BEFORE THE
SCIENTIFIC AND MEDICAL FACILITIES WORKING GROUP OF THE
INDEPENDENT CITIZENS' OVERSIGHT COMMITTEE
TO THE CALIFORNIA INSTITUTE FOR REGENERATIVE MEDICINE
ORGANIZED PURSUANT TO THE
CALIFORNIA STEM CELL RESEARCH AND CURES ACT

PUBLIC INFORMATIONAL MEETING REGARDING FUTURE FACILITIES REQUEST FOR APPLICATIONS

LOCATION: STATE BOARD OF EQUALIZATION
BOARD ROOM
450 N. STREET
SACRAMENTO, CALIFORNIA

DATE: JUNE 11, 2007
1 P.M.

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

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SACRAMENTO, CALIFORNIA; MONDAY, JUNE 11, 2007

01:12 PM

CHAIRMAN LICHTENGER: I'D LIKE TO CALL THE MEETING TO ORDER. I'M DAVID LICHTENGER, AND I'M THE CHAIR OF THE SCIENTIFIC AND MEDICAL FACILITIES WORKING GROUP OF THE CALIFORNIA INSTITUTE OF REGENERATIVE MEDICINE. ALSO IN ATTENDANCE ARE THE WORKING GROUP MEMBERS MARCY FEIT, JEFF SHEEHY, AND ED KASHIAN.

THE PURPOSE OF TODAY'S MEETING IS TO RECEIVE INFORMATION ON THE PROPOSED FUTURE FACILITIES GRANTS IDENTIFIED IN CIRM'S SCIENTIFIC STRATEGIC PLAN. THAT PLAN CALLS FOR $222 MILLION TO BE EXPENDED ON NEW FACILITIES IN SUPPORT OF CIRM OBJECTIVES. THIS IS A SUBSTANTIAL AMOUNT OF FUNDS, AND THE WORKING GROUP HAS DECIDED TO HOLD FOUR INFORMATIONAL MEETINGS THROUGHOUT THE STATE TO PROVIDE THE OPPORTUNITY FOR INTERACTION WITH THE PUBLIC AND WITH APPLICANTS REGARDING FUTURE GRANT PROGRAMS.

THE MEETING WILL BE IN TWO PARTS. FIRST, WE'LL HEAR FROM SOME OF THE POTENTIAL APPLICANTS FOR THESE GRANT FUNDS. WE HAVE FOUR INSTITUTIONS THAT HAVE SIGNED UP TO PROVIDE AN OVERVIEW OF THEIR FACILITIES NEEDS AND OFFER THE WORKING GROUP THEIR PERSPECTIVE ON WHAT CRITERIA ARE MOST IMPORTANT TO BE CONSIDERED.

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THE PRESENTATIONS IN THIS FIRST SESSION WILL BE LIMITED TO TEN MINUTES, PLEASE. OUR STAFF WILL GIVE THE SIGNAL WITH ONE MINUTE TO GO AND ASK SPEAKERS TO COMPLETE THEIR REMARKS WITHIN THE ALLOTTED TIME SO THAT WE HAVE SUFFICIENT TIME TO HEAR FROM EVERYONE WHO WANTS TO BE HEARD. THE WORKING GROUP MAY ASK QUESTIONS OF THE PRESENTERS AND FOLLOW UP WITH THEM.

I'LL MANAGE THE TIME FOR THAT, BUT I DON'T EXPECT TO SPEND MORE THAN FIVE OR TEN MINUTES ON EACH OF THE FOLLOW-UP PRESENTATIONS.

THE SECOND PART OF THE MEETING WE'LL HEAR FROM ANYONE WHO WISHES TO SPEAK ON THE ISSUE OF THE LARGE FACILITIES GRANTS. OF PARTICULAR INTEREST TO THE WORKING GROUP ARE THE TOPICS THAT WERE DISTRIBUTED AS PUBLIC INFORMATION MEETING AGENDA. THESE COMMENTS WILL BE LIMITED TO THREE MINUTES. SPEAKERS NEED TO IDENTIFY THEMSELVES AND ANY AFFILIATION, AND YOU WILL BE ADVISED BY STAFF WHEN THE TIME IS UP. AND, AGAIN, I'D LIKE TO ASK THE SPEAKERS TO COMPLETE THE PRESENTATION ON TIME. WORKING GROUP MEMBERS THEN WILL HAVE THE OPPORTUNITY TO ASK QUESTIONS OF THOSE SPEAKERS. AGAIN, I'LL GAUGE HOW MUCH TIME WE CAN SPEND ON EACH QUESTION AND DISCUSSIONS TO KEEP US ON TIME.

ANYONE SPEAKING TODAY MAY ALSO SUBMIT WRITTEN MATERIALS AS WELL.

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WITH THAT, I'LL ASK STAFF TO ANNOUNCE THE FIRST SPEAKER AND INVITE THEM TO THE PODIUM. ALSO MEMBER HYSEN HAS JOINED US.

MR. KELLER: GOOD AFTERNOON. FIRST PRESENTER TODAY IS FROM THE UNIVERSITY OF CALIFORNIA IRVINE, HANS KEIRSTEAD, INTERIM CO-DIRECTOR OF THE SUE AND BILL GROSS STEM CELL RESEARCH CENTER, DEPARTMENT OF ANATOMY AND NEUROBIOLOGY.

DR. KIERSTEAD: WELL, GOOD MORNING. I HAVE PROVIDED A HANDOUT. WE WON'T BE GOING THROUGH THE ENTIRE HANDOUT, I ASSURE YOU. IF YOU'D LIKE TO FOLLOW ALONG, YOU MAY.

I'D LIKE TO JUST BEGIN BY EXPRESSING MY SINCERE THANKS AND CONGRATULATIONS TO THIS BODY, TO CIRM IN GENERAL, FOR TAKING THE INITIATIVE TO ENGAGE THE SCIENTIFIC COMMUNITY. I THINK IT WAS A VERY SMART THING TO DO. THIS IS GOING TO BRING A LOT OF CLARITY TO THE PROCEDURE AND REALLY ALIGN THE EXPECTATIONS OF THE PUBLIC AND THE SCIENTISTS. THANK YOU FOR THAT.

I'D LIKE TO BEGIN ON SLIDE TWO BY JUST UNDERSCORING OUR URGE TO HAVE CIRM SUPPORT STEM CELL BUILDINGS IN GENERAL. THE STATE OF CALIFORNIA BUILDS BUILDINGS IN PROPORTION TO THE NUMBER OF STUDENTS ON CAMPUSES AS WELL AS TO SCIENTIFIC NEEDS, THIS LATTER POINT IN RECOGNITION OF THE ROLE OF THE STATE IN

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LEADING RESEARCH ON A NATIONAL SCALE. SO I'D URGE CIRM TO FOLLOW THAT EXAMPLE IN LEADING THE NATION IN THIS EMERGING DISCIPLINE.

BUILDINGS SHOULD BE PROVIDED WHERE CIRM MONEY HAS GONE AND WHERE CIRM MONEY IS ANTICIPATED TO GO. ADEQUATE SPACE IS NOT CURRENTLY AVAILABLE FOR THAT RESEARCH. BUILDINGS ARE GOING TO ALLOW US A GREATER OPPORTUNITY TO LEVERAGE FOR FEDERAL DOLLARS WHEN WE ANTICIPATE THEM BECOMING AVAILABLE IN THE FUTURE. AND AS HAS BEEN STRESSED IN OTHER PRESENTATIONS, A CENTRALIZED LOCATION ON CAMPUS IS REALLY GOING TO SOLIDIFY AND QUICKEN THE INTERACTION BETWEEN CLINICIANS AND BASIC RESEARCHERS.

ON SLIDE 3, I'D LIKE TO UNDERSCORE THE POINT THAT CENTERS SHOULD REALLY BE BUILT AT UNIVERSITIES WITH STRONG HUMAN EMBRYONIC STEM CELL PROGRAMS. I CAN'T UNDERSCORE THIS ENOUGH. STEM CELL RESEARCH REQUIRES A GREAT DEAL OF INFRASTRUCTURE. IRB'S, ESCRO'S, IACUC'S, THEY'RE NO SMALL MATTER TO PUT TOGETHER. ACCREDITED ANIMAL RESEARCH PROGRAMS CAN TAKE YEARS TO PUT INTO PLACE, I UNDERSTAND, AND ENVIRONMENTAL HEALTH AND SAFETY EXPERTS. BUT MOST IMPORTANTLY, UNIVERSITIES HOUSE THE NEXT GENERATION OF RESEARCHERS, SO TO PROVIDE THEM WITH A SHINING EXAMPLE, A HOUSE IN WHICH TO INTERACT WITH COLLEAGUES AND

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UNDERTAKE BOTH BASIC AND TRANSLATIONAL RESEARCH, I THINK IS ABSOLUTELY CRITICAL. SO WE WOULD STRESS THAT THE BUILDINGS BE PLACED AT UNIVERSITIES WITH STRONG PROGRAMS IN THESE RELATED FIELDS.

ON SLIDE FOUR WE'D LIKE TO URGE CIRM TO CONSIDER SEVERAL POINTS WITH REGARDS TO THE DISTRIBUTION OF THE BUILDINGS. THE BUILDINGS SHOULD BE BUILT WHERE THE LEVERAGE IS GREATEST. FIRST AND FOREMOST, LEVERAGE MEANS A CRITICAL MASS OF STEM CELL RESEARCHERS, PREFERABLY HUMAN EMBRYONIC STEM CELL RESEARCHERS. LEVERAGE MEANS INSTITUTIONAL SUPPORT OF RESOURCES, WHICH CAN BE TREMENDOUSLY BURDENSOME FOR EMERGING INSTITUTES. AND LEVERAGE MEANS REAL COLLABORATIONS, REAL COLLABORATIONS, WITH INDUSTRY PARTNERS.

SO, FOR EXAMPLE, AT THE UNIVERSITY OF CALIFORNIA IRVINE, WE'RE RECRUITING 80 FACULTY AS OUR GROWTH OVER THE NEXT TWO YEARS. AND WITH THE AVERAGE COST OF FACULTY BEING ABOUT $2 MILLION, THAT'S AN EXAMPLE THAT CAN BE DOCUMENTED TO POINT TO INSTITUTIONAL COMMITMENT. I THINK WITHOUT THAT EXAMPLE, A HARD DOCUMENT THAT ONE CAN POINT TO, IT'S VERY DIFFICULT TO GAUGE GROWTH IN THE FUTURE. SO WE'D URGE THAT THE BUILDINGS GO WHERE THERE ARE RESEARCHERS AND WHERE THERE'S LIKELY TO BE RESEARCHERS.

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ON SLIDE NO. 5 WE'D URGE CIRM TO CONSIDER PUTTING BUILDINGS NEAR POPULATION CENTERS, SO THAT ADDRESSES BOTH ACCESS AND ACCOUNTABILITY. SCIENTISTS AND THE PUBLIC ARE ENTITLED TO THE OUTCOMES OF THIS RESEARCH. SO CONSIDERING POPULATIONS, POPULATION GROWTH, PROXIMITY TO AIRPORTS, I THINK THAT TYPE OF INFORMATION IS VERY CRITICAL IN THE RFA.

ON SLIDE NO. 6, ONE OF THE MORE IMPORTANT ISSUES, THE DISTRIBUTION OF BUILDINGS SHOULD BE MADE IN CONSIDERATION OF PROXIMITY TO THE NEIGHBORS WITH SMALLER BUT SIGNIFICANT PROGRAMS. UCI, FOR EXAMPLE, IS VERY CLOSE TO RIVERSIDE, ONE OF THE LARGEST GROWTH COUNTIES IN THE STATE. YOU MIGHT WANT TO LOOK AT THE NEIGHBORS OF THE APPLICANTS AND DECIDE WHO IS THAT BUILDING GOING TO SERVE. THAT WOULD BE ONE OF OUR STRONG RECOMMENDATIONS.

SLIDE NO. 7, BUILDINGS SHOULD BE BUILT WHERE REAL COLLABORATIONS EXIST WITH INDUSTRY PARTNERS IN THE STEM CELL FIELD, PREFERABLY THE HUMAN EMBRYONIC STEM CELL FIELD. UCI MAINTAINS VERY PRODUCTIVE COLLABORATIONS WITH GERON, FOR EXAMPLE, WITH WHOM WE ANTICIPATE RUNNING THIS NATION'S FIRST HUMAN EMBRYONIC STEM CELL CLINICAL TRIAL. WE MAINTAIN ACTIVE COLLABORATIONS WE CAN POINT TO AND DOCUMENT WITH PRIMEGEN, INVITROGEN, LIFELINE, STEM CELLS, INC.

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THIS EVIDENCE OF INDUSTRY COLLABORATIONS IS SOMETHING THAT CAN BE DOCUMENTED AND UNDERSCORES REALLY A RETURN TO THE PUBLIC OF THE MONEY THAT WE HAVE ALL AND YOU HAVE INVESTED IN BASIC RESEARCH. WE RECOMMEND THAT YOU INSIST UPON CLEAR EVIDENCE OF INDUSTRY COLLABORATIONS IN THE WAY OF MTA'S, MOU'S, AND COLLABORATIVE RESEARCH AGREEMENTS. AND I'D RESPECTFULLY ADVISE THIS PANEL THAT THE PATH TO THE CLINIC, ESPECIALLY WITH HUMAN EMBRYONIC STEM CELLS, IS A LOT MORE DIFFICULT AND LONG THAN MOST PEOPLE REALIZE. SO IF THERE ARE NOT EXISTING INDUSTRY COLLABORATIONS AT PRESENT IN ORDER TO COMMERCIALIZE AND TO TAKE RESEARCH TO THE CLINIC, IT'S GOING TO BE A VERY, VERY LONG TIME COMING, AND IT'S GOING TO BE VERY, VERY DIFFICULT TO DO SO IN THE TIME SPAN OF FIVE TO TEN YEARS.

ON SLIDE EIGHT WE SUGGEST THAT PRIORITY BE GIVEN TO THOSE INSTITUTIONS THAT CAN BUILD FACILITIES QUICKLY. THIS IS A TEN-YEAR INITIATIVE. IF IT TAKES FIVE YEARS TO BUILD A BUILDING, THIS MAY GO BEYOND THE DURATION OF THE SUPPORT. AND WE RECOMMEND THAT CIRM CONSIDER THE HISTORY OF SPEED TO BUILDING COMPLETION FOR EACH APPLICANT. FOR EXAMPLE, ASSESS THE SPEED TO BUILDING COMPLETION, THE INSTITUTE'S HISTORY IN BUILDING, AND THE PROGRESS THE INSTITUTE HAS MADE WITH THEIR BUILDING UP TO THE TIME OF THE APPLICATION, BUT

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ALSO -- FROM THE RFA TO THE APPLICATION ITSELF. WE RECOMMEND THAT YOU DO WHAT YOU CAN TO REWARD THOSE INSTITUTES WITH SPEED TO BUILDING COMPLETION.

I'D LIKE NOW TO ADDRESS THE SECOND QUESTION POSED BY CIRM, THE CRITERIA FOR STEM CELL RESEARCH AND HOW IT RELATES TO BUILDING REQUIREMENTS. SPEED TO THE CLINIC IS PERHAPS ONE OF THE MOST IMPORTANT CONSIDERATIONS IN THIS REGARD.

THERE ARE FEW ACADEMIC CENTERS IN THE WORLD, LET ALONE THE NATION, THAT UNDERSTAND FDA COMPLIANCE OF PRECLINICAL RESEARCH. AS SPEED TO THE CLINIC IS A PRIORITY OF CIRM AND AN EXPECTATION OF THE PUBLIC, WE'D STRONGLY RECOMMEND THAT CIRM DIRECT BUILDINGS TO INSTITUTIONS WITH A PROVEN TRACK RECORD OF BOTH PRECLINICAL AND CLINICAL TRANSLATION RESEARCH. THIS CAN BE EVIDENCED BY STAFF THAT ARE REGULATORY QUALITY ASSURANCE OFFICERS, CLINICAL COMPLIANCE OFFICERS, AND A HISTORY OF TRANSLATING STEM CELL SCIENCE OR HUMAN EMBRYONIC STEM CELL SCIENCE PREFERABLY.

ON SLIDE TEN WE SUGGEST THAT THE FACILITIES BE GIVEN PRIORITY TO INSTITUTIONS WITH PARTICULAR ELEMENTS OF BASIC RESEARCH, SUCH AS TISSUE CULTURE LABORATORIES FOR DERIVING NEW LINES AND SOMATIC CELL NUCLEAR TRANSFER. THIS TECHNOLOGY OR THESE TECHNOLOGIES ARE GOING TO ALLOW THE BURGEONING OF THE

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NEXT WAVE OF STEM CELL VALUE. BESIDES CELLULAR REPLACEMENT STRATEGIES, PERHAPS AN EVEN MORE VALUABLE TECHNOLOGY THAT'S GOING TO EMERGE IS PATIENT-SPECIFIC CELL LINES. AND THESE TECHNOLOGIES ARE GOING TO ALLOW THAT, HIGH THROUGHPUT SCREENING, DRUG DEVELOPMENT, ETC. VERY, VERY CRITICAL OUTCOMES FROM THE STEM CELL FIELD.

THOSE FACILITIES SHOULD BE IN PLACE AS WELL AS COLLABORATIONS WITH FERTILITY CLINICS THAT SHOULD BE EVIDENCED IN PLACE. WITHOUT COLLABORATIONS OF FERTILITY CLINICS, ACCESS TO THIS MATERIAL MAY TAKE A LONG, LONG TIME. AND THERE'S VERY FEW CENTERS -- THERE'S VERY FEW GOOD ACCREDITED FERTILITY CENTERS. SO I THINK IT'S WORTH LOOKING AT COLLABORATIONS THAT ARE EXISTING.

ON SLIDE 11 WHERE TRANSLATION, THOSE FACILITIES WHERE TRANSLATION IS A PRIORITY, WE RECOMMEND THAT PRIORITY BE GIVEN TO APPLICATIONS THAT INCLUDE CLINICAL FACILITIES WITHIN THE BUILDING AND THE EXPERTISE TO PUT THOSE FACILITIES TO USE. ALTHOUGH FEW HUMAN EMBRYONIC STEM CELL TREATMENTS IN THE PRECLINICAL STAGE EXIST NOW, I THINK EXPERTS AGREE THAT MORE ARE COMING. THUS, IT'S CRITICAL THAT MEDICAL RESEARCHERS AND BASIC SCIENTISTS BE IN THE SAME ROOM TO DEVELOP CLINICALLY COMPLIANT OUTCOME MEASURES, FOR EXAMPLE, IN VIVO CELL TRACKING AND THE LIKE.

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FOR EXAMPLE, UCI HAS A GENERAL RESEARCH FACILITY ON THE FIRST FLOOR OF ONE OF THE BUILDINGS. IT IS A PLACE WHERE MEDICAL RESEARCHERS DESIGN OUTCOME MEASURES FOR VARIOUS THINGS, INCLUDING STROKE. THAT CENTER IS A VERY, VERY CRITICAL PLACE FOR BASIC RESEARCHERS TO INTERACT WITH CLINICIANS TO DEVELOP OUTCOME MEASURES THAT WE ARE GOING TO NEED WHEN OUR STEM CELL THERAPIES GO TO THE CLINIC. THEY TAKE YEARS TO PUT INTO PLACE. THEY REQUIRE YEARS TO DEVELOP MECHANIZED MOVEMENTS FOR TRAINING, AUTONOMIC DYSFUNCTION, WHAT OUTCOME MEASURES ARE YOU GOING TO USE FOR PERHAPS REMYELINATING THERAPIES, LIKE THE ONE WE'VE DEVELOPED, MOTOR, SENSORY, ETC.

IT TAKES A VERY LONG TIME FOR THE MEDICAL DOCTORS TO DESIGN THOSE OUTCOME MEASURES, IN VIVO CELL TRACKING INSTRUMENTATION, THAT BASIC SCIENTISTS REQUIRE IN ORDER TO TRANSLATE IT ONCE THE DISCOVERY HAS BEEN MADE.

IN THAT REGARD, WE SHOULD STRESS THE PRIORITY GIVEN TO THOSE INSTITUTIONS THAT HAVE EXISTING RELATIONSHIPS WITH MEDICAL DEVICE COMPANIES, FOR EXAMPLE, AND REHABILITATION COMPANIES.

ON SLIDE 12 WE SUGGEST THAT PRIORITY BE GIVEN TO INSTITUTIONS THAT HAVE TRAINING FACILITIES. ONE OF THE CRIMES OF THE BUSH ADMINISTRATION IS THAT THE NEWER

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GENERATION OF SCIENTISTS HAS BEEN HELD DOWN. AND I TURN DOWN FROM MY LABORATORY BUT ONE STUDENT A WEEK THAT JUST DOESN'T HAVE A PLACE TO GO. SO CREATING BRICKS AND MORTAR IS GOING TO BE VERY CRITICAL.

CHAIRMAN LICHTENGER: THANK YOU VERY MUCH. WE'RE GOING TO NOW ASK THE FACILITIES WORKING GROUP MEMBERS IF THEY HAVE ANY QUESTIONS FOR THE FIRST PRESENTER. BY THE WAY, THANK YOU VERY MUCH FOR YOUR PRESENTATION.

MS. HYSEN: CAN YOU GIVE US A MOMENT?

MR. SHEEHY: SO I'M GOING TO CHEAT AND KIND OF LET YOU TALK ABOUT SLIDE 13 AND 14 BECAUSE I THOUGHT BOTH OF THOSE WERE ACTUALLY VERY IMPORTANT POINTS, WHICH WE HAVEN'T COVERED IN EARLIER MEETINGS.

CHAIRMAN LICHTENGER: CHEAT IS A BAD WORD, BUT WE'LL SLIDE.

MR. SHEEHY: BUT I ACTUALLY HAVE OTHER QUESTIONS AS WELL, BUT I JUST THOUGHT THAT THESE WERE PRETTY CONCRETE, MEASURABLE ELEMENTS THAT WE MAY WANT TO INCLUDE IN OUR RFA.

CHAIRMAN LICHTENGER: PLEASE PROCEED.

DR. KIERSTEAD: ALL RIGHT. I'LL JUST TAKE A MINUTE THEN.

WITH REGARDS TO SLIDE 13, THEN, WE RECOMMEND THAT CONSIDERATION BE GIVEN TO THE NUMBER OF DEDICATED

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TENURE TRACK FACULTY THAT AN INSTITUTE HAS AND HAS COMMITTED TO OVER THE COMING DECADE, TO BE PRECISE. SO YOU CAN ASK WHAT COMMITMENTS THE INSTITUTION HAS MADE OVER THE COMING DECADE, AND IMPORTANTLY, ALSO THE RETENTION OF THE FACULTY.

WE'D FURTHER RECOMMEND THAT CIRM CONSIDER THE DOLLAR VALUE OF INSTITUTIONAL SUPPORT THAT HAS TAKEN PLACE AT THE CAMPUS AND THE AMOUNT OF COMMITTED CIRM FUNDS FOR THAT CAMPUS AS WELL.

MR. SHEEHY: I DON'T WANT TO CUT YOU OFF IN MIDSTREAM BECAUSE THIS HAS KIND OF COME UP BEFORE, THE ISSUE OF FACULTY. BECAUSE WE ALL RECOGNIZE THAT PEOPLE ARE THE MOST CRITICAL ELEMENT. YOU CAN PUT BUILDINGS ANYWHERE. THE RIGHT PEOPLE AREN'T THERE.

DR. KEIRSTEAD: THAT'S CORRECT.

MR. SHEEHY: SO HOW DO WE REALLY CAPTURE THE FUTURE AND THE RETENTION? I ALWAYS, I DON'T KNOW IF YOU'VE NOTICED, I TRY TO GET DOWN TO THE FINE GRAIN OF DETAIL BECAUSE WE'RE GOING TO HAVE TO ASK FOR THIS IN THE APPROPRIATE WAY, OR PEOPLE AREN'T GOING TO UNDERSTAND WHAT WE'RE ASKING FOR.

DR. KIERSTEAD: IN GENERATING THESE THOUGHTS, WHAT WE HAVE DONE WAS APPROACH THE CHANCELLOR'S OFFICE AND EXECUTIVE VICE CHANCELLOR'S OFFICE OF OUR UNIVERSITY AND ASK FOR DOCUMENTATION OF THE NUMBER OF

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FACULTY THAT ARE COMITTED TO WITHIN THE NEXT TWO YEARS.

MR. SHEEHY: SO WE WOULD ASK FOR LETTERS LIKE THAT?

DR. KEIRSTEAD: LETTERS LIKE THAT.

CHAIRMAN LICHTENGER: I HAVE A QUESTION.

DR. KIERSTEAD: MAY I ADD ONE OTHER THING IS YOU CAN ALSO GET HARD NUMBERS ON RETENTION OF FACULTY AS WELL.

MR. SHEEHY: GREAT.

CHAIRMAN LICHTENGER: SO IF YOU HAD ONE POINT AND ONLY ONE POINT TO MAKE TO THIS GROUP TODAY, WHAT WOULD YOU WANT TO LEAVE US WITH?

DR. KIERSTEAD: I'D LIKE TO LEAVE YOU WITH THE -- URGE THE POINT THAT YOU SHOULD BACK HUMAN EMBRYONIC STEM CELL RESEARCH THAT HAS THE ABILITY TO BE TRANSLATED WITHIN TEN YEARS.

CHAIRMAN LICHTENGER: OKAY. MARCY.

MS. FEIT: WHAT KIND OF QUESTION WOULD WE BE LOOKING FOR ASKING IN THE RFA THAT WOULD ALLOW US TO GET THAT INFORMATION?

DR. KIERSTEAD: I THINK DEMONSTRABLE TRACK RECORD OF PRECLINICAL WORK THAT IS FDA COMPLIANT, EXTREMELY IMPORTANT. IF YOU DON'T HAVE EVIDENCE OF FDA COMPLIANCE OF PRECLINICAL WORK, IT'S HANDWAVING, AND IT COULD TAKE YEARS TO PUT INTO PLACE. AND THEN ALSO

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CLINICIANS ON CAMPUS BASICALLY, MEDICAL SCHOOL.

CHAIRMAN LICHTENGER: SO YOU MEAN GMP FACILITIES?

DR. KEIRSTEAD: YES. WELL, NOT ONLY GMP, BUT GTP AS WELL, AND THEN THE STAFF TO ACTUALLY HANDLE PRECLINICAL REGULATORY QUALITY ASSURANCE. IT'S ONE THING FOR AN ACADEMICIAN TO SAY THAT THEY WILL DO SOMETHING FDA COMPLIANT. IT'S ANOTHER THING ENTIRELY TO ACTUALLY DO IT. YOU NEED HELP WITH THAT. IT'S A SPECIALIZATION.

MR. SHEEHY: ASK FOR PROOF THAT STAFF IS ALREADY EXISTING?

DR. KIERSTEAD: ABSOLUTELY.

MR. SHEEHY: ONE THING THAT YOU MENTIONED I THOUGHT THAT WAS INTERESTING, WHICH IT CAME UP IN THE LAST ROUND, AND WE DIDN'T REALLY MEASURE THIS, AND WE DIDN'T REALLY TAKE THIS INTO CONSIDERATION, BUT WE SURE TALKED ABOUT IT A LOT. SO YOU THINK PREEXISTING CIRM FUNDING SHOULD BE CONSIDERED IN THIS APPLICATION?

DR. KIERSTEAD: I THINK THAT LIKE FOLLOWS LIKE, AND SUCCESS BREEDS SUCCESS. SO YOU'VE GOT TO SUPPORT THOSE INSTITUTIONS THAT ARE POSITIONED, PRIMED, AND READY TO GO.

MR. SHEEHY: THAT DID COME UP AT THE RESEARCH WORKING GROUP. IT'S KIND OF LIKE, WELL, WE'VE GIVEN

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THESE FOLKS MONEY. WE KIND OF NEED TO GIVE THEM THE SPACE TO DO THE WORK THAT WE FUNDED.

DR. KEIRSTEAD: I THINK THAT WE'VE GOT A WINDOW HERE THAT'S SO CRITICAL AND THE PROMISE TO THE STATE OF CALIFORNIA THAT HAS BEEN SO PROFOUND AND WIDELY ACCEPTED, THAT SUPPORT SHOULD FOLLOW THOSE INSTITUTES THAT ARE PRIMED AND READY TO ROLL. AND THEN IT WILL BREED AND BRING ALONG THE SMALLER PARTNERS.

CHAIRMAN LICHTENGER: DEBORAH.

MS. HYSEN: YES, I WAS INTERESTED TO HEAR SOME OF THE WORK THAT YOU HAVE TO DO TO PREPARE FOR GOING TO TRANSLATE THIS WORK, THE YEARS, THE PSYCHOMETRIC MEASURES THAT YOU WERE TALKING ABOUT. I HADN'T THOUGHT OF THAT. IT'S HARD WHEN WE'RE LOOKING AT JUST THE FACILITIES AND NOT UNDERSTANDING SOME OF THE SCIENCE BEHIND IT AND HOW YOU CAPTURE THAT IN AN RFA. THIS IS GOOD TO HEAR. I HADN'T HEARD SOME OF THE SPECIFICS YOU MENTIONED TODAY.

THERE'S BEEN SOME DISCUSSION ABOUT WHETHER OR NOT A CO-LOCATED FACILITY THAT'S A CONSORTIUM OF ACADEMIC INSTITUTIONS AND PRIVATE RESEARCH ENTITIES AND HOSPITALS MIGHT BE BENEFICIAL. AND THERE'S BEEN SOME PROS AND CONS FROM BOTH SIDES. CAN YOU MAYBE ARTICULATE A LITTLE BIT ABOUT THAT?

DR. KIERSTEAD: I THINK IT WOULD BE MY

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RECOMMENDATION TO FUND CENTERS THAT ARE UP AND RUNNING AND ARE MULTIDISCIPLINARY WITH ALL THE PIECES AND ALLOW REALLY TIGHT COLLABORATIONS TO BURGEONING FACILITIES WITH EITHER A VERY FULL SPECIALIZATION. AND YOU CAN ASK FOR REAL LETTERS OF COLLABORATION. LIKE UCI AND UC RIVERSIDE, FOR EXAMPLE, WE HAD OUR VCR'S GET TOGETHER, SIGN A FORMAL AGREEMENT, AND WE'VE IDENTIFIED PARTICULAR STRENGTHS IN THAT INSTITUTE THAT UCI REALLY DOES REQUIRE. SO THAT IS A FORMAL RELATIONSHIP USING A SMALLER CAMPUS, BUT WITH A VERY SPECIALIZED EXCELLENT TOOL THAT THE LARGER CAMPUS NEEDS AND, FRANKLY, THAT MAKES FOR A LOT OF EXCHANGE.

SO I WOULD SUPPORT BOTH CONCEPTS, BUT I WOULD SAY PUT THE DOLLARS BEHIND THE LEAD INSTITUTES THAT ARE PRIMED AND READY TO ROLL AS A PRIORITY.

MR. SHEEHY: SO --

CHAIRMAN LICHTENGER: ED, DO YOU HAVE ANY QUESTIONS?

MR. KASHIAN: YES. THANK YOU. I'M CURIOUS WHY YOU BELIEVE THE SCIENTISTS WILL FOLLOW THE BUILDINGS RATHER THAN THE BUILDINGS FOLLOWING THE SCIENTISTS.

DR. KIERSTEAD: I THINK THAT IF A CAMPUS HAS ESTIMATED RECRUITMENT OF -- YOU PICK A GROWTH CAMPUS, USING UCI'S EXAMPLE, 80 FACULTY OVER THE NEXT TWO

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YEARS, WHERE ARE THOSE FACULTY GOING TO GO? IF THERE'S A BUILDING AND THERE ARE CIRM FUNDS THAT THE NEW FACULTY ARE APPLYING FOR, THEN I THINK THE FTE'S CAN BE DIRECTED OVER TOWARDS STEM CELL MORE LIKELY THAN IF THERE IS NO SPACE FOR THOSE PEOPLE TO GO TO.

MR. SHEEHY: I JUST WANTED -- BECAUSE THIS IS HAS COME UP. I THINK YOU WERE IN LOS ANGELES. SO YOU HAVE A CENTER. WHAT WOULD BE THE MECHANICS? WOULD BOTH INSTITUTIONS APPLY FOR TWO DIFFERENT GRANTS? OR WOULD WE GIVE ONE BIG GRANT TO THE CENTRAL INSTITUTE? LOOSE COLLABORATION, I THINK WE ALL HAVE A SENSE OF HOW THE ONE BIG COLLABORATION IS GOING TO COME IN AND APPLY AS A WHOLE. BUT THERE IS AN ONGOING THING -- NOT TRYING TO MEASURE THAT UP AGAINST WHAT YOU'RE DOING, AND I THINK YOU'RE PROBABLY NOT THE ONLY INSTITUTION THAT'S GOING TO DO THIS, GOING TO PARTNER WITH OTHER INSTITUTIONS.

SHOULD WE ASK -- SHOULD YOU ASK MORE FROM YOUR INSTITUTION ALLOCATING THROUGH THAT TO THE OTHER INSTITUTION, OR CAN THE OTHER INSTITUTION STILL COME BACK AND APPLY FOR A SEPARATE GRANT THAT MAY BE OBVIOUSLY SMALLER, BUT WOULD BE COMPLEMENTARY TO WHAT YOU ARE DOING?

DR. KIERSTEAD: IT'S AS VERY GOOD QUESTION. YOU RAISE A VERY GOOD POINT. HOW TO DIFFERENTIATE

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THESE TWO AND ADDRESS THEM BECAUSE THEY'RE TWO VERY DISTINCT NEEDS. I WOULD SUGGEST THAT RFA'S BE SPLIT FOR LARGER AND SMALLER, BUT THAT THE SMALLER INSTITUTIONS EVIDENCE THE COLLABORATION IN THEIR APPLICATION. SO FOR THE EXAMPLE OF RIVERSIDE, IF IT IS TRUE WHAT I SAY TO YOU, THEN RIVERSIDE'S APPLICATION WILL SAY WE HAVE A SPECIALTY IN THIS, WE REQUIRE MONEY FOR THIS SMALL SPECIALIZATION OR WHATEVER YOU'D LIKE TO CALL IT, AND WE ARE PARTNERED WITH THE LARGER UCI WHO'S DOING A DIFFERENT APPLICATION, AND THIS IS THE WAY THAT THESE SCIENTIFIC EXPERTISE AREAS WILL ACTUALLY INTERACT.

CHAIRMAN LICHTENGER: I THINK I HAVE ONE FINAL QUESTION FOR YOU, AND THEN WE'RE GOING TO HAVE TO MOVE TO THE NEXT PRESENTER. YOU MENTIONED SEVERAL TIMES ABOUT COLLABORATION WITH PRIVATE ENTITIES AND FOR-PROFIT ENTERPRISES. SO CAN YOU BE VERY SPECIFIC AND EXPLICIT HOW YOU SEE THAT AS A REAL BENEFIT?

DR. KIERSTEAD: THAT IS LEVERAGE. GERON IS A PUBLIC COMPANY, AND YOU CAN TAKE A LOOK AT HOW MUCH MONEY THEY HAVE ACTUALLY SPENT ON THE OLIGODENDROCYTE HUMAN EMBRYONIC STEM CELL PROGRAM THAT'S EMERGED FROM OUR UNIVERSITY. IT'S TENS OF MILLIONS OF DOLLARS THAT'S TAKEN THIS PARTICULAR DEVELOPMENT AND MOVING IT TOWARDS THE CLINIC. YOU CAN GET AN IDEA OF THEIR

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TIMELINE TO THE CLINIC, AND THAT'S A REAL RETURN TO THE PUBLIC.

CHAIRMAN LICHTENGER: SO IT'S THE DOLLARS THAT YOU FEEL THAT THOSE ENTITIES CAN --

DR. KIERSTEAD: IT'S TWO THINGS. ONE IS IT'S DOLLARS. SO IT'S LEVERAGE. AND THE OTHER IS IT'S A REAL UNDENIABLE COLLABORATION, AND IT CREATES JOBS. IT'S A TRUE COLLABORATION. IF YOU CAN GO TO AN ACADEMICIAN AND SAY, "WOULD YOU LIKE TO COLLABORATE," THEY SAY SURE AND NOTHING COMES OF IT. IF YOU GO TO AN INDUSTRY AND SAY, "WOULD YOU LIKE TO COLLABORATE AND DEDICATE THIS AMOUNT OF EXPERTISE AND MONEY," THEY TAKE IT TO A BOARD, THEY GET CLEARANCE, AND THEN THEY SAY YES. SO IT'S A MUCH MORE REAL TANGIBLE DOCUMENT THAT EXISTS WITH ALLOCATION OF RESOURCES, AND IT'S GOING TO GO SOMEWHERE. ALSO, IT UNDERSCORES THE FAITH THAT SOMEONE HAS, AT LEAST THE COMPANY, IN THE PROGRAM.

CHAIRMAN LICHTENGER: GREAT. WELL, DO WE HAVE ANY OTHER FINAL QUESTIONS?

MS. HYSEN: I JUST THINK AS WE START TO IDENTIFY IF, FOR INSTANCE, WE WANT EVERYTHING TO BE IN A FACILITY THAT WE'RE READY TO FUND, IT WILL DRIVE THE NEED FOR COLLABORATION, WITH SMALLER ENTITIES GETTING TOGETHER WITH AREAS THAT CAN AUGMENT THEIR SERVICES. AND SO HOW WE CRAFT THAT IS REALLY GOING TO BE

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IMPORTANT.

CHAIRMAN LICHTENGER: GREAT. THANK YOU VERY MUCH FOR YOUR PRESENTATION. RICK, NEXT PRESENTER, PLEASE.

MR. KELLER: NEXT PRESENTER IS TOM VENTRESCO, THE DIRECTOR OF SPACE MANAGEMENT AND CAPITAL PROGRAMS FROM UC BERKELEY.

CHAIRMAN LICHTENGER: DO WE HAVE A HANDOUT THAT WE SHOULD BE LOOKING AT?

MR. KELLER: I HAVE COPIES OF HIS PRESENTATION ON THE DAIS FOR YOU.

MR. VENTRESCO: I APOLOGIZE FOR NOT HAVING AN ELECTRONIC PRESENTATION. I'M HAVING THE SAME PROBLEM. PERHAPS I SHOULD SIT DOWN WHILE I SPEAK SO I CAN READ THIS AT THE SAME TIME. IS THAT ALL RIGHT?

CHAIRMAN LICHTENGER: ABSOLUTELY.

MR. VENTRESCO: I SPOKE BRIEFLY BEFORE THIS COMMITTEE IN SAN FRANCISCO ABOUT TWO WEEKS AGO, AND THAT WAS IN ANSWER TO A QUESTION ABOUT OUR CAMPUS' ABILITY, IN GENERAL, OUR CAMPUS' ABILITY TO DELIVER PROJECTS AND THEIR TRACK RECORDS IN THAT RESPECT. AND I ALSO MENTIONED -- DESCRIBED BRIEFLY BERKELEY'S PROJECT, PLANNED PROJECT, FOR STEM CELL RESEARCH.

I LEFT THAT MEETING AND I HAD THE IMPRESSION THAT THERE WERE STILL MANY UNANSWERED QUESTIONS ABOUT

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THE CRITERIA FOR JUDGING THESE FACILITIES GRANT APPLICATIONS, AND IT APPEARS THAT THAT'S STILL THE CASE. AND IT STRUCK ME THAT THAT WAS PARTLY THE RESULT OF SOME MISSING INFORMATION ABOUT SOME OF THE FUNDAMENTALS INVOLVED IN PLANNING AND DEVELOPING THE TYPES OF RESEARCH FACILITIES THAT THE INSTITUTE IS SEEKING.

I NOTE THAT MOST OF YOUR BACKGROUNDS ARE FROM EITHER FINANCE OR LAW OR PATIENT ADVOCACY OR DEVELOPMENT, REAL ESTATE DEVELOPMENT. AND I'D LIKE TO BRING THE PERSPECTIVE OF CAMPUS PLANNER TO DESCRIBE SOME OF THE THINGS THAT WE EXPERIENCE WHEN WE'RE DEVELOPING NEW FACILITIES.

I WOULD LIKE TO ALSO SAY THAT I HEARTILY AGREE WITH FORMER SPEAKER, DR. KEIRSTEAD, AND I'D LIKE TO NOTE HIS EMPHASIS ON THE TIMELINESS, ON THE URGENCY OF SPEED TO DELIVERING THESE RESEARCH PRODUCTS FROM THE PROGRAM.

MY CAMPUS IS VERY EXCITED ABOUT THE PROSPECT OF STEM CELL RESEARCH, AND WE ARE LOOKING FORWARD TO PUBLICATION OF THE RFA. BUT OUR EXPERIENCE IN THE AREA OF ACADEMIC RESEARCH FACILITIES TELLS US IT WON'T BE AN EASY ROAD. SO I'VE COME HERE TO SHARE SOME OF MY OBSERVATIONS AS TO WHAT GOES INTO PLANNING RESEARCH FACILITIES AND SOME OF THE KEY PARAMETERS THAT GUIDE US

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IN ACADEMIC FACILITIES PLANNING.

YOU SEE ON SLIDE TWO I'M TRYING TO KEEP IT VERY SIMPLE. THERE'S THREE THINGS THAT ARE THE KEY CHALLENGES THAT WE FACE. AND THAT'S SPACE, TIME, AND MONEY.

BEGINNING WITH SPACE, IT SHOULD BE UNDERSTOOD THAT SPACE IN ACADEMIC INSTITUTIONS IS AT AN INCREDIBLE PREMIUM. IT'S A VALUABLE RESOURCE, AND IT'S NOT EASILY DUPLICATED OR PRODUCED. THERE ARE THREE FACTORS -- PRINCIPAL FACTORS THAT COME INTO PLAY WHEN TALKING ABOUT SPACE AT A UNIVERSITY. IT'S QUANTITY, QUALITY, AND THE COMPETITION FOR IT.

QUANTITY IS A THING WE LIVE AND BREATHE EVERY DAY. THERE'S SIMPLY NOT ENOUGH SPACE AT TOP INSTITUTIONS, AND I SAY THAT ONLY TO DISPEL THE NOTION THAT WE USUALLY HAVE THIS STUFF LAYING AROUND WAITING FOR A BIG GRANT TO COME ALONG, OR THAT WE CAN JUST, SAY, KICK OUT THE HISTORY DEPARTMENT AND TURN THAT SPACE OVER TO THE BIOLOGY DEPARTMENT. SPACE IS IN HIGH DEMAND EVERYWHERE, ALL DISCIPLINES, AND IT IS FULLY USED BY ALL ITS OCCUPANTS.

IT'S A BIT OF A TRUISM FOR SPACE MANAGERS THAT MONEY IS USUALLY EASIER TO FIND THAN SPACE. MONEY MIGHT COME IN THE FORM OF A CHECK. SPACE USUALLY COMES ONLY AFTER YEARS OF EFFORT BY A LOT OF DEDICATED

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PEOPLE.

IN THE SLIDE PRESENTATION I HAVE SOME TYPICAL GENERAL CAMPUS SPACE DISTRIBUTIONS JUST TO ILLUSTRATE THE NATURE OF HOW MUCH OUR SPACE IS USED. IN THE FIRST ONE I'M LOOKING AT A HYPOTHETICAL CAMPUS OF ABOUT 10 MILLION SQUARE FEET. AND YOU NOTE THAT THE LARGEST USERS OF THAT SPACE ARE RESEARCH, ACADEMIC OFFICE, INSTITUTIONAL SUPPORT, AND HOUSING FOR -- LIBRARIES MAY TAKE UP ABOUT 10 PERCENT OF THE SPACE. INSTRUCTIONAL SPACE IS ACTUALLY A VERY SMALL PERCENTAGE, MAYBE 2 TO 3 PERCENT. IF YOU ZERO IN ON RESEARCH SPACE, THAT 10 MILLION SQUARE FEET REPRESENTS MAYBE TWO AND A HALF TO THREE MILLION SQUARE FEET. AND THAT SPACE IS USUALLY DISTRIBUTED BETWEEN THE THREE LARGEST GROUPS, WHICH WOULD BE ENGINEERING, PHYSICAL SCIENCES, AND LIFE SCIENCES, WITH THE LEFT-OVER PORTIONS FOR SOCIAL SCIENCES, ARTS AND HUMANITIES, AND OTHER ACTIVITIES.

SO FINALLY, IF YOU ZERO IN ON THE LIFE SCIENCES PORTION OF THE SPACE, THE TYPE OF SPACE THAT YOU WOULD BE INTERESTED IN PRIMARILY, WE CAN SAY THAT MAYBE ROUGHLY HALF OF THAT IS DEDICATED FOR BIOLOGY, AND THE OTHER PORTION COULD BE DISTRIBUTED BETWEEN AGRICULTURE AND HEALTH SCIENCES. IT REALLY VARIES FROM CAMPUS TO CAMPUS, AND EVERYONE WILL HAVE THEIR OWN DISTRIBUTION OF THAT TYPE OF SPACE.

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SO AFTER LOOKING AT THAT, THE TYPES OF SPACE THAT WE HAVE, AND YOU DRILL DOWN TO THE DEPARTMENT OF AN INDIVIDUAL DEPARTMENT, THE LEVEL OF AN INDIVIDUAL DEPARTMENT OR DISCIPLINE, WE FIND THAT THERE'S REALLY A LOT LESS SPACE AVAILABLE THAN YOU MIGHT HAVE IMAGINED AT THE OUTSET. AS I SAID BEFORE, ALL THAT SPACE IS SPOKEN FOR. SO THE NEED TO DEVELOP ADDITIONAL SPACE IS CLEAR. AND THAT'S PARTICULARLY THE CASE WHERE SPACE IS NEEDED FOR SPECIALIZED ACTIVITIES LIKE STEM CELL RESEARCH.

ON THE QUALITATIVE FRONT, YOU WILL BE SEEKING SOME OF THE MOST SOPHISTICATED TYPES OF LABORATORIES FOR THE GRANT PROGRAM. AND I CAN'T SAY ENOUGH ABOUT JUST WHAT GOES INTO PLANNING AND DESIGNING THESE FACILITIES. THEY ARE EVERY BIT AS COMPLICATED AS HOSPITALS, IF YOU ARE FAMILIAR WITH THOSE. AND BECAUSE OF THEIR UNIQUENESS, RESEARCH LABORATORIES, THEY'RE POSSIBLY MORE COMPLICATED.

YOU WILL FIND ALSO THAT MOST OTHER CAMPUS SPACE IS UNSUITABLE FOR BIOLOGY RESEARCH WITHOUT EXTENSIVE CONVERSION OR ALTERATIONS. AND LASTLY, IN THE AREA OF SPACE, IT'S COMPETITION THAT DRIVES US. I RAISE THIS BECAUSE OF A REMARK THAT I HEARD IN THE SAN FRANCISCO MEETING, AND IT SUGGESTED TO ME THAT MAYBE YOU THOUGHT WE JUST HAVE SPACE AVAILABLE, AND IT WOULD

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BE THERE INDEFINITELY IF THE RESEARCH GRANTS DIDN'T MATERIALIZE QUICKLY.

COMPETITION FOR ACADEMIC SPACE IS EXTREMELY FIERCE. OUR FACULTY ARE VERY COMPETITIVE, AND THEY WILL -- IF WE HAVE SET ASIDE SPACE, AND WE HAVE AT THE BERKELEY CAMPUS FOR STEM CELL RESEARCH IN A NEW BUILDING, IF WE DON'T FILL THAT WITH GRANT PROGRAMS VERY QUICKLY, IT WILL GO TO SOMEBODY ELSE. SO THERE'S REALLY A VERY BRIEF WINDOW OF OPPORTUNITY HERE TO TAKE ADVANTAGE OF AT LEAST THE BASIC RESEARCH INFRASTRUCTURE AT BERKELEY.

TIME IS THE NEXT MAJOR FACTOR. SINCE I JUST EXPLAINED SOME OF THE DEEP SECRETS OF ACADEMIC SPACE, NAMELY, THAT WE NEED A LOT OF IT, HOW WE GO ABOUT GETTING IT ACTUALLY ALSO TAKES A LOT OF TIME. FACED WITH THE SOPHISTICATION AND THE COST OF THE TYPES OF FACILITIES THAT'S NEEDED FOR STEM CELL RESEARCH, CAREFUL PLANNING AND DESIGN MUST BE GIVEN ADEQUATE TIME, OR THE END PRODUCT RUNS THE RISK OF BEING DEFECTIVE AND POTENTIALLY EVEN A WASTE.

IF YOU WOULD IMAGINE, FOR INSTANCE, SIMPLEST FACILITY, FASTEST THING YOU COULD BUILD TO DELIVER THE PROJECT WOULD PROBABLY BE JUST A SIMPLE BOX. HOWEVER, IN REALITY DELIVERING SUCH A SIMPLE BOX FOR THIS PROGRAM IS PRETTY REMOTE. THE REASON I SAY THAT IS

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BECAUSE WHEN YOU LOOK AT ALL THE INSTITUTIONS IN CALIFORNIA THAT MEET YOUR SCIENTIFIC CRITERIA, YOU WILL PROBABLY FIND THAT THEY'RE ALL LOCATED IN DENSELY DEVELOPED PARTS OF THE STATE WHERE AN UGLY BOX IS UNLIKELY TO MEET ANY LOCAL DESIGN STANDARDS.

I WOULD ALSO ADD IN SOME AREAS OF CALIFORNIA, EVEN A WELL-DESIGNED BUILDING IS MET WITH OPPOSITION, BUT AT LEAST IT HAS A GOOD FIGHTING CHANCE OF SOME APPROVAL.

SO THOSE ARE SOME OF THE FACTORS I THINK YOU SHOULD INCORPORATE AND CONSIDER WHEN YOU'RE SETTING THE CRITERIA IN YOUR RFA.

THAT BRINGS ME TO A COUPLE OF CONCERNS THAT I HAVE. FIRST, PROPOSITION 71 INCLUDED A CRITERION THAT WOULD GIVE PRIORITY TO FACILITIES THAT WOULD BE AVAILABLE FOR RESEARCH NO MORE THAN TWO YEARS AFTER THE GRANT AWARD. GIVEN THE PLANNING COMPLEXITIES THAT I JUST DESCRIBED, I WOULD SUGGEST THAT YOU LOOK VERY CLOSELY AT THAT REQUIREMENT AND HOW MUCH WEIGHT YOU GIVE IT IN THE ULTIMATE SCORING. I WOULD HAVE SERIOUS DOUBTS SOMEONE STARTING FROM SCRATCH WOULD HAVE A REASONABLE CHANCE OF MEETING THE TWO-YEAR REQUIREMENT. THAT'S NOT TO SAY THAT IT CAN'T BE DONE, BUT I THINK IT WILL BE VERY DIFFICULT UNLESS AN INSTITUTION IS ALREADY SUBSTANTIALLY FAR ALONG IN PLANNING FOR A FACILITY OF

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THIS TYPE.

THAT BRINGS ME TO THE FINAL PARAMETER, MONEY. NO DOUBT YOU ARE ALREADY WELL AWARE OF HOW COSTLY THESE TYPES OF FACILITIES ARE. EVERYONE KNOWS THAT LABORATORIES ARE EXPENSIVE, AND THE SPECIALIZED FACILITIES THAT GO ALONG WITH THEM ARE EVEN MORE COSTLY. WHERE YOU BUILD ALSO AFFECTS COST. AS A RULE, LOCATION, LOCATION, LOCATION IS STILL CRITICAL. FOR EXAMPLE, YOU MIGHT BE ABLE TO BUILD A STEM CELL RESEARCH FACILITY FOR LESS MONEY IN THE MIDDLE OF A FIELD SOMEWHERE, BUT THE ADDED COST FOR ONE NEXT TO AN ANIMAL FACILITY OR WITH EASY ACCESS TO CLINICS WILL BE WELL WORTH EVERY EXTRA CENT WHEN IT COMES TO DELIVERING THE RESEARCH.

MY SECOND CONCERN IS ABOUT THE MATCHING REQUIREMENTS. I KNOW YOU'RE WONDERING ABOUT THAT AS WELL. THE QUESTION HAS BEEN ASKED SHOULD ONLY CASH BE COUNTED AS A MATCH, OR COULD EQUITY ALSO BE LEVERAGED? ON THIS POINT I WOULD ADVISE A MORE LIBERAL GUIDELINE THAT ACCEPTS EQUITY AS A MATCHING CONTRIBUTION. THE MORE CRITICAL QUESTION SHOULD BE WHERE DO YOU DRAW THE LINE? SHOULD THE EQUITY BE LIMITED TO THE IMMEDIATE SPACE OF THE STEM CELL RESEARCH LABORATORIES AND FACILITIES, ESSENTIALLY IT'S AS PRO RATA SHARE OF THE BUILDING'S FABRIC, OR COULD BE EXTENDED TO THE ENTIRE

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BUILDING IF A PERSUASIVE CASE COULD BE MADE TO DO SO. SHOULD IT EXTEND TO ADJACENT FACILITIES?

I WOULD SUGGEST AT A MINIMUM THAT YOU INCLUDE ADJACENT FACILITIES WHERE THERE IS A REASONABLE EXPECTATION THAT A SUBSTANTIAL PORTION OF THEIR USE IS FOR STEM CELL-RELATED WORK. AND THE TIME SHOULD APPLY IS ALSO A QUESTION THAT COMES UP, IF YOU SHOULD COUNT ONLY CONCURRENTLY BUILT FACILITIES OR ACCEPT WORK STARTED AFTER NOVEMBER OF 2006.

CHAIRMAN LICHTENGER: THANK YOU FOR YOUR PRESENTATION. I'M GOING TO OPEN UP TO THE WORKING GROUP FOR ANY QUESTIONS.

MS. HYSEN: WE HAD AN OPPORTUNITY TO DRILL THIS POOR GUY WHO WASN'T REALLY PREPARED AT THAT TIME. I THINK YOU JUST REALLY REITERATED A LOT OF THE THINGS THAT YOU HAD SAID BEFORE.

CHAIRMAN LICHTENGER: THEN I GUESS MAYBE I'LL ASK A COUPLE OF QUESTIONS THEN. JEFF, PLEASE.

MR. SHEEHY: WELL, I JUST -- SO YOU THINK WE CREATE -- IT SHOULD BE AS PART -- WE SHOULD COUNT AS LEVERAGE ADJACENT BUILDINGS. SO WE'RE GOING TO GIVE A GRANT TO BUILD A BUILDING, AND YOU WANT TO SAY THE BUILDING NEXT DOOR IS LEVERAGE TOO?

MR. VENTRESCO: IF YOU'RE USING A SUBSTANTIAL PORTION OF THAT BUILDING AS A RESOURCE, YOU MIGHT

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CONSIDER THAT, OR CONSIDER A WAY OF MEASURING AND WEIGHTING THAT IN YOUR CRITERIA. FOR INSTANCE, I COULD GIVE YOU AN EXAMPLE OF OUR BUILDING IS PROPOSED TO INCLUDE AN ANIMAL FACILITY, BUT IT'S ALSO ADJACENT TO AN EXISTING ANIMAL FACILITY, WHICH WILL ACTUALLY ALL BE CONTIGUOUS AT THE END. SO YOU MIGHT CONSIDER THE SCALE OF THE TOTAL ANIMAL FACILITY, ALTHOUGH IT BRIDGES TWO BUILDINGS. ONE WAS BUILT SOME TIME AGO, BUT THE FACILITY THAT IT PROVIDES FOR THE RESEARCH INFRASTRUCTURE IS A VERY STRONG WEIGHTING FACTOR IN YOUR CONSIDERATION.

MR. SHEEHY: I WONDER IF THERE MAY BE TWO DIFFERENT THINGS. WE'VE HEARD FROM OTHER FOLKS THAT SOME VIVARIUM OR SOME CONNECTION WITH AN ANIMAL FACILITY IS IMPORTANT FOR TRANSLATIONAL RESEARCH. SO YOU SHOULD MAYBE GET POINTS FOR THAT IN THAT IT'S NEAR AN EXISTING ONE, BUT TO ALSO THEN ALLOW YOU TO LEVERAGE THAT AS PART OF YOUR 20-PERCENT MATCH SEEMS A LITTLE BIT --

MR. VENTRESCO: OF A STRETCH.

MR. SHEEHY: THE OTHER THING YOU MENTION IS ACCESS TO CLINICS. NOW, IN YOUR SITUATION YOU DON'T HAVE A MED SCHOOL, SO HOW DO YOU MAKE THAT -- HOW DOES THAT COME INTO PLAY WHEN YOU DON'T HAVE A MEDICAL SCHOOL?

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MR. VENTRESCO: WELL, WE ARE ADJACENT TO A NUMBER OF HOSPITALS IN THE BAY AREA IN VERY CLOSE PROXIMITY. I'M NOT A SCIENTIST, SO I CAN'T TELL YOU HOW THAT WORK ACTUALLY TAKES PLACE, HOW THE TRANSFER HAPPENS. FROM THE PEOPLE I HAVE SPOKEN TO, THEY DON'T THINK IT'S A FACTOR TO HAVE -- THAT YOU NECESSARILY HAVE TO HAVE THE PATIENT BEDS IMMEDIATELY ADJACENT TO YOUR LABORATORY SPACE. IT'S MORE IMPORTANT THAT YOU HAVE A REASONABLE TRAVEL DISTANCE BETWEEN INSTITUTIONS TO ACCOMMODATE COMMUNICATION AND THE TRANSFER OF MATERIALS.

MR. SHEEHY: PEOPLE AT THOSE INSTITUTIONS ARE ON BERKELEY FACULTY?

MR. VENTRESCO: WE HAVE JOINT FACULTY APPOINTMENTS AT UC SAN FRANCISCO. WE HAVE JOINT FACULTY WITH STANFORD. WE HAVE JOINT FACULTY RESEARCHERS AT THE CHILDREN'S HOSPITAL OF OAKLAND RESEARCH INSTITUTE.

MR. SHEEHY: THE OTHER THING I WANTED TO ASK YOU ABOUT, YOU TALKED ABOUT COMPETITION FOR SPACE. THIS SEEMS LIKE THERE'S TWO DIFFERENT THINGS. NOW, FOR COMPETITION, IT SEEMED LIKE COMPETITION WOULD FOLLOW GRANT AWARDS. SO IF PEOPLE WERE GETTING GRANTS, SPACE WOULD BE MADE AVAILABLE.

MR. VENTRESCO: THAT'S TRUE.

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MR. SHEEHY: THIS IS DIFFERENT. THIS IS GRANTS FOR FACILITIES. SO WHAT IS THAT CONNECTION TO THAT COMPETITIVE ENVIRONMENT BECAUSE THE OTHER ONE WILL BE DETERMINED ON WHETHER OR NOT YOU HAVE THE APPROPRIATE SCIENTISTS IN PLACE TO COMPETE SUCCESSFULLY FOR THE GRANTS. WHEREAS, THIS IS NOT RELATED TO THAT CALCULATION AT ALL AS YOU DESCRIBED IT.

MR. VENTRESCO: I WAS TRYING TO KEEP MY PRESENTATION TO A MORE GENERAL LEVEL. BUT THINKING SPECIFICALLY OF OUR PROJECT, WE ARE BUILDING, AS I DESCRIBED AT THE PREVIOUS MEETING, A LARGE BUILDING THAT HAS CONSIDERABLE AMOUNT OF SHELL SPACE IN IT. WE'RE COMPLETING IT IN VARIOUS STEPS. AND A PORTION OF THAT SPACE HAS BEEN AT THIS POINT DEDICATED FOR STEM CELL RESEARCH, AND THE RESEARCHERS WILL BE APPLYING FOR GRANTS, THEY WILL BE APPLYING FOR THE FACILITIES GRANT TO FIT OUT THAT SPACE, AS WELL AS TO PERFORM THEIR RESEARCH IN IT.

IF WE ARE NOT SUCCESSFUL IN OBTAINING THE FACILITIES GRANT, OTHER RESEARCHERS WILL BE A VERY SHORT STEP BEHIND COMPETING FOR THAT SPACE, AND THEY WILL GO TO OTHER GRANTING AGENCIES. THAT WINDOW OF OPPORTUNITY WILL THEN BE LOST FOR STEM CELL RESEARCH.

MR. SHEEHY: COULD YOU TELL ME WHO OUR COMPETITORS ARE? NIH FUNDING, I KNOW, IS REALLY TIGHT

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RIGHT NOW. I'M JUST WONDERING. THIS IS THE FIRST TIME I'VE HEARD THAT WE HAVE COMPETITORS, AND THAT IF WE DON'T GIVE YOU A FACILITIES GRANT, WE'RE GOING TO LOSE PARTICIPATION OF BERKELEY IN STEM CELL RESEARCH IS WHAT IT SOUNDS LIKE.

MR. VENTRESCO: NOT NECESSARILY, BUT WE MAY NOT HAVE ALL THE FACILITIES AND THE SCOPE OF FACILITIES THAT WE WILL PROPOSE IN OUR GRANT APPLICATION.

MS. FEIT: YOU RAISE CONCERNS ABOUT THE TIME, THE TWO-YEAR TIMEFRAME, FOR RESURRECTING A FACILITY AFTER THE GRANT HAS BEEN ISSUED. WHAT KIND OF TIMEFRAME IS REASONABLE FOR YOU?

MR. VENTRESCO: I THINK FOR AN INSTITUTION SUCH AS OURS THAT ALREADY HAS A SUBSTANTIAL AMOUNT OF WORK DONE, WE CAN MEET THAT FAIRLY CLOSELY. OTHER INSTITUTIONS THAT ARE NOT AS FAR ALONG, IT MAY BE MORE OF A CHALLENGE. AND PERHAPS MORE LIKE THE THREE- TO FIVE-YEAR WINDOW MAY BE MORE REASONABLE TO EXPECT ACTUALLY DESIGNING AND BUILDING A FACILITY FROM THE GROUND UP.

CHAIRMAN LICHTENGER: ED.

MR. KASHIAN: AM I TO UNDERSTAND YOU BELIEVE THAT DEVOTING A NEW BUILDING SPECIFICALLY TO STEM CELL RESEARCH IS NOT A FEASIBLE PROJECT FOR THE UNIVERSITY OF CALIFORNIA BERKELEY?

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MR. VENTRESCO: YOU MEAN EXCLUSIVELY FOR THAT?

MR. KASHIAN: UH-HUH.

MR. VENTRESCO: WE DON'T HAVE A BUILDING SITE THAT WOULD BE EXCLUSIVELY DONATED TO THAT.

MR. KASHIAN: WOULD IT BE UNFEASIBLE TO BUILD A BUILDING EXCLUSIVELY FOR THAT PURPOSE?

MR. VENTRESCO: WITHIN A FIVE-YEAR FRAME, IT MIGHT BE INFEASIBLE.

MR. KASHIAN: HOW WOULD YOU SUGGEST THAT WE COULD HELP?

MR. VENTRESCO: WE HAVE A BUILDING THAT IS ABOUT TO START CONSTRUCTION IN ABOUT SEVEN OR EIGHT MONTHS, AND IT WILL BE AS I DESCRIBED, A LARGE LABORATORY RESEARCH BUILDING, AND PART OF IT HAS BEEN PROGRAMMED AND PLANNED FOR STEM CELL RESEARCH, ABOUT 30,000 OR MORE SQUARE FEET. WE'RE HOPING THAT THE GRANT -- THAT OUR GRANT FOR COMPLETION OF THAT SPACE WILL BE APPROVED AND THAT WE WILL BE ABLE TO USE THAT MONEY TO COMPLETE THAT SPACE.

SO ESSENTIALLY IT'S NOT ENTIRELY DEDICATED FOR STEM CELL RESEARCH, BUT A LARGE PORTION OF IT.

CHAIRMAN LICHTENGER: WHAT'S THE SCHEDULE WHEN YOU WOULD THINK THAT THOSE FACILITIES WOULD BE DONE FROM TODAY? YOU SAY YOU'RE GOING TO START

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CONSTRUCTION IN SEVEN, EIGHT MONTHS. WHEN WOULD YOU BE ABLE TO BE OPERATIONAL?

MR. VENTRESCO: 2010-11. THAT'S ABOUT TWO, TWO AND A HALF YEARS.

CHAIRMAN LICHTENGER: GREAT.

MS. HYSEN: ACTUALLY I HAVE ONE MORE. IN YOUR SLIDE YOU SAY TIME IS MONEY. AND YOU DID MAKE THE NOTATION ABOUT THE WEIGHTING OF THAT CRITERIA, AND IT'S GOING TO BE SOMETHING WE'RE GOING TO STRUGGLE WITH BECAUSE TIME DOES HAVE A VALUE. IT'S VERY CLEARLY STATED IN PROP 71 THAT THERE'S A VALUE TO GETTING THINGS ON LINE. SO AS A CONSEQUENCE, PEOPLE THAT ARE FURTHER ALONG IN THE PLANNING EFFORT MAY BE IN A BETTER POSITION. AND WE REALLY NEED TO LOOK AT SOME OF THE PERFORMANCE OUTCOMES WE EXPECT. WHAT'S MORE IMPORTANT? IS IT MORE IMPORTANT GETTING IT ONLINE WITHIN A REASONABLE TIMEFRAME, OR GETTING IT ONLINE AND HAVE ALL OF THE ELEMENTS THAT WE NEED IN ONE PLACE? I APPRECIATE YOUR CONCERN ABOUT WEIGHTING CRITERIA BECAUSE I'M LOOKING AT THAT TOO.

IT DOES TAKE A CONSIDERABLE AMOUNT OF TIME TO COME UP WITH A PLAN THAT IS GOING TO MEET EVERYONE'S NEEDS, AND PARTICULARLY WITHIN A LARGE ORGANIZATION LIKE A STATE AGENCY SUCH AS THE UC SYSTEM, SO I APPRECIATE THAT.

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CHAIRMAN LICHTENGER: SO HOW IS IT TWO YEARS AGAIN? WE'RE 2007 AND YOU SAID 2010 TO 2011. SO I JUST WANTED TO MAKE SURE I UNDERSTAND. IF WE GAVE YOU THAT GRANT TODAY, THAT WOULD BE FOUR TO FIVE YEARS. IS THAT WHAT YOU'RE TELLING ME?

MR. VENTRESCO: THREE TO FOUR YEARS. WE HAVEN'T SEEN THE APPLICATION YET.

CHAIRMAN LICHTENGER: I JUST WANT TO UNDERSTAND HOW TWO YEARS.

MS. HYSEN: TWO YEARS IS THE TIMEFRAME IN PROP 71. I THINK WHAT HE'S ARTICULATING AND WHY I THINK IT'S IMPORTANT TO HAVE SOME OF THE CAMPUS PLANNERS -- IT'S IMPORTANT TO SEE THE SCIENTISTS, BUT THE CAMPUS PLANNERS ARE THE ONES THAT ACTUALLY GET EVERYONE TOGETHER AND COME UP WITH A BUILDING. AND I'M GOING THROUGH THIS VERY SAME THING IN THE STATE THAT I'M -- AGENCY I'M WORKING WITH. IT'S DIFFICULT. I THINK TWO YEARS IS GOING TO BE INCREDIBLY DIFFICULT TO DO, AND I THINK THE PREFERENCE POINTS WILL BE GIVEN TO PEOPLE THAT ARE FURTHER AHEAD IN THE PLANNING STAGE OR EVEN POSSIBLY HAVE SOMETHING UNDER CONSTRUCTION BECAUSE TWO YEARS, I THINK THAT'S A PIE IN THE SKY NUMBER, FRANKLY.

CHAIRMAN LICHTENGER: OBVIOUSLY IT'S A VERY AGGRESSIVE TIMEFRAME, BUT I ALSO THINK THAT PROP 71 IS

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PRETTY CLEAR ON THIS ISSUE, AND THAT THOSE INSTITUTIONS THAT MAY CHOOSE TO SPEND MONEY AND BRING THESE PROJECTS FURTHER ALONG, I THINK THAT DEFINITELY IS GOING TO BE CONSIDERED IN THE RFA.

BUT THANK YOU VERY MUCH FOR YOUR TIME AND YOUR PRESENTATION, AND I'M GOING TO ASK RICK TO BRING THE NEXT PRESENTER.

MR. KELLER: THE NEXT PRESENTER IS DR. JAN NOLTA, DIRECTOR OF THE STEM CELL PROGRAM AT UC DAVIS.

DR. NOLTA: THANK YOU VERY MUCH FOR THIS OPPORTUNITY TO VERY BRIEFLY PRESENT THE PLANS FOR OUR NEW STEM CELL RESEARCH FACILITY AT UC DAVIS AND TO PUT FORTH OUR VIEWS.

CHAIRMAN LICHTENGER: IS THIS FOR ONE OR FOR ALL?

DR. NOLTA: I'M SORRY. I THOUGHT I WOULD BE GIVING A POWERPOINT PRESENTATION. THAT WAS JUST ONE THAT I HAD IN MY BRIEFCASE, AND I HAVE ONE TO READ. I APOLOGIZE.

SO THANK YOU VERY MUCH FOR GIVING US THE OPPORTUNITY TO PUT FORTH OUR VIEWS ON WHAT IS REALLY IMPORTANT FOR THE SUCCESS OF THIS TYPE OF FACILITY.

SO, AGAIN, I'M VERY SORRY THAT I DON'T HAVE HANDOUTS FOR EVERYONE, AND I JUST PLANNED TO HAVE SOME PICTURES UP THERE, BUT THAT'S OKAY.

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SO WHAT WE FEEL ARE KEYS TO A SUCCESSFUL FACILITY ARE THAT IT SHOULD SUPPORT TRANSLATIONAL APPROACHES FOREMOST, USE ANIMAL MODELS TO TEST HUMAN STEM CELLS, ENHANCE COLLABORATIONS, INCORPORATE OPPORTUNITIES FOR PARTNERSHIPS, BOTH INDUSTRY AND INTRAINSTITUTIONAL, AND TO INVEST IN KEY RESOURCES, INCLUDING HIGHLY CONTROLLED SPACES FOR CELLULAR THERAPY TRIALS.

SO WE FEEL THAT THIS TYPE OF FACILITY AND ESPECIALLY THE PEOPLE THAT RUN IT SHOULD BE VERY SERVICE ORIENTED. SHOULD FOCUS STRONGLY ON THE GOAL OF HELPING THE FACULTY ON THAT CAMPUS MOVE THEIR RESEARCH FROM THE BENCH TO THE BEDSIDE, AND THAT SHOULD BE ONE OF THE BIGGEST KEY CRITERIA.

SO AS FAR AS CIRM SUPPORT ALREADY AT UC DAVIS, WE WILL HAVE 36 STEM CELL TRAINEES BY 2009 SUPPORTED BY THE CIRM. THERE'S A PARTNERSHIP WITH UC MERCED. THIS IS MULTIDISCIPLINARY TEAM TRAINING. THERE'S A SHARED HUMAN EMBRYONIC STEM CELL RESEARCH FACILITY IN DAVIS THAT HAS JUST BEEN FUNDED BY THE CIRM. THANK YOU. FOUR UC DAVIS RESEARCHERS HAVE WON GRANTS, SO THOSE ARE FOCUSING ON ALTERNATIVES TO LIVER TRANSPLANTATION, USING EMBRYONIC STEM CELLS REPAIRING KIDNEY DISEASE IN UTERO, NEW CARTILAGE REVERSING OSTEOPOROSIS, AND NEW INNER EAR CELLS TO REVERSE

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HEARING LOSS, ALL WITH HUMAN EMBRYONIC STEM CELLS.

SOME OF THE ASSETS THAT WE HAVE AND THAT WE THINK WOULD BE VERY IMPORTANT FOR THIS TYPE OF FACILITY ANYWHERE: WE HAVE THE NIH CLINICAL AND TRANSLATIONAL SCIENCE CENTER. THESE FUND TEAMS OF PEOPLE TO HELP US GET THE RESEARCH FROM THE BENCH TO THE BEDSIDE. WE'RE NEAR SHRINER'S HOSPITAL FOR CHILDREN. THIS IS A KEY PARTNER FOR BURN, SPINAL CORD INJURIES, AND ORTHOPEDICS WHERE THESE APPROACHES CAN BE TRANSLATED. WE HAVE ONE OF TWO NIH CENTERS OF EXCELLENCE IN TRANSLATIONAL HUMAN STEM CELL RESEARCH. AND THIS IS VERY IMPORTANT TO US. EXPERTISE USING HUMAN STEM CELLS IN ANIMAL MODELS, BOTH IMMUNE DEFICIENT MICE AND NONHUMAN PRIMATES.

SO WHAT THE FDA REQUIRES FROM US TO DO THESE TYPES OF TRIALS IS USE THE EXACT POPULATION OF HUMAN STEM CELLS TESTED IN ANIMALS. YOU HAVE TO MAKE SURE THEY'RE NOT GOING TO FORM TUMORS, AND YOU HAVE TO LOOK AT EFFICACY, AND YOU HAVE TO LOOK AT LONG-TERM DATA.

THE NONHUMAN PRIMATES ARE THE BEST MODEL FOR THIS BECAUSE THEY'RE THE MOST LONG-LIVED AND THE CLOSEST TO THE HUMANS. THE IMMUNE DEFICIENT MICE ARE CHEAPER. IT'S A SMALL ANIMAL MODEL. THEY ACCEPT THE HUMAN EMBRYONIC STEM CELLS AND ALSO ADULT STEM CELLS THAT ARE ISOLATED USING VERY SPECIFIC AND FDA-SANCTIONED WAYS. IT'S A MUCH HIGHER THROUGHPUT

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SYSTEM, OF COURSE.

WE ALSO HAVE INDUSTRY PARTNERSHIPS. WE FEEL THAT THESE ARE CRITICAL. SOME OF THE AREAS ARE JUST IMPROVING STEM CELL SELECTION, IMPROVING CRYOPRESERVATION, AND CLINICAL TRIALS USING ADULT STEM CELLS THAT WILL START NEXT YEAR.

WE FEEL THAT STRONG NETWORKS AND PARTNERSHIPS ARE CRITICAL. SO UC DAVIS, US MERCED, AND THE BUCK INSTITUTE, AND WE HAVE REPRESENTATIVES FROM EVERYONE HERE TODAY. WE'LL ALL SHARE THE SCRO, THE STEM CELL RESEARCH OVERSIGHT COMMITTEE. WE ALREADY ARE SHARING THOSE. SO THAT DOESN'T REQUIRE EACH INSTITUTION TO DEVELOP THEIR OWN. WE HAVE GOOD EXPERTISE AT UC DAVIS AND ARE SHARING THAT. WE'RE SHARING ANIMAL MODELS, AN OUTSTANDING IMAGING CORE, AND THE GMP FACILITY CURRENTLY UNDER CONSTRUCTION, AND OTHER KEY ASSETS.

I MENTIONED THE NONHUMAN PRIMATE FACILITY. THIS IS AVAILABLE TO ALL CALIFORNIA INVESTIGATORS. THERE'S ALSO AN AWARD WINNING TELEMEDICINE NETWORK WHICH WE HAVE WHICH LEVERAGES RESEARCH, CLINICAL AND EDUCATIONAL GOALS ACROSS MULTIPLE SITES. WE OUTREACH TO ALL OF THE HOSPITALS AND SMALLER UNIVERSITIES IN NORTHERN CALIFORNIA USING THIS.

SO WE'VE ASSEMBLED DISEASE AND TISSUE-SPECIFIC FOCUS GROUPS. WE THINK THAT THIS IS

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SOMETHING THAT'S VERY IMPORTANT. SO THE GOAL OF THIS IS TO FOSTER STRONG INTERACTION AMONG BASIC, TRANSLATIONAL, AND CLINICAL FACULTY AND EXTERNAL PARTNERS, INDUSTRY, AND OTHER HEALTH CENTERS. SO THIS GETS TOGETHER THE BASIC RESEARCHERS WITH, FOR INSTANCE, IN LIVER REGENERATION. IT'S GETS THE BASIC RESEARCHERS WORKING ON HUMAN EMBRYONIC STEM CELLS TOGETHER WITH THE LIVER TRANSPLANT PEOPLE AND THE M.D.'S THAT WORK IN THAT AREA AND REALLY HELPS FOSTER IDEAS. IT HELPS THE BASIC RESEARCHERS, THAT'S THE SIDE THAT I'M ON, AND THE TRANSLATIONAL RESEARCHERS UNDERSTAND WHAT'S REALLY NECESSARY AT THE CLINICAL LEVEL. AND WE THINK THAT THIS IS PRETTY KEY AND IS SOMETHING THAT SHOULD BE WEIGHTED STRONGLY.

WE ALSO HAVE PEOPLE -- DEFINED FOCUS GROUPS IN HEART DISEASE AND BIOLOGICAL PACEMAKERS, NEUROLOGICAL DISEASES, PERIPHERAL ARTERY DISEASE, REVASCULARIZATION, AND OTHER FOCUS GROUPS, EYE, KIDNEY, LUNG, SKIN, BONE, AND CARTILAGE.

SO WE FEEL THAT IT'S VERY IMPORTANT TO HAVE THE ESSENTIAL CORES WHICH WILL, AS A SERVICE, ENHANCE RESEARCH DEVELOPMENT. ON THE BASIC RESEARCH SIDE, THINGS THAT ARE IMPORTANT ARE TRANSGENIC MICE, VECTOR CORE TO ALLOW INSERTION OF GENES INTO CELLS TO STUDY HOW THAT AFFECTS THEM. FACS SORTING, WE HAVE TO PUT IN

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THE DIFFERENTIATED PRODUCTS OF THE HUMAN EMBRYONIC STEM CELLS. WE CANNOT ALLOW THE STILL PRIMITIVE CELLS TO GO INTO ANY ANIMAL HOPEFULLY OR ANY HUMAN. THEY WILL FORM A TUMOR. THIS IS VERY IMPORTANT TO HAVE HIGH LEVEL FACS SORTING. MICROSCOPY CORES AND SHARED HUMAN EMBRYONIC STEM CELL FACILITIES, WHICH ARE ALREADY BEING FUNDED.

ON THE TRANSLATIONAL RESEARCH SIDE, WE HAVE THE XENO TRANSPLANTATION CORES, HUMAN CELLS INTO MICE AND NONHUMAN PRIMATES. TISSUE REPAIR MODELS, SO WAYS THAT ARE SIMILAR TO THE INJURIES THAT WOULD HAPPEN IN OUR PATIENTS THAT WE WOULD LIKE TO TREAT THAT CAN HAPPEN IN ANIMALS, AND LOOKING AT THE EFFICACY OF STEM CELLS TO CORRECT THAT, BOTH ADULT AND EMBRYONIC. IMAGING CORES ARE HIGHLY IMPORTANT, AND THE ABILITY TO DYNAMICALLY IMAGE THE STEM CELLS AND THEIR TRAFFICKING IN ANIMALS OVER TIME IN THE SAME ANIMAL SAVES A LOT OF MONEY. THIS IS CRITICAL.

GOOD LABORATORY PRACTICE SCALE-UP FOR TRIALS IS ESSENTIAL. EVERYTHING IS A WASTE OF TIME IF YOU'RE NOT DOING IT AT THE LEVEL OF GOOD LABORATORY PRACTICE. THIS IS SOMETHING THAT THE FDA WANTS TO SEE. WHEN YOU ARE PREPARING FOR A CLINICAL TRIAL, THEY WANT TO SEE WHERE YOU'VE KEPT YOUR RECORDS, HOW YOU'VE STORED THEM, AND THAT EVERYTHING HAS BEEN DONE IN AN FDA-APPROVABLE

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WAY. ALSO ON THE TRANSLATIONAL SIDE, THE PRIMATE CENTER IS KEY FOR US.

WE HAVE CLINICAL TRIALS SCIENCE CENTER WHICH HELPS WITH BOTH THE TRANSLATIONAL RESEARCH AND THE CLINICAL TRIALS FOR THE PAPERWORK, MOVING THINGS SMOOTHLY, GIVING SEED GRANTS TO INVESTIGATORS THAT ARE TRYING TO MOVE THE RESEARCH FORWARD. THE GOOD MANUFACTURING PRACTICE FACILITY IS CRITICAL TO ACTUALLY DO THE CLINICAL TRIALS. IT HAS TO HAVE A SOLID QUALITY ASSURANCE, QUALITY CONTROL PROGRAM, AND PERSONNEL THAT KNOW HOW TO PREPARE STANDARD OPERATING PROCEDURES AND INVESTIGATIONAL NEW DRUG APPLICATION. WITHOUT THAT, YOU JUST CAN'T GET THROUGH THE FDA WITHOUT PEOPLE THAT HAVE HAD A LOT OF EXPERIENCE THERE.

ONE OF THE KEY CRITERIA WILL BE THE ANIMAL MODELS FOR HUMAN STEM CELL THERAPIES, AND WE HOPE THAT YOU WEIGHT THIS VERY STRONGLY. THIS IS AN IMPORTANT REQUISITE FOR OBTAINING FDA APPROVAL FOR CELLULAR THERAPY TRIALS TO DEMONSTRATE BOTH SAFETY AND EFFICACY USING THE EXACT POPULATION OF HUMAN STEM CELLS IN ANIMAL MODELS. YOU HAVE TO ISOLATE THEM IN EXACTLY THE SAME WAY THAT YOU WILL IN THE PATIENT.

SO THE FACILITY THAT WE'RE PLANNING WILL ALLOW ISOLATION OF ADULT STEM CELLS IN THE GMP FACILITY, EXPANSION OF EMBRYONIC STEM CELLS UNDER GMP

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COMPLIANT CONDITIONS, SAFETY AND EFFICACY TESTING IN IMMUNE DEFICIENT MICE, SAFETY AND EFFICACY ASSESSMENTS IN NONHUMAN PRIMATES PRIOR TO THE CLINICAL TRIALS, DEVELOPMENT OF SOP'S AND SUBMISSION OF IND APPLICATIONS TO WHICH I JUST REFERRED AND, FINALLY, PERFORMANCE OF THE CLINICAL TRIALS. SO EVERYTHING FROM THE BENCH TO THE BEDSIDE.

SO I HAD A COUPLE OF SLIDES IN HERE SHOWING TRIALS THAT WE WILL START IN AUGUST OF 2008 WHEN OUR GMP FACILITY AND OUR NEW STEM CELL CENTER IS READY. THE FIRST ONE WOULD BE HUMAN ADULT STEM CELLS BEING RAPIDLY RECRUITED TO THE SITE OF BLOOD VESSEL BLOCKAGE IN IMMUNE DEFICIENT MICE. THEY GO THERE WITHIN SIX HOURS TO BEGIN THE REPAIR. SO WE HOPE THAT YOU DON'T FOCUS ONLY ON HUMAN EMBRYONIC STEM CELLS, BUT ALSO ALLOW INSTITUTIONS TO COMPARE THE ADULT STEM CELLS. THERE ARE CURES THAT ARE COMING VERY RAPIDLY USING THE ADULT STEM CELLS WHILE WE WORK ON THE SAFETY OF THE HUMAN EMBRYONIC STEM CELLS.

WE ALSO HAVE DYNAMIC IMAGING STUDIES IN NONHUMAN PRIMATES ONGOING. THIS, AGAIN, HELPS US TO LOOK AT STEM CELL MIGRATION AND SAFETY AND EFFICACY.

SO WE'RE CURRENTLY DEVELOPING A PREEXISTING 100,000 SQUARE FOOT BUILDING ON THE SACRAMENTO CAMPUS AS OUR STEM CELL RESEARCH FACILITY. IT WILL

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EXPEDIENTLY ALLOW RESEARCHERS IN OUR GROUP AND OTHER COLLABORATORS THROUGHOUT CALIFORNIA TO SHARE OUR LABORATORIES, QUARTERS, AND A GOOD MANUFACTURING PRACTICE FACILITY FOR CELLULAR THERAPIES. WE HAVE A LARGE VIVARIUM THERE FOR PRECLINICAL TESTING OF THESE HUMAN CELLS. THERE ARE TWO COMMON MEETING AREAS FOR COFFEE AND IDEA SHARING LOCATED OUTSIDE OF AUDITORIUMS, SMALLER LECTURE AND CONFERENCE ROOM. THE CTSC IS ADJACENT, FACILITATING TRANSLATION OF TECHNOLOGIES TO THE CLINIC. AND EACH FOCUS GROUP AREA CONTAINS TRANSITIONAL BENCHES FOR CLINICAL FACULTY, FELLOWS, AND INDUSTRY PARTNERS TO PERFORM COLLABORATIVE SCALE-UP RESEARCH WITHIN THE GROUP.

THE UNIVERSITY HAS COMMITTED TO BUILDING OUT HALF OF THIS SPACE, AND WE WILL BE APPLYING TO CIRM TO HELP US BUILD OUT THE REMAINING BENCH SPACE.

ONE OF OUR KEY ASSETS IS CLINICAL TRIALS EXPERIENCE. BETWEEN MYSELF AND DR. BAUER, WHO RUNS OUR GMP FACILITY, WE'VE HAD TWO DECADES OF EXPERIENCE WITH CELL THERAPY TRIALS. WE HAVE PARTICIPATED IN AND DESIGNED 18 TRIALS SINCE 1994. AND THESE ARE CLINICAL TRIALS USING ADULT STEM CELLS. WE'LL BEGIN IN 2008, ONCE THE FDA-REQUIRED SAFETY STUDIES ARE FINISHED.

CHAIRMAN LICHTENGER: THANK YOU VERY MUCH FOR YOUR PRESENTATION. NOW I'M GOING TO OPEN IT UP FOR

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QUESTIONS. MARCY.

MS. FEIT: WHAT IS THE TIMEFRAME OF YOUR ORGANIZATION FOR COMPLETING YOUR RESEARCH FACILITIES?

DR. NOLTA: WE'RE CURRENTLY APPROACHING THE BIDDING PHASE. SO WE'RE IN REVIEW AT THE MOMENT. CONSTRUCTION WILL START IN SEPTEMBER OR OCTOBER OF THIS YEAR. IT WILL BE READY FOR MOVE-IN, AT LEAST THE FIRST HALF THAT THE UNIVERSITY HAS PLEDGED, IN SEPTEMBER OF 2008. AND BY THAT TIME WE'LL HAVE THE PAPERWORK READY FOR THE ADULT STEM CELL TRIALS WHICH WILL BEGIN AT THAT POINT.

CHAIRMAN LICHTENGER: SO WE'RE TALKING ABOUT A YEAR AND A HALF FROM NOW ROUGHLY?

DR. NOLTA: YEAH. LITTLE LESS.

MR. SHEEHY: JUST A COUPLE OF QUESTIONS. IN TERMS OF THIS LOCATION, IS THIS NEAR THE PRIMATE CENTER?

DR. NOLTA: IT'S ACTUALLY ON THE SACRAMENTO CAMPUS, AND THE PRIMATE CENTER ON THE DAVIS CAMPUS, THEY'RE ABOUT TEN TO FIFTEEN MINUTES AWAY FROM EACH OTHER, DEPENDING ON HOW YOU DRIVE.

MR. SHEEHY: AND THE OTHER QUESTION I HAD WAS ABOUT THE NONHUMAN PRIMATE. THERE HAVE BEEN QUESTIONS RAISED ABOUT THE ETHICS. CERTAIN EXPERIMENTS IN NONHUMAN PRIMATES NOT REALLY CONSIDERED TO BE -- LIKE

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INTRODUCING THEM TO THE BRAIN OR INTO GERM CELLS. IT SEEMS LIKE YOU'RE DOING IMAGING STUDIES RIGHT NOW SO YOU CAN FIGURE OUT WHERE THEY'RE GOING SEEMS LIKE THE FIRST STAGE. AND I UNDERSTAND THE IMPORTANCE OF DOING NONHUMAN PRIMATE RESEARCH MIGHT BE HELPFUL.

NOT NECESSARILY TO ANSWER ME HERE TODAY BECAUSE THEY'RE NOT LIVE IN FRONT OF US, BUT I KNOW THAT THIS IS A QUESTION THAT WAS RAISED, MAYBE ELABORATING IN YOUR APPLICATION MIGHT BE HELPFUL BECAUSE SOME PEOPLE WEREN'T REALLY CLEAR.

DR. NOLTA: CERTAINLY. SO WE WOULD NEVER, FOR INSTANCE, INTRODUCE HUMAN EMBRYONIC STEM CELLS INTO A BLASTOCYST STAGE OR AN EARLY EMBRYO STAGE, BUT THESE GO INTO FETAL NONHUMAN PRIMATES THAT ARE ALREADY DEVELOPED AND ARE JUST GROWING, AND THE FULLY DIFFERENTIATED CELLS GO IN.

CHAIRMAN LICHTENGER: SO ONE COMMENT AND ONE QUESTION. IF YOU COULD PLEASE SEND THIS SO WE CAN DISTRIBUTE IT TO EVERYONE.

DR. NOLTA: I HAVE IT ON THREE DIFFERENT THUMB DRIVES.

CHAIRMAN LICHTENGER: THAT'S FINE. SO I'M GOING TO ASK A QUESTION I ASKED ONE OF THE OTHER PRESENTERS. SO IF THERE WAS ONE SINGLE POINT THAT YOU WANTED TO GET ACROSS TO THIS FACILITIES WORKING GROUP,

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WHAT WOULD THAT ONE POINT BE?

DR. NOLTA: YES. THAT WE WOULD REALLY HOPE THAT THE RFA WILL BE PUT OUT WITH VERY CLEAR CATEGORIES SUCH AS THOSE I HAD DISCUSSED WHERE WE'LL BE GRADED. AND WE HOPE THAT WE COULD KNOW THE WEIGHT WITH WHICH EACH CATEGORY COULD BE ASSESSED. AND WE HOPE THAT OUR TAKE-HOME MESSAGE IS THAT YOU WILL LOOK VERY STRONGLY AT THE SPIRIT OF THE COLLABORATION, GOOD, CLEAN, LONG-STANDING SCIENCE, AND THE ABILITY TO MOVE THIS RAPIDLY INTO THE CLINIC, BOTH STEM CELLS -- ADULT STEM CELLS AND EMBRYONIC.

CHAIRMAN LICHTENGER: OKAY. ANY OTHER QUESTIONS?

MR. KASHIAN: I WAS CURIOUS ABOUT OUR RULES AND REGULATIONS AND OUR STAFF. YOU FIND THEM HELPFUL, OR WHAT FACILITIES OR WHAT SERVICES CAN WE OFFER TO HELP FACILITATE AN APPLICATION?

DR. NOLTA: AS I JUST MENTIONED, IT WOULD BE GREAT IF WE JUST KNEW THAT 50 PERCENT WOULD BE ON THE SCIENCE, 20 PERCENT -- YOU KNOW, 5 PERCENT ON THE MATCH, JUST THE CRITERIA WITH WHICH YOU WOULD LOOK AT THE APPLICATIONS WOULD REALLY HELP US BECAUSE I THINK WITH THE SMALL FACILITIES GRANTS, WE DIDN'T REALLY KNOW HOW THINGS MIGHT BE SCORED, AND IT WOULD BE REALLY HELPFUL FOR THIS. THERE WAS AN IDEA, BUT --

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CHAIRMAN LICHTENGER: DIDN'T WE -- WASN'T THAT PUBLIC INFORMATION?

MS. HYSEN: WE COVERED THAT TOO, THAT QUESTION, WHAT WOULD YOU LIKE TO KNOW IN ADVANCE IN THE LAST MEETING TOO BECAUSE WE THOUGHT IT WASN'T MADE AVAILABLE.

MR. KELLER: CATEGORIES WERE KNOWN, BUT NOT THE WEIGHTING.

DR. NOLTA: WHAT'S MORE IMPORTANT FOR YOU TO SEE FROM US.

CHAIRMAN LICHTENGER: WE'LL CONSIDER THAT.

DR. NOLTA: WE APPRECIATE THIS OPPORTUNITY FOR EVERYONE TO COME FORTH AND GIVE THEIR IDEAS. I THINK IT'S A GREAT THING.

MR. SHEEHY: I JUST HAD -- I THINK THE WEIGHT OF THE SCIENCE IS ALWAYS GOING TO BE KIND OF A MOVING TARGET BECAUSE THESE TWO WORKING GROUPS OPERATE ON DIFFERENT TRACKS. I DO THINK THAT THE SCIENCE PIECE WILL HAVE, AT LEAST FROM THE LAST, WE HAVE TO JUDGE IT BY WHAT THE ICOC DOES. THEY SEEM TO ATTACH A GREATER SIGNIFICANCE TO THE SCIENCE SIDE, BUT THEY MAY MAKE THAT A MORE FORMAL POLICY OR IT MAY BE INFORMAL AS THEY DID AT THE LAST ROUND.

MY QUESTION IS IS THAT WITHIN THE CONTEXT OF THE SCIENTIFIC PEER REVIEW APPLICATION, REVIEW OF AN

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APPLICATION. WOULD YOU LIKE THOSE SPELLED OUT, SAY, SCIENTIFIC EXCELLENCE, TRACK RECORD OF INVESTIGATORS WEIGHTED WITH SPECIFIC POINTS? WOULD YOU LIKE THOSE REVIEWERS -- OR WOULD YOU LIKE MORE OF AN NIH TRADITIONAL PEER REVIEW? AS A SCIENTIST --

DR. NOLTA: I WOULD FIND THE WEIGHTING MORE USEFUL. WITH THE NIH, WE'VE ALL DONE STUDY SECTIONS. WE ALL KNOW WHAT'S ACTUALLY REALLY IMPORTANT IS THE SIGNIFICANCE AND THE NOVELTY. BUT IT'S NOT REALLY SPELLED OUT, BUT IT WOULD BE GREAT IF THERE WAS SOME WAY TO KNOW THAT.

MR. SHEEHY: DO YOU THINK REVIEWERS WOULD BE COMFORTABLE WITH THAT, OKAY, YOU GET A SPREAD?

DR. NOLTA: IF I WAS A REVIEWER, IT WOULD HELP ME. WITH NIH YOU NEVER REALLY KNOW.

MS. HYSEN: I JUST MAYBE HAVE JUST A NOTE AS WE START TO COLLABORATE. THE NOTION THAT WE'LL GIVE PREFERENCE TO FACILITIES THAT ARE COMING ONLINE WITHIN TWO YEARS OF THE AWARD, WE SHOULD COMPARE WITH WHAT THE FIRST SPEAKER MENTIONED AS TO HOW LONG SOME OF THIS WORK NEEDS TO TAKE THAT MAY WELL EXCEED THE PLANNING AND CONSTRUCTION TIME OF A FACILITY SO THAT IN TOTAL THAT TIMELINE IS SOMEHOW FACTORED INTO OUR ANALYSIS BECAUSE IF YOU BUILD IT QUICKLY, AND YET YOU DON'T HAVE ALL THE THINGS IN PLACE THAT TAKE YEARS OF PLANNING AND

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TIME, THEN WE MAY NOT HAVE IN THE END WHAT WE'RE LOOKING FOR.

CHAIRMAN LICHTENGER: OKAY. GREAT. IF THERE ARE NO OTHER QUESTIONS, THANK YOU FOR ANSWERING OUR QUESTIONS AND YOUR PRESENTATION. THANK YOU. RICK, NEXT PRESENTER.

MR. KELLER: NEXT PRESENTER IS MARIA PALLAVICINI, DEAN OF THE SCHOOL OF NATURAL SCIENCES OF UC MERCED.

DR. PALLAVICINI: YOU DID IT PERFECTLY.

CHAIRMAN LICHTENGER: DO WE HAVE A HANDOUT?

DR. PALLAVICINI: NO, WE DON'T. I'M PART OF THE UC DAVIS TEAM, AND WE DON'T HAVE A HANDOUT, BUT I WILL SEND IT TO YOU.

I'D LIKE TO START OUT WITH FIVE CRITERIA THAT WE AS A SMALL INSTITUTION AND A GROWING UC CAMPUS FEEL ARE VERY IMPORTANT FOR OUR CAMPUS AND FOR STEM CELL BIOLOGY IN GENERAL.

FIRST IT'S TO LOOK FOR PROGRAMS THAT INTEGRATE ACROSS DISCIPLINES. MANY OF THE ADVANCES THAT ARE MOST SIGNIFICANT AND THAT ARE MADE MOST QUICKLY ARE THOSE ADVANCES THAT INTEGRATE ACROSS DISCIPLINES, ENGINEERING WITH BIOLOGY, BIOLOGY WITH CHEMISTRY. SO LOOK FOR PROGRAMS THAT YOU CAN LOOK FOR THAT INTEGRATION.

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BEING IN THE CENTRAL VALLEY, AS A NEW CAMPUS, WE HAVE A VERY STRONG COMMITMENT TO STUDENTS OF OUR REGION, FOR STUDENTS OF OUR REGION FOR PROVIDING OPPORTUNITIES FOR HIGHER EDUCATION AS WELL AS FOR RESEARCH. SO LET'S LOOK TO HOW WE CAN TRAIN THE NEXT GENERATION OF STUDENTS, HOW WE CAN TRAIN STUDENTS WHO WILL REFLECT THE FACE OF CALIFORNIA IN THE PROGRAMS THAT WE PUT FORWARD THROUGH CIRM AND THE FACILITIES THAT CIRM PROVIDES.

LOOK TO HOW THE FACILITIES CAN IMPACT NOT JUST A CITY, NOT JUST A LOCALIZED AREA, BUT LOOK HOW THEY CAN IMPACT A REGION. CONSIDER THE SAN JOAQUIN VALLEY, WHICH IS FROM STOCKTON TO BAKERSFIELD, 500 SQUARE MILES. NOT A SINGLE BIOTECH COMPANY IN THAT REGION. TWO MAJOR UNIVERSITIES, CSU FRESNO, UC MERCED, AND CSU STANISLAUS, AND CSU BAKERSFIELD ON THE SOUTH END. LOOK TO HOW ONE CAN USE OR LEVERAGE THE MONEY THAT THE VOTERS HAVE COMMITTED TO STEM CELL BIOLOGY TO HELP PROVIDE OPPORTUNITIES FOR ALL OF CALIFORNIA.

LOOK FOR A TRACK RECORD OF COLLABORATION. AS A NEW UC CAMPUS WITH 1200 STUDENTS RIGHT NOW, LOOKING TO GROW TO 2,000 NEXT YEAR, WE DON'T LOOK TO SET UP EVERYTHING OURSELVES FROM THE GET-GO. WE LOOK TO HOW WE CAN COLLABORATE AND LEVERAGE WITH OUR OTHER PARTNERS, WHICH IN THIS CASE IS UC DAVIS. SO LOOK TO

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HOW THE FACILITIES AND THE PROGRAMS WILL LEVERAGE STRENGTHS ACROSS INSTITUTIONS.

A LITTLE BIT ABOUT UC MERCED SINCE I KNOW IT'S NEW TO MANY OF YOU. WE OPENED IN 2005 ON 105 ACRES. RIGHT NOW WE HAVE APPROXIMATELY 1200 INDIVIDUALS WITH A PAYROLL OF FOUR MILLION PER MONTH. AS OF FALL 2006, NEARLY 40 PERCENT OF OUR STUDENTS CAME FROM THE CENTRAL VALLEY. AND THE IMPACT OF THE CAMPUS ON THE REGION WAS $558 MILLION TO DATE.

OUR STUDENTS COME FROM THE CENTRAL VALLEY, AND THE CENTRAL VALLEY IS VERY DIVERSE. THIRTY-FIVE PERCENT ARE LOW-INCOME, 45 PERCENT COME FROM FAMILIES WHERE ENGLISH IS A SECOND LANGUAGE. WE HAVE 35 PERCENT HISPANIC-LATINO STUDENTS, ABOUT 25 PERCENT ASIAN STUDENTS, 6 PERCENT AFRICAN AMERICAN, THE HIGHEST IN THE UC SYSTEM.

LET'S LOOK TO PUT FACILITIES WHERE YOU CAN PROVIDE OPPORTUNITIES FOR ALL OF THESE STUDENTS. AT UC MERCED IN THE ACADEMIC YEAR, 35 PERCENT OF OUR STUDENTS WERE BIOLOGY MAJORS, 15 PERCENT WERE ENGINEERING MAJORS. THAT'S 50 PERCENT OF ALL THE STUDENTS ENROLLED IN OUR CAMPUS ARE IN SCIENCE AND ENGINEERING. AS OF LAST YEAR, WE HAD SIX FACULTY IN STEM CELL BIOLOGY, ONE OF WHICH RECEIVED A CIRM TRAINING GRANT, AND ONE GRAD STUDENT SUPPORTED ON A CIRM FELLOWSHIP IN OUR

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COLLABORATIONS WITH UC DAVIS. WE LOOK TO MANY MORE.

OUR FACULTY ARE ACROSS DISCIPLINES. THEY ARE BIOENGINEERING FACULTY WHO ARE USING DEVICES TO LOOK AT HOW ONE CAN USE SHEAR STRESS, FOR EXAMPLE, TO INFLUENCE WHETHER A STEM CELL WILL BECOME AN ENDOTHELIAL CELL OR A MUSCLE CELL. THE CIRM-SUPPORTED GRADUATE STUDENT IS LOOKING AT HOW ADHESION MOLECULES, MOLECULES THAT CONNECT BETWEEN TWO CELLS, CAN BE MANIPULATED TO DETERMINE WHAT THOSE CELLS ARE GOING TO BECOME. LAST YEAR ALONE WE HAD 25 OF OUR UNDERGRADUATES INVOLVED IN THE RESEARCH LABS OF THESE FACULTY. THAT'S A TREMENDOUS IMPACT FOR UNDERGRADUATES FROM A VERY DIVERSE AREA WHO HAVE NOT HAD THE OPPORTUNITY BEFORE TO PARTICIPATE IN STEM CELL RESEARCH.

UC MERCED BRINGS PARTICULAR STRENGTH TO OUR COLLABORATION WITH UC DAVIS. WE ARE A VERY HIGHLY INTERDISCIPLINARY CAMPUS. WE DON'T HAVE DISCIPLINE-BASED DEPARTMENTS SET OFF AND CREATE SILOS ON ESTABLISHED INSTITUTIONS WHERE IT'S DIFFICULT TO HAVE A PHYSICIST WORK WITH A BIOLOGIST TO LOOK AT PARAMETERS ASSOCIATED WITH STEM CELLS. OUR SCIENCE FACULTY ARE HOUSED TOGETHER WITH OUR ENGINEERING FACULTY IN A BEAUTIFUL 100,000 SQUARE FOOT BUILDING ON OUR MAIN CAMPUS. WE HAVE A VIVARIUM. WE HAVE FACULTY. WE'RE IN A GROWTH PHASE. ACROSS THE CAMPUS RIGHT NOW,

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WE HAVE 105 FACULTY. NEXT YEAR WE'RE GOING TO BE ADDING 127 AND THE YEAR AFTER THAT 153. IN 2030 THIS CAMPUS, WHICH IS NOW 2,000 STUDENTS, IS GOING TO BE UP TO 23,000 STUDENTS.

SO WE HAVE TREMENDOUS OPPORTUNITIES ON THIS CAMPUS TO PROVIDE RESEARCH OPPORTUNITIES FOR OUR STUDENTS FROM DISADVANTAGED BACKGROUNDS TO LINK UP TO OUR SISTER CAMPUSES TO LEVERAGE WHAT THEY HAVE WITH WHAT SOME OF OUR UNIQUE CAPABILITIES ARE.

OUR UNIQUE CAPABILITIES ARE OUR INTERDISCIPLINARY RESEARCH. THE CIRM GRANT THAT'S BEEN FUNDED FOR ONE OF OUR SEVEN INVESTIGATORS NOW BRINGS TOGETHER SCIENCE FACULTY AND ENGINEERING FACULTY IN A UNIQUE RESEARCH PROJECT. PEOPLE OFTEN LOOK AT UC MERCED AND THEY SAY, "YOU'RE A STARTING CAMPUS. HOW CAN YOU ASPIRE TO BUILD A STEM CELL GROUP? HOW CAN YOU ASPIRE TO BE A TOPNOTCH RESEARCH UNIVERSITY?" BUT THAT'S EXACTLY WHAT WE DO ASPIRE TO BE. OUR ASSISTANT PROFESSORS BROUGHT IN MORE MONEY PER INDIVIDUAL, PER FTE THAN ANYWHERE ON ANY OF THE UC CAMPUSES.

NOW, THIS IS NOT DUE, OF COURSE, SOLELY TO STEM CELL BIOLOGY RESEARCH. BUT WE HAVE THE HIGHEST AMOUNT -- IN ACADEMIC YEAR 2005-2006, THE HIGHEST AMOUNT OF RESEARCH DOLLARS BROUGHT INTO OUR CAMPUS PER OUR ASSISTANT FACULTY.

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SO WHEN WE LOOK AT HOW UC MERCED IS BUILDING ITS STEM CELL BIOLOGY GROUP, WE DO IT BECAUSE THE FACULTY IN THE SCIENCE AND ENGINEERING SCHOOLS HAVE COMMITTED TO BUILDING THIS PROGRAM. IN EACH OF THE SCHOOL'S FIVE-YEAR STRATEGIC PLAN, THERE ARE ADDITIONAL HIRES FOR STEM CELL BIOLOGY FACULTY. WE RECOGNIZE THAT AS A CAMPUS THAT WE HAVE A UNIQUE OPPORTUNITY HERE IN CALIFORNIA TO BE ABLE TO LEVERAGE THE RESOURCES THAT ARE AVAILABLE THROUGH THE CIRM FOUNDATIONS.

NOW, I MENTIONED WHEN WE STARTED THAT WE CLEARLY ASPIRE TO BE AT THE TOP OF THE UC CAMPUSES OR AMONG THE TOP, BUT WE CAN'T DO THAT ALONE. SO WE LOOK TO OUR PARTNERS, DAVIS IN THIS CASE, AS TO WHAT WE CAN DO WITH DAVIS. HOW DID DAVIS HELP UC MERCED DEVELOP ITS STEM CELL BIOLOGY PROGRAM? AS WE GROW OUR FACULTY, WE'LL CLEARLY BE ADDING MORE STEM CELL FACULTY, BUT WE DON'T HAVE THEM YET. DOES IT MAKE SENSE FOR US TO GO FOR OUR OWN FACILITY AT THIS POINT? NO. WE ELECTED TO NOT DO THAT. BUT DAVIS HAS WONDERFUL FACILITIES, WONDERFUL ANIMAL MODELS THAT ARE CRITICALLY IMPORTANT FOR OUR ASSISTANT PROFESSORS AND OUR PROFESSORS TO BE ABLE TO ACCESS.

WE LOOK FORWARD TO COLLABORATIONS WITH THE BUCK INSTITUTE THROUGH THIS PARTNERSHIP WITH ACCESS TO GMP EMBRYONIC STEM CELL LINES. WE LOOK FORWARD TO

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BEING ABLE TO WORK WITH UC DAVIS ON THE VECTOR CORE THAT THEY PROPOSE AS PART OF THEIR FACILITY, ON THEIR XENOGRAPH CORE, ON THEIR TISSUE MODEL CORES, AND ON THEIR PRIMATE FACILITIES. BUT VERY IMPORTANTLY, WE LOOK TO UC DAVIS TO HELP US WITH TAKING SOME OF THE BASIC SCIENCE THAT OUR CURRENT FACULTY ARE DOING AND INTEGRATING IT INTO CLINICAL PRACTICE, LOOKING TO UC DAVIS TO PROVIDE THE TRANSLATIONAL ARM FOR THE RESEARCH THAT WE DON'T HAVE YET AT UC MERCED. AND THIS HAS BEEN A WONDERFUL COLLABORATION SO FAR WITH UC DAVIS.

WE HAVE CIRM FELLOWS AT UC MERCED. OUR STUDENTS ARE TAKING COURSES BY VIDEOCONFERENCING THROUGH UC DAVIS. WE PARTICIPATE IN STEM CELL TRAINING COURSES, SEMINARS THAT COME TO -- SEMINAR SPEAKERS THAT COME TO UC DAVIS WILL ALSO TO COME UC MERCED. AND SO WE LOOK TO MUCH MORE OF THAT HAPPENING WITH OUR COLLABORATIONS WITH DAVIS.

SO I URGE TO YOU TO CONSIDER STRONGLY THE USE OF VOTERS' MONEY TO DEVELOP STEM CELL RESEARCH THAT CAN LEVERAGE A REGION, TO ALLOW ALL REGIONS OF CALIFORNIA TO BENEFIT FROM THIS MONEY, AND NOT JUST TO PUT THE MONEY IN REGIONS THAT HAVE DEMONSTRATED EXCELLENCE. LOOK FOR REGIONS THAT HAVE THE OPPORTUNITY TO PROVIDE THAT EXCELLENCE AND THE STUDENTS FROM A VERY DIVERSE BACKGROUND TO CONTRIBUTE TO THAT AND BE PART OF IT.

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CHAIRMAN LICHTENGER: GREAT. THANK YOU FOR YOUR PRESENTATION. I'LL OPEN IT UP NOW TO ANY MEMBERS THAT HAVE QUESTIONS.

MR. KASHIAN: I HAVE A CONFLICT OF INTEREST.

CHAIRMAN LICHTENGER: IS THIS THE CLOSEST UC TO FRESNO, ED? IS THAT WHAT YOU'RE GOING TO TELL ME?

MR. KASHIAN: IT'S ACTUALLY UC MERCED AT FRESNO.

DR. PALLAVICINI: WE WON'T GO THERE.

CHAIRMAN LICHTENGER: THANKS FOR YOUR COMMENT.

MR. KASHIAN: YOU MIGHT WANT TO POINT OUT THE POSSIBILITY OF OBTAINING A UC MEDICAL SCHOOL AT MERCED AS WELL IN THE FUTURE.

DR. PALLAVICINI: RIGHT. WE ARE -- SOME OF YOU MAY HAVE HEARD THAT UC MERCED IS PLANNING TO DEVELOP A MEDICAL SCHOOL IN THE HOPEFULLY NOT TOO DISTANT FUTURE. IT'S A MEDICAL SCHOOL WHICH IS A REGIONAL MODEL THAT HAS SOME OF THE BASIC TRAINING, BASIC COURSES AT UC MERCED, AND THE CLINICAL CAMPUS OF THIS MEDICAL SCHOOL WILL BE IN FRESNO. AND WE ARE TALKING AS WE SPEAK WITH THE REGENTS ABOUT THIS AND PUTTING FORWARD A BUSINESS PLAN.

IT'S A DIFFERENT TYPE OF MEDICAL SCHOOL THAN IS ON ANY OF THE OTHER UC CAMPUSES. WITH THAT BEING

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SAID, YOU CAN IMAGINE THAT THERE MIGHT BE SOME EYEBROWS RAISED, BUT UC MERCED GOT OPEN AS A CAMPUS BECAUSE WE HAD A VISION. AND WE CERTAINLY HAVE A VISION TO IMPROVE HEALTHCARE IN THE VALLEY. DOWN THE ROAD, WE HOPE TO BE ABLE TO DO OUR OWN CLINICAL TRIALS WITH STEM CELLS, BUT IN THE NEAR TERM, DAVIS IS A VERY GOOD PARTNER FOR THIS.

CHAIRMAN LICHTENGER: I JUST HAVE ONE COMMENT. WE HAVE NOT DETERMINED WHAT SIZE. THERE MAY BE VARYING SIZE OF GRANTS. SO I JUST WANT TO MENTION THAT.

DR. PALLAVICINI: GOOD. THANK YOU.

CHAIRMAN LICHTENGER: ANY OTHER QUESTIONS? OKAY. WELL, THANK YOU VERY MUCH. AND, RICK, THE LAST PRESENTER, LAST BUT NOT LEAST.

MR. KELLER: OUR NEXT PRESENTER IS DR. JAMES KOVACH, PRESIDENT AND CHIEF OPERATING OFFICER OF THE BUCK INSTITUTE.

DR. KOVACH: THANK YOU. I DON'T HAVE A POWERPOINT EITHER. I CAME AS PART OF THE -- AT THE INVITATION OF UC DAVIS, AND WOULD LIKE TO THANK PEOPLE FOR INVITING ME. I THINK JUST TO ECHO OTHERS' COMMENTARY ABOUT THIS RELATIONSHIP WITH DAVIS THAT ALLOWED US TO GAIN ACCESS TO THE ESCRO'S, REALLY QUITE IMPORTANT TO US. THE BREADTH OF EXPERTISE NEEDED IN AN

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ESCRO IS SOMEWHAT DAUNTING TO A RESEARCH INSTITUTE LIKE THE BUCK INSTITUTE THAT IS REALLY FOCUSED ON BASIC RESEARCH. AND IT REALLY HAS ALLOWED US TO ACTUALLY MEET AFTER THIS MEETING TO TALK ABOUT SYNERGIES AND OTHER WAYS TO WORK TOGETHER.

JUST AS A PRELUDE, THE BUCK INSTITUTE IS AN INDEPENDENT RESEARCH INSTITUTE LOCATED IN NOVATO, CALIFORNIA. IT OPENED ITS DOORS IN 1999. IT'S ACTUALLY AN I. M. PEI DESIGNED RESEARCH INSTITUTE. IT'S THE ONLY INSTITUTE IN THE COUNTRY THAT'S DEDICATED EXCLUSIVELY TO AIDS RESEARCH. WE RECEIVED A $4.1 MILLION TRAINING GRANT TO THE NORTH BAY CONSORTIUM FOR STEM CELL TRAINING. AND CERTAINLY THAT GRANT CHANGES THE ARC OF OUR OWN HISTORY FOREVER.

IT IS CONVERTING NEW SPACE, SHELL SPACE THAT WAS ORIGINALLY DESIGNATED AS OFFICE SPACE, BUT NOW FOREVER WILL BE USED TO TRAIN NOT ONLY SCIENTISTS OF BUCK INSTITUTE, BUT THOSE THROUGHOUT THE REGION. AND I THINK THAT IT'S A WONDERFUL STATEMENT TO BE ABLE TO CREATE SCIENTIFIC SPACE AND ALSO IN TERMS OF THE METRICS OF LOOKING AT LEVERAGE. CERTAINLY THERE'S THE LEVERAGE OF GETTING THIS SPACE UP AND RUNNING, BUT THEN THERE'S THE ADDITIONAL LEVERAGE OF HAVING SUCH A PROFOUND INFLUENCE ON AN INSTITUTE LIKE THE BUCK INSTITUTE THAT I THINK NEEDS TO GET TAKEN INTO ACCOUNT.

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SO I HAVE FIVE CRITERIA THAT I'D LIKE TO DISCUSS AS WELL. AND I STRUGGLE IN THE LAW. THERE'S INFORMATIVE PRESENTATIONS AND PURSUASIVES. AND I THINK THAT, LIKE OTHER PRESENTERS, I WANT TO BE INFORMATIVE, BUT YOU TEND TO SLIP INTO PERSUASIVE MODE. I'LL JUST APOLOGIZE AHEAD OF TIME, BUT I'LL TRY TO DO IT IN THE BACKDROP OF THE PARADOX OF CIRM IN NEEDING TO DEVELOP THERAPEUTICS AND DESIRING TO DO THAT, A THERAPEUTIC, BUT IN THE SENSE OF A BRAND NEW FIELD. STEM CELL BIOLOGY IS TRULY IN ITS INFANCY. IT'S VERY POWERFUL, BUT THESE ARE VERY EARLY DAYS.

LET'S SAY THAT, WELL, IT IS THE CASE THAT THAT'S WHAT PROP 71 AND CIRM BASICALLY AUTHORIZED. SO IF FORM FOLLOWS FUNCTION AND IN TEN YEARS WE WANT TO HAVE BOTH A THERAPEUTIC AND SIGNIFICANT INCREASE IN TERMS OF THE KNOWLEDGE, INCREASING WORKER FORCE, THINGS LIKE THAT, WHAT ARE THE KINDS OF THINGS YOU NEED? ONE CRITERIA, I THINK, IS TO INCENTIVIZE INSTITUTIONS TO WORK TOGETHER. AND WE'VE TALKED ABOUT THAT ALREADY, SO I DON'T NEED TO SAY ANY MORE OTHER THAN AT OUR INSTITUTE WE'RE GOING TO HAVE TEN REGIONAL UNIVERSITIES, SONOMA STATE, CPMC, DOMINICAN, DAVIS, GALLO INSTITUTE, LBNL, OTHERS THAT WOULD PROBABLY NOT BE INTERESTED IN THIS EARLY STAGE OF DOING STEM CELL TRAINING.

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THEY'LL HAVE ACCESS TO OUR SPACE, WHICH, AS YOU KNOW, FROM A TRAINING PERSPECTIVE IS GOING TO BE VACANT IN BETWEEN THE TRAINING PERIODS. SO YOU HAVE THE CONCEPT OF DOING A STEM CELL MOTEL OR PILOT PROJECTS THAT BASICALLY THE BUCK INSTITUTE WILL MAKE AVAILABLE. WE'RE VERY EXCITED TO DO IT BECAUSE IT HELPS US AS AN INSTITUTE INTERACT AND REALLY KIND OF BUILD UP OUR EXPERTISE IN AGING, BUT TO HAVE OTHERS IN THE MIX, IT'S VERY IMPORTANT.

ALACRITY, I THINK, IS IMPORTANT AS WELL. WE HAVE 180,000 SQUARE FEET BUILT ON OUR CAMPUS. WE CAN GO RIGHT TO PERMIT FOR ANOTHER 180,000 SQUARE FEET. IT'S A QUESTION OF, IN BUILDING THE INSTITUTE, WE HAVE 15 PRINCIPAL INVESTIGATORS. WE JUST FINISHED OUT 12,000 SQUARE FEET AND ARE GOING TO BRING ON EIGHT MORE FACULTY, BUT IT STILL LEAVES US WITH A LOT OF OPPORTUNITY FOR ADDITIONAL SPACE.

WE BELIEVE STRONGLY WE CAN MEET THE TWO-YEAR REQUIREMENT AND ARE VERY INTERESTED IN DOING THAT. SO INTERNALLY WE'RE REALLY TRYING TO STICK TO OUR STRENGTH, WHICH IS THE BIOLOGY OF AGING, UNDERSTAND HOW AGING AND STEM CELL EXHAUSTION AND DISEASES OF AGING, LIKE CANCER, INTERACT AND REALLY EXECUTE ON A PLAN, AND WE'RE REALLY GOING TO BE LOOKING AT THAT IN THE NEXT COUPLE OF YEARS.

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SO ALACRITY, BASICALLY WE TALK ABOUT ALACRITY IN TERMS OF RESEARCH, BUT I DO BELIEVE THAT THERE'S LAND AVAILABILITY USE, PRECONSTRUCTION PLANNING, PERMITS, BUDGET, ETC., THAT ARE VERY IMPORTANT TO LOOK AT.

I THINK IT'S IMPORTANT NOT TO HAVE ANY REDUNDANCY, SO TO REALLY FACILITATE. FOR THE BUCK INSTITUTE, FOR EXAMPLE, WE'RE NEVER GOING TO HAVE PATIENTS, AT LEAST IN THE NEXT MANY, MANY YEARS. AND SO WE'RE LOOKING FOR PARTNERS TO WHERE WE CAN DO ALL THE WORK. IF WE ARE GOING TO THINK ABOUT A THERAPEUTIC, DO IT IN A WAY THAT FROM THE VERY BEGINNING DOES ALL THE -- INCORPORATES ALL THE PROCEDURES THAT WOULD TRACK TO A CLINICAL TRIAL SO THAT WHEN WE HAND IT OFF TO UC DAVIS OR ANOTHER CLINICAL INSTITUTION, YOU DON'T HAVE TO SAY, OOPS, I FORGOT THIS ONE PARTICULAR STUDY, SO YOU HAVE TO GO BACK TO GO, AS I LIKE TO SAY.

I SPENT MANY YEARS IN THE STEM CELL BUSINESS SECTOR AND FOUND THAT MANY ACADEMIC INSTITUTES, THEY'LL FORGET OR LEAVE OUT STEPS THAT ARE VERY CRUCIAL TO ACTUALLY DOING A CLINICAL TRIAL. SO I THINK IT'S REALLY IMPORTANT TO PROVIDE OR MAKE SURE THAT THAT DOESN'T HAPPEN.

I THINK WE NEED A MANHATTAN PROJECT. WE TALK

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ABOUT BUSINESSES BEING INVOLVED, BUT WE DO HAVE AN OCCURRENCE, THE VALLEY OF DEATH. THERE'S THE LACK OF BIOTECHNOLOGY FUNDING. AND WHEN YOU COUPLE THE FACT THAT IT'S SUCH EARLY STAGE IN TERMS OF DEVELOPING STEM CELLS AS THERAPEUTIC, MY OWN FEELING IS WE REALLY KIND OF NEED TO LOOK AT THE MODEL OF TRADITIONAL BIOTECH DEVELOPMENT, RECOGNIZE WE'RE LOOKING AT CELLS AS THERAPEUTICS, AND REALLY JUST KIND OF BLOW IT UP AND BASICALLY CREATE A CONSORTIUM, PERHAPS USE ANOTHER BUSINESS MODEL LIKE AS HAS BEEN DONE WITH SEMICONDUCTORS, BALANCED BETWEEN A COMPANY'S NEED TO HAVE WHAT I CALL POINT OF NOVELTY. SO YOU ONLY NEED A SINGLE POINT OF NOVELTY TO HAVE A PRODUCT WITH THE RECOGNITION THAT WE'RE MANY, MANY YEARS AWAY FROM MANY OF THE THERAPIES. SO WE ALL WOULD BENEFIT FROM COMING TOGETHER IN A COMMON KIND OF ENVIRONMENT AND SHARING INFORMATION.

FOR EXAMPLE, IT'S HARD TO ESTIMATE HOW MUCH VALUE YOU WOULD DERIVE FROM HAVING KNOWLEDGE OF FAILED EXPERIMENTS. TYPICALLY THOSE ARE DONE IN MANY, MANY INSTITUTIONS, AND WE TOLERATE IT JUST BECAUSE THERE'S ALWAYS BEEN CAPITAL TO GET THOSE PRODUCTS THROUGH. WE JUST DON'T HAVE THE TIME OR THE MONEY TO ACTUALLY DO THAT IN STEM CELL BIOLOGY, AT LEAST TO MEET THE CRITERIA OF CIRM.

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AND THEN, LASTLY, I'D EMPHASIZE THAT I THINK AS A CRITERION FOR A FACILITY IS TO CONSIDER TRAINING AND TOOLS AS TWO VERY IMPORTANT AREAS FOR THE LONG-TERM SUCCESS OF CALIFORNIA AS AN INDUSTRY AND FOR, MAYBE NOT THE FIRST THERAPEUTIC, BUT THE FIFTH, SIXTH, SEVENTH, AND EVERY THERAPEUTIC BEYOND THAT. BY TOOLS I MEAN IT'S BASICALLY THE MARKERS, METHODOLOGIES, REAGENTS THAT ALLOW US TO IDENTIFY, ISOLATE, EXPAND, MAINTAIN STEM CELL POPULATION, AND THEN TO CAUSE THOSE TO GO INTO ALL THE VARIOUS DIFFERENT LINEAGES THAT THEY COULD TRACK TO THE CLINIC.

I THINK THAT, FROM MY LOOKING AT THE TESTIMONY, SOMETIMES IT'S UNDERESTIMATED HOW FAR WE HAVE TO GO IN TERMS OF JUST DEVELOPING THE PICKS AND AXES, SO TO SPEAK, OF HOW TO WORK WITH THE STEM CELLS AND HOW TO SHARE REAGENTS BETWEEN INSTITUTIONS, WHICH I THINK IS VERY IMPORTANT.

SO, IN SUMMARY, I'D LIKE TO SAY ONCE AGAIN THAT THE BUCK INSTITUTE, WE RECOGNIZE THAT WE HAVE CERTAIN STRENGTHS. I THINK THAT, LIKE OTHER INSTITUTIONS, WE'RE TRYING TO IDENTIFY WHAT WE HAVE AS A STRENGTH TO REALLY FOCUS ON THAT. FOR US IT'S BASIC RESEARCH AND THE POTENTIAL TO USE SOME OF THE CAMPUS THAT, FROM A TIMING PERSPECTIVE, JUST HAPPENS TO FIT POTENTIALLY WITH THE MANDATE OF GETTING THESE

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FACILITIES BUILT AND SAYING IN DOING SO WE'D WANT TO CREATE AN ENVIRONMENT THAT REALLY BRINGS THE MANY DIFFERENT DISCIPLINES TOGETHER IN ORDER TO EXPEDITE THE DEVELOPMENT OF THERAPIES.

CHAIRMAN LICHTENGER: THANK YOU FOR YOUR PRESENTATION. I HAVE A QUESTION IF NO OTHER. SO YOU MENTIONED INCENTIVIZING INSTITUTIONS TO SHARE THEIR FACILITIES FOR RESEARCH. CAN YOU GO INTO A LITTLE BIT MORE GRANULARITY ABOUT HOW YOU WOULD PROPOSE TO POTENTIALLY WEIGH THAT ABILITY TO HOTEL OR SHARE BECAUSE THAT'S SOMETHING I HAVE SOME INTEREST IN?

DR. KOVACH: WELL, FROM MY PERSPECTIVE, IT SIMPLY IS LET'S USE THE BUCK INSTITUTE. SO THE CRITERION WOULD BE IN EXCHANGE FOR FUNDING FROM CIRM -- IT HAPPENED IN THE STEM CELL TRAINING GRANT. WE SAID IN THE GRANT THAT IF WE GOT -- IF WE RECEIVED FUNDING, WE WOULD MAKE OUR FACILITIES OPEN TO THE PARTICIPANTS THAT WOULD WANT TO TAKE ADVANTAGE OF THE TRAINING. AND SO FOR US IT'S SMALL SCALE. IT'S A VERY KIND OF A FOCUSED PROJECT, BUT IT DOES IMPLICATE FOR US THAT WE'RE GOING TO HAVE A LOT MORE PEOPLE UP THERE. AND SO --

CHAIRMAN LICHTENGER: WOULD YOU SPECIFY A PERCENTAGE YOU MIGHT MAKE PORTIONS OF A FACILITY AVAILABLE?

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DR. KOVACH: YEAH. I THINK THE NEXT INCREMENT, IT HAPPENS TO BE THE WAY OUR CAMPUS IS SET TO BE BUILT, WE HAVE THREE 60,000 SQUARE FOOT RESEARCH BUILDINGS TO BE BUILT. SO FOR THE NEXT TIME THAT WE THINK ABOUT THIS, I THINK YOU COULD ACTUALLY DEVELOP A FORMULA WHERE YOU'D SAY GOING INTO THE BUILDING -- IT WOULD BE VERY DIFFICULT FOR US TO FILL 60,000 SQUARE FEET, SO WHY WOULDN'T WE WANT TO BASICALLY CO-LOCATE OTHER ACTIVITIES THAT BASICALLY ARE ENGAGED IN OTHER ASPECTS OF STEM CELL DEVELOPMENT? I THINK THAT THAT WOULD BE REALLY A NATURAL THING FOR US TO DO.

MS. FEIT: YOU MENTIONED THAT WE NEEDED A MANHATTAN PROJECT. WHAT ROLE WOULD YOU SEE CIRM PLAYING IN THAT?

DR. KOVACH: WELL, I THINK THAT IN THE RFA YOU COULD ESSENTIALLY ASK AN INSTITUTION TO RESPOND TO AN RFA THAT BASICALLY SAYS THAT WE ARE GOING TO -- IT REALLY WOULD PICK UP ELEMENTS OF CONTRIBUTION ON THE PART OF THE INSTITUTE, BUT WOULD FORCE THE INSTITUTE TO GO OUT AHEAD OF TIME AND KIND OF PRELOAD SOME OF THE MANY, MANY DIFFERENT RELATIONSHIPS THAT YOU WOULD NEED. I, FRANKLY, THINK THAT WOULD BE SOMETHING THAT WOULD BE EXCITING TO DO. IT'S NOT TRIVIAL AT ALL, CERTAINLY WOULD AFFECT OUR INSTITUTE, BUT IT DOES KIND OF FORCE THE ISSUE IN TERMS OF SAYING, YOU KNOW WHAT, YOU'RE

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TALKING ABOUT ALL THIS INTERACTION THAT WOULD TAKE PLACE. YOU SHOW ME IN THE RFA WHAT EXACTLY YOU'RE WILLING TO DO TO MAKE THAT HAPPEN.

AND IT WOULD BE VERY COMPLEX BECAUSE YOU'RE TALKING ABOUT INTELLECTUAL PROPERTY. FOR EXAMPLE, YOU'D HAVE TO FIGURE OUT HOW THE IP WOULD WORK. I BELIEVE THAT THERE'S THE POTENTIAL TO DO THAT, BUT IT'S SO COMPLICATED A SUBJECT, THAT TO DATE NO ONE HAS HAD THE INCENTIVE TO ACTUALLY HAVE ALL THE MEETINGS YOU'D NEED TO DO TO FIGURE IT OUT. SO IT JUST DOESN'T GET DONE.

MR. SHEEHY: I HAD A COUPLE OF QUESTIONS, ACTUALLY PRETTY MUCH TWO AREAS. FIRST, I WANT TO JUST COMMEND YOU ON YOUR GRANT AWARD. BUCK INSTITUTE, THE SHARED FACILITIES, THE TECHNIQUES COURSE, THIS IS WELL RECEIVED, WELL REVIEWED. IT'S EXACTLY WHAT WE'RE TRYING TO DO, I THINK, WITH SOME OF OUR PROJECTS IS EXPAND THE BASE.

I GUESS WHAT -- WE'RE TALKING ABOUT A MAJOR FACILITIES GRANT THAT PROBABLY SOUNDS A LOT LIKE WHAT DR. KEIRSTEAD IS LOOKING FOR, HEAVY TRACK RECORD, ESTABLISHED WORK, THIS WHOLE BIG TRAIN THAT'S TO A LARGE DEGREE LEFT THE STATION. NOW, FOR YOU, AS SOMEONE WHO'S DEVELOPING A PROGRAM AND DOING JUST AN EXTRAORDINARY JOB OF MEETING THE CHALLENGES AND

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COMPETING WITH FOLKS LIKE THIS ON GRANTS, WHAT WOULD BE THE THING THAT WOULD HELP YOU MOST AS OUR NEXT STEP WITHIN THE FACILITIES CONTEXT?

DR. KOVACH: WELL, WE'LL BENEFIT FROM -- WE'RE NOT COMPETITORS TO UC IRVINE OR UC DAVIS IN THE SENSE THAT WE WILL BE TAKING OUR CELL LINES OR OUR PRODUCT CANDIDATES TO THEM AND THEN LINKING IN WITH THEIR CLINICIANS. SO I REALLY SEE THAT FUNDING FOR THEM AS VERY BENEFICIAL FOR EVERYONE. I THINK -- AND I WOULD NEVER COMPETE THERE. THE BUCK INSTITUTE IS TRYING TO BE REALLY SMART ABOUT THE NICHE THAT WE'RE TRYING TO DEVELOP.

AND FOR US I THINK THAT WE CAN DO AS GOOD A JOB AS ANYONE ON THIS PRECLINICAL SIDE BECAUSE OF THE FACT THAT WE -- IT KIND OF GOES AGAINST THE ACADEMIC -- EXISTING ACADEMICS. WE DON'T HAVE DEPARTMENTS. WE DON'T HAVE PEOPLE -- OUR RESEARCHERS ARE ALL EMBEDDED WITHIN, YOU KNOW, 50 YARDS OF EACH OTHER, NOT EVEN IN SEPARATE BUILDINGS. SO WE HAVE THE ABILITY TO CONTEMPLATE THE REAL SOUP TO NUTS, WITH THE NUTS BEING ACTUALLY HANDING OFF AT THE END OF PRECLINICAL, AND REALLY KIND OF BUILDING OUT THE TOOLS THAT ARE NEEDED, FOR EXAMPLE, TO MAKE SURE THAT YOU'RE DIFFERENTIATING CELLS INTO NEURAL CELLS ON A VERY REPLICATIVE KIND OF FASHION.

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SO I THINK THAT PART OF US -- WE'RE NOT REALLY COMPETITIVE TO THE EXTENT WE'RE TALKING ABOUT THE CLINICAL SIDE. AND THE MONEY, I THINK, IS REALLY GOING TO HELP US TO TALK ABOUT HOW TO INTERACT WITH CLINICIANS. AND, SURE, I GUESS WE WOULD BE COMPETITIVE SOMEWHAT, BUT EVEN THAT BEING THE CASE, WE'RE REALLY GOING TO TRY TO STAY FOCUSED IN TERMS OF THE INTERFACE BETWEEN STEM CELLS AND WHAT HAPPENS AS WE AGE. SO WE DON'T PURPORT TO BE THE END ALL, BE ALL FOR THE PRECLINICAL. IT'S WITHIN CERTAIN AREAS. AND SO I THINK THAT'S GOING TO ACTUALLY HELP REFINE THE REQUESTS WE MAKE, AND HOPEFULLY WE'LL BE SMART ENOUGH TO REALLY GO TO OUR STRENGTHS AND SUBMIT VERY STRONG GRANTS THAT AWAY.

CHAIRMAN LICHTENGER: GREAT. THANK YOU.

MR. SHEEHY: THE OTHER QUESTION, YOU MENTIONED TOOLS, AND THIS HAS COME UP IN IP POLICY. I THINK THAT THIS MAY BE SOME OF OUR LOW HANGING FRUIT. HOW CAN WE KIND OF DRIVE THAT? I THINK A LOT OF TOOLS ARE CREATED IN THESE RESEARCH ENVIRONMENTS, THEY'RE NOT COMMERCIALIZED. HOW CAN WE --

DR. KOVACH: WELL, ON THE FACILITIES SIDE, I THINK THAT FOR A FACILITIES GRANT, AGAIN, I COULD IMAGINE AN RFA GOING OUT FOR SPACE THAT BASICALLY IS COMPLETELY DEDICATED TO CREATING TOOLS FOR THE BENEFIT

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OF ALL CALIFORNIA INVESTIGATORS, BUT THEN THE KICKER AND WHAT WOULD NEED TO HAPPEN IS YOU'D NEED TO FIGURE OUT IT'S FAIRLY COMPLEX IN TERMS OF GETTING THOSE TOOLS INTO THE BUSINESS MARKET. AGAIN, YOU'D HAVE TO, ONCE AGAIN, GO TO THE IP, MAKE SURE THAT THE BUSINESSES WHICH ARE LED IN CALIFORNIA, BUT THERE'S OTHER STEM CELL BUSINESSES AS WELL, ARE KIND OF ON BOARD, THEY UNDERSTAND YOUR STRATEGY, AND ARE GOING TO ADOPT IT.

SO AT THE END OF THE DAY, YOU CAN HAVE WORKED TO DEVELOP KIND OF, I DON'T WANT TO SAY STANDARDS, BUT AT LEAST A SUITE OF TOOLS THAT ARE AVAILABLE TO ALL CALIFORNIA RESEARCHERS AND ARE VALIDATED. AND ESSENTIALLY THE WHOLE PURPOSE WOULD BE TO HELP THE INVESTIGATORS BE ABLE TO TALK AND COMMUNICATE. THEY'RE WORKING WITH THESE SAME REAGENTS, SO IF THEY GET RESULTS, BE ABLE TO HAVE CERTAINTY THAT THOSE RESULTS ARE THE SAME.

WITH ALL DUE RESPECT, MY EXPERIENCE WHEN I WAS IN THE STEM CELL BUSINESS FIELD, IS THAT MANY ACADEMIC INVESTIGATORS HAVE KIND OF A VESTED INTEREST IN THEIR OWN CELLS. SO WE KNOW BECAUSE OF THE VARIABILITY BASED ON SLIGHT DIFFERENCES IN CULTURE TECHNIQUES THAT THESE CELLS WILL EXPRESS DIFFERENT MARKERS. THEREFORE, IT'S A DIFFERENT CELL. WELL, I THINK THAT ONE OF THE WAYS TO HELP ADDRESS THAT WOULD

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BE POTENTIALLY THROUGH A PLACE LIKE THE BUCK INSTITUTE THAT WOULD BE WORKING AND DEDICATING, BUT IN COLLABORATION, BUT AS A PLACE THAT COULD HELP SET THE STANDARDS OR CREATE STANDARDS OR I GUESS I WILL CALL IT STANDARDS. IT WOULD HELP US. CERTAINLY WE NEED TO MAKE SURE IT'S CONSISTENT WITH OUR MISSION. BUT IT'S THAT KIND OF THINKING, I THINK, WE NEED TO REALLY KIND OF BRING TO THE TABLE IN ORDER TO MEET THESE AMBITIOUS GOALS OF LIKE BUILDING THE ENTIRE INDUSTRY AND THEN GETTING A THERAPEUTIC TO MARKET IN TEN YEARS.

CHAIRMAN LICHTENGER: WELL, THANK YOU VERY MUCH FOR YOUR PRESENTATION AND YOUR ANSWERS. ANY OTHER QUESTIONS? OKAY. SO THANK YOU.

WE'RE GOING TO NOW OPEN UP TO THE SECOND PART OF THE MEETING WHERE WE'RE GOING TO INVITE ANY INDIVIDUALS WHO WOULD LIKE TO SPEAK REGARDING THE LARGE FACILITIES GRANTS. I'D ASK EACH SPEAKER TO LIMIT THEMSELVES TO THREE MINUTES AND, AGAIN, TO IDENTIFY THEMSELVES. SO ANY SPEAKERS?

MR. SIMPSON: JOHN SIMPSON FROM THE FOUNDATION FOR TAXPAYER AND CONSUMERS RIGHTS. VERY QUICKLY, IT SEEMS TO ME ONE OF THE MOST IMPORTANT THINGS THAT YOU SHOULD BE FOCUSING ON IS INCENTIVES TO FOSTER COLLABORATION. AND IT STRIKES ME SIMPLY THAT A LOT OF INSTITUTIONS MAY HAVE LETTERS OR SOMETHING

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SAYING THEY'RE GOING TO COLLABORATE. WHAT YOU MAYBE SHOULD BE LOOKING FOR IN AN RFA IS SPECIFIC APPLICATIONS JOINTLY FROM SEVERAL INSTITUTIONS ALL SIGNING ON TO THE SAME APPLICATION, BUT NOT ONLY SIGNING THEIR NAMES, COMMITTING A PORTION OF THE FINANCING FOR THE PROJECT. SO IT'S NOT JUST ENOUGH FOR UC MERCED TO SAY, YES, WE'RE GOING TO COLLABORATE WITH DAVIS. THEY'RE GOING TO SAY AND WE ARE PLANNING TO BUDGET $2 MILLION TOWARDS THIS FACILITY.

THE SECOND POINT THAT I WOULD MAKE IS THAT, INDEED, IN LOOKING THROUGH THE NECESSITY UNDER PROPOSITION 71 OF A TIMELINESS, THAT YOU DO LOOK VERY CLOSELY AT THAT. THAT'S GOING TO MEAN YOU'RE GOING TO HAVE TO LOOK AT PROJECTS THAT HAVE ALREADY LEFT THE STATION. AND I THINK YOU NEED TO ASK A VERY INTERESTING QUESTION THERE. BECAUSE I THINK SOMETIMES WHAT UNIVERSITIES DO IS THEY PLAN TO BUILD THESE THINGS, AND THEY'RE PRETTY CONFIDENT THEY'RE GOING TO GET MONEY SOMEWHERE SOMEHOW. WHAT YOU WANT TO DO IS LEVERAGE THE MONEY THE MAXIMUM WAY FOR STEM CELL RESEARCH IN CALIFORNIA. SO, THEREFORE, WHAT YOU NEED TO ASK IS, WELL, THIS ONE THAT'S ALREADY LEFT THE TRAIN STATION, WHAT HAPPENS IF WE DON'T GIVE THEM ANY MONEY? DOES IT STILL GET THERE? WELL, IF IT STILL GETS THERE, THEN MAYBE THAT MONEY SHOULD BE GOING SOMEWHERE ELSE.

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I'M NOT QUITE SURE HOW YOU GET THAT IN AN RFA, BUT IT'S JUST AS IMPORTANT TO ASK PEOPLE WHAT DO YOU DO IF YOU DON'T GET OUR MONEY AS IT IS TO ASK PEOPLE WHAT DO YOU DO IF YOU DO GET IT.

FINALLY, I'D MAKE ANOTHER POINT, AND IT'S NOT BECAUSE I'VE LATELY BEEN BATTLING FOLKS AT UC BERKELEY OVER OTHER THINGS OR FOLKS AT STANFORD OVER OTHER ISSUES. BUT THERE ARE CERTAIN INSTITUTIONS THAT SOMETIMES COME FORWARD AS IF THEY HAVE A SENSE OF ENTITLEMENT TO THESE FUNDS. THOSE GUYS AND SOME OF THE OTHERS ARE GOING TO FIND THE MONEY SOMEWHERE NO MATTER WHAT. AND SOME OF THE MOST INTRIGUING -- MAYBE BP OR EXXON MOBILE, WHO KNOWS, BUT SOME OF THE MOST INTRIGUING POSSIBILITIES COULD WELL TO BE USE PUBLIC MONEY TO ENGENDER INTERESTING AND OTHER VALUABLE PUBLIC PROJECTS IN OTHER UNDERSERVED PARTS OF THE STATE. THANK YOU VERY MUCH.

CHAIRMAN LICHTENGER: THANK YOU FOR YOUR COMMENTS. DO WE HAVE ANY QUESTIONS OF THE LAST SPEAKER?

MR. REED: DON REED, MEMBER OF THE PUBLIC. FIRST, I THINK THE WAY WE'RE DOING IT IS JUST RIGHT. I LOVE THAT THE COLLEGES ARE SPEAKING UP AND SAYING THEIR SPECIFIC EXPERTISE. IT HELPS SO MUCH. EACH ONE HAS GOOD POINTS TO MAKE. BEFORE I CAME HERE, THE VICE

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PRESIDENT OF CAMR, DAN PERRY, SAID, "WATCH OUT FOR BUCK INSTITUTE. THOSE PEOPLE REALLY SOMETHING ON THE BALL. THEY'RE DOING GREAT STUFF." UC BERKELEY AT UC MERCED, THERE'S LIKE A JUDO PERSON THAT'S USING LEVERAGE TO FIND THE BEST WAY TO MEASURE IMPACT. BERKELEY, BASIC RESEARCH; DAVIS IS TRANSLATIONAL, ALTHOUGH I HOPE THEY WILL NOT FOCUS TOO MUCH IN THE ADULT STEM CELL BECAUSE PROP 71 HAS SOME SPECIFIC LANGUAGE WHICH MAKES THAT JUST NOT LIKELY TO BE A SUCCESSFUL AVENUE OF APPROACH FOR THEM.

BUT UC IRVINE, THE ROMAN REED SPINAL CORD INJURY RESEARCH ACT FUNDED DR. HANS KEIRSTEAD'S EARLY WORK WITH EMBRYONIC STEM CELL RESEARCH. AND I'VE HAD THE PRIVILEGE OF WATCHING THAT GO FORWARD. MARCH 2002 I GOT TO HOLD IN MY OWN HANDS A RAT WHICH HAD BEEN PARALYZED, WHICH WALKED AGAIN BECAUSE OF THAT RESEARCH. NOW IT'S GOING TO HUMAN TRIALS. HE'S TAKEN IT THROUGH ALL THE DIFFERENT STEPS OF THE FDA. SO IT'S NOT JUST A QUESTION OF MAYBE. IT'S HAPPENING. SO IN MY MIND UC IRVINE WILL NOT JUST BE THE FLAGSHIP FOR THE STATE, BUT FOR THE NATION. THANK YOU AGAIN FOR GOING THROUGH THIS PROCESS.

CHAIRMAN LICHTENGER: THANK YOU FOR YOUR COMMENTS. ANY OTHER MEMBERS OF THE PUBLIC?

MR. LOPES: MY NAME IS FRAN LOPES. I'D LIKE

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TO APPLAUD THE COMMITTEE AND WHAT'S TRANSPIRING HERE. I'M EXCITED ABOUT THIS TYPE OF THERAPY. AND I'M INVOLVED WITH THE ADVISORY COMMITTEE TO THE ROMAN REED MONEY. AND I APPLAUD THE COLLABORATION THAT GOES ON. AND MY SENSE OF URGENCY IS A LITTLE MORE THAN A LOT OF PEOPLE. THIS TYPE OF RESEARCH CAN RESTORE QUALITY OF LIFE TO SO MANY PEOPLE. AND I THINK THAT THE COMMITTEE IS GOING IN THE RIGHT DIRECTION HERE. THANK YOU.

CHAIRMAN LICHTENGER: THANK YOU.

DR. BAUER: GERHARD BAUER, LABORATORY DIRECTOR OF THE GMP FACILITY AT UC DAVIS. I NEED TO RESPOND TO THE COMMENT THAT WAS MADE BEFORE, EMBRYONIC STEM CELL RESEARCH VERSUS ADULT STEM CELL RESEARCH.

I COULD HAVE DONE ADULT STEM CELL RESEARCH IN THE INSTITUTION WHERE I WAS BEFORE, AND I CAME TO CALIFORNIA BECAUSE I REALLY WANT TO MAKE A DIFFERENCE HERE. I HAVE BUILT NOW THE FOURTH GMP FACILITY. I HAVE DONE APPROXIMATELY 20 SOMETHING CLINICAL TRIALS ABOUT ADULT STEM CELLS AND PIONEERED GENE THERAPY INTO BONE MARROW STEM CELLS.

NOW THE KIDS THAT WE HAVE STARTED TO TREAT IN 1994 ARE BEING CURED IN EUROPE REGULARLY, ON A REGULAR BASIS. I MEAN CURED. THEY'RE NOW HOME, HEALTHY, AND HAPPY. AND I THINK WITH THAT TRACK RECORD, WE CAN ACTUALLY DO SOMETHING WITH COMPLETELY NOVEL TREATMENTS,

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AND I THINK WHAT YOU ARE DOING HERE IS ALLOWING US THE OPPORTUNITY TO DO THAT. ADULT STEM CELL CLINICAL TRIALS ARE FINE BECAUSE WE CAN DO THEM RIGHT NOW. IT'S HERE. IT'S HELPING. WHAT WE REALLY NEED TO DO IS GET SOMEBODY OUT OF A WHEELCHAIR, HELP A PARKINSON'S PATIENT. AND, YES, MAYBE MY FATHER MAY BE TOO OLD, BUT HE HAS ALZHEIMER'S DISEASE. MAYBE WE CAN DO SOMETHING ABOUT THIS. THANK YOU.

CHAIRMAN LICHTENGER: THANK YOU. ANY OTHER? YES, IN THE SECOND ROW.

DR. ADELSON: MY NAME IS DR. JOEL ADELSON. FULL DISCLOSURE. I WORK AT THE INSTITUTE FOR HEALTH AND AGING AT THE UNIVERSITY OF CALIFORNIA SAN FRANCISCO. I'M NOT HERE REPRESENTING ANY POINT OF VIEW FROM THEM. AND ALSO WE ARE FUNDED, MY COLLEAGUES AND I WHO ARE HERE, DR. JUSTICE AND MS. WEINBERG, HAVE BEEN FUNDED BY THE NATIONAL SCIENCE FOUNDATION TO STUDY THE CIRM FROM A SOCIAL AND LEGAL ASPECT. AND SO WE WILL BE CONTACTING MANY OF YOU IN THE FUTURE TO TALK TO YOU AND TO LEARN ABOUT WHAT'S HAPPENING AND WHAT'S GOING ON.

BUT I LISTENED TO THIS DISCUSSION, AND AS A MEMBER OF THE PUBLIC PURELY, I WANTED TO JUST SHARE WHAT I THOUGHT WAS IMPORTANT FOR A SECOND.

AND THAT IS THAT WHEN THE PROPOSITION WAS ORIGINALLY PASSED A COUPLE OF YEARS AGO, THE POLITICAL

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LANDSCAPE AND THE SCIENTIFIC LANDSCAPE FOR HUMAN EMBRYONIC STEM CELL RESEARCH WERE PROBABLY QUITE DIFFERENT THAN THEY ARE JUST AT THE MOMENT. AND I THINK THAT THIS CHANGE AND THIS EVOLUTION HAS GREAT IMPACT ON WHAT MAY NEED TO HAPPEN WITH THE GRANTING OF FUNDS FOR FACILITIES.

SPECIFICALLY WHAT I'M REFERRING TO IS THAT THE POLITICS AT THE NATIONAL LEVEL ARE CHANGING, CERTAINLY, WITH THE LIMITS ON THE BUSH ADMINISTRATION, WITH THE TIMING OF THE BUSH ADMINISTRATION, WITH THE SHIFT IN THE ATTITUDE OF THE NATIONAL INSTITUTES OF HEALTH AND ITS LEADERS TOWARD NATIONAL STEM CELL, HUMAN EMBRYONIC STEM CELL RESEARCH, AND THE LIKELIHOOD OR PROBABILITY THAT THAT PRIOR PRESENT ADMINISTRATION VIEWPOINT WILL NOT BE CONTINUED PAST THE ELECTIONS OF NEXT YEAR.

THAT'S ONE CHANGE. AND THE OTHER CHANGE IS THE CHANGE THAT OCCURRED AND YOU SAW, ALL OF YOU, IN HUGE PRINT IN THE NEWSPAPERS OVER THE LAST WEEK, AND THAT WAS THIS ALTERNATIVE POSSIBILITY THAT EMBRYONIC STEM CELL EQUIVALENTS NOT DRAWN FROM THE GERM LINE, BUT RATHER DERIVED FROM SOMATIC CELL LINES, MAY COME TO THE FORE. WHAT THAT CHANGES, I THINK TO SOME EXTENT, FOR YOU IS THE NEED OR NONNEED TO DEVELOP EXCLUSIVELY KIND OF HUMAN EMBRYONIC STEM CELL SILOS, IF YOU WILL, AND

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I'M BEING RHETORICAL BY SAYING THAT BECAUSE IT'S A LITTLE BIT TOO SHARP A DISTINCTION, BUT TO BUILD BUILDINGS AND BRICKS AND MORTAR EXCLUSIVELY FOR THE USE OF HUMAN EMBRYONIC STEM CELLS DRAWN FROM THAT LINE WHEN THE POSSIBILITY IS THAT AT THE NATIONAL LEVEL AND THE INTERNATIONAL LEVEL, EMBRYONIC STEM CELL EQUIVALENTS WILL BECOME BROADLY AVAILABLE IN THE NEXT COUPLE OF YEARS, VERY LIKELY.

AND IF THAT IS THE CASE, THEN YOU WILL END UP WITH HAVING SORT OF A LOT OF MONEY SPENT ON A VERY LIMITED POSSIBILITY, RATHER THAN MONEY SPENT FOR BROADER POSSIBILITIES, WHICH I THINK THE PROPOSITION INTENDED ANYWAY.

SO WHERE AM I GOING WITH THIS? BRIEFLY, WHAT I WOULD SAY IS THAT TO THINK ABOUT, FOR EXAMPLE, CAMPUSES THAT ARE RESTRICTED IN SIZE AND HAVE ALREADY GOT THEIR BUILDINGS BUILT AND CANNOT SQUEEZE IN ANOTHER BUILDING IN A HURRY. THOSE CAMPUSES BECOME MORE IMPORTANT, I THINK, FOR DUAL USE AND POSSIBILITIES FOR YOU FOR THE FUTURE THAN THEY ARE WHEN YOU THINK BACK TWO YEARS AGO AND YOU HAVE TO REQUIRE THEM TO BUILD STEM CELL TOWERS EXCLUSIVELY FOR THAT USE. DUAL USE, THINGS LIKE THAT, BECOME VERY MUCH MORE USEFUL TO YOU IN CARRYING OUT THE PURPOSE OF THE PROPOSITION THAN THEY WERE TWO YEARS AGO.

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SO WHAT I'M SAYING IS THAT AS I LISTEN TO THESE PRESENTATIONS, THE NOTION OF FLEXIBILITY, THE NOTION OF DUAL USE, ETC., ARE BECOMING VERY IMPORTANT, AND I THINK THAT THAT IS A CHANGE FROM WHERE YOU WERE BEFORE. THANK YOU.

CHAIRMAN LICHTENGER: I JUST HAD A QUICK QUESTION. YOU SAID YOU WERE AFFILIATED WITH THE UNIVERSITY OF SAN FRANCISCO?

DR. ADELSON: UNIVERSITY OF CALIFORNIA AT SAN FRANCISCO, BUT I AM NOT SPEAKING FOR THEM. I'M SPEAKING PURELY AS A CITIZEN.

CHAIRMAN LICHTENGER: CAN YOU BE A LITTLE BIT MORE SPECIFIC? YOU SAID WHAT YOUR ROLE IS THERE?

DR. ADELSON: I AM A PROFESSOR OF SOCIAL MEDICINE AND PUBLIC HEALTH AT THE INSTITUTE FOR HEALTH AND AGING AT THE UNIVERSITY OF CALIFORNIA SAN FRANCISCO. THAT'S A SEPARATE RESEARCH INSTITUTE. IT'S AN ORGANIZED RESEARCH UNIT OF THE UNIVERSITY OF CALIFORNIA. AND WE ARE FUNDED TO STUDY THE CIRM. AND I AM NOT SPEAKING FOR THAT STUDY AT THIS POINT.

CHAIRMAN LICHTENGER: GREAT. THANK YOU. ANY OTHER QUESTIONS, FACILITIES WORKING GROUP?

MS. MINER: THANK YOU VERY MUCH. IT'S SO NICE THAT THE PUBLIC IS ALWAYS WELCOME HERE BECAUSE WE PATIENTS DO HAVE OUR OPINIONS. AND SOMETIMES THEY'RE

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VERY DIFFERENT THAN THE SCIENTIFIC COMMUNITY.

I WOULD SAY AS FAR, IN MY OPINION, URGENCY, I'M GOING BY YOUR SHEET HERE, URGENCY FOR MOST OF US WOULD BE LOW HANGING FRUIT. AND THAT WORKS NOT JUST BECAUSE I WANT GET OUT OF HERE. I'VE BEEN IN THIS CHAIR TOO LONG, BUT IT ALSO WORKS POLITICALLY TOO. WE ALL KNOW THAT ONCE SOMETHING HAPPENS WITH THE STEM CELL RESEARCH THAT'S POSITIVE THAT PRESENTS A NEW THERAPY, EVERYTHING CHANGES. PEOPLE THAT HAVE BEEN LOUD OR QUIET, EVERYTHING GETS SO MUCH EASIER. AND THAT MAYBE ISN'T NEEDED IN CALIFORNIA, BUT IT IS NEEDED IN OTHER STATES WHERE THERE ARE STATES BATTLING AT THIS MOMENT THAT MAYBE HAVE AN OKAY ON IT, BUT THEY HAVE LEGISLATION PENDING WHERE THEY'RE TRYING TO PUT A BAN ON IT.

SO MANY REASONS FOR LOW HANGING FRUIT. EXCELLENCE. GIVE ME A MINUTE. I'M ON PAIN MEDICATION. COLLABORATION, TO ME THAT IS HUGE. NOW, I'M VERY FAMILIAR WITH UCI, THE IRVINE RESEARCH CENTER, BECAUSE HAVING A SPINAL CORD INJURY, I WENT OUT TO SEE WHO I THOUGHT WAS DOING THE BEST AND HAVE FOLLOWED THEM FOR YEARS. NOW, ONE OF THE THINGS THAT THEY DO HAVE IS THEY HAVE COLLABORATION. THEY HAVE PEOPLE COMING IN AND OUT, WHETHER IT'S FOR TWO MONTHS OR TWO YEARS. AND THE MORE FRESH IDEAS WE GET, THE MORE WE HAVE PEOPLE

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WORKING TOGETHER, I THINK THAT'S EXTREMELY IMPORTANT.

FACILITIES, I KNOW THAT YOU PROBABLY HAVE SEVERAL DIFFERENT CRITERIA AS FAR AS WHAT COLOR IT CAN BE AND SQUARE FOOTAGE AND HOW GREEN IT'S GOING TO BE BECAUSE THAT'S TODAY'S THING. I GET INTO THAT MYSELF. BUT I DO THINK THAT THE MAIN THING IS THAT WE NEED TO GO AFTER SOMETHING THAT'S GOING TO WORK FIRST, THAT IT IS LOW HANGING FRUIT.

AND, SECOND, THE MONEY DOES HAVE TO BE SPREAD AROUND. I THINK -- AND I'M SURE THAT YOU ARE GOING TO HAVE SMALL GRANTS AND LARGE GRANTS, BUT IT DOES HAVE TO BE BECAUSE THE MORE MINDS THAT ARE THINKING ABOUT IT, THE FASTER IT'S ALL GOING TO HAPPEN. SO I'D LIKE TO SEE A BIG SPREAD SO IT ISN'T JUST THE BIG CONDITIONS THAT HAVE THE MOST MONEY OR THE CONDITIONS THAT HAVE THE MOST PEOPLE AFFECTED BY IT ARE THE ONES THAT GET MOST FUNDING.

SO I'LL JUST LEAVE YOU. I APOLOGIZE FOR MY MENTAL CONDITION, BUT I WILL LEAVE YOU WITH THE THOUGHT OF, PLEASE, THE LOW HANGING FRUIT AND COLLABORATION. THOSE ARE MY TWO MAIN THINGS.

CHAIRMAN LICHTENGER: THANK YOU FOR YOUR COMMENTS. COULD YOU STATE YOUR NAME?

MS. MINER: I'M SORRY. I'M KAREN MINER.

CHAIRMAN LICHTENGER: GREAT. THANK YOU. ANY

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QUESTIONS? THANK YOU VERY MUCH.

MS. ROTCHY: GOOD AFTERNOON. I'M SUSAN ROTCHY. I'M A PATIENT ADVOCATE, AND I'M PART OF RESEARCH FOR CURE. AND I'M ALSO MS. WHEELCHAIR CALIFORNIA. I'M VERY PROUD TO BE A REPRESENTATIVE OF THIS STATE. AND I DO HAVE AN INVESTED INTEREST IN IT. I DO WANT QUALITY OF LIFE, AND I WOULD LOVE TO WALK OUT OF THIS CHAIR. REALISTICALLY THAT MIGHT NOT BE POSSIBLE. I'VE BEEN INJURED FOR A LONG TIME. OSTEOPOROSIS HAVE SET IN BESIDES MY SPINAL CORD INJURY.

WE DO NEED A LOT OF DIFFERENT INSTITUTIONS, AND EMBRYONIC STEM CELLS WOULD BE GREAT FOR SPINAL CORD INJURIES, AS WELL AS OSTEOPOROSIS AND OTHER SECONDARY CONDITIONS THAT COME WITH THE SPINAL CORD INJURY. SO I REALLY WOULD LOVE TO RECONSIDER EVERY ONE OF THOSE GRANTS, WHETHER THEY'RE SMALL OR LARGE OR PRIVATE SECTORS. LOTS OF TIMES, IF YOU SHOW THAT THERE'S MONEY COMING FROM ALL DIFFERENT AREAS, THAT WILL BRING MORE MONEY. IT WILL GIVE US SEED MONEY. SO I COMMEND YOU ALL. THANK YOU.

CHAIRMAN LICHTENGER: THANK YOU FOR YOUR COMMENTS.

DR. DONOVAN: MY NAME IS PETER DONOVAN. I'M THE CO-DIRECTOR OF THE SUE AND BILL GROSS STEM CELL CENTER AT UC IRVINE. I'D JUST LIKE TO MAKE A COMMENT

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ABOUT THE COMPARISON OF ADULT AND EMBRYONIC STEM CELLS AND KIND OF SOME THOUGHTS ABOUT HOW YOU MIGHT WEIGHT THOSE THINGS.

AS SOMEONE WHO'S WORKED IN THE FIELD ALMOST SINCE ITS INCEPTION, I THINK THAT MANY OF US IN THE FIELD SAW THE EXCITEMENT IN THE SCIENTIFIC COMMUNITY AND IN THE PUBLIC ABOUT THE POTENTIAL OF THOSE CELLS TO MAKE CELL TYPES FOR EVERY PART OF OUR BODIES AND THE POTENTIAL FOR THERAPY DEVELOPMENT.

MANY OF US IN THE FIELD HAVE ALWAYS FELT THAT CURES WOULD ALSO COME FROM ADULT STEM CELLS. AND SO I THINK THERE'S A LOT OF REASON TO WANT TO SUPPORT THAT WORK TOO, BUT IT'S WORTH REMEMBERING THAT ALL OF THAT WORK HAS BEEN FUNDED FULLY BY THE FEDERAL GOVERNMENT, PERHAPS NOT AS MUCH AS PEOPLE IN THOSE FIELDS WOULD LIKE, BUT CERTAINLY THAT FUNDING HAS BEEN AVAILABLE. IT'S BEEN POSSIBLE TO DO IN THE LABORATORIES THAT ARE EXISTING. AND WHILE WE, I THINK, BELIEVE THAT THERE SHOULD BE A BALANCED APPROACH, THAT WE CAN LEARN A LOT FROM THE ADULT STEM CELL FIELD.

I THINK THAT THE FIELD OF EMBRYONIC STEM CELL RESEARCH IS LIKE THE CELLS THEMSELVES, VERY FRAGILE. AND SO YOU HAVE AN OPPORTUNITY HERE TO REALLY NOURISH THIS FIELD, AND YOU SHOULD WEIGH THAT IN TERMS OF THINKING ABOUT WHAT YOU DO WITH YOUR BUILDINGS AND HOW

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YOU WANT TO SUPPORT THAT FIELD. THANK YOU.

CHAIRMAN LICHTENGER: THANK YOU.

MS. HYSEN: I'D LIKE TO COMMENT ON THAT BECAUSE I THINK THAT NO MATTER WHAT TYPE OF FACILITY YOU HAVE, AND IN PARTICULAR YOU'RE IN A FILED THAT'S QUICKLY CHANGING, ADAPTING TO NEW RESEARCH, NEW TECHNOLOGIES. AND SO FOR ME, WHEN I DESIGN A BUILDING, I WANT TO MAKE SURE THAT I HAVE A BUILDING THAT CAN GROW WITH MY PROGRAM. AND I'LL BE LOOKING FOR PROVIDING SOME WEIGHTING TO BUILDINGS THAT HAVE EXPANSION CAPABILITIES. WHETHER OR NOT WE CAN SPECIFICALLY HAVE EXPANSION CAPABILITIES FOR STEM CELLS GIVEN THE RESTRICTIONS OF PROPOSITION 71, I DON'T KNOW. I THINK FOR US TO FUND A BUILDING THAT HAS NO ADDITIONAL EXPANSION CAPABILITY IN A RESEARCH FIELD THAT IS GROWING, WE WOULD BE REMISS. SO I WANT TO MAKE SURE THAT WE LOOK AT THE GROWTH OPPORTUNITIES WITHIN THE BUILDING OR WITHIN THE CAMPUSES OR WITHIN THAT SETTING.

CHAIRMAN LICHTENGER: RICK, ONE POINT FOR US TO DO A LITTLE BIT OF RESEARCH IN TERMS OF IF WE'RE FUNDING A PARTICULAR FACILITY, HOW ADAPTABLE THAT FACILITY MIGHT BE FOR OTHER TYPES OF RESEARCH. AS THE GENTLEMAN FROM THE UC IN SAN FRANCISCO POINTED OUT HOW THAT POTENTIALLY COULD BE AN INTERESTING PERSPECTIVE.

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MR. KELLER: I THINK THE CASE IS IS THAT FOR MOST OF THE MAJOR UNIVERSITIES THAT HAVE MASTER PLANS FOR DEVELOPMENT, AND WHILE STEM CELL RESEARCH CERTAINLY REQUIRES IMPORTANT BIOCHEMISTRY-ORIENTED LABORATORIES, THERE IS A MEASURE OF FLEXIBILITY BY VIRTUE OF THE FACT THAT THE BASIC SYSTEMS HAVE SUFFICIENT CAPACITY. AND THERE'S SO MANY OTHER VARIABLES, IT'S HARD TO SAY WHETHER OR NOT ADDITIONAL EXPANSION IS POSSIBLE, EITHER THROUGH A WING OR A SECOND BUILDING OR SOMETHING.

CHAIRMAN LICHTENGER: THANK YOU. ANY OTHER MEMBERS OF THE PUBLIC WISH TO MAKE COMMENTS? WELL, I'D LIKE TO THANK EVERYONE, ALL THE MEMBERS OF THE PUBLIC AND ALL PARTICIPANTS AND FACILITIES WORKING GROUP, FOR ATTENDING TODAY. WITH THAT, WE STAND ADJOURNED. THANK YOU.

(THE MEETING WAS THE CONCLUDED AT 03:08 P.M.)

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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 PROCEEDINGS BEFORE THE INDEPENDENT CITIZEN'S OVERSIGHT COMMITTEE OF THE CALIFORNIA INSTITUTE FOR REGENERATIVE MEDICINE IN THE MATTER OF ITS REGULAR MEETING HELD AT THE LOCATION INDICATED BELOW

STATE BOARD OF EQUALIZATION
BOARD ROOM, 450 N. STREET
SACRAMENTO, CALIFORNIA
ON
MONDAY, JUNE 11, 2007

WAS HELD AS HEREIN APPEARS AND THAT THIS IS THE ORIGINAL TRANSCRIPT THEREOF AND THAT THE STATEMENTS THAT APPEAR IN THIS TRANSCRIPT WERE REPORTED STENOGRAPHICALLY BY ME AND TRANSCRIBED BY ME. I ALSO CERTIFY THAT THIS TRANSCRIPT IS A TRUE AND ACCURATE RECORD OF THE PROCEEDING.

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