUGH PERHAPS IF A NEW MOUSE MODEL OF X DISEASE BECOMES AVAILABLE, THAT WOULD BECOME THE HOT ONE TO CROSS WITH AN IMMUNOSUPPRESSED MOUSE.

CHAIRMAN KLEIN: DR. BLOOM.

DR. BLOOM: I WAS ONE OF THOSE WHO WAS NOT HERE FOR THE SECOND PART OF THE APRIL MEETING, SO I MISSED THE DISCUSSION AND WAS PUZZLED WHEN I GOT THE BOOK WITH THE TIER 2 APPLICATIONS IN IT BECAUSE I THOUGHT THOSE HAD ALREADY BEEN DEALT WITH. SO I TOOK THE TIME TO READ THE 300 PAGES OF THE MINUTES OF THE APRIL MEETING, AND I FEEL AS THOUGH I WAS PRESENT NOW THAT I'VE GONE THROUGH ALL THOSE PAGES.

WHEN IT CAME TO THE DISCUSSION OF 1232, WHAT I DREW FROM THE MINUTE DISCUSSION, NOT FROM WHAT WAS SAID TODAY, WAS THAT THE NEGATIVE PEOPLE WERE NEGATIVE BECAUSE THEY DIDN'T THINK THE OTHER INVESTIGATORS IN OUR STEM CELL PROGRAM WOULD WANT TO

USE THESE TO THE EXTENT THAT THESE PEOPLE WANTED TO MAKE THEM.

SO MY QUESTION WOULD BE THIS: IS A BOTTLENECK GRANT ALSO TIMED FOR SUCCESS IN THE WAY THE DEVELOPMENT GRANTS ARE? AND IF NO ONE CHOSE TO USE THE FUNDS TO MAKE THE MICE THEY WANT TO MAKE, WOULDN'T WE THEN KNOW WHETHER OR NOT THESE WERE ATTRACTIVE SCIENTIFIC MODELS?

DR. CSETE: WELL, I'LL SLIP THAT A LITTLE BIT IN THAT WE MADE PRIORITIES OF BOTTLENECKS WHEN WE WROTE THE RFA, AND ANIMAL MODELS WERE ONE OF THEM. AND SO IT WAS OUR SENSE THAT THE TIMING WAS NOW ACUTE FOR OUR GRANTEES, AND THAT'S WHY WE PUT IT AS A PRIORITY. WE COULD HAVE LISTED OTHER PRIORITIES AND BOTTLENECKS, BUT THAT WAS ONE OF THE ONES WE CHOSE TO GO FOR.

DR. BLOOM: I UNDERSTAND THAT WE WANTED IT AS A PRIORITY, BUT THE ARGUMENT THAT WAS MADE AGAINST IT WAS THAT PEOPLE DIDN'T WANT TO USE THESE MICE OR WOULDN'T WANT TO USE THEM TO THE EXTENT THAT THE FUNDING BEING REQUESTED WOULD GENERATE.

DR. CSETE: I THINK THAT WE HAVE A BETTER SENSE OF OUR GRANTEES' NEEDS THAN SCIENTISTS COMING FROM OUTSIDE THE STATE WHO DON'T HAVE REALLY ACCESS TO THE PORTFOLIO, SO IT WAS THEIR OPINION THAT

PERHAPS --

DR. BLOOM: THAT'S NOT REALLY WHAT I'M SAYING. I'M SAYING THAT IF WE WERE TO DECIDE TO AWARD THIS GRANT AND NO ONE CAME TO ASK FOR THESE ANIMALS, THOSE FUNDS WOULD NOT BE SPENT.

CHAIRMAN KLEIN: FLOYD, DR. BLOOM, WHAT WOULD ACTUALLY HAPPEN IS IF WE APPROVE THE GRANT, THE MODELS WOULD BE MADE FOR THESE SEVEN DIFFERENT DISEASES.

DR. BLOOM: THE WAY MY FEELING WITH JACKSON LABS HAVE BEEN IS THAT THEY DON'T MAKE ANYTHING UNTIL THEY'VE GOT A CUSTOMER FOR IT.

DR. CSETE: OR A GRANT.

CHAIRMAN KLEIN: OR A GRANT. THEY SOMETIMES ARE ABLE TO GET NIH GRANTS TO DEVELOP THE MODELS. IN THIS CASE THEY'RE COMING TO US TO GET THE GRANT TO DEVELOP THE MODELS, BUT THEY'D MAKE THE SEVEN DIFFERENT DISEASE MODELS. AND THEN THEY HAVE, IN FACT, POLLED GRANTEE ORGANIZATIONS TO DETERMINE ALREADY BEFORE THEY SUBMITTED TO US. THEY ALSO TALKED TO -- SPECIFICALLY IT WAS DISCUSSED THAT THEY HAVE TALKED TO GRANTEE ORGANIZATIONS TO SEE WHICH MODELS PEOPLE NEEDED.

SO THEY HAVE DONE SOME PRELIMINARY RESEARCH HERE. OKAY. I'M GOING TO ADJOURN TO

DINNER. WE'RE GOING TO TAKE ABOUT AN HOUR ON THIS PROCESS. AND BEFORE WE RECONVENE, MR. HARRISON, WOULD YOU LIKE TO CITE THE STATUTORY PROVISIONS FOR THE EXECUTIVE SESSION SO THAT WE CAN CONCURRENTLY HAVE DINNER AND THE EXECUTIVE SESSION? WE MAY BE AS MUCH AS AN HOUR AND 15 MINUTES.

AND BEFORE THIS CITATION OF THE SESSION, JENNIFER, CAN YOU TELL US WHERE THE DINNER WILL BE?

MS. PRYNE: MR. CHAIRMAN, THE DINNER WILL BE HELD IN FAIRBANKS ROOM C AND D, THE SAME ROOM WHERE WE HAD THE REFRESHMENT BREAKS THIS AFTERNOON.

CHAIRMAN KLEIN: FOR THOSE MEMBERS WHO JUST CAME SINCE WE'VE STARTED THE SESSION, IT'S DOWN THIS HALL ON THE LEFT.

MS. PRYNE: THAT'S CORRECT.

MR. HARRISON: THE BOARD WILL BE CONVENING IN CLOSED SESSION PURSUANT TO HEALTH AND SAFETY CODE SECTION 125290.30(D) TO DISCUSS CONFIDENTIAL AND PROPRIETARY INFORMATION RELATING TO THE EARLY TRANSLATIONAL RESEARCH AWARD APPLICATIONS.

CHAIRMAN KLEIN: THANK YOU. WE WILL HAVE PUBLIC COMMENT AGAIN WHEN WE RECONVENE. THANK YOU.

(A RECESS WAS TAKEN.)

CHAIRMAN KLEIN: IF WE CAN RECONVENE, PLEASE. THAT'S AN ACCOMPLISHED VOICE OF AUTHORITY.

IF WE COULD RETURN TO ITEM 8 ON THE AGENDA, I WOULD LIKE TO ASK IF ANYONE WOULD LIKE TO MAKE A MOTION TO APPROVE ANY GRANT ON THIS LIST.

MR. ROTH: ITEM 9.

CHAIRMAN KLEIN: ITEM 9. IT IS ITEM 9.

DR. AZZIZ: CAN I MAKE A MOTION?

MR. HARRISON: YES.

DR. AZZIZ: JUST WANT TO MAKE SURE. I'D LIKE TO MAKE A MOTION THAT WE -- FOR TIER 2 THAT WE DO NOT FUND ALL THOSE APPLICATIONS WITH THE EXCEPTION OF 01232.

CHAIRMAN KLEIN: SO THE --

DR. AZZIZ: THERE WE GO.

CHAIRMAN KLEIN: I THINK WHAT OUR ESTEEMED COUNSEL IS GOING TO RECOMMEND IS THAT MORE MEMBERS CAN VOTE IF WE JUST MAKE IT AN ISOLATED MOTION.

MR. HARRISON: RIGHT. YOU CAN MAKE A MOTION AS TO APPLICATION 1232. YOU CANNOT MAKE A MOTION AS TO THE REMAINDER.

DR. AZZIZ: SOUNDS PERFECT.

CHAIRMAN KLEIN: MY UNDERSTANDING OF THE MOTION MADE BY DR. AZZIZ IS TO FUND ITEM 1223.

MR. HARRISON: 1232.

CHAIRMAN KLEIN: 1232. DYSLEXIA WILL GET SOMEONE A LOT OF MONEY. THANK YOU. IS THERE A

SECOND?

DR. LOVE: SECOND.

MR. SHEEHY: SECOND.

CHAIRMAN KLEIN: SECOND BY JEFF SHEEHY. SECOND BY DR. LOVE. I GUESS WE HAVE TWO SECONDS. VERY IN VOGUE FOR THIS GROUP. DISCUSSION ON THE MOTION? FOR THE PURPOSES OF THE PUBLIC, COULD THE STAFF IDENTIFY THE SUBJECT OF THIS MOTION AGAIN SINCE WE'VE HAD DISCUSSION PREVIOUSLY, A VERY SHORT SUMMARY DISCUSSION BY STAFF OF THE TOPIC OF THIS MOTION.

DR. CSETE: THE CRUX OF THE APPLICATION IS TO DEVELOP AND CHARACTERIZE A VARIETY OF DISEASE MODELS IN IMMUNOSUPRESSED MICE FOR TESTING OF VARIOUS NONMOUSE, INCLUDING HUMAN STEM CELL THERAPIES, IN THE THERAPY OF THOSE DISEASES.

CHAIRMAN KLEIN: THANK YOU, DR. CSETE. I WOULD LIKE TO ASK IF THERE'S ANY ADDITIONAL DISCUSSION? WE HAD A VERY VIBRANT, ROBUST DISCUSSION BEFORE THE BREAK. SEEING NONE, I'D LIKE TO SEE IF THERE'S ANY DISCUSSION FROM THE AUDIENCE. YES. IF YOU WOULD LIKE TO MAKE A STATEMENT, PLEASE APPROACH THE MICROPHONE.

MR. SIANI-ROSE: I'M SORRY. DOES IT HAVE TO BE SPECIFIC TO APPROVING THESE?

CHAIRMAN KLEIN: HAS TO BE SPECIFICALLY RELEVANT TO THIS MOTION.

MR. SIANI-ROSE: NO COMMENT.

CHAIRMAN KLEIN: THANK YOU. I WILL ASK FOR GENERAL PUBLIC COMMENT AT THE END OF THE SESSION TONIGHT. THANK YOU. IS THERE A SPECIFIC COMMENT RELATED TO THIS MOTION?

MS. PETERSON: SUZANNE PETERSON, SCRIPPS RESEARCH INSTITUTE. I HAVE NO AFFILIATION WITH THIS PROPOSAL WHATSOEVER, BUT I'VE HEARD ABOUT IT AT THIS MEETING, AND I'VE HEARD ABOUT IT AT THE L.A. ONE. AND IT SOUNDS LIKE SUCH A GREAT IDEA TO ME. BEING A RESEARCHER, MOUSE MODELS ARE SO IMPORTANT FOR GETTING THINGS TO THE CLINIC. AND I JUST -- I FEEL LIKE IT'S A REALLY GREAT IDEA, BUT ANYHOO.

CHAIRMAN KLEIN: THANK YOU VERY MUCH. ADDITIONAL PUBLIC COMMENT? SEEING NONE, I'D LIKE TO CALL THE QUESTION AS A ROLL CALL VOTE, PLEASE. AND, COUNSEL, REMIND US OF WHO CANNOT VOTE.

MR. HARRISON: MEMBERS FEIT AND BURTIS.

CHAIRMAN KLEIN: YES, THANK YOU.

MS. KING: RICARDO AZZIZ.

DR. AZZIZ: FOR.

MS. KING: ROBERT PRICE FOR ROBERT BIRGENEAU.

DR. PRICE: YES.
MS. KING: FLOYD BLOOM.
DR. BLOOM: NO.
MS. KING: DAVID BRENNER.
DR. BRENNER: NO.
MS. KING: JACOB LEVIN FOR SUSAN BRYANT.
DR. LEVIN: YES.
MS. KING: LEEZA GIBBONS.
MS. GIBBONS: YES.
MS. KING: NANCY MILLIKEN FOR SAM HAWGOOD.
DR. MILLIKEN: YES.
MS. KING: BOB KLEIN.
CHAIRMAN KLEIN: YES.
MS. KING: LEONARD ROME FOR GERALD LEVEY.
DR. ROME: NO.
MS. KING: TED LOVE.
DR. LOVE: YES.
MS. KING: ELIZABETH FINI FOR CARMEN PULIAFITO.
DR. FINI: YES.
MS. KING: DUANE ROTH.
MR. ROTH: NO.
MS. KING: JEFF SHEEHY.
MR. SHEEHY: YES.
MS. KING: AND ART TORRES.

MR. TORRES: ABSTAIN.

CHAIRMAN KLEIN: THIS IS AN INTERIM VOTE COUNT. SO WE HAVE JOAN, FOR HEALTH REASONS FOR THIS EVENING, HAS RETURNED TO HER ROOM, AND WE HAVE A COUPLE OF MEMBERS THAT ARE STILL IN TRAFFIC. WE'RE GOING TO -- MY INTENT HERE IS TO LEAVE THIS ROLL OPEN FOR THE MORNING TO COMPLETE THIS BECAUSE WE DO NOT CURRENTLY HAVE A QUORUM PRESENT. WHAT IS YOUR INTERIM VOTE COUNT?

MR. HARRISON: NINE YES VOTES, FOUR NO VOTES, AND ONE ABSTENTION.

CHAIRMAN KLEIN: THANK YOU VERY MUCH. WITH THAT AND GIVEN THAT WE HAVE HOW MANY MORE -- ABOUT -- WE HAVE ANOTHER FIVE MEMBERS THAT WILL BE HERE IN THE MORNING. ASSUMING THAT JOAN IS ALSO RETURNING, WE WILL HAVE SIGNIFICANTLY MORE THAN OUR QUORUM IN THE MORNING.

MS. KING: WE SHOULD HAVE SEVEN MORE.

CHAIRMAN KLEIN: AND WE ARE IN A POSITION WHERE WE HAD AN ILLNESS IN THE FAMILY FOR ONE OF THE BOARD MEMBERS, WHICH IS NOT FATAL, BUT SIGNIFICANT THEY HAD TO ATTEND TO AND COULD NOT COME AT THE LAST MINUTE. SO WE DO NEED TO LEAVE THIS OPEN UNTIL THE MORNING.

WE WILL COME TOGETHER IN THE MORNING AT

8:30 FOR A SPOTLIGHT AT WHICH LOCATION?

MS. KING: RIGHT HERE.

CHAIRMAN KLEIN: IN THIS ROOM. AND I WOULD ENCOURAGE EVERYONE'S ATTENDANCE. CATRIONA JAMIESON WILL BE THERE TO MAKE A PRESENTATION ON HER CIRM-FUNDED RESEARCH WHICH IS IN A PHASE I TRIAL. SHE HAS PATIENTS THAT HAVE SUCCESSFULLY GONE THROUGH THAT TRIAL. EVEN THOUGH IT IS A PHASE I TRIAL, THEY ARE VERY SUBSTANTIAL RESULTS, WHICH YOU WILL FIND, I THINK, EXTREMELY INTERESTING. IT IS A POINT OF GREAT ENCOURAGEMENT. ALTHOUGH WE HAVE TO TRACK THESE PATIENTS OVER TIME, IT IS A POINT OF GREAT ENCOURAGEMENT, AND I THINK YOU WILL FIND IT EXTREMELY INTERESTING.

WE THANK OUR ESTEEMED DR. BRENNER, WHO WILL BE A PART OF THAT PROGRAM. AND WE WILL LOOK FORWARD TO RECONVENING. AND I WOULD LIKE TO SAY THAT THOSE 300 SCIENTIFIC PAPERS THAT HAVE BEEN CREATED WERE THE RESULT OF DEDICATED WORK OF SOME TREMENDOUSLY TALENTED SCIENTISTS AND PHYSICIAN/SCIENTISTS. THEY'RE ALSO THE RESULT OF SOME EXTRAORDINARY DEDICATION BY OUR PRESIDENT, DR. TROUNSON, OUR CHIEF SCIENTIFIC OFFICER, DR. CSETE, OUR HEAD OF OUR SCIENCE TEAM, DR. OLSON, AND A PHENOMENAL SCIENCE TEAM. AND I'D LIKE US TO GIVE

OUR SCIENCE TEAM, INCLUDING THE INDIVIDUAL SCIENCE MEMBER WHO HEADS OUR PEER REVIEW, DR. SAMBRANO, ALL A GREAT HAND OF APPLAUSE.

(APPLAUSE.)

MR. TORRES: IS IT POSSIBLE TO CHANGE THE SCREEN SO WE CAN SEE THEM?

CHAIRMAN KLEIN: CAN WE MOVE THE SCREENS IN CLOSER FOR THE MORNING SESSION?

MR. TORRES: SO THAT EVERYBODY CAN SEE.

MS. PRYNE: WE'LL MOVE IT IN A LITTLE BIT MORE. NO PROBLEM.

CHAIRMAN KLEIN: THAT WOULD BE PHENOMENAL. IT'S A VERY NICE FACILITY. WE JUST NEED TO CLOSE DOWN THE DISTANCE. SOME OF US, EVEN WITH THE HELP OF OPTICAL INSTRUMENTS, DON'T HAVE PERFECT LONG-RANGE EYESIGHT. THANK YOU VERY MUCH AND THANK ALL MEMBERS. MARCY FEIT. I'VE GOT FROM THE RIGHT AND THE LEFT REMINDERS. ADDITIONAL PUBLIC COMMENT TONIGHT? YES, GO AHEAD.

MR. SIANI-ROSE: GOOD EVENING. I'M MIKE SIANI-ROSE, PRESIDENT AND FOUNDER OF THEREGEN, INC. I JUST WANTED TO SAY I'VE ATTENDED THE LAST SEVERAL ICOC MEETINGS FOR THE PAST YEAR, AND I'M IMPRESSED WITH THE CALIBER OF THE PEOPLE AND THE CALIBER OF THE WORK THAT YOU'RE DOING. HOWEVER, I AM RUNNING A

SMALL VENTURE-FUNDED COMPANY IN THE BAY AREA BASED IN SAN FRANCISCO.

MY BACKGROUND IS AS A COMPUTATIONAL CHEMIST AND VARIOUS BIOTECH START-UPS AND NOW LARGER COMPANIES, ONE OF WHICH BECAME CHIRON AND NOW IS NOVARTIS. SO I'VE HAD ABOUT 15 YEARS EXPERIENCE IN BIOTECH IN THE BAY AREA, AND NOW I'VE MOVED INTO CELL THERAPY.

WE HAVE A TISSUE PATCH CONTAINING LIVING DERMAL FIBROBLASTS THAT'S JUST FINISHED PHASE I TRIALS AS A TREATMENT FOR ISCHEMIC HEART DISEASE. WE ACTUALLY PUT THE PATCH ON THE SURFACE OF THE HEART. AND WE FILED AN EARLY TRANSLATION GRANT APPLICATION FOR COMBINING OUR PATCH WITH CARDIAC PROGENITOR CELLS. THE CELLS ARE MADE FROM THE HUMAN EMBRYONIC STEM CELL-DERIVED CARDIAC PROGENITOR CELLS. THEY'RE MADE BY CALIFORNIA STEM CELLS, INC., WHICH IS OUR COLLABORATOR.

AND I JUST WANT YOU TO KNOW THAT I'VE LOOKED AT THE APPROVED GRANTS FROM THE TIER 1, AND TWO OF THEM ARE CORPORATIONS. ONE OF THE STRENGTHS OF CALIFORNIA IS THE INCREDIBLE DRIVE AND INNOVATION OF THE START-UP COMPANIES IN THE BAY AREA. WE HAVE SILICON VALLEY, AND SAN DIEGO IS EQUIVALENT. I USED TO WORK AT SCRIPPS IN THE '80S, AND, YOU KNOW, I

KNOW A LOT OF COMPANIES CAME OUT OF SCRIPPS, UCSD, AND SURROUNDING AREA.

I THINK WE SHOULD ASK OURSELVES WHAT TRANSLATION REALLY IS IF IT'S NOT GOING TO GET INTO THE CLINIC BY MEANS OF A CORPORATE ENTITY. AND OUR GRANT APPLICATION RECEIVED A SCORE OF 21. OKAY. NOW, IT PROBABLY DESERVED A 21. I CAN'T REALLY TELL FROM THE COMMENTS. BUT WE HAVE SOMETHING THAT'S GOING INTO PHASE II CLINICAL TRIALS NOW, AND IT'S A CELL-BASED THERAPY. SO I'M ASSUMING THAT WE'RE NOT COMPLETELY OFF BASE. BUT THE REVIEWERS' COMMENTS TALKED ABOUT THE FACT THAT WE STRESSED GOOD MANUFACTURING PRACTICES, DEVELOPMENT OF, YOU KNOW, THE PROCESS AND THE STEM CELLS SO THAT THEY WOULD MEET FDA GUIDELINES SO THAT WE CAN GO INTO HUMANS.

AND WE WILL SUBMIT AGAIN FOR THE NEXT RFA, AND I'M HOPING THAT WE CAN GET INTO THE 60 POINT RANGE, BUT IT SEEMS UNLIKELY GIVEN THAT ONLY TWO OF THE 15 AND NOW 16 ARE ACTUALLY COMMERCIAL ENTITIES. SO THANK YOU FOR LISTENING TO ME. I DON'T HAVE ANY -- I'M NOT INTERESTED IN -- I DON'T HAVE A QUESTION, SO I'M NOT INTERESTED IN ANY ANSWERS, BUT I REALLY WANT YOU TO THINK ABOUT THIS. WE'RE WORKING REALLY HARD AT ALL THE DIFFERENT STAGES, BUT THIS -- I DON'T BELIEVE PROP 71 WAS INTENDED TO JUST

BE FOR RESEARCH.

CHAIRMAN KLEIN: SO THANK YOU FOR YOUR COMMENTS. IN THE NEXT BOARD MEETING IN AUGUST, I'LL ASK FOR A REPORT FROM THE SCIENTIFIC STAFF ON THE NUMBER OF COMPANIES THAT ARE INVOLVED IN THE DISEASE TEAMS EITHER AS PI'S OR CO-PI'S. WE ARE GOING TO DISCUSS THAT LATER. I DIDN'T SEE THAT NUMBER. I WAS POSSIBLY TRYING TO DEAL WITH OUR QUORUM AND OUR MEMBER THAT COULDN'T APPEAR.

DR. TROUNSON: SO THERE WAS EIGHT COMPANIES IN THE DISEASE TEAM PROGRAM THAT WERE EITHER LEADING OR WERE CO-PI'S.

CHAIRMAN KLEIN: WAS IT EIGHT, OR MAYBE I DID SEE IT, NINE. EIGHT. OKAY. OUT OF THE 32.

DR. TROUNSON: UH-HUH.

CHAIRMAN KLEIN: SO IN TERMS OF -- THAT'S NOT AT AN AWARD LEVEL, BUT IN TERMS OF THE FINAL COMPETITION, IT'S EIGHT OUT OF 32. WHAT IS VERY VALUABLE, SEPARATE FROM A COMPETITION, ARE THE DISCUSSIONS THAT CAN OCCUR WITH SCIENTIFIC STAFF ON SPECIFIC STRENGTHS OF APPLICATIONS AND DEFICIENCIES.

WE HAVE HAD PREVIOUSLY PRESENTATIONS TO THE PRIVATE SECTOR ON HOW TO ENHANCE THOSE PROCESSES. AND, DR. TROUNSON, COULD YOU ADDRESS OUR NEXT STEPS TO, IN FACT, ENHANCE THE PRIVATE SECTOR

COMPETITION OR COMPETITIVENESS IN ADDITION TO THE FACT THAT WE ARE INTEGRATING AS WE GO FURTHER INTO TRANSLATION LARGER NUMBERS OF INDUSTRY REPRESENTATIVES ON OUR PEER REVIEW PANELS.

DR. TROUNSON: YOU ARE CORRECT. WE'RE INCREASING THE NUMBER OF PEOPLE WHO WORK DIRECTLY IN THAT PHASE IN THE COMPANIES. THAT CAN BE MORE TRICKY BECAUSE OF THE COMPANIES THAT ARE SPREAD ACROSS CALIFORNIA AND THE REST OF THE U.S. IT CAN BE DIFFICULT TO FIND THOSE THAT ARE NOT -- THAT WOULD FIT IN THE PARAMETERS, BUT WE'RE SEARCHING AND GETTING THOSE PEOPLE.

WE ALSO ASKED ELONA BAUM TO DEVELOP A PROGRAM WHERE WE WOULD GO BACK TO THE COMPANIES AND WITH THE ASSISTANCE OF SOME OF THOSE COMPANIES THAT HAVE BEEN VERY SUCCESSFUL TO GIVE SOME INDICATION OF HOW THEY WERE SUCCESSFUL AND WHAT WAS THEIR -- WHAT WAS THEIR WAY OF ACHIEVING A SUCCESS IN THE GRANTS FORUM. AND I THINK COMING DIRECTLY FROM THOSE PEOPLE IT MIGHT BE MORE INFORMATIVE THAN FROM US OR FROM AN ACADEMIC.

FINALLY, YOU KNOW, IF THERE IS A RESIDUAL DIFFICULTY IN THIS AREA, WE'VE CONTEMPLATED THE POSSIBILITY OF A COMPANY OWNING PROJECTS. BUT AT THIS STAGE WE'RE NOT IN A POSITION OF WANTING TO

RECOMMEND THAT, BUT IT IS SOMETHING THAT WE COULD CONSIDER IF THERE WAS A SERIOUS DEFICIENCY THERE IN THAT REGARD.

SO WHAT WE'RE TRYING TO DO IS EDUCATE AND INFORM. YOU WOULD RECOGNIZE THAT SOME OF THE MORE SENIOR COMPANIES ACTUALLY HAVEN'T ENTERED THE PROCESSES BECAUSE THEY HAVE RESIDUAL ISSUES WITH OUR IP OR WITH THE LOAN PROGRAM, AND WE'RE WORKING WITH THEM, AS I SAID EARLIER, TRYING TO FIND OUT WHAT ARE THE SHARP AND HARD POINTS FOR THEM AND WHETHER WE CAN EITHER ADDRESS THAT BY GIVING THEM SOME WRITTEN DOCUMENTATION TO ALLAY THEIR FEARS; OR IF IT TURNS OUT THERE'S GENERIC ISSUES, WE'LL BRING THEM BACK TO THE ICOC AND SAY, WELL, THESE ARE THE PROBLEM AREAS. CAN WE RECONSIDER SOME OF THESE ISSUES WHERE THEY'RE ABLE TO BE RECONSIDERED?

SO WE'RE TRYING TO OFFER SORT OF A BROAD SPECTRUM FROM INFORMATION, EDUCATION, AND, IF NEEDS BE, IN THE LONG TERM, IF WE FEEL THAT IT'S A DEFICIENCY THAT WE CAN'T CORRECT THROUGH OUR CURRENT PROGRAMS, WE'D EXAMINE THE POSSIBILITY OF THE COMPANY OWNING PROJECTS. THERE'S SOME. I THINK THE NIH RUNS SOME OF THESE ALTHOUGH THEY'RE MUCH SMALLER THAN THE ONES WE'VE OPERATED. AND WE HAVE LISTENED TO THE FEEDBACK THAT WE'VE HAD, AS YOU SAID, FROM

THE COMMERCIAL INDUSTRIES ABOUT HOW THEY FEEL THAT THE PROGRAM'S OPERATING.

AS SOMEBODY WHO I'VE STARTED UP A NUMBER OF COMPANIES, AND MOST OF THOSE ARE ACTUALLY HEALTHY AND LIVING LIFE SOMEWHERE ELSE NOT ASSOCIATED WITH ME, BUT HAVING BEEN IN THAT SPACE, I HAVE LIVED IN BOTH WORLDS TO SOME EXTENT. AND I THINK THAT WE'RE NOT REALLY FAR OFF GETTING A REASONABLE DEAL FOR ALL SIDES. BUT WE'RE OPEN. WE'RE OPEN TO WHATEVER THOUGHTS THAT WOULD COME FROM THE ICOC, BUT ALSO FROM THE COMMERCIAL INDUSTRY ITSELF. AND WE WOULD HOPE THAT CONTINUAL DIALOGUE, AND WE'LL HAVE MORE DIALOGUE WITH THE BIOTECH COMPANIES AND PHARMACEUTICAL COMPANIES, THAT MORE DIALOGUE MIGHT ALSO THROW UP SOME NEW OPPORTUNITIES THAT WE CAN BRING BACK TO YOU FOR CONSIDERATION.

CHAIRMAN KLEIN: ALL RIGHT. AND A SPECIFIC IMMEDIATE STEP THAT WE'VE TAKEN IS THAT OUR GENERAL COUNSEL, WHO HAS COME RECENTLY FROM GENENTECH, ALONG WITH THE PRESIDENT, DUANE ROTH, AND I, HAVE MET WITH COUNSELS ALONG WITH BOARD COUNSEL -- WITH PRIVATE COMPANIES ALONG WITH BOARD COUNSEL TO IDENTIFY OBSTACLES, BARRIERS TO THEIR PARTICIPATING. SO WE ARE IN A ROBUST MANNER DEDICATED TO FULL PARTICIPATION BY THE PRIVATE

SECTOR IN THIS. IT IS AN INCREMENTAL PROCESS BECAUSE WE'RE CREATING AND WE'LL BRING BACK TO THE BOARD MODIFICATIONS THAT WILL HOPEFULLY STIMULATE THAT ACTIVITY. BUT THANK YOU VERY MUCH FOR YOUR WORDS AND YOUR WORK.

MR. SIANI-ROSE: YOU'RE WELCOME. THANK YOU.

CHAIRMAN KLEIN: WE STAND ADJOURNED.

(THE MEETING WAS THEN ADJOURNED AT 8:51 P.M. TO RECONVENE AT 9:30 ON JUNE 18, 2009.)

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

SHERATON HOTEL & MARINA
1580 HARBOR ISLAND DRIVE
BAY TOWER, BEL AIRE BALLROOM
SAN DIEGO, CALIFORNIA
ON
JUNE 17, 2009

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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