BEFORE THE

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

REGULAR MEETING

LOCATION: AS INDICATED ON THE AGENDA

DATE: JULY 19, 2018
11 A.M.

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

FILE NO.: 2018-12

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JULY 19, 2018; 11 A.M.

CHAIRMAN THOMAS: GOOD MORNING, EVERYBODY, AND WELCOME TO THE REGULAR MEETING OF THE ICOC AND THE APPLICATION REVIEW SUBCOMMITTEE FOR JULY 2018. LIKE TO CALL THE MEETING TO ORDER. MARIA, WILL YOU PLEASE CALL THE ROLL.

MS. BONNEVILLE: SURE. GEORGE BLUMENTHAL. LINDA BOXER. DAVID BRENNER. KEN BURTIS. DEBORAH DEAS.

DR. DEAS: HERE.

MS. BONNEVILLE: ANNE-MARIE DULIEGE.

DR. DULIEGE: HERE.

MS. BONNEVILLE: JUDY GASSON.

DR. GASSON: HERE.

MS. BONNEVILLE: SAM HAWGOOD. DAVID HIGGINS.

DR. HIGGINS: PRESENT.

MS. BONNEVILLE: STEPHEN JUELSGAARD.

MR. JUELSGAARD: HERE.

MS. BONNEVILLE: SHERRY LANSING. LINDA MALKAS.

DR. MALKAS: HERE.

MS. BONNEVILLE: DAVE MARTIN.

DR. MARTIN: YES.

MS. BONNEVILLE: SHLOMO MELMED.
DR. MELMED: HERE.
MS. BONNEVILLE: LAUREN MILLER.
MS. MILLER: HERE.
MS. BONNEVILLE: ADRIANA PADILLA.
DR. PADILLA: HERE.
MS. BONNEVILLE: JOE PANETTA. FRANCISCO PRIETO. ROBERT QUINT.
DR. QUINT: HERE.
MS. BONNEVILLE: AL ROWLETT.
MR. ROWLETT: HERE.
MS. BONNEVILLE: SUZANNE SANDMEYER.
DR. SANDMEYER: YES.
MS. BONNEVILLE: JEFF SHEEHY.
MR. SHEEHY: HERE.
MS. BONNEVILLE: OSWALD STEWARD.
DR. STEWARD: HERE.
MS. BONNEVILLE: JONATHAN THOMAS.
CHAIRMAN THOMAS: HERE.
MS. BONNEVILLE: ART TORRES.
MR. TORRES: HERE.
MS. BONNEVILLE: KRISTINA VUORI.
DR. VUORI: HERE.
MS. BONNEVILLE: DIANE WINOKUR.
MS. WINOKUR: HERE.

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MS. BONNEVILLE: WE HAVE A QUORUM.

CHAIRMAN THOMAS: THANK YOU, MARIA.

COUPLE OF MINISTERIAL ITEMS. ONE IS, IF YOU'RE ON THE LINE AND NOT SPEAKING, IF YOU COULD PLEASE MUTE YOUR PHONE.

THE SECOND IS WITH REGARD TO PUBLIC COMMENT. MEMBERS OF THE PUBLIC WHO ARE ON THE PHONE AT A NON-NOTICED MEETING LOCATION WILL HAVE THE OPPORTUNITY TO DO SO WHEN WE CALL FOR PUBLIC COMMENT. ONCE WE'VE CALLED FOR PUBLIC COMMENT, MEMBERS OF THE PUBLIC WILL BE ABLE TO DO SO BY PRESSING STAR ONE WHICH WILL PLACE YOU IN LINE TO MAKE YOUR PUBLIC COMMENT. ONCE WE CALL YOUR NAME, YOU WILL HAVE THREE MINUTES TO MAKE YOUR PUBLIC COMMENT.

THE LAST MINISTERIAL THING I WANT TO POINT OUT IS FOR THOSE MEMBERS OF THE BOARD ON THE PHONE, WE E-MAILED OUT A LITTLE WHILE AGO A TABLE WHICH REFERENCES THE INDICATIONS UNDER CONSIDERATION TODAY FOR THE QUEST AWARDS AND GIVES INFORMATION ON EXISTING AWARDS THAT HAVE BEEN MADE IN THE SPACE, THAT YOU HAVE SOME SORT OF COMPARATIVE ANALYSIS OF WHAT'S BEEN FUNDED AND WHAT HASN'T. SO YOU MIGHT WANT TO CHECK THAT E-MAIL. WE HAVE COPIES OF IT HERE FOR MEMBERS OF THE BOARD WHO ARE PRESENT HERE

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IN CIRM HEADQUARTERS AS WELL.

OKAY. SO LET'S PROCEED RIGHT IN HERE. WE'LL GO TO ITEM NO. 3, READOPTION OF INTELLECTUAL PROPERTY RULES FOR NEW AWARDS. MR. TOCHER.

MR. TOCHER: YES. THANK YOU, CHAIRMAN THOMAS.

WITH THIS ITEM, IT'S A BIT IF A FORMALITY. YOU WILL RECALL THAT A LITTLE EARLIER THIS YEAR WE ADOPTED FINAL LANGUAGE FOR OUR INTELLECTUAL PROPERTY RULES THAT WILL BE APPLICABLE TO THE AWARDS.

THE REPORTER: THIS IS BETH. I'M SORRY. THERE IS STILL A LOT OF NOISE ON THE LINE. I CAN HARDLY HEAR MR. TOCHER.

MR. TOCHER: EARLIER THIS YEAR WE ADOPTED FINAL LANGUAGE TO IMPLEMENT THESE NEW IP POLICY RULES. AS PART OF THE OFFICE OF ADMINISTRATIVE LAW'S REVIEW OF THAT FILE, THEY REQUESTED SOME CHANGES TO NOT THE ACTUAL TEXT OF THE POLICY, BUT SOME OF THE DOCUMENTS THAT UNDERLIE THE REGULATORY FILE.

AS A CONSEQUENCE, WE CIRCULATED THOSE REVISED DOCUMENTS TO THE PUBLIC. AND WITH THAT COMMENT PERIOD, WHICH HAS NOW CONCLUDED, AS A FORMALITY, THE BOARD MUST THEN READOPT THE IP POLICY. I NOTE THAT THERE HAS BEEN NO CHANGE,

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AGAIN, TO THE ACTUAL TEXT OF THE LANGUAGE THAT THE BOARD HAS ALREADY APPROVED; BUT THIS IS A STEP REQUIRED BY THE OFFICE OF ADMINISTRATIVE LAW JUST TO CLOSE OUT THE PROCESS. AND I WOULD EXPECT THAT WE WOULD HAVE THIS ALL WRAPPED UP BY THE END OF THIS MONTH ACCORDING TO MY CONVERSATIONS WITH OAL.

SO HAPPY TO TAKE ANY QUESTIONS OR REQUEST A MOTION TO ADOPT.

MR. JUELSGAARD: I MOVE THAT WE --

MR. TORRES: SO MOVED.

DR. JUELSGAARD: -- ADOPT INTELLECTUAL PROPERTY RULES.

MR. TOCHER: STEVE AND ART IS THE SECOND.

MS. WINOKUR: SECOND.

CHAIRMAN THOMAS: DO WE HAVE ANY COMMENT ON THIS ITEM FROM MEMBERS OF THE PUBLIC EITHER HERE AT HEADQUARTERS OR AT ANY OF THE NOTICED OR NON-NOTICED LOCATIONS?

HEARING NONE, I BELIEVE WE CAN DO A VOICE VOTE HERE AND CALL THE ROLL FOR MEMBERS ON THE PHONE.

DR. PRIETO: MR. CHAIRMAN, THIS IS FRANCISCO PRIETO. I JUST WANTED TO SAY I'M ON THE LINE.

CHAIRMAN THOMAS: THANK YOU, FRANCISCO.

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ALL THOSE HERE IN PERSON PLEASE SAY AYE, IN FAVOR SAY AYE. OPPOSED? IT'S UNANIMOUS HERE. MARIA, WILL YOU PLEASE CALL THE ROLL.

MS. BONNEVILLE: DEBORAH DEAS.

DR. DEAS: AYE.

MS. BONNEVILLE: ANNE-MARIE DULIEGE.

DR. DULIEGE: AYE.

MS. BONNEVILLE: JUDY GASSON.

DR. GASSON: AYE.

MS. BONNEVILLE: DAVID HIGGINS.

DR. HIGGINS: YES.

MS. BONNEVILLE: STEVE JUELSGAARD.

MR. JUELSGAARD: YES.

MS. BONNEVILLE: LINDA MALKAS.

DR. MALKAS: YES.

MS. BONNEVILLE: DAVE MARTIN.

DR. MARTIN: AYE.

MS. BONNEVILLE: SHLOMO MELMED.

DR. MELMED: YES.

MS. BONNEVILLE: LAUREN MILLER.

MS. MILLER: YES.

MS. BONNEVILLE: ADRIANA PADILLA.

DR. PADILLA: AYE.

MS. BONNEVILLE: FRANCISCO PRIETO.

DR. PRIETO: AYE.

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MS. BONNEVILLE: ROBERT QUINT.
DR. QUINT: YES.
MS. BONNEVILLE: AL ROWLETT.
MR. ROWLETT: YES.
MS. BONNEVILLE: SUZANNE SANDMEYER.
DR. SANDMEYER: YES.
MS. BONNEVILLE: JEFF SHEEHY.
MR. SHEEHY: YES.
MS. BONNEVILLE: OS STEWARD.
DR. STEWARD: YES.
MS. BONNEVILLE: JONATHAN THOMAS.
CHAIRMAN THOMAS: YES.
MS. BONNEVILLE: ART TORRES.
MR. TORRES: AFFIRMATIVE.
MS. BONNEVILLE: KRISTINA VUORI.
DR. VUORI: YES.
MS. BONNEVILLE: DIANE WINOKUR.
MS. WINOKUR: YES.
MS. BONNEVILLE: MOTION CARRIES. THANK YOU.
CHAIRMAN THOMAS: THANK YOU, MARIA.
ON TO ITEM 4, CONSIDERATION OF APPLICATIONS SUBMITTED IN RESPONSE TO CLINICAL TRIAL STAGE PROJECTS CLIN1, 2, OR 3. WE'LL HAVE DR. SAMBRANO DO A PRESENTATION. OH, DR. PATEL WILL DO

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THE PRESENTATION, AND THEN WE'LL TURN THE DISCUSSION OVER TO MR. SHEEHY.

DR. PATEL: THANK YOU, J.T. SO I'LL BE PRESENTING THE CLINICAL PROGRAM APPLICATIONS TO YOU TODAY, AND I THANK YOU FOR THE OPPORTUNITY.

JUST A REMINDER THAT WE ACTUALLY HAVE THREE DIFFERENT FUNDING OPPORTUNITIES WITHIN THE CLINICAL PROGRAM. TODAY WE HAVE ONE APPLICATION FOR YOUR CONSIDERATION, THE CLIN1 OPPORTUNITY, WHICH IS IND-ENABLING STUDIES.

JUST A REMINDER OF THE GWG SCORING MECHANISM FOR OUR CLINICAL PROGRAM. A SCORE OF 1 INDICATES EXCEPTIONAL MERIT AND WARRANTS FUNDING; A SCORE OF 2 WOULD INDICATE THAT IT NEEDS IMPROVEMENT AND HAS OPPORTUNITY FOR RESUBMISSION; AND A SCORE OF 3 WOULD INDICATE THAT THE APPLICATION IS SUFFICIENTLY FLAWED AND SHOULD NOT BE RESUBMITTED FOR SIX MONTHS AFTER REVIEW.

SO TO GIVE YOU A BRIEF OVERVIEW OF WHAT THE STATUS LOOKS LIKE FOR THE CLINICAL PROGRAM AT THE MOMENT. THE PROGRAM WAS ALLOCATED $130 MILLION FOR THE YEAR. 82 MILLION HAVE BEEN APPROVED FOR SPENDING BY THE BOARD SO FAR THIS YEAR. THE CURRENT APPLICATION UP FOR REVIEW TODAY IS $4 MILLION. IF THAT WERE TO BE APPROVED, THEN THERE WOULD BE $44

MILLION REMAINING TO FUND THE REST OF THE PROJECTS FOR THIS CALENDAR YEAR.

NOW, AS YOU KNOW, THERE'S A BIG SIX GOALS THAT CIRM HAS, AND WE ALLOCATED THE FOLLOWING TARGETS TOWARD THAT BIG SIX GOAL. THERE WERE 12 CLIN2S THAT WERE TARGETED FOR 2018 AND FOUR CLIN1S FOR 2018. SO FAR THIS YEAR THE BOARD HAS FUNDED SIX CLIN2 AWARDS, AND THEY FUNDED THREE CLIN1 AWARDS. IF YOU FUND THE CLIN1 AWARD TODAY, THAT WOULD MAKE IT FOUR FOR THE YEAR.

NOW I'M GOING TO GO INTO THE APPLICATION ITSELF. THE APPLICATION IS CLIN1-10999. THIS IS A LATE STAGE PRECLINICAL THERAPY STUDY FOR A THERAPY FOR PROSTATE CANCER. THE THERAPY ITSELF IS CAR-T CELLS, AND THESE ARE STEM MEMORY T CELLS THAT COMPOSE THIS PARTICULAR PRODUCT.

THE INDICATION IS FOR PATIENTS WITH METASTATIC CASTRATE RESISTANT PROSTATE CANCER. THIS IS THE MOST ADVANCED FORM OF THIS PARTICULAR DISEASE. THE GOAL FOR THIS PARTICULAR PROJECT IS TO CONDUCT PRODUCT MANUFACTURING, CONDUCT THE PRECLINICAL SAFETY AND EFFICACY STUDIES, AS WELL AS PREPARE AND SUBMIT THE IND. AND THEY'RE REQUESTING ROUGHLY $4 MILLION FOR CIRM FUNDING, AND THEY'RE GOING TO BE CO-FUNDING $1 MILLION.

TO GIVE YOU AN IDEA ABOUT THIS PARTICULAR PROJECT, WE'VE PREPARED A FEW ITEMS. FIRST OF ALL, THE POTENTIAL IMPACT FOR THIS THERAPY. THERE ARE 165,000 NEW CASES OF PROSTATE CANCER SUBMITTED FOR THIS PARTICULAR YEAR, AND ROUGHLY 30,000 PROSTATE CANCER DEATHS FOR 2018 AS ESTIMATED BY THE NIH.

NOW, THE PARTICULAR DISEASE INDICATION THAT THIS PRODUCT IS GOING FOR, WHICH IS THE METASTATIC CASTRATE RESISTANT PROSTATE CANCER POPULATION, THAT REPRESENTS A VERY SMALL PERCENTAGE OF THE OVERALL PROSTATE CANCER POPULATION, BUT AN OVERWHELMING MAJORITY OF THE DEATHS FOR THIS PARTICULAR DISEASE. IF SUCCESSFUL, THIS PARTICULAR THERAPY WOULD TARGET THAT MOST NEEDY, HIGHEST RISK PATIENT POPULATION.

IN TERMS OF THE VALUE PROPOSITION, OVER THE LAST DECADE OR SO, THERE HAS BEEN A STEADY IMPROVEMENT IN THE STANDARD OF CARE FOR PROSTATE CANCER. CURRENTLY AVAILABLE THERAPIES FOR PROSTATE CANCER FOR METASTATIC CASTRATE RESISTANT PROSTATE CANCER INCLUDES HORMONE THERAPY, CHEMOTHERAPY, AS WELL AS AN AUTOLOGOUS T-CELL PRODUCT, WHICH IS AN ACTIVATED T-CELL PRODUCT, ALL OF WHICH HAVE SHOWN MODEST SURVIVAL BENEFIT IN CLINICAL TRIALS.

THE PROPOSED THERAPY HAS A POTENTIAL TO

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INDUCE LONG-TERM REMISSION WITH POSSIBLY A SINGLE TREATMENT.

IN TERMS OF WHY THIS IS A STEM CELL PROJECT, AS I MENTIONED EARLIER, THIS PARTICULAR PRODUCT IS COMPOSED OF MEMORY STEM T-CELLS.

TO GIVE YOU A BRIEF OVERVIEW OF THE CURRENT PORTFOLIO FOR CIRM WITH RESPECT TO RELATED PROJECTS, WE ARE NOT CURRENTLY FUNDING ANY PROSTATE CANCER-DIRECTED PROJECTS, BUT WE DO HAVE SOME SOLID TUMOR PROJECTS, INCLUDING THERAPIES INCLUDING THERAPIES OF CELL-DERIVED THERAPIES AS WELL AS SMALL MOLECULE ANTIBODY-BASED THERAPIES, ALL IN EARLY PHASE OR IND-ENABLING STUDIES.

THIS PARTICULAR APPLICANT HAS RECEIVED CIRM FUNDING BEFORE. THEY ARE CURRENTLY CONDUCTING A PHASE 1 TRIAL FOR A CAR-T BASED THERAPY FOR MULTIPLE MYELOMA, WHICH IS FUNDED BY CIRM.

LASTLY, THE GWG REVIEWED THIS APPLICATION AND UNANIMOUSLY GAVE IT A TIER I RECOMMENDATION. THERE WERE 12 SCORES FOR TIER I, ZERO SCORES FOR TIER II, AND ZERO SCORES FOR TIER III. THE CIRM TEAM RECOMMENDATION FOLLOWS THE GWG RECOMMENDATION FOR THE AWARD AMOUNT OF $3,992,090. CHAIRMAN THOMAS.

CHAIRMAN THOMAS: THANK YOU, DR. PATEL.

WE'LL TURN THE DISCUSSION OVER HERE TO MR. SHEEHY.

MR. SHEEHY: SO DO I HAVE A MOTION TO EITHER ACCEPT OR REJECT THE TEAM RECOMMENDATION?

MR. TORRES: SO MOVED.

MR. JUELSGAARD: SECOND.

MR. SHEEHY: TO ACCEPT?

MR. TORRES: YES.

MR. SHEEHY: IS THERE ANY DISCUSSION? IS THERE ANY PUBLIC COMMENT AT ANY OF THE SITES? COULD WE CALL THE ROLL PLEASE.

MS. BONNEVILLE: ANNE-MARIE DULIEGE.

DR. DULIEGE: YES.

MS. BONNEVILLE: DAVID HIGGINS.

DR. HIGGINS: YES.

MS. BONNEVILLE: STEVE JUELSGAARD.

MR. JUELSGAARD: YES.

MS. BONNEVILLE: DAVE MARTIN.

DR. MARTIN: YES.

MS. BONNEVILLE: LAUREN MILLER.

MS. MILLER: YES.

MS. BONNEVILLE: ADRIANA PADILLA.

DR. PADILLA: YES.

MS. BONNEVILLE: FRANCISCO PRIETO.

DR. PRIETO: AYE.

MS. BONNEVILLE: ROBERT QUINT.

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DR. QUINT: YES.
MS. BONNEVILLE: AL ROWLETT.
MR. ROWLETT: YES.
MS. BONNEVILLE: JEFF SHEEHY.
MR. SHEEHY: YES.
MS. BONNEVILLE: OS STEWARD.
DR. STEWARD: YES.
MS. BONNEVILLE: JONATHAN THOMAS.
CHAIRMAN THOMAS: YES.
MS. BONNEVILLE: ART TORRES.
MR. TORRES: AYE.
MS. BONNEVILLE: DIANE WINOKUR.
MS. WINOKUR: YES.
MS. BONNEVILLE: THANK YOU. THE MOTION CARRIES.
MR. SHEEHY: THANK YOU. I THINK WE'RE READY TO ROLL OVER TO THE QUEST AWARDS.
NOW, BEFORE DR. SAMBRANO STARTS, I THINK THAT THERE IS A SIGNIFICANT FEATURE OF THIS ROUND IN THAT WE HAVE 14 AWARDS IN THE FUNDABLE CATEGORY, BUT WE ONLY HAVE FUNDING FOR APPROXIMATELY HALF OF THOSE. SO THE DISCUSSION THAT WE RECENTLY HAD ABOUT PROGRAMMATIC REVIEW, I THINK, IS NOW REAL. AND THE WAY WE WILL PROCEED, I THINK, IS THAT DR. SAMBRANO WILL GIVE US AN INTRODUCTION. WE'LL HAVE A

CONVERSATION ABOUT THE GRANTS IN THE NOT FUNDABLE CATEGORY SO THAT WE CAN DISPOSE OF THOSE. AND THEN PERHAPS BEFORE WE START LOOKING AT THE FUNDABLE RANGE, WE MIGHT HAVE A LITTLE BIT OF A BRIEF DISCUSSION OF SOME OF THE PROGRAMMATIC CONSIDERATIONS THAT WE MAY WANT TO BRING TO BEAR IN LOOKING AT MAKING DECISIONS ABOUT THESE APPLICATIONS.

I WILL NOTE, AND I THINK CHAIRMAN THOMAS NOTED THIS, THERE'S A NICE -- THE TEAM HAS PUT TOGETHER A NICE SHEET KIND OF GIVING US WHAT WE FUNDED AND WHAT TYPES OF TECHNOLOGIES ARE INVOLVED IN THESE APPLICATIONS AND WHAT THE DISEASE TARGETS ARE. AND WE MIGHT WANT TO LOOK AT THAT AS WELL AS WE PREPARE FOR THIS DISCUSSION BECAUSE WE'RE GOING TO HAVE TO MAKE SOME HARD CHOICES TODAY AND I THINK THE BEGINNING OF MAYBE A TIME WHERE THAT BECOMES MORE COMMON. DR. SAMBRANO.

DR. SAMBRANO: THANK YOU, MR. SHEEHY. JUST TO START OFF, I WANT TO GIVE YOU AN OVERVIEW ON THE QUEST PROGRAM AND WHERE IT FITS UNDER OUR FUNDING OPPORTUNITIES.

SO QUEST IS THE HALLMARK OF THE DISCOVERY PROGRAM WHICH IS INTENDED TO DEVELOP CANDIDATES THAT CAN LATER BE TRANSLATED AND THEN ULTIMATELY GO TO

THE CLINIC OR BE AVAILABLE TO PATIENTS. SO THE DISCOVERY PROGRAM USUALLY HAS ONE OR TWO OPPORTUNITIES PER YEAR. FOR THE QUEST PROGRAM WE ANTICIPATE HAVING ONE THIS YEAR IN WHICH, AS MENTIONED, WE ALLOCATED $10 MILLION AND PROBABLY THE SAME NEXT YEAR.

THE OBJECTIVE OF THE PROGRAM, OF COURSE, IS TO PROMOTE DISCOVERY OF PROMISING NEW STEM CELL-BASED TECHNOLOGIES THAT WOULD BE READY FOR TRANSLATION IN TWO YEARS. SO THIS IS A TWO-YEAR ENDEAVOR FOR ANYBODY WHO RECEIVES THIS AWARD. AND THE GOAL IS TO SUPPORT PROJECTS THAT CAN BE THERAPEUTIC, BUT ALSO A DIAGNOSTIC, A MEDICAL DEVICE, OR A TOOL THAT CAN BE COMMERCIALIZED.

SO MORE SPECIFICALLY ON WHAT QUALIFIES, THIS IS A PRETTY BROAD SCOPE IN TERMS OF THE PROJECTS THAT CAN COME IN. IT CAN INCLUDE STEM OR PROGENITOR CELL THERAPIES, REPROGRAMMED CELL THERAPIES, SMALL MOLECULES OR BIOLOGICS THAT STIMULATE OR ACT ON ENDOGENOUS STEM CELLS OR CANCER STEM CELLS, AND DEVICES, DIAGNOSTIC, OR TOOLS THAT IN SOME WAY USE STEM PROGENITOR CELLS OR THAT ADDRESSES A BOTTLENECK IN THE STEM CELL THERAPY FIELD. SO THAT'S JUST A BIG PICTURE OF THE TYPES OF PROJECTS THAT WE ACCEPT FOR THIS.

THE GRANTS WORKING GROUP, AS YOU KNOW, DOES THE SCIENTIFIC MERIT ASSESSMENT OF THESE APPLICATIONS, AND THEY USE FOUR CRITERIA TO DO THAT, WHICH INCLUDE WHETHER THE PROJECT HOLDS THE NECESSARY SIGNIFICANCE AND POTENTIAL FOR IMPACT; THAT IS, WHAT VALUE IS IT BRINGING TO THE TABLE AND DOES IT ADDRESS UNMET MEDICAL NEED? IS THE RATIONALE SOUND, MEANING DOES IT MAKE SENSE AND DO THEY HAVE DATA TO SUPPORT WHAT THEY INTEND TO DO? IS THE PROJECT WELL-PLANNED AND DESIGNED? AND IS IT FEASIBLE, INCLUDING WHETHER THEY HAVE AN APPROPRIATE TEAM ASSEMBLED AND THE RESOURCES TO CARRY OUT WHAT'S PROPOSED.

IN THIS PARTICULAR TYPE OF COMPETITION, UNLIKE THE CLINICAL PROGRAM, THE SCORING SYSTEM IS BASED ON A ONE-TO-A-HUNDRED SCALE. SO APPLICATIONS THAT RECEIVE A SCORE BETWEEN 85 AND A HUNDRED, THIS IS BASED ON THE MEDIAN SCORE BY THE SCIENTIFIC REVIEWERS, WOULD GET A RECOMMENDATION FOR FUNDING. THOSE THAT SCORE BELOW 85 ARE NOT RECOMMENDED FOR FUNDING.

SO FOR THIS PARTICULAR CYCLE, WE HAD ABOUT 41 OR 43 APPLICATIONS COMING IN. THERE WERE 14 APPLICATIONS THAT WERE RECOMMENDED, AS MR. SHEEHY MENTIONED EARLIER, AND THE TOTAL REQUEST FROM THOSE

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14 APPLICATIONS TOTALS TO JUST OVER $19 MILLION. AND AS ALSO NOTED, WE HAVE AVAILABLE TO US 10 MILLION. SO THAT, IN ESSENCE, MEANS WITH ANY COMBINATION OF THOSE THAT ARE IN THAT TOP TIER, YOU COULD COVER WITH 10 MILLION AS LITTLE SIX AND AS MANY AS EIGHT, BUT PRETTY MUCH MOST COMBINATIONS GIVE YOU SEVEN APPLICATIONS.

SO THE CIRM TEAM, AFTER QUITE A BIT OF DISCUSSION OVER THESE, KNOWING THAT THIS IS OBVIOUSLY A CHALLENGE FOR ALL OF US IN TERMS OF WHAT WE CAN FUND, DEVELOPED A RECOMMENDATION. AND I THINK YOU SHOULD LOOK AT THIS AS A STARTING POINT, PERHAPS, FOR DISCUSSION. AND SO OUR RECOMMENDATION AND SUGGESTION TO YOU IS TO FUND THE TOP SEVEN RANKING APPLICATIONS AS SHOWN IN THE CHART THAT WE PROVIDED THAT BEGINS WITH THIS DISC2-11131 DOWN TO DISC2-11175.

THIS WOULD UTILIZE 9.4 MILLION OUT OF THE 10 MILLION AVAILABLE IN THE BUDGET. IT CAPTURES THE FOUR APPLICATIONS THAT RECEIVED A UNANIMOUS VOTE FROM THE GRANTS WORKING GROUP. THESE SEVEN INCLUDE SIX CELL THERAPY AND ONE BIOLOGIC APPROACH, WHICH WE FELT, AMONG THE DIFFERENT APPROACHES, WAS CORE TO WHAT CIRM DOES AND OVERALL MISSION. IT CAPTURES FOUR OF FIVE APPLICATIONS WITHIN THAT TOP TIER THAT

HAVE HAD PREVIOUS CIRM FUNDING AND THAT HAS CONTRIBUTED TO THE DEVELOPMENT OF THE PROJECTS. SO THAT IS OUR RECOMMENDATION.

I'LL JUST NOTE THAT IT DOESN'T NECESSARILY GIVE PRIORITY TO ANY DISEASE INDICATION OR WHETHER OR NOT IT WAS REPRESENTED IN OUR PORTFOLIO. BUT FOLLOWING DISCUSSION, I WILL GIVE AN OVERVIEW OF EACH OF THE APPLICATIONS THAT INCLUDE SOME OF THESE ELEMENTS TO GIVE YOU A SENSE OF EACH ONE. MR. SHEEHY.

MR. SHEEHY: JUST ONE QUICK QUESTION BEFORE WE START IN. DO WE KNOW WHICH ARE THE FIVE APPLICATIONS WITH PREVIOUS CIRM FUNDING?

DR. SAMBRANO: WE DO. SO IN THE CHART, THE PREVIOUS CIRM FUNDING HAS A COLUMN THAT'S YES OR NO. AND I CAN JUST TELL YOU THOSE ARE THE FIRST TWO, WHICH ARE 11131 FOR THE DANON DISEASE INDICATION. 11157, WHICH IS A CANCER INDICATION. IT IS 11105 FOR BLADDER CANCER, AND THEN 11175 FOR TYPE 1 DIABETES. AND THOSE ARE AMONG THE ONES THAT WE ARE RECOMMENDING, BUT ALSO THERE IS 11199 FOR HEARING LOSS.

MR. SHEEHY: THANK YOU. SO, FIRST, I THINK, JUST FOR SIMPLICITY, IS THERE ANY DESIRE BY ANY MEMBER TO MOVE ANY APPLICATION FROM TIER II INTO

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TIER I? OKAY. NOT HEARING THAT, COULD I GET A MOTION TO NOT FUND THE APPLICATIONS IN TIER II?

MR. ROWLETT: SO MOVED.

MR. SHEEHY: SO AL. STEVE JUELSGAARD AS THE SECOND.

DISCUSSION ABOUT THAT? ANY PUBLIC COMMENT AT ANY OF THE SITES? SO CAN WE CALL THE ROLL?

MS. BONNEVILLE: ANNE-MARIE DULIEGE.

DR. DULIEGE: AYE.

MS. BONNEVILLE: DAVID HIGGINS.

DR. HIGGINS: YES.

MS. BONNEVILLE: STEVE JUELSGAARD.

MR. JUELSGAARD: YES.

MS. BONNEVILLE: DAVE MARTIN.

DR. MARTIN: AYE.

MS. BONNEVILLE: LAUREN MILLER.

MS. MILLER: YES.

MS. BONNEVILLE: ADRIANA PADILLA.

DR. PADILLA: YES.

MS. BONNEVILLE: FRANCISCO PRIETO.

DR. PRIETO: AYE.

MS. BONNEVILLE: ROBERT QUINT. AL ROWLETT.

MR. ROWLETT: YES.

MS. BONNEVILLE: JEFF SHEEHY.

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MR. SHEEHY: YES.
MS. BONNEVILLE: JONATHAN THOMAS.
CHAIRMAN THOMAS: YES.
MS. BONNEVILLE: OS STEWARD.
DR. STEWARD: YES, EXCEPT FOR THOSE WITH WHICH I'M IN CONFLICT.
MS. BONNEVILLE: ART TORRES.
MR. TORRES: AYE.
MS. BONNEVILLE: DIANE WINOKUR.
MS. WINOKUR: YES.
MS. BONNEVILLE: DR. QUINT.
MOTION CARRIES.
MR. SHEEHY: GREAT. THANK YOU.
DR. STEWARD, YOU NO LONGER HAVE CONFLICTS, SO THERE'S NO IMPEDIMENT TO YOU FULLY PARTICIPATING IN THE DISCUSSION AS WE GO FORWARD. SO I WANTED TO MAKE SURE YOU ARE AWARE OF THAT.
DR. STEWARD: YES. THANK YOU VERY MUCH.
MR. SHEEHY: SURE. NOW, IS THERE ANY DESIRE TO HAVE ANY DISCUSSION BEFORE WE -- ABOUT PROGRAMMATIC REVIEW BEFORE WE START INTO THE APPLICATIONS? MR. JUELSGAARD.
DR. JUELSGAARD: THERE'S A DESIRE ON MY PART. I'M SURE EVERYBODY WILL RECALL AT THE ICOC MEETING THAT WE JUST HAD A MONTH OR SO AGO WE

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INTRODUCED THE WHOLE NOTION OF PROGRAMMATIC REVIEW. THIS IS SOMETHING WE HAVEN'T USED FOR SEVERAL YEARS NOW. I REMEMBER WHEN I FIRST JOINED THE ICOC, WE ACTUALLY DID ENGAGE IN PROGRAMMATIC REVIEW AT THAT TIME, BUT SINCE THEN IT'S SORT OF GONE BY THE WAYSIDE. BUT I THINK IT'S AT THIS POINT APPROPRIATE TO CONSIDER WHETHER WE WANT TO APPLY PROGRAMMATIC REVIEW FOR THE APPLICATIONS THAT WERE BROUGHT TO US.

SO I NOTE THAT THE STAFF'S RECOMMENDATION IS BASICALLY BASED ON SCIENTIFIC MERIT AND FUNDING THOSE IN RANK ORDER. I HAVE A LITTLE DIFFERENT TAKE ON THAT ASPECT. FROM MY POINT OF VIEW, ONCE AN APPLICATION HAS RECEIVED A SCORE OF 85 OR GREATER, I BEGIN TO LOOK LESS AT SCIENTIFIC MERIT BECAUSE, FROM MY POINT OF VIEW, THEY'VE ALL BEEN DEEMED WORTHY OF BEING FUNDED. AND IF WE HAD THE MONEY AVAILABLE TO US RIGHT HERE AND NOW, I WOULD DARE SAY WE WOULD PROBABLY APPROVE ALL OF THEM IRREGARDLESS OF WHERE THEY FIT ON THE 85 TO 100 RANKING SCALE.

SO FROM MY POINT OF VIEW, THEN, I PUT THAT ASIDE AND LOOK AT WHAT OTHER ATTRIBUTES WE MIGHT CONSIDER IN TERMS OF LOOKING AT THESE APPLICATIONS. AND SO THIS CHART THAT'S BEEN PROVIDED TO US PRIOR TO THE MEETING AND WHICH REFERENCE HAS BEEN MADE TO A COUPLE OF TIMES FOR ME IS ILLUSTRATIVE OF

SOMETHING THAT MIGHT WE WELL CONSIDER, AND THAT IS HOW WELL FUNDED ARE THESE PARTICULAR THERAPEUTIC AREAS ALREADY.

SO YOU WILL SEE A VAST DISPARITY FROM SOME DISEASE INDICATIONS THAT HAVE NO FUNDING. TAKE, FOR EXAMPLE, THE VERY FIRST ONE, DANON DISEASE. NOW, IT HAS A VERY HIGH SCIENTIFIC SCORE; BUT PUTTING THAT ASIDE, THERE ARE NO --

MR. TORRES: EXCUSE ME, STEVE. PLEASE PUT YOUR PHONES ON MUTE.

MR. JUELSGAARD: ARE WE GOOD TO GO NOW? I'LL CONTINUE. ANYWAY, THERE ARE A NUMBER OF THESE THAT HAVE EITHER NO CURRENT ACTIVITY GOING ON WITH RESPECT TO THIS DISEASE OR THERAPEUTIC AREA OR ONLY A MINIMAL AMOUNT OF ACTIVITY. AND ON THE OTHER HAND, THERE ARE SOME WHERE THERE'S A GREAT DEAL OF ACTIVITY THAT WE'VE ALREADY FUNDED. AND SO THERE'S, FOR ME, A BIT OF AN EQUITY ISSUE IN ALL OF THAT, AND THAT RELATES TO WHETHER OR NOT WE SHOULDN'T BE FUNDING THOSE HAVING SOME FUNDING IN THOSE AREAS THAT CURRENTLY WE HAVE NO PROJECTS BEING ADDRESSED. SO I THINK THAT'S AN IMPORTANT, AT LEAST FOR ME, CONSIDERATION THAT I WOULD PUT INTO THE MIX.

SO THAT STANDS SEPARATE AND APART FROM SCIENTIFIC MERIT. AGAIN, I GO BACK TO MY

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PROPOSITION THAT ONCE THEY'RE IN THAT TOP-TIER GROUP, THEY'RE ALL WORTHY FROM A SCIENTIFIC POINT OF VIEW. SO NOW IT GETS TO BE A QUESTION OF ARE THEY WORTHY FROM SOME OTHER POINT OF VIEW? AND SO, AT LEAST, AND I'M REPEATING MYSELF, BUT ONE VERY SIMPLISTIC WAY OF LOOKING AT THIS IS WHICH ARE THE AREAS THAT RECEIVE NONE OR MINIMAL FUNDING AT THIS POINT? AND SHOULDN'T WE BE DEDICATING RESOURCES TO THOSE AS OPPOSED TO SOME OF THESE WHICH HAVE AS MANY AS 35 PROJECTS, GENERALLY SPEAKING, INVOLVED AS, FOR EXAMPLE, IN THE CANCER AREA. SO, ANYWAY, THAT'S MY THOUGHTS.

DR. MARTIN: STEVE, I THINK THOSE ARE VERY VALID THOUGHTS, AND I WAS OBVIOUSLY NOT INVOLVED IN THE EARLIER PROCESS THAT CONSIDERED PROGRAMMATIC ISSUES. BUT I THINK THERE ARE TWO OTHERS THAT WE DID DISCUSS THAT WE CAN'T LOSE SIGHT OF. ONE WAS BROUGHT UP BY ART, AND THAT IS WE'RE SPENDING THE PUBLIC'S MONEY ON THIS. AND SO ONE CRITERION SHOULD BE WHAT IS THE IMPACT, SOCIETAL IMPACT, ON CALIFORNIANS, FOR EXAMPLE? AND THAT HAS SORT OF A SIZE ISSUE TO IT.

AND THEN THE OTHER ONE, WHICH I THINK ALSO NEEDS TO BE WEIGHED IN IS WHETHER A PROJECT IS INNOVATIVE ENOUGH SO IT'S GOING TO HAVE WIDESPREAD

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APPLICATIONS THAT, FOR EXAMPLE, WOULD GO BEYOND JUST THE NUMBER OF INDIVIDUALS OR PATIENTS AFFECTED WITH A SPECIFIC PROPOSAL AND/OR WHETHER THE APPLICANT HAS RECEIVED OR THE FIELD HAS RECEIVED PREVIOUS ACTIVITY.

SO IT'S A COMPLEX -- I CONSIDER IT TO BE AN IMPORTANT BUT COMPLEX PROBLEM WITH AT LEAST THREE TYPES OF CRITERIA THAT NEED TO BE CONSIDERED.

DR. JUELSGAARD: SO, DAVE, I APPRECIATE THAT. IN THE LANGUAGE IN THE TEXT OF PROPOSITION 71, THERE'S A REFERENCE, AT LEAST IN A COUPLE OF DIFFERENT PLACES, TO THE SUPPORT FOR ORPHAN INDICATIONS. THIS ADDRESSES YOUR ISSUE OF IMPACT, RIGHT? SO YOU'RE SPEAKING OF DISEASE POPULATIONS WHICH ARE LARGE IN NUMBER AND LARGE IN ECONOMIC IMPACT. BUT SEPARATE AND APART FROM THAT ARE THE SO-CALLED ORPHAN INDICATIONS, THE ONES THAT REALLY DON'T GET MUCH ATTENTION AT ALL. THEY GET OVERLOOKED BECAUSE THERE ISN'T THE LEVEL, CERTAINLY, OF COMMERCIAL INTEREST OR PERHAPS EVEN RESEARCH INTEREST ASSOCIATED WITH THOSE.

SO I DO THINK WE NEED TO PUT THOSE ON THE SAME PLAYING FIELD WITH THE LARGE INDICATIONS, IF FOR NO OTHER REASON, BECAUSE THAT SPECIFICALLY IS CALLED OUT IN THE LANGUAGE OF PROP 71.

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DR. MARTIN: GOOD POINT. THANK YOU.

MR. SHEEHY: CHAIRMAN THOMAS.

CHAIRMAN THOMAS: ANOTHER SORT OF WAY OF LOOKING AT THIS WITH RESPECT TO THE PROJECTS THAT HAVE SIGNIFICANT AMOUNT OF FUNDING TO DATE OR A PARTICULAR INDICATION THAT DOES, ONE WAY OF LOOKING AT THOSE IS, YES, THAT IS A FACTUAL STATEMENT. BUT I ALWAYS SORT OF FALL BACK ON OUR CHILEAN MINER EXAMPLE WHERE THEY ENDED UP BORING THREE SEPARATE HOLES INTO THE EARTH IN THE HOPE THAT ONE OF THEM HIT THE MINERS, WHICH ULTIMATELY WAS THE CASE. AND THE ARGUMENT CAN BE MADE THAT IF YOU HAVE INDICATIONS THAT THE BOARD FEELS ARE A PRIORITY, THE FACT THAT WE HAVE GIVEN FUNDING TO IT DOES NOT NECESSARILY COUNT OUT GIVING ADDITIONAL FUNDING WITH DEVIATING STRATEGY THAT MIGHT GIVE A BETTER SHOT OF ULTIMATELY ACHIEVING THE GOAL OF GETTING A CURE FOR THAT PARTICULAR INDICATION.

SO I WOULD ASK THAT WE SORT OF KEEP THAT AS AN ADDITIONAL THING TO ANALYZE IN THE COURSE OF THIS DISCUSSION.

DR. HIGGINS: MAY I MAKE A COMMENT.

MR. SHEEHY: SURE.

DR. HIGGINS: JUST A QUICK COMMENT. THIS REALLY IS JUST AN EXTENSION OF WHAT DAVE SAID. IS

THERE SOME CRITERIA THAT WE ALREADY JUDGE THESE APPLICATIONS ON THAT WOULD BE SORT OF THE CRITERION NO. 4 OR CRITERION NO. D OR WHATEVER? AFTER THE TOP THREE HAVE DEMONSTRATED SCIENTIFIC WORTHINESS, IS THERE SOME OTHER CRITERION THAT WE HAVE ALREADY RULED ON, IF YOU WILL, THAT WE COULD AUTOMATICALLY SORT OF FOLD INTO THAT PLACE? I DON'T KNOW IF I'M MAKING SENSE. WHETHER IT BE AN INDICATION OR WHETHER IT WAS A SUCCESS OR THE TEAM'S CONFIDENCE, THAT KIND OF THING. THAT'S MY QUESTION.

MR. SHEEHY: TO WHOM ARE YOU ADDRESSING THIS QUESTION?

DR. HIGGINS: TO THE GROUP, TO YOU, TO J.T. I GUESS WHAT I'M THINKING -- TRYING TO THINK IS IS THERE AN AUTOMATIC DEFAULT NEXT CRITERIA TO JUDGE GRANTS ON AFTER THEY'VE ALL PASSED THE 85 MARK? WHAT STEVE SAID I THINK IS REALLY TRUE. ANYTHING SORT OF 86 THROUGH A HUNDRED IS KIND OF THE SAME. SO WE'RE LOOKING FOR SOME WAY TO DISTINGUISH THOSE. INSTEAD OF JUST SORT OF HAVING A RANDOM DISCUSSION ABOUT IT, IS THERE SOME WAY WE CAN HAVE AN AUTOMATIC DEFAULT NEXT CRITERIA TO SEPARATE THESE?

MR. SHEEHY: AT LEAST FOR ME PERSONALLY A COUPLE OF THINGS THAT ALWAYS IMPACT ME ARE HOW

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ALIGNED IS IT WITH THE ORIGINAL MISSION OF CIRM. SO AS I SAID, I HAVE A LOT OF TROUBLE WITH SMALL MOLECULES, WHICH THERE'S NO REAL IMPEDIMENT TO DEVELOPING. AND TO ME ALSO I THINK ANOTHER BIG CRITERIA FOR ME OR CRITERION IS I TAKE SERIOUSLY THE FACT THAT CIRM HAS ALREADY INVESTED IN THESE PROJECTS. AND SO IF WE DECIDE TO NOT CONTINUE TO INVEST, I PERSONALLY LIKE TO HAVE A STRONG REASON. AND THEN I DO LOOK AT INDICATION AND ALSO TO WHAT DEGREE YOU'RE CREATING INNOVATION WHERE WE CAN REALLY SHOW REAL LEADERSHIP.

SO THAT'S KIND OF -- BUT I DO THINK, AT LEAST FROM MY PERSPECTIVE, I THINK AT SOME POINT WE'LL HAVE TO LOOK AT THE APPLICATIONS AND ASK PEOPLE TO MAKE MOTIONS TO FUND. AND THEN IT WILL BE UP TO THE MOTION MAKER TO PRESENT AN ARGUMENT THAT MAY INCLUDE SOME, IF NOT ALL OF THE DIFFERENT CONSIDERATIONS THAT WE'VE DISCUSSED TODAY, AND WE HAVE TO MAKE A CHOICE. WE HAVE LIMITED RESOURCES. WE HAVE NOT GOTTEN TO A POINT WHERE WE HAVE IDENTIFIED SPECIFIC CRITERIA IN ORDER TO DO THAT CUT. AND I THINK, GIVEN THE RANGE OF ELEMENTS WE'VE DISCUSSED, I DON'T KNOW IF WE HAVE THE TIME OR ABILITY TO KIND OF COME UP WITH ONE OR TWO CRITERIA THAT WE CAN USE TODAY, IN MY OPINION, JUST TO GET AN

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INITIAL CUT.

DR. HIGGINS: THANKS FOR THAT, JEFF. I APPRECIATE THAT.

DR. STEWARD: COULD I GET IN THE CUE?

MR. SHEEHY: GO AHEAD.

DR. STEWARD: TWO THINGS. ONE IS THAT THERE IS AT LEAST AN OBJECTIVE CRITERION THAT WE COULD CONSIDER, AND I'M NOT SAYING IT'S NECESSARILY THE ONE THAT I WOULD LOOK TO IMMEDIATELY, BUT IT IS THE NUMBER OF REVIEWERS THAT RECOMMENDED AGAINST FUNDING. THAT INFORMATION IS AVAILABLE. AND SO SOME OF THESE HAVE ZERO RECOMMENDING AGAINST, SOME HAVE ONE, SOME HAVE TWO, AND ONE HAS FOUR.

NOW, THAT JUST IS SORT OF SAYING THAT, YEAH, THERE WERE SOME NUMBER OF PEOPLE IN THE ROOM, BUT STILL THE AVERAGE WAS ABOVE 85. BUT THAT IS AT LEAST AN OBJECTIVE CRITERION IF YOU WANT TO LOOK AT THAT.

WHERE I AM HAVING A PROBLEM, AND IN PRINCIPLE I AGREE WITH STEVE AND OTHERS, THAT IT IS REALLY THE JOB OF THE ICOC TO MAKE THESE KINDS OF DECISIONS BASED ON PROGRAMMATIC CONSIDERATIONS. HOWEVER, I'M A LITTLE UNCERTAIN ABOUT HOW TO PROCEED. SO WE HAVE A LIMITED AMOUNT OF FUNDING. SO IF WE RECOMMEND PROJECT X TO BE MOVED INTO TIER

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I, WHERE DO WE PUT IT? BECAUSE WE CAN'T FUND ALL THAT ARE THERE ABOVE THE FUNDING LINE RIGHT NOW WITHOUT BUMPING ONE OTHER DOWN. SO I'M NOT EVEN SURE HOW TO MAKE THE MOTION. WE WOULD ALMOST HAVE TO MAKE IT I WOULD LIKE TO PUT IT IN THE FOLLOWING ORDER. SO I JUST THROW THAT OUT THERE AS A PROCEDURAL ISSUE TO THINK ABOUT AS WE'RE DISCUSSING THIS. THANK YOU.

MR. SHEEHY: THANK YOU. DO WE HAVE OTHER CONSIDERATIONS OR COMMENTS FROM OTHER MEMBERS?

DR. JUELSGAARD: SO I WANT TO RESPOND TO SOMETHING THAT J.T. SAID ABOUT THE CHILEAN MINER WAY OF LOOKING AT THE WORLD. IF YOU TAKE A DISEASE AREA LIKE CANCER, FOR EXAMPLE, CANCER AND CARDIOVASCULAR DISEASE AND HEART ISSUES ARE THE TWO MOST FUNDED THERAPEUTIC AREAS OR DISEASE AREAS GLOBALLY TODAY. IT'S NOT JUST CIRM THAT'S PROVIDING FUNDING FOR PROGRAMS, BUT THERE'S A VAST EFFORT THAT'S BEING UNDERTAKEN BY MANY, MANY INSTITUTIONS BOTH FOR-PROFIT AND NON-FOR-PROFIT. AND SO ONE MORE MINE SHAFT WHERE WE'RE LITTERED WITH MILLIONS OF MINE SHAFTS I DON'T THINK IS NECESSARILY A HELPFUL WAY OF LOOKING AT IT. I'M MORE WORRIED ABOUT THE PLACES WHERE THE CHILEAN MINERS ARE TRAPPED AND NOBODY IS DRILLING A HOLE TO GET TO THEM, TO USE THAT ANALOGY.

MR. SHEEHY: OKAY. OTHER MEMBERS HAVE POINTS THEY'D LIKE TO MAKE OR SHOULD WE MOVE AHEAD? OKAY.

SO I THINK AT THIS POINT I THINK WE'RE LOOKING AT ONE OF TWO MOTIONS. EITHER A MOTION TO FUND AN APPLICATION OR A MOTION TO NOT FUND AN APPLICATION. I THINK WE CAN -- IS THERE A PREFERENCE FOR STARTING FROM THE TOP, OR DO WE WANT TO GO AT IT JUST BASED ON WHAT FOLKS WOULD LIKE TO DO?

DR. JUELSGAARD: YES. SO I KNOW THIS IS A LITTLE COMPLICATED, JEFF, BUT THERE IS ONE OTHER WAY OF LOOKING AT THIS. AND SO REMEMBER WHAT WE'RE LIMITED BY IS BY $10 MILLION, BUT THAT LIMITATION IS FOR THIS FISCAL YEAR ONLY, WHICH ENDS, I THINK, ON DECEMBER 31ST FROM A FUNDING OF GRANTS POINT OF VIEW. SO ONE ALTERNATIVE IS TO, IN ESSENCE, APPROVE ALL OF THESE IN WHATEVER ORDER WE WANTED TO APPROVE THEM, BUT SIMPLY PROVIDE FUNDING FOR THOSE THAT WE SO DEEM WORTHY RIGHT NOW. AND THEN IN THE NEXT BUDGET CYCLE, WHICH COMES UP AT THE BEGINNING OF NEXT YEAR AND WHEN WE APPROVE FUNDING FOR ANOTHER GROUP OF QUEST APPLICATIONS, WE ALREADY HAVE A GROUP OF AUTOMATICALLY APPROVED APPLICATIONS THAT WOULD RECEIVE THAT FUNDING.

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SO, IN OTHER WORDS, THERE WOULD BE ONE GROUP THAT RECEIVED FUNDING NOW, AND THEN THE OTHER GROUP WOULD RECEIVE FUNDING, LET'S SAY, FIVE MONTHS FROM NOW, WHICH IS ROUGHLY IN THE BEGINNING OF WHEN NEXT YEAR COMMENCES. SO THAT WE SAY, OKAY, ALL YOU THESE ARE WORTHY, AND WE SHOULD AGREE TO FUND THEM. WE'RE JUST GOING TO DO THIS IN TWO TRANCHES, THE MONEY WE HAVE NOW AND THEN THE MONEY WE'LL MAKE AVAILABLE NEXT YEAR.

SO PERHAPS, OS, THIS CIRCUMVENTS THE WHOLE ISSUE OF TRYING TO FIGURE OUT WHICH IS THE WORTHIEST RIGHT NOW, WHETHER IT'S ALL BASED ON SCIENCE OR WHETHER IT'S BASED ON A NUMBER OF PROJECTS ONGOING OR WHATEVER WE WANTED TO USE. SO I JUST THROW THAT OUT THERE AS AN ALTERNATIVE. I REALIZE THERE MAY BE SOME ISSUES WITH THAT THAT WE OUGHT TO TALK ABOUT, BUT A DIFFERENT WAY OF LOOKING AT IT.

DR. STEWARD: IF I COULD, I THINK THERE ARE VERY IMPORTANT ISSUES AND PROBLEMS WITH THAT APPROACH. THE FIRST AND MOST OBVIOUS IS THAT IT KIND OF ROLLS INTO NEXT YEAR THIS SET OF GRANTS WHICH BY NEXT YEAR MAY NOT BE THE TOP ONES THAT WE WOULD WANT TO FUND IF WE WERE RECOMPETING THE WHOLE THING.

THE SECOND IS THAT IT IMPACTS IN A VERY

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CRITICAL WAY ON NEXT YEAR'S BUDGET CONSIDERATION. SO I THINK THAT'S A MUCH -- THAT SECOND POINT BRINGS US INTO A MUCH BROADER CONVERSATION. BUT JUST ON THE BASIS OF THE FIRST, I THINK THAT THIS IS PROBABLY NOT THE WAY WE WOULD WANT TO DO THIS IF WE ARE REALLY LOOKING TO FUND THE VERY BEST THINGS THAT WE HAVE AVAILABLE AT THE TIME THAT WE HAVE THE FUNDS AVAILABLE. THANK YOU.

DR. JUELSGAARD: OS, THAT SORT OF BEGS THE QUESTION OF WHAT ARE THE BEST TO BE APPROVED. SO MY ARGUMENT, IT'S NOT BASED ON THE SCIENTIFIC SCORE, BUT IT'S BASED ON SOME OTHER ANALYSIS. SO I'M NOT SURE HOW YOU CAN FIGURE OUT WHAT'S BEST AND WHAT'S NOT BEST. WE'LL RUN INTO THE SAME PROBLEM NEXT TIME IF WE PROCEED WITH ONLY FUNDING 10 MILLION AND EVERYBODY COME BACK AROUND AGAIN. WE'RE GOING TO GET TO PICKING AND CHOOSING IN SOME FASHION ULTIMATELY.

DR. STEWARD: NO. I AGREE. I'M JUST SAYING THAT, YES, I THINK WE NEED TO FORCE OURSELVES TO HAVE THE DISCIPLINE TO DO THAT NOW. IT WOULD BE FINE FOR THESE PROJECTS TO COME BACK IN NEXT YEAR AND RECOMPETE, AND THAT WOULD BE GREAT, AND WE'RE GOING TO HAVE TO DO IT AGAIN NEXT YEAR. BUT THAT IS ALL PART OF THE PROCESS. THANK YOU.

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CHAIRMAN THOMAS: COUPLE POINTS ON THAT. FYI, THE NEXT ROUND OF QUEST AWARDS, I BELIEVE, ARE TARGETED TO BE CONSIDERED AT THE SAME TIME OF THE YEAR NEXT YEAR AS THIS YEAR. AM I CORRECT, DR. SAMBRANO? THAT ROUND WOULDN'T BE UNTIL JUNE, NO. 1.

NO. 2, THIS NOTION OF PROVIDING FUNDING, WE GET INTO THE NEXT BUDGET CYCLE. MR. TOCHER, IS THAT REMINISCENT OF IN THE OLD DAYS THERE WAS A DESIGNATION FOR PROVIDING -- APPROVING PROJECTS FOR WHICH FUNDS ARE AVAILABLE SO THAT PRESUMABLY IF FUNDS BECAME AVAILABLE SUBSEQUENT TO THAT PARTICULAR DATE, THEY WOULD BE FUNDED? OR WAS THAT NOT THE PURPOSE OF THAT DESIGNATION? WE HAVEN'T HAD THAT ONE FOR MANY YEARS.

MR. TOCHER: RIGHT. VERY EARLY ON THERE WAS A CATEGORY IF FUNDS ARE AVAILABLE, BUT NEITHER OF THOSE DECISIONS WERE ACTUALLY MADE. THE DETERMINATION THAT FUNDS WERE OR WERE NOT AVAILABLE WERE ACTUALLY MADE AT THE BOARD MEETING WHEN ALL OF THE OTHER APPLICATIONS WERE DISCUSSED. SO THOSE ROUNDS WERE, IN FACT, CLOSED OUT ALL AT THE SAME TIME ALONG WITH THOSE APPLICATIONS THAT WERE RECOMMENDED FOR FUNDING. THAT WAS WHEN WE HAD MORE MONEY AND THE BOARD FELT MORE COMFORTABLE WITH AUGMENTING ITS BUDGET SORT OF ON THE FLY.

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CHAIRMAN THOMAS: THANK YOU FOR THE CLARIFICATION.

MS. WINOKUR: THIS IS DIANE. I WONDER IF WE'VE EVER MADE SOME CONSIDERATION TO THE INSTITUTION THAT'S REPRESENTED BY THE FUNDS WE GRANT. THERE ARE SOME INSTITUTIONS THAT WE HAVE GIVEN A LOT OF MONEY TO BY FUNDING PROJECTS THAT CAME FROM THEM AND SOME INSTITUTIONS WHERE WE'VE NEVER GIVEN ANY MONEY THAT HAVE APPLIED THIS TIME. I'M JUST ASKING WHETHER WE'VE EVER DONE THAT.

MR. SHEEHY: WE HAVEN'T BECAUSE WE'RE UNABLE TO IDENTIFY THE PRIMARY INVESTIGATOR AND THE INSTITUTION PRIOR TO THE AWARD PUBLICLY. WE'RE UNABLE TO PUBLICLY IDENTIFY. OUR PROCESS HAS NOT PUBLICLY IDENTIFIED EITHER THE INSTITUTION OR THE PRIMARY INVESTIGATOR PRIOR TO AWARD. THAT'S BEEN THE PRACTICE. NOW, SOMETIMES THEY SELF-DISCLOSE THROUGH APPEALS OR LETTERS OR OTHER MANNER OF CONTACT, BUT IT'S ALWAYS BEEN OUR PROCESS NOT TO DO SO.

SO ARE THERE OTHER THOUGHTS, CONSIDERATIONS? ARE THERE ANY MOTIONS? I THINK WE'LL BE HERE AWHILE. I THINK WE PROBABLY SHOULD CLOSE OUT THAT DISCUSSION. AND I THINK -- STEVE.

DR. JUELSGAARD: SO I'D ACTUALLY LIKE JUST

TO -- I THINK THIS WILL HELP US REACH SOME RESOLUTION. SO I'M GOING TO MOVE THAT WE APPROVE A SINGLE APPLICATION AT THIS POINT, WHICH IS 11070, WHICH IS ENTITLED "DRUG DEVELOPMENT FOR AUTISM SPECTRUM DISORDER USING HUMAN PATIENT IPSC'S." AND IT'S A PROJECT FOR WHICH WE ONLY HAVE ONE APPLICATION THAT WE'VE APPROVED HISTORICALLY. SO WE HAVE VERY LITTLE ACTIVITY IN THAT AREA FOR A DISEASE OR CONDITION THAT'S SEEMINGLY VERY WIDESPREAD IN THE POPULATION THESE DAYS. IT AFFECTS YOUNG PEOPLE. SO I MOVE THAT WE APPROVE THAT APPLICATION. IT'S NOT AMONG THE TOP SEVEN FROM A SCIENTIFIC RANKING POINT OF VIEW.

DR. STEWARD: STEVE, THIS IS OS, AND IF I COULD JUST ASK A QUESTION. ACTUALLY I'M GOING TO GO AHEAD AND SECOND THIS. AND THE REASON IS THAT WE HAVE TRADITIONALLY HAD A VERY SERIOUS UNDERREPRESENTATION OF DISEASES AFFECTING CHILDHOOD MENTAL HEALTH. BUT I DO WANT TO ASK YOU A QUESTION. SO WHERE DO YOU PUT IT? ARE YOU SUGGESTING THAT THIS REPLACE WHAT IS CURRENTLY RANKED NO. 7? THANK YOU.

DR. JUELSGAARD: NO, IT DOESN'T REPLACE ANYTHING. OS, MY PREMISE IS THAT ONCE YOU'RE IN THIS GREEN CHART THAT WE HAVE UP IN FRONT OF US HERE

IN OAKLAND, ONCE YOU'RE THERE, ONCE YOU'VE GOT A SCORE OF 85 AND ABOVE, YOU'RE IN WHAT I CALL THE WORTHY CATEGORY. AND I DON'T PLACE A LOT OF DISTINGUISHMENT -- A LOT OF DISTINCTION AMONGST THESE. I DO REFLECT UPON YOUR POINT AS FAR AS THE NUMBER OF NO VOTES GO, AND I SEE THAT THE VERY LAST TWO ON THIS GREEN CHART, ONE HAS, I THINK, FOUR NO VOTES AND THE OTHER HAS FIVE. I GIVE SOME CREDENCE TO THAT. BUT APART FROM THAT, FOR ME, THE OTHER 13 ARE ON THE SAME PLAYING FIELD. I'M NOT REPLACING ONE FOR ANOTHER.

DR. STEWARD: STEVE, I'M SORRY. I THINK YOU HAVE TO BECAUSE OTHERWISE WE GO OVER THE BUDGET. AND WE CAN'T -- IF I UNDERSTAND IT, AGAIN, SOMEBODY CORRECT ME IF I'M WRONG, BUT WE CAN'T GO OVER THE BUDGET UNLESS THE BOARD VOTES TO EXCEED THAT BUDGET. AND THERE'S A PROBLEM DOING THAT, AS WE KNOW, WHEN CONSIDERING PARTICULAR APPLICATIONS. SO THIS WOULD HAVE TO BE EITHER A REPLACEMENT OR YOU WOULD HAVE TO CUT THE FUNDING FOR SOMETHING ABOVE THAT BUDGET LINE. THANK YOU.

DR. JUELSGAARD: NO, OS. WHAT I'M PROPOSING IS WE DO THIS ON A ONE BY ONE BY ONE BASIS, NOT ON A GROUP BASIS. I'M NOT BUYING THE GROUP NOTION. WE DO THAT WHEN WE HAVE ENOUGH MONEY

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FOR EVERYBODY; BUT WHEN WE DON'T, THEN IT'S GOING TO BE WHICH ARE THE MOST WORTHY. IT'S WHATEVER THEY ARE. SO I'M STARTING WITH THIS ONE. AND MY SUGGESTION IS WE GO TO THE NEXT ONE THAT SOMEBODY FEELS IS WORTHY OF BEING FUNDED UNTIL WE HIT THE $10 MILLION MARK.

DR. STEWARD: I'M SORRY THEN. THIS MAY NOT BE LEGAL. I'M GOING TO ASK SCOTT. I'M GOING TO WITHDRAW MY MOTION IN THAT CASE, MY SECOND OF THAT MOTION. IS THAT -- MAY I DO THAT?

MR. TOCHER: YES.

MR. SHEEHY: DO WE HAVE AN ADDITIONAL SECOND? NOT HEARING A SECOND, CAN I GET ANOTHER MOTION?

DR. SAMBRANO: I JUST WANT TO MAKE A CLARIFICATION ON THE DOCUMENT THAT WAS PROVIDED JUST SO YOU KNOW. THE NUMBER OF AWARDS THAT ARE LISTED REFLECT ACTIVE AWARDS. SO IN MANY CASES THERE MAY HAVE BEEN ADDITIONAL AWARDS THAT, AT LEAST IN CIRM'S LIFETIME, MAY HAVE BEEN MADE TO SOME OF THESE INDICATIONS. SO WITH THE AUTISM, FOR EXAMPLE, WE HAVE IN THE PAST MADE OTHER AWARDS IN THAT ARENA. WE JUST HAPPEN TO HAVE ONE THAT WE CALL THE ANGELMAN SYNDROME THAT FALLS INTO THE AUTISM SPECTRUM DISORDERS GROUP.

MR. SHEEHY: DO WE HAVE A MOTION? I'M HAPPY TO MAKE A MOTION IF NO ONE ELSE WANTS TO.

DR. STEWARD: LET ME TRY ONE HERE. I WOULD LIKE TO MOVE, AND I THINK WE CAN DO THIS AS A GROUP, THAT ALL OF THE APPLICATIONS THAT HAVE NO -- IN WHICH NONE OF THE REVIEWERS RECOMMENDED AGAINST FUNDING, AND THERE ARE FOUR OF THOSE, THAT WE APPROVE THOSE FOUR. THAT'S NOS. 1, 2, AND 3 ON THE LIST AND NO. 5. THANK YOU.

DR. HIGGINS: I WOULD SECOND THAT MOTION.

MR. SHEEHY: WE HAVE A SECOND FOR THAT MOTION. DO WE HAVE DISCUSSION? AND ALSO SOMEBODY IS ADDING, I HOPE.

DR. SAMBRANO: JUST SO YOU KNOW, ON THIS SPREADSHEET, AND IF YOU CAN SEE IT ON WEBEX, IT WILL COUNT HOW MUCH IN TERMS OF FUNDS ARE AVAILABLE AFTER YOU HAVE APPROVED EACH OF THE APPLICATIONS. SO WE WILL TRACK THAT AMOUNT.

MR. SHEEHY: SO WE HAVE A MOTION AND A SECOND. IS THERE DISCUSSION?

MR. TORRES: WHICH IS THE PROJECT AGAIN?

MR. SHEEHY: SO THE PROJECTS ARE 11131 THAT HAS A BUDGET OF 1.4 THAT IS FOR DANON DISEASE. IT'S CELL THERAPY. THEN IT'S 11157 AND IT'S 1.4 MILLION, AND IT'S FOR THE UNIVERSAL THERAPY FOR

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CANCER. IT'S A CELL THERAPY. APPLICATION 1 AND 2. AND THEN APPLICATION 3, WHICH IS 11036, WHICH IS THE THIRD APPLICATION, IT IS FOR PEDIATRIC GLIOBLASTOMA, I BELIEVE. IS THAT CORRECT?

DR. SAMBRANO: YES.

MR. SHEEHY: THE FOURTH IS 11175, WHICH IS, I THINK, FOR TYPE 1 DIABETES, I BELIEVE.

SO IS THERE FURTHER DISCUSSION?

MR. TORRES: AND THE TOTAL OF THOSE RECOMMENDATIONS IS?

DR. SAMBRANO: SO THAT WOULD TOTAL TO 5.3 MILLION.

MR. SHEEHY: AND WE HAVE ANOTHER 4.7 AVAILABLE. IS THERE DISCUSSION? PEOPLE WANT TO DISCUSS? DO WE WANT -- WE NEED TO OPEN THIS UP FOR PUBLIC COMMENT. SO ANYWHERE. YOU CAN START AT THE SATELLITES IF THERE'S SOMEONE AT ONE OF THE SATELLITES WHO WOULD LIKE TO MAKE A PUBLIC COMMENT.

DR. CHIU: PUBLIC COMMENT FROM CITY OF HOPE.

MR. SHEEHY: YES.

DR. CHIU: THIS IS ARLENE CHIU FROM CITY OF HOPE. I WOULD APPRECIATE UNDERSTANDING THE RATIONALE FOR THESE FIVE BEING PROPOSED. I GUESS I MISSED IT BECAUSE OF THE DISTANCE AND ALL. JUST A

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CLARIFICATION. YOU ARE RECOMMENDING FUNDING NOW FOR THE FIRST, SECOND, AND THIRD, AND THEN THE FIFTH AND THE SEVENTH. AM I FOLLOWING YOU CORRECTLY?

MR. SHEEHY: FIRST, SECOND, AND THIRD AND THE SEVENTH.

DR. CHIU: DISCUSSION ON ANY OF THESE PROPOSALS, OR IS THERE A RATIONALE FOR SELECTING THESE? THANK YOU.

MR. SHEEHY: DR. CHIU, WE'RE RECOMMENDING THE FIRST, SECOND, AND THIRD, AND SEVENTH RANKED. AND THE RATIONALE IS THAT THEY RECEIVED UNANIMOUS SUPPORT FROM THE MEMBERS OF THE GRANTS WORKING GROUP.

DR. STEWARD: I'M SORRY. I MAY BE MISREADING. BUT WHAT I WAS -- SO THE FIRST THREE, YES; BUT THE FOURTH ON MY LIST WAS 11175.

MR. SHEEHY: YEAH.

DR. STEWARD: IS THAT NO. 7? I MUST BE LOOKING AT A DIFFERENT RANKING LIST. YOU'RE SCORING BY MEDIAN, NOT MEAN. WHICH ONE ARE WE USING FOR THIS RANKING?

DR. SAMBRANO: WE'RE USING THE MEDIAN AS THE METHOD FOR RANKING. SO THE FIRST THREE END UP BEING UNANIMOUS, AND THEN THE SEVENTH IN THAT RANK ORDER ENDS UP BEING UNANIMOUS.

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DR. STEWARD: THE MEAN RANKING, IF YOU WANTED TO USE THE MEAN, 11175 WOULD BE, WELL, ONE OF THE TOP FIVE.

DR. SAMBRANO: RIGHT. SO THE WAY THESE ARE RANKED, THEY'RE RANKED FIRST BY MEDIAN AND THEN ANYTHING THAT TIES IN MEDIAN IS THEN RANKED BY MEAN.

MR. TORRES: MR. CHAIRMAN.

MR. SHEEHY: YES.

MR. TORRES: ON THE ITEM -- GILBERT, ON THE ITEM 11165 DEALING WITH DEMENTIA, IS THAT RANKED LAST? IS THAT WHAT YOU'RE SAYING?

DR. SAMBRANO: YES.

MR. TORRES: AND WHAT WAS THE RATIONALE FOR RANKING IT LAST?

DR. SAMBRANO: THE MEDIAN SCORE.

MR. TORRES: THE MEDIAN SCORE. THEREFORE, GOING ALONG WITH STEVE'S DISCUSSION ON DEVELOPING AN AWARD FOR AUTISM BECAUSE WE DON'T HAVE MUCH IN THAT AREA, IF ANY, AND DEMENTIA WE HAVE NOTHING, DO WE SEE ANYTHING IN THE FUTURE ON DEMENTIA BECAUSE THAT IS THE HIGHEST COST ITEM FOR HEALTHCARE IN CALIFORNIA?

DR. SAMBRANO: I'M NOT SURE I UNDERSTAND THE QUESTION YOU'RE ASKING ME.

MR. TORRES: THE QUESTION I'M ASKING IS DO

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YOU KNOW OF ANYTHING IN THE PIPELINE THAT WE WOULD CONSIDER LATER TO ADDRESS DEMENTIA?

DR. SAMBRANO: NO. WE DON'T HAVE ANYTHING CURRENTLY IN THE PIPELINE THAT WOULD BE DEVELOPING A PROJECT FOR AT LEAST THIS PARTICULAR FRONTOTEMPORAL DEMENTIA.

MR. TORRES: NOTHING THAT YOU FORESEE FROM POTENTIAL FUTURE APPLICATIONS?

DR. SAMBRANO: NO.

MR. SHEEHY: I WOULD BE HAPPY TO RECOGNIZE YOU, SENATOR TORRES, AFTER THIS MOTION IF YOU'D LIKE TO MAKE A MOTION FOR THAT APPLICATION.

MR. TORRES: THANK YOU, MR. CHAIRMAN.

MR. SHEEHY: MAYBE WE CAN WORK OUR WAY THROUGH THIS MOTION. DO WE HAVE ANY OTHER PUBLIC COMMENT?

DR. CHIU: I'M SORRY TO BUTT IN. THIS IS ARLENE CHIU AGAIN.

MR. SHEEHY: YOU NEVER BUTT IN. PLEASE.

DR. CHIU: I WAS JUST CURIOUS THAT THE REVIEWERS, THE GWG, HAVE GIVEN GREAT SERVICE IN IDENTIFYING AND SCORING AND IN THE YES/NO. AS ONE OF THE BOARD MEMBERS HAD MENTIONED, ALL THE PROPOSALS IN GREEN HAVE MET THE BASE CRITERION. AND I WAS UNDER THE IMPRESSION THAT THE BOARD WILL NOW

LOOK WITH MANY OF THE CRITERIA THAT YOU HAVE IDENTIFIED IN THE EARLIER DISCUSSION. GOING BACK TO SELECTING THESE FOUR MEANS PICKING THE ONES WHERE, AGAIN, THE GWG HAS NOT VOTED NO, WHICH MEANS, AGAIN, DEFERRING TO GWG. I JUST WANTED TO POINT OUT THAT I WONDERED IF ANY OF THESE ALSO MEET YOUR OTHER CRITERIA. JUST A THOUGHT. THANK YOU.

DR. STEWARD: IF I COULD JUST COMMENT IN ANSWER TO YOUR QUESTION, ARLENE. WHAT I'M REALLY TRYING TO DO IS SORT OF GET US STARTED. AND I TOTALLY ACCEPT THAT WE WILL NEED TO DISCUSS THE OTHER CRITERIA IF THIS IS APPROVED, FILL IN THE LAST THREE APPLICATIONS TO BE FUNDED. THAT WAS REALLY THE REASON FOR DOING IT EXACTLY IN THE WAY THAT I'M DOING IT, THE WAY THAT I FORMULATED THIS MOTION. THANK YOU.

MR. SHEEHY: IS THERE FURTHER DISCUSSION OR PUBLIC COMMENT AT ANY SITE? COULD WE CALL THE ROLL THEN.

MS. BONNEVILLE: ANNE-MARIE DULIEGE.

DAVID HIGGINS.

DR. HIGGINS: YES.

MS. BONNEVILLE: STEVE JUELSGAARD.

MR. JUELSGAARD: YES.

MS. BONNEVILLE: DAVE MARTIN.

DR. MARTIN: AYE.
MS. BONNEVILLE: LAUREN MILLER.
MS. MILLER: YES.
MS. BONNEVILLE: ADRIANA PADILLA.
DR. PADILLA: YES.
MS. BONNEVILLE: FRANCISCO PRIETO.
DR. PRIETO: AYE.
MS. BONNEVILLE: ROBERT QUINT.
DR. QUINT: ABSTAIN.
MS. BONNEVILLE: AL ROWLETT.
MR. ROWLETT: YES.
MS. BONNEVILLE: JEFF SHEEHY.
MR. SHEEHY: YES.
MS. BONNEVILLE: OS STEWARD.
DR. STEWARD: YES.
MS. BONNEVILLE: JONATHAN THOMAS.
CHAIRMAN THOMAS: YES.
MS. BONNEVILLE: ART TORRES.
MR. TORRES: AYE.
MS. BONNEVILLE: DIANE WINOKUR.
MS. WINOKUR: YES.
THE REPORTER: THIS IS BETH. I DIDN'T HEAR AN ANSWER FROM DR. DULIEGE.
MS. BONNEVILLE: SHE HAS DROPPED OFF THE LINE.

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MR. SHEEHY: SENATOR TORRES, DID YOU HAVE A MOTION?

MR. TORRES: NO. I THINK, GIVEN THE EXPLANATION THAT GILBERT MADE ON THE VIABILITY OF THAT DEMENTIA PROJECT, I THINK I'M JUST GOING TO HAVE TO WAIT TILL SOMETHING COMES THROUGH OUR PROCESS BECAUSE I DO THINK IT'S AN ISSUE THAT WE NEED TO ADDRESS AS A STATE AGENCY AND THE IMPACT THAT IT HAS ON THE COST OF HEALTHCARE AND CAREGIVING IN CALIFORNIA. THANK YOU.

MR. SHEEHY: I THOUGHT THAT WAS A GOOD PROJECT. I WAS HOPING YOU'D MAKE A MOTION.

MR. TORRES: BUT IT CAME IN LAST. IS IT VIABLE SCIENTIFICALLY?

MR. SHEEHY: WELL, IT WAS IN THE FUNDABLE CATEGORY, SENATOR TORRES. I WOULD JUST NOTE THAT IT'S ONE OF THE MORE INNOVATIVE ONES AND THAT IT INVOLVES HUMAN EMBRYONIC STEM CELL-DERIVED -- NO, IPS, INDUCED PLURIPOTENT STEM CELL-DERIVED MICROGLIA.

MR. TORRES: I'M SORRY. THAT'S THE PROBLEM WITH BEING ON A CALL. YOU DON'T GET ALL THE INFORMATION IN FRONT OF YOU. SO I WOULD MOVE TO ACCEPT THAT PROJECT ON DEMENTIA.

MR. SHEEHY: YOU WANT A MOTION TO APPROVE

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IT?

MR. TORRES: YES, SIR.

MR. SHEEHY: I WOULD BE HAPPY TO SECOND THAT MOTION.

IF PEOPLE ARE WONDERING, YOUR CRITERIA, I CERTAINLY AGREE WE HAVEN'T FUNDED ANYTHING IN THAT CATEGORY; BUT ALSO FOR ME IT IS HIGHLY INNOVATIVE AND VERY WELL ALIGNED WITH CIRM'S MISSION IN THAT IT REALLY IS AT THE CUTTING-EDGE OF BOTH, AT LEAST WHAT I UNDERSTAND THE ROLE OF MICROGLIA IN NEURODEGENERATIVE DISEASES IS STILL UNDEREXPLORED, I THINK. I SEE IT IN HIV, THAT WE REALLY DON'T KNOW WHAT'S HAPPENING WITH IMMUNE CELLS IN THE BRAIN AND WHAT THEIR ROLE IS. AND I WOULD NOTE TOO THAT IN HIV DEMENTIA, IT'S AN ISSUE THAT WE SEE, HAS ALWAYS BEEN AN ISSUE IN HIV, AND CERTAINLY AS PEOPLE AGE, IT'S AN ISSUE THAT GROWS.

IT GOT -- ONE WOULD EXPECT SOMETHING THAT'S HIGHLY INNOVATIVE TO PERHAPS NOT SCORE AS WELL AS MORE, LET'S SAY, PROJECTS WITH MORE GENERIC PATHWAYS. WE OBVIOUSLY DON'T HAVE AN IPSC APPROVED THERAPY. SO TO A LARGE DEGREE PEOPLE ARE KIND OF HUNTING TO FIGURE OUT HOW TO GET SOMETHING ACROSS THE FINISH LINE.

SO TO ME IT'S A VERY INNOVATIVE PROJECT.

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IT ALIGNS TOTALLY WITH THE CORE MISSION OF CIRM IN THAT IT INVOLVES PLURIPOTENT CELLS.

MR. TORRES: IT'S STARTING TO IMMERGE. I'M SPEAKING WITH MY OTHER HAT NOW AS A BOARD MEMBER OF COVER CALIFORNIA, WHICH OVERSEES OBAMACARE IN THIS STATE, THAT DEMENTIA IS COMING UP IN OUR NEGOTIATIONS WITH THIRD-PARTY PAYERS AS A REAL COST FACTOR. AND IF WE COULD POINT THAT WE'RE DOING SOMETHING, AT LEAST ATTEMPTING TO DO SOMETHING ABOUT THIS DISEASE, THEN I THINK THAT WOULD BE LOOKED ON FAVORABLY BY OUR POPULATION.

MR. TOCHER: SORRY TO INTERRUPT THE CONVERSATION. I JUST WANTED TO CLARIFY FOR BETH AND THE RECORD THAT THIS IS A MOTION TO FUND APPLICATION 11165.

MR. SHEEHY: CHAIRMAN THOMAS HAD A COMMENT, AND THEN I HEARD MR. ROWLETT, AND THERE MAY BE OTHERS.

CHAIRMAN THOMAS: THANK YOU, MR. SHEEHY. SO I WOULD TEND TO BE SUPPORTIVE OF THIS FOR THE REASONS MENTIONED. AND, IN ADDITION, GIVEN THAT THE CHALLENGES OF DEMENTIA ARE MANY AND SIGNIFICANT, THAT ANYTHING GLEANED THROUGH THIS PARTICULAR LINE OF RESEARCH, I THINK, WOULD HAVE A SHOT OF INFORMING RESEARCH IN OTHER FORMS OF DEMENTIA. THIS, OF

COURSE, IS CLOSELY RELATED TO ALZHEIMER'S, FOR EXAMPLE. AND I THINK THAT, GIVEN THE DIFFICULTY IN COMING UP WITH SOMETHING TO ADDRESS ANY OF THESE CONDITIONS HAS BEEN SO PRONOUNCED, THAT WE WOULD BE WISE TO FUND SOMETHING IN THIS SPACE.

HAVING SAID THAT, I WOULD LIKE TO ASK DR. SAMBRANO OR DR. PATEL. THIS DID GET FIVE TIER IIS. IF YOU COULD JUST INFORM THE BOARD ON THE REASONS FOR THOSE VOTES, THAT WOULD BE HELPFUL. THANK YOU.

DR. PATEL: CERTAINLY. WOULD YOU LIKE ME TO GIVE YOU AN OVERVIEW OF THE PROPOSAL AS WELL, OR WOULD YOU JUST LIKE TO KNOW --

CHAIRMAN THOMAS: SURE. I THINK THAT WOULD BE HELPFUL FOR THE BOARD.

DR. PATEL: OKAY. SO THIS ONE IS AN APPLICATION THAT'S FOCUSED ON PROGRANULIN DEFICIENT FRONTOTEMPORAL DEMENTIA. SO IT IS A SUBSET OF WHAT IS THE SECONDMOST COMMON DEMENTIA FOR THOSE UNDER 65. SO THE FRONTAL LENS IS ABOUT 15 TO 20 PER 100,000 INDIVIDUALS.

THERE'S A FAMILIAL TYPE, WHICH IS THIS ONE, WHICH IS THE PROGRANULIN MUTATION. THERE'S A LOSS OF FUNCTION THAT RESULTS IN THIS PARTICULAR TYPE OF DEMENTIA THAT THIS APPLICATION ADDRESSES.

SO WHAT THEY INTEND TO DO IS UTILIZE

INDUCED PLURIPOTENT STEM CELLS TO GENERATE MICROGLIA, WHICH IS A MACROPHAGE IN THE NEURAL SYSTEM -- IT'S AN IMMUNE CELL SYSTEM -- AND USE THOSE TO MAKE THEM TRANSPLANTABLE IN ORDER TO RESTORE THE PROGRANULIN AS WELL AS TEST THE EFFECT ON MOUSE MODELS OF DEMENTIA. SO THAT'S WHAT THEY INTEND TO DO WITH THIS WITH THE HOPE OF DEVELOPING A THERAPY, A CELL THERAPY, THAT COULD ULTIMATELY IMPACT ON THOSE PATIENTS.

SO AS MENTIONED BEFORE, THE DISEASE IS NOT REPRESENTED CURRENTLY IN OUR PORTFOLIO. ALTHOUGH THERE IS ONE AWARD TO DEVELOP A METHOD FOR DIFFERENTIATING PLURIPOTENT STEM CELLS INTO MICROGLIA.

IN TERMS OF THE WORKING GROUP RECOMMENDATION, IN THE CONTEXT OF ALL OF THESE APPLICATIONS THAT YOU ARE LISTENING TO HAVING HAD A POSITIVE VIEW BY THE GWG, THERE ARE ONLY A FEW COMMENTS THAT MIGHT CAPTURE WHAT SOME OF THESE GWG REVIEWERS MAY HAVE THOUGHT WAS A CONCERN.

SO FOR THIS APPLICATION, IT WAS MENTIONED THAT IT WAS UNCLEAR WHETHER THERE WOULD BE ENOUGH CELLS OR THE ABILITY TO SCALE UP THE NUMBER OF CELLS THAT WOULD BE REQUIRED FOR A HUMAN THERAPY. BUT ON THE OTHER HAND, THIS IS AN APPLICATION THAT IS AT

THE STAGE WHERE IT'S DEVELOPING ITS PROOF OF PRINCIPLE. SO ALTHOUGH A CONCERN, IT'S SOMETHING THAT THE APPLICANTS WOULD BE WORKING TOWARDS IN TERMS OF ACHIEVING. THAT WAS THE MOST SALIENT COMMENT THAT WAS MADE BY GWG IN TERMS OF CONCERN.

MR. SHEEHY: DO WE HAVE OTHER QUESTIONS OR COMMENTS FROM OTHER --

MS. MILLER: THIS IS LAUREN. I JUST WANTED TO ADD THAT THE ALZHEIMER'S AND DEMENTIA COMMUNITY, AS I THINK SO MANY OF YOU KNOW, ARE DESPERATE FOR INNOVATION. AND THERE ARE SO FEW INNOVATIVE STUDIES LIKE THIS THAT ARE HAPPENING OUT THERE, AND THAT FUNDING SOMETHING LIKE THIS WOULD GIVE SUCH ENERGY TO ALL DEMENTIA PATIENT ADVOCATES AND, THEREFORE, I THINK, WOULD CREATE SUCH AN EXCITEMENT OVER THE WORK THAT CIRM IS DOING IN ADDITION TO POTENTIALLY CREATING A TREATMENT FOR SOMETHING THAT, AS A FEW PEOPLE HAVE TOUCHED ON, IS EXTRAORDINARILY COSTLY, THE MOST COSTLY DISEASE IN THIS STATE AND THE COUNTRY, AND IS GROWING ASTRONOMICALLY AS FAR THE NUMBER OF PATIENTS AND IS, AS I SAID, DESPERATE FOR SOMETHING TO MOVE THE NEEDLE. AND I THINK THAT CIRM FUNDING SOMETHING LIKE THIS WOULD BE TREMENDOUSLY HELPFUL FOR BOTH THE DISEASE AND CIRM OVERALL.

DR. MARTIN: I HAVE A TECHNICAL QUESTION ABOUT THE PROPOSAL. ANIMAL MODELS OF THESE TYPES OF DISEASES ARE VERY DIFFICULT IF THEY'RE AT ALL REAL. SINCE THE SELECTION OF A HUMAN DISEASE IS AN INHERITED FRONTOTEMPORAL DEMENTIA, IS THE MOUSE MODEL A TRANSGENIC GENETIC MODEL OF THE SAME GENE DEFECT?

DR. PATEL: LET ME LOOK THAT UP. I BELIEVE IT IS. IT'S A MODEL WHERE THE PROGRANULIN IS DEFICIENT. LET ME LOOK THAT UP TO GIVE YOU A DEFINITIVE ANSWER ON THAT.

DR. MARTIN: MY COMMENT WOULD BE THAT THAT MAY BE A SIGNIFICANT ADVANTAGE FOR THIS MODEL FOR THIS DIFFICULT DISEASE BECAUSE THERE IS VERY LIKELY A REASONABLE PHENOTYPE IN THAT MOUSE THAT CAN BE MONITORED; WHEREAS, OTHER MOUSE MODELS FOR CNS DISEASES, UNLESS THEY'RE TRANSGENIC AND OF THE SAME GENE, ARE USUALLY NOT RELIABLE AND NOT PREDICTIVE.

MR. SHEEHY: WHILE WE WAIT FOR DR. SAMBRANO, ARE THERE OTHER COMMENTS? I NOTE MR. ROWLETT HAD A COMMENT THAT HE WANTED TO MAKE OR A QUESTION.

MR. ROWLETT: SOMETIMES THERE'S AN ADVANTAGE -- THIS IS AL ROWLETT -- TO LISTENING TO OTHERS. AS THE PATIENT ADVOCATE FOR THIS AREA, I

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CERTAINLY ENDORSE ALL THE ADVOCACY AND APPRECIATE THE COMMENTS.

I THINK, AGAIN, HAVING THIS BE THE FIFTH GRANT THAT WE WOULD APPROVE TODAY, CERTAINLY I WOULD SUPPORT THAT GIVEN THE OTHER FOUR RECEIVED NO UNFUNDABLE SCORES FROM ANY OF THE REVIEWERS AND ALSO GIVEN THE COMMENTS BY DR. SAMBRANO REGARDING WHAT THE REVIEWERS SAID THAT ULTIMATELY ENDED UP THIS BEING A TIER II. SO NOT TO REPEAT MYSELF, BUT I ALSO SUPPORT. AND THANK YOU VERY MUCH, SENATOR, FOR MOVING THIS UP.

MR. TORRES: THANK YOU.

DR. SAMBRANO: JUST TO ANSWER THE PREVIOUS QUESTION ON THE MOUSE MODEL. SO THIS IS A GRN MINUS MINUS MOUSE, SO IT IS A TRANSGENIC THAT HAS THE PROGRANULIN KNOCKED OUT, AND THEY WILL COMPARE IT TO THE WILD TYPE.

DR. MARTIN: THANK YOU. THAT'S ENCOURAGING.

MR. SHEEHY: OTHER QUESTIONS AND COMMENTS?

MR. TORRES: CALL FOR THE QUESTION.

MR. SHEEHY: ABSOLUTELY. IS THERE PUBLIC COMMENT AT ANY OF THE SITES? SEEING NO PUBLIC COMMENT, COULD WE CALL THE ROLL.

MS. BONNEVILLE: DAVID HIGGINS.

DR. HIGGINS: YES.
MS. BONNEVILLE: STEVE JUELSGAARD.
MR. JUELSGAARD: YES.
MS. BONNEVILLE: DAVE MARTIN.
DR. MARTIN: YES.
MS. BONNEVILLE: LAUREN MILLER.
MS. MILLER: YES.
MS. BONNEVILLE: ADRIANA PADILLA.
DR. PADILLA: YES.
MS. BONNEVILLE: FRANCISCO PRIETO.
DR. PRIETO: AYE.
MS. BONNEVILLE: ROBERT QUINT.
DR. QUINT: YES.
MS. BONNEVILLE: AL ROWLETT.
MR. ROWLETT: YES.
MS. BONNEVILLE: JEFF SHEEHY.
MR. SHEEHY: YES.
MS. BONNEVILLE: OS STEWARD.
DR. STEWARD: YES.
MS. BONNEVILLE: JONATHAN THOMAS.
CHAIRMAN THOMAS: YES.
MS. BONNEVILLE: ART TORRES.
MR. TORRES: AYE.
MS. BONNEVILLE: DIANE WINOKUR.
MS. WINOKUR: YES.

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MS. BONNEVILLE: THANK YOU. THE MOTION CARRIES.

MR. SHEEHY: OKAY. DO WE HAVE AN ADDITIONAL MOTION ON AN APPLICATION?

I ACTUALLY AM GOING TO STEP IN AND SUGGEST 11107. AND THE REASON IS BECAUSE IT'S OVARIAN CANCER, WHICH WE'VE DONE -- ACTUALLY I DON'T THINK WE'VE DONE ANY WORK IN OVARIAN CANCER. WE DID A COUPLE OF DISCOVERY, BUT WE MADE NO PROGRESS. AND THIS IS A CANCER THAT IS JUST HORRIFYING. AND HAVING SEEN PEOPLE WHO SUFFERED FROM OVARIAN CANCER, THERE'S REALLY NO TREATMENT. IT SEEMS LIKE A GREAT TARGET FOR CAR T CELL THERAPY BY A GROUP THAT'S REALLY GOOD AT CAR T CELL THERAPY AND DEVELOPING NOVEL CAR T THERAPIES. AND I THINK THE IMPACT WOULD BE HUGE ON A CANCER THAT IMPACTS MANY, MANY PEOPLE IN CALIFORNIA, MANY WOMEN IN CALIFORNIA. SO I MAKE THAT MOTION IF THERE'S A SECOND.

MR. JUELSGAARD: SECOND.

MR. SHEEHY: THERE'S A SECOND. DISCUSSION? ANY PUBLIC COMMENT?

DR. PRICEMAN: MEMBERS OF THE BOARD, MY NAME IS SAUL PRICEMAN FROM THE CITY OF HOPE, AND I'M THE PRINCIPAL INVESTIGATOR FOR THE APPLICATION DISC1-11107. I ALSO SUBMITTED ONE OF THE LETTERS

THAT HAS BEEN POSTED FOR PUBLIC REVIEW.

EVERY SINGLE DAY FIVE WOMEN IN CALIFORNIA WILL BE DIAGNOSED WITH OVARIAN CANCER. FOUR OUT OF THESE FIVE WOMEN WILL HAVE LATE STAGE, AGGRESSIVE, AND INCURABLE DISEASE, AND ONLY ONE WILL SURVIVE BEYOND FIVE YEARS. WE ALL KNOW SOMEONE WHO HAS BEEN AFFLICTED WITH THIS DREADED DISEASE. IN FACT, IN THE UNITED STATES, 22,000 WOMEN WILL BE DIAGNOSED WITH IT THIS YEAR. AND OF THESE, 14,000 WILL DIE.

IN CHECKING THE CIRM WEBSITE, I WAS SURPRISED TO FIND THAT CIRM HAS FUNDED ONLY ONE GRANT EXCLUSIVELY ON OVARIAN CANCER. THIS IS AN EARLY STAGE DISC1 AWARD AT THE COST OF $172,000 FOR RESEARCH. IT MAKES OVARIAN CANCER AN UNDERREPRESENTED DISEASE IN TERMS OF CIRM FUNDING.

WE HOPE THAT YOU WILL CHANGE THIS BECAUSE WE BELIEVE OUR APPROACH, A CAR T CELL STRATEGY, WILL REVOLUTIONIZE THE TREATMENT FOR WOMEN WITH OVARIAN CANCER. BECAUSE WE'RE VERY ANXIOUS TO GET TO CLINICAL TRIAL, WE PROVIDE A CLEAR AND ACCELERATED MILESTONE THAT LEADS TO PRE-FDA FILING AT THE END OF THE TWO-YEAR FUNDING PERIOD. THIS MAY SEEM AMBITIOUS FOR A QUEST AWARD, BUT WORKING AT CITY OF HOPE, AS WAS MENTIONED, MAKES A HUGE DIFFERENCE TO THE FEASIBILITY OF OUR TIMELINE.

CITY OF HOPE HAS FOCUSED A GREAT DEAL OF RESOURCES ON THE DEVELOPMENT OF NEW CAR APPROACHES FOR TREATING THE MOST INCURABLE AND DEADLY SOLID TUMORS. IN THE EARLY 2000S, CITY OF HOPE WAS THE FIRST TO TREAT SOLID TUMOR PATIENTS WITH CAR T CELLS AND IS RECENTLY THE FIRST TO DEMONSTRATE A DURABLE CLINICAL RESPONSE IN A PATIENT WITH GLIOBLASTOMA.

BY THE END OF 2018, WE WILL BE ENROLLING PATIENTS ON OUR ONGOING TRIAL FOR GLIOBLASTOMA, AND WE WILL INITIATE TRIALS FOR BOTH PROSTATE CANCER AND BREAST CANCER WITH CAR T CELL THERAPIES. OVARIAN CANCER IS THE NEXT HURDLE WE AIM TO TACKLE. WE DO UNDERSTAND THE CHALLENGES FACING THE DEVELOPMENT OF EFFECTIVE CAR T CELL THERAPIES FOR SOLID TUMORS AND, IN PARTICULAR, THE HARSH ENVIRONMENT CREATED BY THE TUMOR HAS HISTORICALLY PREVENTED IMMUNOTHERAPY FROM WORKING FOR THESE PATIENTS.

TO ADDRESS THESE CHALLENGES, WE WILL ENHANCE THE STEMNESS OF T-CELLS SO THAT THEY WILL BE ABLE TO RETAIN IN THE BODY FOR A LONG PERIOD OF TIME. WE ALSO PROMOTE THEIR TRAFFICKING TO THE SOLID TUMORS AS WELL AS IMPROVE THEIR ABILITY TO KILL TUMORS ONCE THEY ARRIVE THERE. THESE APPLICATIONS HAVE BROAD STROKES ACROSS ALL SOLID AND LIQUID SOLID TUMORS.

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IN SUMMARY, WE HOPE YOU WILL FUND OUR PROPOSAL AND LET US MOVE SWIFTLY TO CONDUCT THE NECESSARY STUDIES TO PRESENT TO THE FDA. THANK YOU.

MR. SHEEHY: THANK YOU. IS THERE ADDITIONAL PUBLIC COMMENT? CAN WE CALL THE ROLL.

MS. BONNEVILLE: DAVID HIGGINS. STEVE JUELSGAARD.

MR. JUELSGAARD: YES.

MS. BONNEVILLE: DAVE MARTIN.

DR. MARTIN: YES.

MS. BONNEVILLE: LAUREN MILLER.

MS. MILLER: YES.

MS. BONNEVILLE: ADRIANA PADILLA.

DR. PADILLA: YES.

MS. BONNEVILLE: FRANCISCO PRIETO.

DR. PRIETO: AYE.

MS. BONNEVILLE: ROBERT QUINT.

DR. QUINT: YES.

MS. BONNEVILLE: AL ROWLETT.

MR. ROWLETT: YES.

MS. BONNEVILLE: JEFF SHEEHY.

MR. SHEEHY: YES.

MS. BONNEVILLE: OS STEWARD.

DR. STEWARD: YES.

MS. BONNEVILLE: JONATHAN THOMAS.

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CHAIRMAN THOMAS: YES.
MS. BONNEVILLE: ART TORRES.
MR. TORRES: AYE.
MS. BONNEVILLE: DIANE WINOKUR.
MS. WINOKUR: YES.
MS. BONNEVILLE: THE MOTION CARRIES.
MR. SHEEHY: GREAT. SO CAN WE GET AN UPDATE ON FUNDS AVAILABLE?
DR. SAMBRANO: SURE. SO WHAT REMAINS AT THIS POINT IS 1.7 MILLION. THAT WOULD COVER VIRTUALLY ANY AWARD EXCEPT FOR ONE IN THE TOP TIER.
CHAIRMAN THOMAS: A QUESTION FOR DR. SAMBRANO OR THE TEAM. HOW MANY PROJECTS HAVE WE FUNDED FOR ANY FIBROSIS RELATED? I SEE THAT WE'VE GOT A PULMONARY FIBROSIS ON HERE. IT REFERENCES A COUPLE OF AWARDS FOR PULMONARY AND ONE FOR CYSTIC FIBROSIS. IS THAT THE EXTENT OF OUR FIBROSIS PORTFOLIO?
DR. SAMBRANO: SO WHAT WE REPRESENT THERE ARE ACTIVE AWARDS. ONE AWARD, AS YOU NOTED, FOR CYSTIC FIBROSIS AND TWO THAT WOULD IMPACT ON THE IDIOPATHIC PULMONARY FIBROSIS, WHICH IS THE SUBJECT OF THE APPLICATION BEFORE US.
CHAIRMAN THOMAS: AND IS THERE A THEORY THAT IF YOU WERE ABLE TO MAKE HEADWAY ON ONE

PARTICULAR FIBROTIC CONDITION, THAT IT COULD POSSIBLY HELP INFORM RESEARCH ON OTHERS?

DR. SAMBRANO: SO THE CLAIM BY THE APPLICANTS FOR THIS APPLICATION IS THAT IT COULD. THERE ARE DIFFERENT TYPES OF FIBROSIS, NOT NECESSARILY CYSTIC FIBROSIS, WHICH IS ONE THAT COULD POSSIBLY, BUT THERE ARE DIFFERENT STRATEGIES FOR ADDRESSING CYSTIC FIBROSIS.

CHAIRMAN THOMAS: SO ON THE THEORY THAT ONE CRITERION THAT WE MIGHT APPLY IS FUNDING PROJECTS THAT COULD POTENTIALLY LEAD TO AN IMPACT ON MORE THAN ONE CONDITION, AND NOTING THAT, AS IS THE CASE WITH EVERYTHING WE CONSIDER HERE, OF COURSE, THE PULMONARY FIBROSIS AND CYSTIC FIBROSIS ARE BOTH TERRIBLE DISORDERS AND THAT WE DON'T HAVE A WHOLE LOT IN THE PORTFOLIO ADDRESSING THESE, I WOULD MOVE THAT WE APPROVE ITEM 11192 FOR APPROVAL.

DR. JUELSGAARD: I'LL SECOND THAT MOTION.

MR. SHEEHY: IS THERE ANY COMMENT?

DR. MARTIN: THIS IS DAVE. I WOULD JUST SO WE UNDERSTAND, CYSTIC FIBROSIS AND WHAT IS CALLED PULMONARY FIBROSIS HAVE COMPLETELY DIFFERENT MECHANISMS OF PATHOGENESIS. COMPLETELY DIFFERENT.

CHAIRMAN THOMAS: THAT'S WHY I WAS ASKING THE QUESTION TO DR. SAMBRANO. IS THERE A CHANCE

THAT -- AND OBVIOUSLY THE WAY THE CONDITIONS PLAY OUT IS DIFFERENT AS WELL. PULMONARY FIBROSIS COULD BE IN ITS MOST VIRULENT FORM FATAL IN SIX MONTHS. THERE ARE LONGER LASTING VERSIONS OF IT THAT CAN SPAN OVER YEARS; BUT, NONETHELESS, HAVE A HORRIBLE -- BUT, DAVE, THAT'S EXACTLY WHY I ASKED THAT QUESTION.

DR. MARTIN: I'M JUST POINTING OUT THAT YOU'RE OBVIOUSLY CORRECT ON THAT. I'M JUST SAYING THAT CYSTIC FIBROSIS SHOULD BE JUST BE SORT OF OUT. IT'S A COMPLETELY DIFFERENT DISEASE. SO THERE WON'T BE CROSSOVER THERE I'M RELATIVELY CERTAIN, AS CERTAIN AS ONE CAN BE ABOUT ANYTHING GOING ON IN THE FORM OF FIBROSIS, BUT THERE ARE PLENTY -- THERE IS, AS YOU POINT OUT, CLEAR HETEROGENEITY WITHIN THE GENERAL CLASS OF PULMONARY FIBROSIS.

MR. SHEEHY: ADDITIONAL COMMENTS? SO JUST TO NOTE THAT THIS WILL BE THE LAST ONE THAT WE'RE ABLE TO APPROVE. SO IF ANYONE HAS ANY INTEREST IN ANY OTHER APPLICATIONS, YOU MIGHT NOTE THAT.

I WILL SAY THAT FOR ME I DO LOOK AT 11109 BECAUSE THERE'S NOTHING ELSE FOR THAT INDICATION. IT'S A VERY RARE DISEASE AND UNLIKELY TO GET SUPPORT FROM -- I THINK -- IS THIS AN HSCC? IS THIS AN EMBRYONIC STEM CELL-DERIVED THERAPY? THIS IS AN

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IPS-DERIVED THERAPY WHICH ALIGNS WITH CIRM'S MISSION.

SO TO ME --

DR. JUELSGAARD: CALL THE QUESTION.

MR. SHEEHY: CALL THE QUESTION? OKAY. ANY PUBLIC COMMENT AT ANY SITE? WE HAVE PUBLIC COMMENT HERE IN SAN FRANCISCO. JUST IDENTIFY YOURSELF.

DR. WEINACHT: THANK YOU SO MUCH FOR GIVING ME THE OPPORTUNITY TO SPEAK. MY NAME IS KATJA WEINACHT. I'M A PHYSICIAN SCIENTIST AND STEM CELL TRANSPLANTER AT STANFORD SCHOOL OF MEDICINE AND TOGETHER WITH MY COLLABORATOR, VITTORIO SEBASTIANO, WHO IS A DEVELOPMENTAL BIOLOGIST, AND WE PROPOSE TO YOU TO MAKE REGENERATIVE THYMIC TISSUE TO CURE THE IMMUNE DEFECT IN A DISEASE CALLED 22Q11 SYNDROME.

AS YOU POINTED OUT, THE MISSION OF CIRM IS TO FUND INCURABLE DISEASES AND FIND THERAPIES FOR DISEASES WHERE THERE'S NOTHING OUT THERE. AND IT IS EXACTLY THE 22Q11 DISEASE. IT'S A MULTICENTRIC DISEASE, BUT WHAT KILLS THESE PATIENTS IS THAT THEY DO NOT HAVE A THYMUS AND, THEREFORE, THEY DO NOT HAVE AN IMMUNE SYSTEM. AND CURRENTLY TO THIS DATE THERE IS NO THERAPY OUT THERE. SO THESE PATIENTS ARE CONFINED IN THE ICU IN A PROTECTED ENVIRONMENT

INEVITABLY UNTIL THEY CATCH A LETHAL INFECTION AND THEREFORE DIE.

SO WHAT WE ARE PROPOSING TO YOU AND THE SCOPE OF OUR PROPOSAL IS TO MAKE REGENERATIVE THYMIC TISSUES FOR INDUCED PLURIPOTENT STEM CELLS. THE GOAL OF THIS PROPOSAL IS TWOFOLD. FIRST, WE CAN MAKE SCALABLE TISSUES IN WHATEVER AMOUNT FOR ALL THE PATIENTS WHO NEED THEM. WE HAVE TISSUES THAT ARE HLA-COMPATIBLE OR PATIENT SPECIFIC AND THEY'RE SUPERIOR TO THE FORMERLY AVAILABLE TRANSPLANT AND IS NO LONGER AVAILABLE TO DATE.

I THINK EVERYBODY (UNINTELLIGIBLE) CIRM PORTFOLIO, YOU HAVE IN THE PAST FIVE APPLICATIONS THAT SUPPORTED THYMUS-RELATED OR THYMIC FUNCTION-RELATED PROJECTS, BUT YOU'VE NEVER HAD A PROJECT THAT ACTUALLY WANTED TO MAKE REGENERATIVE THYMIC TISSUES THAT REPLACE THE THYMIC FUNCTION OF PATIENTS WHO DO NOT HAVE A THYMUS AT ALL.

(UNINTELLIGIBLE) CIRM GIVE US A WONDERFUL INFRASTRUCTURE FOR US TO BUILD ON RIGHT NOW. WE HAVE THE TECHNOLOGY TO REALLY PUT IPS-DERIVED THERAPIES INTO THE CLINIC VERY QUICKLY. AND I THINK IF THIS GRANT GETS FUNDED, WITHIN TWO YEARS WE MAY BE ABLE TO FILE A PRE-IND, WE MAY BE ABLE TO MOVE TO A CLINICAL DESIGN, AND WE MAY BE ABLE TO START

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TREATING AND CURING THESE PATIENTS.

I THINK WE OWE THIS TO OUR PATIENTS AND THE FAMILY, AND WE HAVE A MOTHER ON THE PHONE. AND IF AT ALL POSSIBLE, I WOULD LOVE IT IF YOU COULD HEAR FROM KATIE WILKERSON WHOSE SON IS SEVEN MONTHS SINCE HE WAS BORN.

MR. SHEEHY: YES. IS THERE SOMEONE ON THE PHONE THAT WOULD LIKE TO MAKE A COMMENT?

MS. CHEUNG: KATIE, IF YOU ARE ON THE LINE, IF YOU CAN HIT STAR ONE.

MS. WILKERSON: MY NAME IS KATIE WILKERSON. I AM THE MOM OF AN AMAZING SEVEN-AND-A-HALF-MONTH-OLD LITTLE BOY, CHARLIE, WHO WAS BORN WITHOUT A THYMUS.

I LIVE MY LIFE IN CONSTANT FEAR OF WHAT EVERY COUGH, EVERY SNEEZE, EVERY CRY WILL BRING. EACH PERSON THAT COMES INTO MY SON'S ROOM, I WORRY THAT THIS WILL BE THE LAST TIME HE GETS A VIRUS AND WE'RE GOING TO LOSE HIM.

MY SIX-YEAR-OLD FREQUENTLY ASKS WHAT WILL HAPPEN IF CHARLIE DIES? THIS BREAKS MY HEART BECAUSE I CAN'T EVEN TELL HIM THAT WE'LL HAVE AND BE PROVIDED A CURE. THIS POSSIBILITY IS ALL TOO REAL. I WISH I COULD SAY I'M ALONE IN THIS, BUT I'VE GOTTEN TO KNOW TOO MANY PARENTS IN THE SAME

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PREDICAMENT.

WHEN CHARLIE WAS ONE WEEK OLD, MY FAMILY'S WORLD COMPLETELY CHANGED WHEN THE NEWBORN SCREENING CAME BACK SHOWING CHARLIE HAD NO T CELLS. AT THE TIME WE THOUGHT HE HAD SCID AND WE WERE OVERWHELMED. AS WE TALKED WITH DOCTORS, THEY ASSURED US THERE WERE TREATMENT OPTIONS. CHARLIE WAS HOSPITALIZED IN ISOLATION BECAUSE I HAVE THREE OTHER SMALL KIDS WHO ARE GERM BALLS BEING 6, 5, AND 3 YEARS OLD. IF WE HAD BEEN TOLD AT THE TIME WHAT WE HAD IN STORE, I THINK I WOULD HAVE BEEN COMPLETELY CRUMBLED UNDER THE REALITY OF IT ALL.

AFTER SEVERAL MORE TESTS, WE WERE GIVEN THE NEWS THAT CHARLIE DID NOT HAVE SCID, BUT HAD COMPLETE DIGEORGE. I WENT INTO A RESEARCH FRENZY LEARNING ANYTHING I COULD. I WANTED TO BECOME KNOWLEDGEABLE ON CHARLIE'S CONDITION BECAUSE MANY OF CHARLIE'S DOCTORS HAD NEVER TREATED A COMPLETE DIGEORGE PATIENT. THEY HAD NEVER SEEN THE CONDITION BEFORE. I WAS TOLD THE ONLY TREATMENT OPTION FOR HIM WAS A THYMUS TRANSPLANT AT DUKE UNIVERSITY WHICH IS STILL IN A RESEARCH PHASE. WE RUSHED TO GET ALL THE INFORMATION THEY REQUIRED TO ADD HIM TO THEIR RESEARCH STUDY AS SOON AS POSSIBLE. OUR PACKET WAS SENT MIDDLE OF JANUARY. MONTH AFTER MONTH OUR

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INFORMATION WAS NOT REVIEWED AND THEY WERE NOT TAKING PATIENTS FOR TRANSPLANT.

SEVERAL MONTHS LATER THEY SENT OUT A LETTER TO PATIENTS ON THE WAIT LIST, WHICH WE HAD NOT EVEN GOTTEN TO THAT YET, SAYING THEIR PROGRAM WAS SUSPENDED. MY HEART COMPLETELY DROPPED. WITH NO KIND OF INFORMATION ON WHEN THEY WOULD REVIEW, I FELT LIKE MY SON'S CHANCE OF LIFE WAS ON HOLD. HE IS KEPT IN ISOLATION IN THE HOSPITAL, AND WE HAVE BEEN ABLE TO KEEP HIM VIRUS FREE. YET EACH DAY REMAINS A GAME OF RUSSIAN ROULETTE. IS TODAY THE DAY THAT CHARLIE GETS SICK?

MY TIME IS SPLIT BETWEEN MY THREE KIDS AT HOME AND MY BOY IN THE HOSPITAL. MY HUSBAND IS ACTIVE DUTY IN THE MILITARY AND HASN'T BEEN THERE, LEAVING ME TO BE THE SOLE CARE PROVIDER FOR OUR FOUR CHILDREN.

IF DUKE RESUMES THEIR TRANSPLANTS, THERE ARE DOZENS AHEAD OF CHARLIE. I WILL DO EVERYTHING IN MY POWER TO KEEP MY SON HEALTHY TO GET THERE, BUT WORRY IS THIS REALLY POSSIBLE FOR ANOTHER YEAR OR MORE. EVEN IF HE GETS A TRANSPLANT, IT ISN'T A PERFECT FIT BECAUSE THEY ARE NOT HLA-MATCHED. SO HIS CHANCE OF AUTOIMMUNE ISSUES DRASTICALLY GO UP.

I IMPLORE YOU TO FUND DR. WEINACHT AND DR.

SEBASTIANO'S RESEARCH FOR REGENERATIVE THYMUS TISSUE. NOT ONLY DOES MY SON'S LIFE LITERALLY DEPEND ON IT, BUT SO DO DOZENS OF OTHER KIDS TODAY AND IN THE FUTURE. IN ORDER TO LIVE, CHARLIE NEEDS A THYMUS. THANK YOU.

MR. SHEEHY: THANK YOU. CHAIRMAN THOMAS.

CHAIRMAN THOMAS: SO THANK YOU FOR THAT TESTIMONY, BOTH OF YOU. BEFORE WE, AS WE DO HAVE A MOTION ON THE TABLE HERE, BEFORE WE VOTE ON THAT, I WANT TO REVISIT ONE OF MR. JUELSGAARD'S IDEAS AND PLAY DEVIL'S ADVOCATE TO OS AND HIS COMMENT IN RESPONSE TO THAT.

SO MR. JUELSGAARD SUGGESTED AS A POSSIBILITY MOVING TO FUND ALL OF THESE PROJECTS WITH THE CAVEAT THAT WE APPROVE A CERTAIN NUMBER TODAY AND THEN THE BALANCE WOULD BE AUTOMATICALLY FUNDED IN THE BEGINNING OF THE NEXT BUDGET CYCLE, WHICH WOULD BE THE FIRST OF THE YEAR. IN DOING THAT, WHAT YOU WOULD BE DOING IS AGREEING TODAY TO FUND WHAT WOULD BE A LIST OF ALL RECOMMENDED FOR FUNDING PROJECTS. AND WE ARE IN, AMONG OTHER THINGS, THE TIME BUSINESS HERE, WHICH IS TO SAY WE'RE -- IF WE DID NOT DO SOMETHING LIKE THAT AND WAITED UNTIL THE NEXT QUEST ROUND, AS I INDICATED, THAT'S GOING TO BE NEXT JUNE WITH APPROVALS NEXT

JULY, SO YOU'D BE LOOKING AT A SIX-MONTH FURTHER DELAY IN FUNDING. AND YOU HAVE HERE BEFORE YOU A LIST OF PROJECTS THAT ARE ALL RECOMMENDED, AND WE JUST APPROVED ONE THAT WAS NO. 13 OR 14 OR WHATEVER ON THE LIST, SUGGESTING THE FACT THAT THE BOARD UNDERSTANDS FULLY THAT EACH OF THESE PROJECTS IS WORTHY OF FUNDING.

YES, IF WE WERE TO DO SOMETHING LIKE THIS, IT WOULD HAVE AN IMPACT ON BUDGET DISCUSSIONS. IF, FOR EXAMPLE, WE DECIDED IN THE NEXT BUDGET DISCUSSION ROUND THAT WE MIGHT WANT TO PUT MORE EMPHASIS ON OTHER PARTS OF THE RESEARCH SPECTRUM, ETC., BUT I FOR ONE AM SUPPORTIVE OF MR. JUELSGAARD'S IDEA HERE. AND I RAISE IT AT THIS POINT BECAUSE, IF WE DO VOTE ON ANY SUBSEQUENT PROJECT HERE, IT WILL CLOSE OUT THIS ROUND AND PRECLUDE FUNDING THESE OTHERS UNLESS THEY COME BACK AND APPLY IN A YEAR.

SO I JUST WANT TO REVISIT THAT. AND, OS, I WELCOME YOUR COMMENTS ON THAT AND ANYBODY ELSE WHO HAS A THOUGHT ON IT.

DR. STEWARD: THANK YOU, J.T. THIS IS OS, AND I WILL MAKE A COMMENT.

SO EFFECTIVELY WHAT THAT DOES WOULD BE TO USE UP ALL OF NEXT YEAR'S LIKELY FUNDING FOR THE

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DISCOVERY ROUNDS.

CHAIRMAN THOMAS: THAT'S CORRECT.

DR. STEWARD: AND I THINK FORECLOSING DISCOVERY IN THAT WAY COULD BE A HUGE MISTAKE BECAUSE AT EACH STAGE OF THE RESEARCH PROCESS, THERE ARE THINGS THAT ARE VERY GOOD AND VERY EXCITING AND WONDERFUL, BUT NEW THINGS ARE COMING ALONG. I THINK THAT THERE'S A GOOD CHANCE THAT NEXT YEAR WE'LL BE SEEING THINGS THAT SIMPLY DON'T EXIST RIGHT NOW, AND THAT COMPLETELY FORECLOSING THE NEXT YEAR'S DISCOVERY ROUNDS WOULD BE VERY UNFORTUNATE.

THE ONLY WAY THAT WE COULD AVOID THAT WOULD BE TO LITERALLY DOUBLE NEXT YEAR'S DISCOVERY BUDGET, WHICH WOULD DETRACT FROM THE OTHER FUNDING THAT WE HAVE AVAILABLE. WE ARE COMING TO THE END. AND AS WE GO FORWARD, WE'RE GOING TO HAVE TO MAKE HARDER AND HARDER DECISIONS, AND I THINK WE REALLY NEED TO DO THAT NOW. THANK YOU.

MR. SHEEHY: SO HERE WE ARE. THERE IS A MOTION ON THE TABLE. IF YOU WANT TO WITHDRAW THAT MOTION AND THEN MAKE ANOTHER MOTION.

CHAIRMAN THOMAS: OKAY. I'LL WITHDRAW THAT MOTION.

MR. SHEEHY: DOES THE SECOND AGREE WITH THAT? I DON'T REMEMBER WHO THE SECOND IT.

DR. JUELSGAARD: I DO, YES.

MR. SHEEHY: THAT MOTION IS WITHDRAWN.

SO YOU WANT TO MAKE ANOTHER MOTION TO SUBSTITUTE? YOU ACTUALLY KIND OF WITHDREW WHAT I THOUGHT I REALLY WOULD LIKE TO FUND PERSONALLY THIS ONE APPLICATION THAT WE'VE HEARD ABOUT TODAY. I WOULD BE HAPPY TO PROPOSE TO FUND THE REST IN THE NEXT CYCLE, BUT I THINK THE NEED IS PRETTY DESPERATE RIGHT NOW FOR CHROMATIN 22Q11 DELETION SYNDROME.

DR. JUELSGAARD: SO I HAVE A SPLIT-THE-BABY-LIKE PROPOSAL, WHICH IS WE HAVE TWO PROJECTS THAT WE'VE TALKED ABOUT, PULMONARY FIBROSIS AND THIS DELETION SYNDROME, BOTH FROM MY POINT OF VIEW SOUND VERY WORTHY OF FUNDING, BUT WE COULDN'T FUND BOTH OF THEM RIGHT NOW. HOWEVER, WE COULD APPROVE BOTH OF THEM AND SIMPLY PUT ONE OF THE TWO THAT WE APPROVE ON THE SLOWER PAYMENT TRACK. IN OTHER WORDS, WHATEVER FUNDING WE APPROVE NEXT YEAR, THAT FIRST DOLLAR IS FOR THE PROJECT THAT WE DON'T HAVE ENOUGH MONEY FOR TODAY. SO INSTEAD OF APPROVING ALL OF THE ONES THAT ARE ON THIS LIST OF 15, WE STAY WITH WHAT WE'VE APPROVED, AND THEN APPROVE TWO, PULMONARY FIBROSIS, THE DELETION SYNDROME, REALIZING THAT SOME OF NEXT YEAR'S MONEY IS GOING TO BE PUT TO ONE OF THOSE PROJECTS. SO I

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WOULD INTRODUCE THAT AS A MOTION.

CHAIRMAN THOMAS: QUESTION ON THAT. MR. JUELSGAARD, I DON'T KNOW HOW LONG THESE PROJECTS TAKE TO PLAY OUT. WE CAN ASK DR. SAMBRANO. WHAT'S THE LENGTH OF --

DR. SAMBRANO: THE AWARDS ARE TWO YEARS.

CHAIRMAN THOMAS: SO IF YOU WERE TO ADOPT YOUR APPROACH, IN THEORY, SINCE WE'RE SPLITTING BABIES HERE, YOU COULD FUND HALF OF EACH AND GET THEM STARTED SINCE THEY'RE TWO-YEAR AWARDS ANYWAY. NO, CAN'T DO IT?

DR. JUELSGAARD: THE OTHER POSSIBILITY, AND I'D HAVE TO ASK SOMEBODY, THE PERSON FROM STANFORD THAT SPOKE A LITTLE BIT AGO, BECAUSE AT LEAST IN CERTAIN SITUATIONS IN ACADEMIA OR IN THE RESEARCH AREA, IF YOU HAVE ASSURANCE OF FUNDING THAT'S COMING DOWN THE ROAD, THE INSTITUTION IS ASSURED THAT FUNDING IS COMING, IT'S JUST NOT COMING AS QUICKLY AS YOU LIKE, SOMETIMES INSTITUTIONS WILL FRONT THE MONEY, PROVIDE YOU SOME FUNDING TO GET YOU UP AND RUNNING, AND THEN GET RECOMPENSED FOR THAT WHEN THE ACTUAL FUNDING COMES THROUGH. IF THAT'S TRUE, AND I DON'T KNOW IF IN EITHER OF THESE CASES IT IS TRUE, THAT'S ONE WAY OF NOT HAVING TO WORRY ABOUT THE TIMING INTERVAL. THE INITIAL FUNDING

WOULD ACTUALLY COME FROM THE INSTITUTION FOR THE RESEARCH THAT'S BEING DONE, AND THEN THERE WOULD BE A MAKEUP THAT HAPPENS WHEN MONEY BECOMES AVAILABLE FROM CIRM GOING BACK TO THE INSTITUTION WHERE THE MONEY IS ALREADY INVESTED.

DO YOU KNOW WHETHER THAT'S A POSSIBILITY -- I'M SORRY. I DON'T REMEMBER YOUR NAME. IS THAT A POSSIBILITY AT STANFORD?

DR. WEINACHT: WHAT IS THE TIMELINE IN WHICH WE THINK THE FUNDING WOULD BECOME AVAILABLE?

DR. JUELSGAARD: MY UNDERSTANDING, AND I COULD BE CORRECTED, BUT IF WE DO WHAT I PROPOSE, THE ADDITIONAL MONEY WOULD BECOME AVAILABLE JANUARY 1ST. SO WE'RE TALKING ABOUT FIVE MONTHS FROM NOW, SO A RELATIVELY COMPRESSED TIME PERIOD.

DR. WEINACHT: SO IF THE MONEY WAS ASSURED, BUT IT WAS ASSURED TO COME IN JANUARY, WOULD THE INSTITUTION? I THINK PROBABLY.

DR. JUELSGAARD: THANK YOU.

MR. TOCHER: I'D LIKE TO MAKE A COMMENT FROM A PROCESS STANDPOINT. WHILE THE SUBCOMMITTEE MEETING TODAY CAN URGE YOUR COLLEAGUES AT THE BOARD MEETING WHEN IT DETERMINES ITS BUDGET TO MAKE THIS ALLOCATION SPECIFIC FOR CERTAIN AWARDS, IT CANNOT BE, TO THE EARLIER COMMENT, GUARANTEED THAT THAT

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WOULD TAKE PLACE. SO I JUST WANT TO MAKE SURE THAT WE DON'T OVERASSURE SOMETHING THAT IS STILL UP TO THE VOTE OF THE BOARD WHEN IT MAKES BUDGETARY ALLOCATIONS.

DR. JUELSGAARD: HAVING SAID THAT, SCOTT, I THINK THE NUMBER OF VOTES THAT ARE BEING COUNTED TODAY, IF EVERYBODY WERE TO AGREE TO WHAT WE'RE SAYING RIGHT NOW, IF THE VOTES STAYED THE SAME AS THEY ARE TODAY, IT WOULD BE DE FACTO APPROVED OR EVEN DE JURE APPROVED.

MR. TOCHER: I UNDERSTAND. I JUST DIDN'T WANT PEOPLE TO MISCONSTRUE THE WORD "GUARANTEE" IN ANY SORT OF LEGAL SENSE THAT THIS WAS BINDING ON A LATER ACTION OF THE BOARD.

DR. MARTIN: I DID NOT UNDERSTAND THAT. WOULD YOU REPEAT THAT CONSTRAINT?

MR. TOCHER: SURE. WHAT I WAS POINTING OUT IS THERE WAS A QUESTION RAISED ABOUT WHETHER OR NOT THE SUBCOMMITTEE COULD GUARANTEE THAT AT A FUTURE MEETING THE ADDITIONAL FUNDS WOULD BE ALLOCATED FOR ADDITIONAL AWARDS BEYOND WHAT IS BUDGETED FOR TODAY. AND I JUST WANTED TO EMPHASIZE THE LEGAL POINT, THAT A VOTE, WHILE ALL OF THE STATEMENTS THAT DR. JUELSGAARD MADE ARE TRUE, IS NOT LEGALLY BINDING ON THE BOARD WHEN IT NEEDS TO MAKE A

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FURTHER BUDGET DECISION, THAT IT WOULD STILL BE UP TO THE FULL BOARD'S DISCRETION.

DR. MARTIN: THANK YOU. I THINK THAT'S AN IMPORTANT CONSIDERATION.

I HATE TO PROPOSE THIS, BUT I WOULD SPLIT THE BUCKET, NOT SPLITTING BABIES ANYMORE, BUT SPLIT THE BUCKET, AND I WOULD FUND HALF OF, EACH OF THESE HALF, PERIOD, AND ENCOURAGE THEM, THE GRANTEES, TO FIND FUNDING FOR THE OTHER HALF ELSEWHERE AND/OR REAPPLY NEXT YEAR. I THINK THAT'S A CLEAR PROCESS. CERTAINLY CIRM IS NOT THE ONLY SOURCE OF FUNDING FOR THESE IMPORTANT PROJECTS, AND MATCHING FUNDS FROM INSTITUTIONS ARE CERTAINLY ONE OF THE OTHER OPPORTUNITIES.

CHAIRMAN THOMAS: DAVE, I RESPECTFULLY, IF WE'RE GOING TO BE SPLITTING ANYTHING, I'D RATHER FUND HALF NOW AND HALF AT THE BEGINNING AND NOT LEAVE THE APPLICANTS HANGING TO EITHER WHERE THEY'RE GOING TO GET THE BALANCE OR HAVING TO WAIT TILL NEXT JUNE TO REAPPLY. THANK YOU.

MR. TOCHER: JUST A SUGGESTION. I'M TOLD WE'RE ON THE VERGE OF LOSING QUORUM. ONE THING -- ONE OTHER OPTION TO CONSIDER IS WE TRY TO DISPOSE OF WHAT YOU CAN WITHIN THE BUDGET TODAY. THE NEXT FULL BOARD MEETING IS ACTUALLY SCHEDULED FOR OCTOBER.

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ONE COULD AGENDIZE A BUDGET AUGMENTATION AND NOT WAIT UNTIL JANUARY FOR THE BROADER DISCUSSION. YOU WOULD HAVE TO KIND OF ADVANCE THAT DISCUSSION. I DON'T PROPOSE TO PRESUME THAT THIS HAS BEEN VETTED INTERNALLY, BUT THAT IS AT LEAST A MORE EXPEDITIOUS OPTION THAN WAITING TILL DECEMBER OR JANUARY.

MR. SHEEHY: WHAT ABOUT IF -- WE HAVE 1.7 MILLION ROUGHLY LEFT. WHY DON'T WE SPLIT THAT BETWEEN THE TWO PROJECTS AND COMMIT TO AGENDIZING THE REMAINDER AT THE NEXT BOARD MEETING?

MR. TOCHER: THE ONLY QUESTION THEN IS, JUST TO PLAY IT OUT, IF FOR SOME REASON IT DIDN'T GO FORWARD, THAT THE ADDITIONAL FUNDS WEREN'T APPROVED ON THESE APPLICATIONS, YOU WOULD ESSENTIALLY HAVE STARTED AN APPLICATION AND THEN HAD TO STOP IT IF THEY WERE UNABLE TO MAKE UP THE SUPPLEMENT FUNDING. SO YOU MIGHT WANT TO MAKE IT CONTINGENT ON THEM BEING ABLE TO TAKE UP THAT FUNDING IN THE EVENT THAT IT WASN'T ULTIMATELY REACHED.

DR. JUELSGAARD: I'D ACTUALLY DO IT DIFFERENTLY. I WOULD DO IT EXACTLY AS JEFF SUGGESTED. NOW IT'S THEN UP TO THE ACADEMIC INSTITUTIONS OR WHOEVER IT IS THAT'S RUNNING THIS WHETHER THEY WANT TO ACCEPT THAT AMOUNT OF MONEY AND PROCEED FORWARD UNDERSTANDING THERE'S SOME RISK.

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ALTHOUGH I PERCEIVE THAT RISK AS MINIMAL, THERE WOULD BE SOME RISK THAT THEY WOULDN'T GET ADDITIONAL FUNDING.

SO IF I WERE THEM, I'D EITHER START AND TAKE A CHANCE THE ADDITIONAL FUNDING WILL SHOW UP, OR I WOULD SIMPLY WAIT TO SEE IF THE ADDITIONAL FUNDING SHOWS UP. THOSE WOULD BE THE TWO ROADS I WOULD GO DOWN, BUT I WOULD DO THIS NOW, AND THEN WE'LL TAKE THE NEXT STEP IN OCTOBER.

MR. SHEEHY: THAT MAKES A LOT OF SENSE.

MR. TOCHER: SO THE MOTION WOULD BE TO FUND EACH OF THOSE TWO PROJECTS HALF OF THEIR BUDGET?

MR. SHEEHY: NO.

MR. TOCHER: ONE-HALF OF ALL THE REMAINING DOLLARS.

MR. SHEEHY: SPLITTING THE REMAINING DOLLARS BETWEEN THE TWO APPLICATIONS. SO THE MOTION IS TO SPLIT THE REMAINING ONE MILLION 730 BETWEEN THE TWO APPLICATIONS, TO APPROVE THE TWO APPLICATIONS, TO SUBMIT -- TO SPLIT THE REMAINING MONEY THAT'S LEFT, THE 1.730, BETWEEN THOSE TWO APPLICATIONS AND THEN TO BRING THE REMAINDER OF EACH APPLICATION TO THE BOARD FOR ADDITIONAL FUNDING AT THE NEXT BOARD MEETING TO COMPLETE THE FUNDING

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REQUEST.

MR. ROWLETT: THAT'S CLEAR AND UNDERSTOOD. THANK YOU, JEFF.

CHAIRMAN THOMAS: SECOND.

MR. SHEEHY: WE HAVE A SECOND ON THAT.

MR. ROWLETT: I WILL CERTAINLY MAKE A MOTION.

MR. SHEEHY: DO WE HAVE ANY ADDITIONAL COMMENT BY MEMBERS OF THE BOARD? DO WE HAVE ANY ADDITIONAL PUBLIC COMMENT? CAN WE CALL THE ROLL.

MS. BONNEVILLE: STEVE JUELSGAARD.

MR. JUELSGAARD: YES.

MS. BONNEVILLE: DAVE MARTIN.

DR. MARTIN: YES.

MS. BONNEVILLE: LAUREN MILLER.

MS. MILLER: YES.

MS. BONNEVILLE: FRANCISCO PRIETO.

DR. PRIETO: AYE.

MS. BONNEVILLE: ROBERT QUINT.

DR. QUINT: YES.

MS. BONNEVILLE: AL ROWLETT.

MR. ROWLETT: YES.

MS. BONNEVILLE: JEFF SHEEHY.

MR. SHEEHY: YES.

MS. BONNEVILLE: OS STEWARD.

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DR. STEWARD: YES.
MS. BONNEVILLE: JONATHAN THOMAS.
CHAIRMAN THOMAS: YES.
MS. BONNEVILLE: ART TORRES.
MR. TORRES: AYE.
MS. BONNEVILLE: DIANE WINOKUR.
MS. WINOKUR: YES.
MS. BONNEVILLE: THE MOTION CARRIES.
CHAIRMAN THOMAS: GREAT. THANK YOU.
MR. TOCHER: THE REMAINING APPLICATIONS, YOUR MOTION IS WITH RESPECT TO THE TWO THAT YOU SPOKE OF.
CHAIRMAN THOMAS: WHY DON'T WE CONTINUE THE REMAINING APPLICATIONS FOR THE NEXT APPLICATION REVIEW SUBCOMMITTEE? THAT HAPPENS AFTER THE BOARD, AND WE CAN HAVE A DISCUSSION WITH THE BOARD WHETHER OR NOT TO FUND THOSE APPLICATIONS OR NOT.
MS. BONNEVILLE: YOU WANT TO KEEP THESE OPEN UNTIL AUGUST OR UNTIL AFTER OCTOBER?
MR. SHEEHY: AFTER THE OCTOBER MEETING. NOW THAT I'VE HAD EXPERIENCE ON OTHER BODIES, SOME OF THESE CONTINUED THINGS, A NOVEL THING. WE DIDN'T REALLY REACH A CONSENSUS ON WHAT TO DO WITH THE OTHER APPLICATIONS AND LET'S HEAR WHAT THE REST OF THE BOARD BECAUSE THAT WAS A LEGITIMATE AND

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INTERESTING IDEA. WE'RE GOING TO ASK THEM TO FUND THE REMAINDER, WHICH WILL BE, WHAT, ABOUT 600,000 MAYBE OR 700,000 UNLESS MY MATH IS OFF FOR THOSE TWO, AND THEN WE CAN DISCUSS WHETHER THERE'S AN INTEREST IN FUNDING THE REST OF THESE -- PUTTING MONEY IN FOR THE REST OF THESE APPLICATIONS. WE DON'T HAVE TO DISPOSE OF THEM AT THIS TIME. THEY'RE APPLICATIONS WITH MERIT, BUT WE GET THE SEVEN THAT WE WANTED TO GET MOVING FORWARD. WE SHOULD BE ABLE TO GET THE REMAINDER OF THAT FUNDING AT THE NEXT BOARD MEETING, AND THEN WE CAN HAVE A DISCUSSION THERE ON WHAT THEY WANT TO DO ABOUT THE DISCOVERY ROUND FOR NEXT YEAR. AND WE CAN LET MORE MEMBERS OF THE BOARD PARTICIPATE IN THAT DECISION.

CHAIRMAN THOMAS: I THINK THAT'S AN EXCELLENT IDEA, MR. SHEEHY.

MR. SHEEHY: UNLESS SOMEBODY HAS ANY COMMENTS.

DR. STEWARD: I HAVE A QUESTION. AND THIS IS FOR SCOTT. SO DOES THAT MEAN THAT THE NEXT DISCUSSION OF THIS WOULD BE THE APPLICATION REVIEW SUBCOMMITTEE OR THE WHOLE BOARD, OR HOW DOES THAT WORK?

MR. TOCHER: THE FIRST DISCUSSION WOULD BE THE WHOLE BOARD, WHICH WOULD DETERMINE WHETHER OR

NOT TO ALLOCATE ADDITIONAL FUNDS. ASSUMING THAT WAS ANSWERED IN THE AFFIRMATIVE, WE WOULD THEN MEET AS THE APPLICATION REVIEW SUBCOMMITTEE WHO WOULD MAKE DETERMINATION REGARDING THE REMAINDER OF BUDGETS OF THESE TWO APPLICATIONS THAT ARE PARTIALLY FUNDED AND THEN TO DISPOSE OF ONE WAY OR THE OTHER WITH THE REMAINING APPLICATIONS. LIKE TODAY, IT WOULD BE A JOINT MEETING. DOES THAT ANSWER YOUR QUESTION, OS?

DR. STEWARD: YES, IT DID. THANK YOU VERY MUCH.

MR. SHEEHY: OKAY. IS THERE ADDITIONAL PUBLIC COMMENT AT ANY OF THE SITES?

DR. STEWARD: JEFF, THIS IS OS AGAIN. AND I WONDER -- I THINK THAT THE MOTION AS IT CURRENTLY STANDS IS A TWO-PART MOTION, WHICH IS TO FUND THESE TWO POTENTIALLY AT HALF AND THEN TO DEFER THE REST; IS THAT CORRECT?

MR. SHEEHY: THE MOTION IS TO FUND THESE TWO APPLICATIONS WITH THE 1.7 MILLION, WHICH IS ABOUT TWO-THIRDS. THERE'S A REMAINDER OF ABOUT ONE MILLION THAT WE WILL BE REQUESTING THE BOARD TO FUND TO FINISH COMPLETING THE FUNDING FOR THE AWARDS. AT THAT SAME BOARD, WE HAVE CONTINUED THE REMAINDER OF THE APPLICATIONS, AND WE WILL HEAR AT THE BOARD, WE WILL AGENDA THE BOARD THE DISCUSSION OF WHETHER THEY

WANT TO PUT IN ADDITIONAL MONEY FOR THESE APPLICATIONS BECAUSE IT WILL HAVE AN IMPACT ON NEXT YEAR'S BUDGET. AND THAT SHOULD BE A FULL BOARD DISCUSSION. IF THEY DON'T WANT TO PUT ANY ADDITIONAL MONEY IN, THEN THAT'S THAT. IF THEY DO DECIDE TO PUT IN ADDITIONAL MONEY, THEN WE CAN HAVE A VOTE AT THE APPLICATION REVIEW SUBCOMMITTEE. THESE REMAINING AWARDS ARE NOT FUNDED AS OF THIS MEETING. THEY'RE CONTINUED. DOES THAT MAKE SENSE?

DR. STEWARD: IT DOES MAKE SENSE, BUT I WANT TO JUST SAY THAT I WILL BE IN FAVOR OF YES FOR FUNDING THESE TWO AT HALF. I'M NOT IN FAVOR OF THE CONTINUATION SIMPLY BECAUSE, AGAIN, I RAISED A POINT THAT I THINK WE NEED TO START IMPOSING DISCIPLINE ON OURSELVES AND MAKING THE HARD DECISIONS THAT WE KNOW ARE GOING TO NEED TO BE MADE. SO I WOULD NOT VOTE FOR THE SECOND PART OF THAT MOTION IF IT'S PART OF THE MOTION. IF IT'S NOT A VOTE INVOLVED, THAT'S FINE. THANK YOU.

MR. SHEEHY: THERE'S NOT A VOTE INVOLVED. IT'S ACTUALLY AT THE DISCRETION OF CHAIRMAN THOMAS TO AGENDA THE ITEM, WHICH I THINK HE INTENDS TO AGENDA.

CHAIRMAN THOMAS: CORRECT.

DR. CHANG: HI. I'M ALAN CHANG. I'M ONE

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OF THE PHYSICIAN SCIENTISTS FROM STANFORD. I'M HERE TO ADVOCATE FOR MY GRANT 11199. IT'S A VERY COMMON DISEASE. IT AFFECTS ABOUT HALF A BILLION WORLDWIDE AND TWO MILLION CALIFORNIANS, AND THERE'S VERY LITTLE FUNDING FOR IT. I WAS PREVIOUSLY FUNDED BY CIRM TO BASICALLY ESTABLISH THE MODEL AND THE PRELIMINARY DATA TO ALLOW ME TO APPLY WHAT I PUT TOGETHER RIGHT NOW.

IT'S STILL A VERY COMMON PROBLEM THAT AFFECTS US DAY-TO-DAY COMMUNICATION TO OUR EMOTIONAL STATUS, SOCIAL STATUS. AND IN KIDS, THEY CANNOT HAVE SPEECH IF THEY DON'T HAVE HEARING. ACTUALLY HAD A MOM WHO HAD BEEN WAITING FOR TREATMENT ON THE PHONE, AND HER CHILD ACTUALLY LOST HEARING, THAT WE HAVE TO PUT A COCHLEAR IMPLANT IN JUST A FEW WEEKS AGO. RIGHT NOW THERE IS NO BIOLOGICAL TREATMENT. YOU CAN ONLY USE HEARING AIDS. IF THERE'S NO HEARING, THEN WE HAVE TO USE COCHLEAR IMPLANTS.

I THINK WE HAVE A VERY NICE AND EXCITING PROGRAM THAT I THINK WILL MAKE A BIG DIFFERENCE TO OUR PATIENTS IN CALIFORNIA. SO I HOPE I CAN GET YOUR SUPPORT ON OUR PROGRAM.

MS. CHEUNG: WE HAVE SOMEONE ON THE PHONE. NEAL, WE'RE PUTTING YOU THROUGH IF YOU'RE STILL THERE.

DR. SIEGEL: I AM. THIS IS NEAL SIEGEL. I'M AT UCS. I'M ADVOCATING FOR THE GRANT 11183, A SCREEN FOR DRUGS TO PROTECT AGAINST CHEMOTHERAPY-INDUCED HEARING LOSS. LET ME START BY EXPLAINING THE SCOPE OF THE PROBLEM.

THIS IS PLATIN-BASED CHEMOTHERAPY IS THE TREATMENT OF CHOICE FOR MANY PEDIATRIC CANCERS, SUCH AS NEUROBLASTOMA, AND IT HAS A HIGH SUCCESS RATE, GREATER THAN 80 PERCENT. HOWEVER, IT ALSO HAS SEVERE SIDE EFFECTS INCLUDING PROFOUND HEARING LOSS IN OVER 60 PERCENT OF THOSE SURVIVORS. WHILE ADULT CANCER SURVIVORS ALSO EXPERIENCE SIGNIFICANT HEARING LOSS, IT IS PARTICULARLY A PROBLEM IN YOUNG CHILDREN, MANY OF WHOM HAVE NOT LEARNED TO SPEAK. THUS, LEADING TO DELAYS IN LANGUAGE ACQUISITION AND COGNITIVE DEVELOPMENT EVEN WITH INTENSIVE THERAPY.

LET ME ALSO SAY THAT TO DATE CIRM HAS PROVIDED THREE HEARING LOSS GRANTS IN ITS HISTORY WHILE FUNDING 25 OR MORE GRANTS RELATED TO BLINDNESS. SO IT'S AN UNDERSERVED GROUP. DEAFNESS IS CAUSED BY THE HYPERSENSITIVITY OF THE SENSORY HAIR CELLS OF THE INNER EAR, TO ENVIRONMENTAL STRESS LIKE THESE PLATINATED CHEMOTHERAPY AGENTS; AND WHEN HAIR CELLS DIE, THEY DO NOT REGENERATE AS DR. CHANG JUST MENTIONED. CURRENTLY THERE ARE NO PROTECTIVE

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DRUGS AVAILABLE TO AMELIORATE THE SIDE EFFECTS THAT ACCOMPANY THIS LIFESAVING TREATMENT. AN ADJUVANT DRUG THERAPY THAT CAN BE ADMINISTERED ALONG WITH CISPLATIN TO PROTECT HEARING WOULD BE VERY WELCOME.

HAIR CELLS HAVE LONG BEEN KNOWN TO BE HYPERSENSITIVE TO THESE CHEMOTHERAPY AGENTS, AND WE HAVE RECENTLY BEEN SUCCESSFUL IN USING A DIRECT LINEAGE REPROGRAMMING APPROACH TO GENERATE LARGE NUMBERS OF THESE HAIR CELLS FROM MOUSE FIBROBLASTS USING A COCKTAIL OF TRANSCRIPTION FACTORS AND IN PILOT STUDIES HAVE USED THIS SAME COCKTAIL OF TRANSCRIPTION FACTORS TO INDUCE HUMAN IPS CELLS DERIVED FIBROBLASTS TO BECOME HAIR CELL-LIKE. WITH THIS PROCESS, THESE INDUCED HAIR CELLS HAVE PROPERTIES EXTREMELY SIMILAR TO NORMAL HAIR CELLS, INCLUDING THE HYPERSENSITIVITY TO CHEMOTHERAPY AGENTS.

SO OUR PROPOSAL TO CIRM IS TO PRODUCE A HIGH THROUGHPUT SCREEN TO DISCOVER DRUGS THAT ARE ABLE TO PROTECT HAIR CELLS DURING LIFESAVING CHEMOTHERAPY. AS I MENTIONED, CIRM HAS PREVIOUSLY FUNDED ONLY THREE HEARING LOSS GRANTS, AND SO I BELIEVE THIS IS PARTLY A REFLECTION OF THE PAUCITY OF STEM CELL APPROACHES FOR STUDYING HEARING LOSS IN HUMANS. OUR NEW DIRECT LINEAGE REPROGRAMMING

APPROACH USING HUMAN INDUCED HAIR CELLS FOR DRUG DISCOVERY PROMISES TO OVERCOME THESE PROBLEMS AND I THINK DESERVE CIRM'S FURTHER CONSIDERATION.

I'D ALSO LIKE TO SAY THAT, WHILE I REALIZE THE DIFFICULTY THAT THE BOARD HAS AND THE DISCIPLINE THAT DR. STEWARD SUGGESTS IS NEEDED FOR MAKING THESE DECISIONS, THE PROCESS OF MAKING THOSE DECISIONS IS A LITTLE FRUSTRATING LISTENING TO THIS OVER THE PHONE GIVEN THAT ALL DECISIONS HAVE ALMOST BEEN MADE BEFORE YOU'VE HEARD THESE PUBLIC COMMENTS. THANK YOU.

MR. SHEEHY: THANK YOU.

MS. CHEUNG: ONE MORE FROM THE PREVIOUS GRANT. LENA, WE'RE GOING TO PUT YOU THROUGH SHORTLY. ONE SECOND. WE'RE JUST PUTTING YOU THROUGH NOW. CAN YOU HIT STAR ONE ON YOUR PHONE PLEASE, LENA? YOU CAN GO AHEAD AND SPEAK, LENA.

LENA: MY NAME IS LENA, AND I AM A MOTHER OF A CHILD WITH HEARING LOSS. HER HEARING LOSS IS GENETIC. AND, YOU KNOW, IT WAS LIFECHANGING WHEN WE DISCOVERED THAT OUR DAUGHTER HAD A HEARING LOSS ESPECIALLY BECAUSE WE START LOOKING FOR ALTERNATIVES. AND THERE'S NO CURE FOR THAT. AND, YOU KNOW, THE ONLY OPTION THAT WE HAVE WAS HEARING AIDS. AND RIGHT NOW WE'RE LOOKING AT -- SHE HAS A

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COCHLEAR IMPLANT RECENTLY.

IT'S BEEN REALLY TOUGH. IT'S A TOUGH JOURNEY JUST TO SEE A CHILD. IT STARTS WITH A BABY, AND THEN IT'S GOING TO HAVE THIS FOR HER WHOLE LIFE. AND HER HEARING LOSS IS GENETIC. SO IT'S TOUGH FOR PARENTS THAT HAVE MORE KIDS, MORE THAN ONE KID WITH HEARING LOSS. AND WE REALLY HOPE THAT IN THE FUTURE WHEN MY DAUGHTER DECIDES TO HAVE KIDS, THERE WILL BE A CURE FOR HER FAMILY AND NOT HAVE THE WORRY AS WE DID WITH HER WHEN SHE WAS A BABY AND ALL OF THAT.

AND I WOULD LIKE TO SHARE THAT IT'S BEEN TOUGH NOT ONLY FOR THE CHILD, BUT ALSO FOR THE FAMILY. THIS IS A JOURNEY THAT IS TOUGH FOR THE WHOLE FAMILY, AND IT AFFECTS THE WHOLE FAMILY. WE'RE, LIKE, IN THIS TOGETHER, AND IT'S REALLY HARD. I WILL LOVE TO SEE THERE'S FUNDING FOR THIS JUST TO FIND A CURE BECAUSE, LIKE US, IT IS GENETIC, BUT THERE'S SO MANY KIDS OUT THERE WITH A HEARING LOSS, AND ALL OF THEM ARE DIFFERENT REASONS FOR THEIR HEARING LOSS. AS A PARENT, IT IS HARD. AND IT IS AMAZING UNTIL YOU ARE IN OUR SHOES TO SEE THAT CALIFORNIA HAS SO MANY KIDS WITH HEARING LOSS. AND IT WILL BE REALLY, REALLY WONDERFUL TO FIND A CURE FOR THESE KIDS. THESE KIDS ARE THE FUTURE OF THIS COUNTRY, AND WE JUST WANT THE BEST FOR THEM.

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MR. SHEEHY: THANK YOU. SO NO ADDITIONAL PUBLIC COMMENT OR BUSINESS BEFORE THE APPLICATION REVIEW SUBCOMMITTEE? THAT CLOSES THIS APPLICATION REVIEW SUBCOMMITTEE, AND IT IS THEN NOW BACK TO YOU, CHAIRMAN THOMAS.

CHAIRMAN THOMAS: THANK YOU, MR. SHEEHY. IS THERE ANY PUBLIC COMMENT ON ANY TOPIC INCLUDING ANYTHING ABOVE AND BEYOND THAT RELEVANT TO TODAY'S APPLICATION REVIEW SUBCOMMITTEE MEETING? HEARING NONE, THAT CONCLUDES OUR AGENDA, AND THANK YOU, EVERYBODY, FOR YOUR PARTICIPATION AS ALWAYS. WE STAND ADJOURNED.

(THE MEETING WAS THEN ADJOURNED AT 1:03 PM.)

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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 TELEPHONIC PROCEEDINGS BEFORE THE INDEPENDENT CITIZEN'S OVERSIGHT COMMITTEE AND THE APPLICATION REVIEW SUBCOMMITTEE OF THE CALIFORNIA INSTITUTE FOR REGENERATIVE MEDICINE IN THE MATTER OF ITS REGULAR MEETING HELD ON JULY 19, 2018, WAS HELD AS HEREIN APPEARS AND THAT THIS IS THE ORIGINAL TRANSCRIPT THEREOF AND THAT THE STATEMENTS THAT APPEAR IN THIS TRANSCRIPT WERE REPORTED STENOGRAPHICALLY BY ME AND TRANSCRIBED BY ME. I ALSO CERTIFY THAT THIS TRANSCRIPT IS A TRUE AND ACCURATE RECORD OF THE PROCEEDING.

BETH C. DRAIN, CA CSR 7152
133 HENNA COURT
SANDPOINT, IDAHO
(208) 255-5453