BEFORE THE

SCIENTIFIC AND MEDICAL RESEARCH FUNDING 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

REGULAR MEETING

LOCATION:	CALIFORNIA INSTITUTE FOR REGENERATIVE MEDICINE 210 KING STREET SAN FRANCISCO, CALIFORNIA
DATE:	JULY 12, 2006 7 P.M.
REPORTER:	BETH C. DRAIN, CSR CSR. NO. 7152
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I N D E X

SAN FRANCISCO, CALIFORNIA; WEDNESDAY, JULY 12, 2006

7 P.M.

DR. HALL: WHY DON'T WE GO AHEAD AND GET STARTED. FIRST OF ALL, LET ME JUST SAY I THINK EVERYBODY WAS AROUND THE TABLE IN THE BACK MORE OR LESS, BUT JUST GIVE A FORMAL WELCOME TO CIRM. IT'S OUR LOVELY HEADQUARTERS, AS YOU CAN SEE, THAT WE'VE OCCUPIED SINCE LAST NOVEMBER, AND THEY WERE PART OF THE --

CO-CHAIR SAMUELSON: FREE.

DR. HALL: SORRY?

CO-CHAIR SAMUELSON: FREE.

DR. HALL: YES. CONTRIBUTED BY THE CITY OF SAN FRANCISCO RENT FREE, AND WE GOT AN ARCHITECT TO REDO THE WHOLE THING. THIS IS PART OF THE PACKAGE THAT BOB GOT FOR US IN THE COMPETITION BETWEEN THE VARIOUS CITIES HERE. AND SO I THINK YOU WILL AGREE IT'S A VERY PLEASANT SPACE, NICELY SITUATED IN THE CITY. AND SO WE FEEL VERY FORTUNATE ABOUT IT.

THE OTHER THING I WANTED TO DO IS INTRODUCE YOU TO THE STAFF. THIS IS A PUBLIC MEETING, AND I THINK, WITH ONE OR TWO TECHNICAL EXCEPTIONS, MOSTLY CIRM AND ITS FRIENDS HERE TONIGHT. WE DIDN'T QUITE KNOW WHO WOULD SHOW UP. SEVERAL PEOPLE CLAIMED THEY

WOULD BE HERE, BUT HAVEN'T BEEN. SO WE'LL WELCOME THEM IF THEY COME.

WE'RE SMALL ENOUGH THAT I WONDER IF EVERYBODY COULD JUST GO AROUND THE ROOM AND SAY QUICKLY WHO THEY ARE AND WHAT THEIR CONNECTION IS. I'LL START AND GO DOWN THE TABLE THROUGH BOB AND ON AROUND THE ROOM.

I'M ZACH HALL, THE PRESIDENT OF THE CIRM.

CO-CHAIR ORKIN: I'M STU ORKIN, THE CO-CHAIR FOR THE GRANTS AND SCIENTIFIC REVIEW COMMITTEE FROM THE HARVARD MEDICAL SCHOOL. AND PROBABLY THE ONLY OTHER THING THAT'S RELEVANT MAYBE TO THE CIRM IS THAT I'M NOW SERVING ON THE NATIONAL ACADEMY HUMAN STEM CELL GUIDELINES PANEL, WHICH IS THE CONTINUATION OF THE PREVIOUS ONE. JUST ACTUALLY MET LAST WEEK.

CO-CHAIR SAMUELSON: JOAN SAMUELSON, VICE CHAIR, CO-CHAIR, SOMETHING. PRESIDENT OF PARKINSON'S ACTION NETWORK, MEMBER OF THE ICOC.

MR. KLEIN: I'M BOB KLEIN AND CHAIRMAN OF THE INDEPENDENT CITIZEN'S OVERSIGHT COMMITTEE AND A MEMBER OF THE INTERNATIONAL JUVENILE DIABETES BOARD, BUT LIKE DAVID AND JEFF AND THE REST OF THE PATIENT ADVOCATES, I THINK WE EMBRACE THE ENTIRE COMMUNITY OF PATIENT ADVOCATES AND THEIR FAMILIES.

DR. BRIVANLOU: I'M ALI BRIVANLOU. I'M A PROFESSOR OF EMBRYOLOGY AT THE ROCKEFELLER UNIVERSITY.

I'M ALSO PART OF THE NIH STUDY SECTIONS THAT MAKE DECISIONS ABOUT EMBRYONIC STEM CELLS. IN ADDITION, I'M IN CHARGE OF THE ORGANIZATIONAL STUDY COMMITTEE OF THE TRI-INSTITUTIONAL STEM CELL INITIATIVE.

MR. SERRANO-SEWELL: DAVID SERRANO-SEWELL. I'M A MEMBER OF THE INDEPENDENT CITIZEN'S OVERSIGHT COMMITTEE.

MR. PILLARI: TONY PILLARI WITH PRICEWATERHOUSECOOPERS. WE'RE ASSISTING THE CIRM IN PUTTING TOGETHER THE STRATEGIC PLAN.

DR. JOYNER: ALEX JOYNER, GENETICIST AT NYU.

MS. OLSON: PATRICIA OLSON. I'M WITH THE CIRM PROGRAM OFFICE, CURRENTLY LEADING THE STRATEGIC PLAN INITIATIVE WITH THE CIRM.

MR. SHEEHY: I'M JEFF SHEEHY, AND I'M ONE OF THE ADVOCATE MEMBERS OF THE ICOC, THE OVERSIGHT COMMITTEE. I'M COMMUNICATIONS DIRECTOR AT UCSF AIDS RESEARCH INSTITUTE, AND I ADVISE SAN FRANCISCO'S MAYOR, GAVIN NEWSOM.

MS. DE LAURENTIS: SUSAN DE LAURENTIS. I'M THE PRESIDENT OF THE ALLIANCE FOR STEM CELL RESEARCH AND A COFOUNDER OF THE ELIZABETH GLASER PEDIATRIC AIDS FOUNDATION.

DR. SVENDSEN: CLIVE SVENDSEN, PROFESSOR OF ANATOMY AND EMBRYOLOGY ADDRESSING STEM CELLS.

DR. STEINDLER: I'M DENNIS STEINDLER. I'M THE DIRECTOR OF THE MCKNIGHT BRAIN INSTITUTE, AND I STUDY STEM CELLS. AND WHEN I DON'T STUDY THEM, I'M IN JEB BUSH'S OFFICE TRYING TO GET HIM INTERESTED IN STEM CELLS.

MR. CLAEYS: I'M MICHAEL CLAEYS. I'M A CONSULTANT WITH THE ALLIANCE FOR STEM CELL RESEARCH AND ALSO CONSULTANT FOR OTHER PATIENT ADVOCACY PRO STEM CELL AND PRO RESEARCH ORGANIZATIONS.

DR. KIMBLE: I'M JOAN KIMBLE. I'M A PROFESSOR OF BIOCHEMISTRY AND GENETICS WITH THE UNIVERSITY OF WISCONSIN, MADISON, AND INVESTIGATOR WITH HHMI, AND I'M A BASIC SCIENTIST WORKING ON STEM CELLS.

DR. MAXON: I'M A MARY MAXON. I'M A CIRM STAFF MEMBER, ALSO A SCIENTIST, AND WORKING ON THE STRATEGIC PLANNING TEAM.

DR. SAMBRANO: I'M GIL SAMBRANO, AND I'M A SCIENTIFIC REVIEW OFFICER AT THE CIRM.

DR. CHIU: ARLENE CHIU, AND I'M DIRECTOR OF SCIENTIFIC ACTIVITIES AT THE CIRM.

MR. TOCHER: I'M SCOTT TOCHER, NOT A SCIENTIST, BUT STAFF COUNSEL HERE AT THE CIRM.

DR. HALL: BETH, COME ON. YOU'RE A PART OF THE GROUP AS MUCH AS ANYBODY ELSE.

THE REPORTER: I'M BETH DRAIN, THE OFFICIAL

REPORTER FOR THE CIRM.

DR. HALL: SO WE ARE ENGAGED, AS YOU ALL KNOW, IN A STRATEGIC PLANNING PROCESS THAT'S QUITE ELABORATE ACTUALLY OVER A PERIOD OF ABOUT SIX MONTHS IN WHICH WE ARE TRYING TO PLAN OUR WORK FOR THE NEXT TEN YEARS. AND WE HAVE BEEN ASSISTED BY THE PRICEWATERHOUSE CREW, AS YOU HEARD FROM TONY. AND WE HAVE THREE PARTS TO THIS REALLY. ONE IS INTERVIEWS. WE ARE INTERVIEWING ABOUT -- PROBABLY END UP INTERVIEWING SOMEWHERE BETWEEN 65 AND 70 PEOPLE. I THINK THERE'S A LIST IN YOUR FOLDER OF THE PEOPLE THAT WE HAVE INTERVIEWED SO FAR, AND YOU CAN SEE IT'S A SORT OF BROAD RANGE OF PEOPLE, AN INTERNATIONAL GROUP, AND INVOLVES SCIENTISTS, CLINICIANS, PATIENT ADVOCATES, PUBLIC INTEREST PEOPLE, ETHICISTS AND SO FORTH. WE'VE COMPLETED ABOUT 40 OF THOSE INTERVIEWS, AND WE'LL EXPECT TO FINISH UP IN ANOTHER MONTH OR SO.

WE ALSO HAVE A SERIES OF PUBLIC MEETINGS AT WHICH TOMORROW'S WILL BE ONE EXAMPLE. THESE ARE MEETINGS THAT WE HOLD SPECIFICALLY FOR ICOC MEMBERS AND FOR THE PUBLIC. THEY ARE -- ANYBODY IS WELCOME TO COME. AND THE IDEA IS THAT WE -- IT'S A FORUM FOR DISCUSSION. THERE ARE NO DECISIONS MADE, BUT IN EACH CASE WE'VE HAD SPEAKERS, AND THEN WE HAD DISCUSSION ON POINTS THAT THE SPEAKERS HAVE RAISED. AND I WON'T GO

THROUGH THEM. BECAUSE OF THE LATE HOUR AFTER RUNNING BEHIND, I WON'T GO THROUGH THOSE IN ANY DETAIL.

WE HAD ONE ON MAY 25TH THAT REALLY HAD TO DO WITH FUNDING STRUCTURES. THIS ONE HAS TO DO WITH FUNDING STRATEGY. AND THEN WE'RE GOING TO HAVE ANOTHER MEETING INVOLVING THE PRIVATE SECTOR ON JULY 25TH. WE WANTED YOU MEMBERS OF THE WORKING GROUP PARTICULARLY FOR THIS ONE BECAUSE THIS IS THE ONE THAT IS EXPLICITLY DEVOTED TO SCIENTIFIC STRATEGY, AND SO WE'LL HAVE A CHANCE TO TALK ABOUT THAT TOMORROW. WE HAVE A GREAT LIST OF SPEAKERS LINED UP, AS YOU SEE THERE. WE ALSO HAVE SEVERAL FOCUS GROUPS. IN PARTICULAR A PATIENT ADVOCATES GROUP THAT DAVID AND SUSAN ARE HELPING US PUT TOGETHER. THEY'LL BE MEETING NEXT MONDAY NIGHT; IS THAT CORRECT? AND THEN WE HAVE A DIVERSITY GROUP THAT WILL BE MEETING AT THE END OF AUGUST.

AND OUR BOARD HAS BEEN INVOLVED IN TERMS OF CONSIDERING A MISSION STATEMENT, LONG-TERM OBJECTIVES, AND THEN THE VALUES THAT WE WANT THE PLAN TO EMBODY. AND SO WE WILL BRING A DRAFT OF THE PLAN, WE HOPE, BY THE OCTOBER BOARD MEETING TO THE BOARD FOR THEIR CONSIDERATION, AND THEN WHATEVER CHANGES, SUGGESTIONS THEY HAVE WE HOPE THEN TO BRING A FINAL VERSION BACK IN DECEMBER.

SO THIS IS REALLY THE PURPOSE OF THIS

MEETING. JOAN SAMUELSON HAS BEEN A VERY STRONG CHAMPION ALL ALONG OF INVOLVING YOU IN THIS PROCESS, AND SO WE THOUGHT THIS SEEMED LIKE A GOOD WAY TO DO IT, AND WE WILL TURN THE MEETING OVER TO HER IN JUST A MOMENT. WE HAVE A LITTLE BIT OF NEWS WE WANTED TO BRING YOU ABOUT WHAT WE'VE BEEN DOING.

FIRST OF ALL, LET ME JUST SAY THAT WE HAVE AN UPDATE ON OUR PROGRESS ON THE LEGAL FRONT. SEVERAL OF YOU HAVE ASKED ME ABOUT THIS. WE WERE SUCCESSFUL IN GETTING A VERY, VERY STRONG COURT DECISION IN APRIL. IT HAS BEEN APPEALED PREDICTABLY, AND WE NOW ESTIMATE THAT THE TIME THAT IT WILL TAKE TO GO THROUGH THE COURT OF APPEALS AND STATE SUPREME COURT MAY BE AS MUCH AS A YEAR FROM NOW BEFORE WE ARE ACTUALLY GIVEN ACCESS TO THE MONEY. IT IS A VERY STRONG DECISION, HOWEVER, AND THERE IS NO DOUBT IN ANY OF OUR MINDS ABOUT HOW IT'S GOING TO TURN OUT. IT'S JUST A QUESTION OF WORKING ITS WAY THROUGH.

IN THE MEANTIME BOB KLEIN AND HIS TEAM HAVE RAISED INITIALLY $14 MILLION IN LOANS ESSENTIALLY FROM PHILANTHROPIC INDIVIDUALS AND FOUNDATIONS FOR THE NEXT TWO YEARS. AND THIS HAS ALLOWED US TO FUND THE FIRST ROUND OF TRAINING GRANTS THAT YOU EVALUATED LAST SUMMER AND THAT WERE APPROVED BY OUR BOARD IN SEPTEMBER. AND YOU HAVE A LIST IN YOUR FOLDERS ALSO OF THOSE, AND I'LL

SAY JUST A BIT MORE ABOUT THAT IN A MOMENT.

THROUGH THE EFFORTS OF BOB AND HIS TEAM, WE ALSO EXPECT TO ANNOUNCE SHORTLY ANOTHER LARGER SUM OF MONEY THAT WE HOPE WILL LET US GO FORWARD WITH AT LEAST ONE MORE RFA BEFORE THE END -- OR THE FALL. SO I THINK, EVEN THOUGH WE'RE NOT ABLE TO PARTICIPATE AT FULL STRENGTH HERE, WE ARE MANAGING TO KEEP SCIENTIFIC ACTIVITY ALIVE AND TO GET THINGS STARTED, AND WE ARE VERY PLEASED AND HEARTENED BY THAT IN THE FACE OF ALL THE DIFFICULTIES.

I THINK I'LL GO OUT OF ORDER ON THE THING AND JUST TALK BRIEFLY ABOUT THE TRAINING GRANTS IF I MIGHT. ARLENE ORGANIZED A MEETING ON JUNE 16TH OF OUR TRAINING GRANT DIRECTORS FROM THE 16 PROGRAMS AROUND THE STATE. AND THAT WAS ACTUALLY TERRIFIC. THEY ALL CAME HERE, MET IN THIS ROOM, AND PEOPLE TALKED ABOUT THE PLANS AT THEIR PARTICULAR UNIVERSITIES AND WHAT THEY WERE DOING, AND WE HAD A CHANCE TO TALK TO THEM ABOUT OUR HOPES AND OUR EXPECTATIONS FOR THE TRAINING PROGRAMS. AND WHAT WAS TERRIFIC ABOUT IT WAS, FIRST OF ALL, AS YOU KNOW, HAVING LOOKED AT THE APPLICATIONS, WE HAVE VARIED PROGRAMS FROM VERY LARGE SCHOOLS WITH TREMENDOUS AMOUNT OF RESOURCES AND VERY BROAD PROGRAMS TO SMALL SCHOOLS WITH HIGHLY FOCUSED PROGRAMS. UNIVERSITY OF CALIFORNIA SANTA BARBARA, FOR EXAMPLE, SOME OPHTHALMOLOGIC

PROBLEMS. WE HAVE NOT ONLY THE USUAL SUSPECTS OF BIOLOGISTS AND CLINICIANS, BUT WE HAVE COMPUTATIONAL PEOPLE, WE HAVE CHEMISTRY PROGRAMS THAT ARE STRONG IN CHEMISTRY, WE HAVE OTHER PROGRAMS THAT ARE VERY STRONG IN ENGINEERING. AND THAT BREADTH IS ACTUALLY REFLECTED IN THE FELLOWS WHO ARE BEING APPOINTED.

WE HAVE ALREADY APPOINTED ABOUT HALF OF THE 170 FELLOWS THAT WE EXPECT WILL BE APPOINTED. LIKE STANFORD ANNOUNCED TODAY THAT THEY APPOINTED THEIR 16. AND SO WE HAVE ALREADY QUITE A RANGE IN TERMS OF THE FELLOWS. BERKELEY HAS TWO LEGAL RESEARCH FELLOWS AND AN ETHICIST BEING SUPPORTED. SO WE WERE REALLY VERY HEARTENED BY THAT, AND SOME OF THE PLANS ARE REALLY QUITE INTERESTING. THERE'S NOT TIME TO GO INTO THEM, BUT IT WAS TERRIFIC FOR US TO HEAR WHAT THEY WERE DOING, FOR THEM TO HEAR WHAT EACH OTHER WAS DOING, AND WE ALSO HAD A CHANCE TO HEAR FROM THEM ABOUT WHAT SOME OF THEIR NEEDS WERE, AND THAT WAS INTERESTING FOR US AS WELL AND IN SOME CASES SURPRISING. SO THAT WAS IMPORTANT.

SO I WANT TO LET ARLENE AND SCOTT JUST BRING YOU QUICKLY UP TO DATE ABOUT OUR GRANTS ADMINISTRATION POLICY, WHICH YOU WORKED WITH US ON EARLIER, JUST TO LET YOU KNOW THAT, AND THEN WE'LL GO AHEAD WITH THE MAIN PART OF THE MEETING.

DR. CHIU: JUST ONE LAST FOLLOW-UP ABOUT THE TRAINEES IS THAT WE HOPE TO HAVE THE ANNUAL TRAINEES MEETING PROBABLY NEXT SUMMER, AND WE ASKED THEM TO HELP US BEGIN THINKING ABOUT HOW TO HAVE A CIRM SCHOLARS MEETING WHERE THEY COULD COME AND MEET EACH OTHER AND PERHAPS HAVE POSTERS, ETC. AND SO ANY IDEAS THAT YOU HAVE ABOUT HOW TO MAKE THIS SORT OF RETREAT A SUCCESS, WE'D APPRECIATE HEARING FROM YOU LATER ON.

BUT I WANTED TO VERY QUICKLY UPDATE YOU ON THE CIRM GRANTS ADMINISTRATION PROGRAM THAT YOU HAVE LOOKED AT A NUMBER OF VERSIONS ALREADY. AND THAT SIMPLY IN 2005 YOU HAVE REVIEWED FOR US THE INTERIM CIRM GRANTS ADMINISTRATION POLICY FOR THE TRAINING GRANTS, AND YOU RECOMMENDED APPROVAL THAT WAS SUBSEQUENTLY APPROVED BY THE ICOC. AND BECAUSE IT WAS APPROVED, WE COULD GO AHEAD AND AWARD THE TRAINING GRANTS THAT YOU HEARD ABOUT.

THIS YEAR WE'VE BEEN WORKING ON THE GRANTS ADMINISTRATION POLICY FOR ALL RESEARCH GRANTS FOR ACADEMIC AND NONPROFIT INSTITUTIONS. AND THAT YOU HAVE. THE FINAL VERSION IS IN YOUR BOOKLET, A 44-PAGE DOCUMENT. WHAT HAPPENED WAS IN MARCH, YOU MAY REMEMBER THAT WE HAD A TELECONFERENCE AND YOU REVIEWED THE DRAFT, MADE RECOMMENDATIONS THAT CAUSED US TO AMEND THE DOCUMENT, AND WITH YOUR RECOMMENDATIONS, PRESENTED IT

TO THE ICOC, WHO HAD FURTHER RECOMMENDATIONS FOR CHANGES. SO THAT WAS IN THE APRIL MEETING OF THE ICOC, AND BY JUNE A REVISED DOCUMENT WAS PRESENTED AND THEN APPROVED -- TO THE ICOC, WHO THEN APPROVED THAT DOCUMENT. AND THIS IS THE DOCUMENT THAT YOU HAVE IN YOUR HANDS TODAY, VERSION 14-C. SO YOU CAN SEE, IT'S BEEN THROUGH A LOT.

WITH THIS APPROVED VERSION, UNLIKE OTHER POLICIES, IT NOW GOES THROUGH THE ADMINISTRATIVE PROCEDURES ACT. AND I TURN TO SCOTT TOCHER TO EXPLAIN HOW THIS BECOMES REGULATIONS IN CALIFORNIA.

MR. TOCHER: THIS IS REALLY TRYING TO REDUCE AN ENTIRE BODY OF LAW TO ONE PAGE, AND THIS IS WHAT WE COME UP WITH. I'LL BE FAST HERE BECAUSE I KNOW THAT THERE'S MORE IMPORTANT THINGS TO DO HERE TONIGHT.

BUT JUST TO LET YOU KNOW, ALL THAT WORK THAT YOU DID IN PREPARING THAT 45-PLUS-PAGE GRANTS ADMINISTRATION MANUAL NOW NEEDS TO ENTER INTO THE OFFICIAL PHASE OF ACTUALLY BEING CONVERTED INTO A REGULATION. BECAUSE THIS IS A STANDARD THAT WILL BE APPLIED TO A SECTOR OF THE REGULATED COMMUNITY, I.E., OUR GRANTEES, LAW SAYS THAT THIS MANUAL HAS TO GO THROUGH THE REGULATORY ADOPTION PROCESS. BASICALLY THAT'S A PROCESS THAT JUST SEEKS TO ENSURE THAT THE PUBLIC HAS A CHANCE TO REVIEW ANY REGULATIONS THAT COME

DOWN THE ROAD AND HAS AN OPPORTUNITY TO IMPACT THE OUTCOME.

CREATES A LOT OF WORK, BUT ULTIMATELY WHEN IT ENDS UP DOWN HERE, IT'S GOING TO BE SOMETHING THAT EVERYONE WILL HAVE A SENSE OF OWNERSHIP IN. RIGHT NOW, JUST TO GIVE YOU AN IDEA, THIS IS THE CAPITOL THAT GRANTED US THE AUTHORITY TO ADOPT THE REGS AND STUFF. BUT, OF COURSE, WE KNOW THAT THE VOTERS DID THAT WITH PROP 71. THIS IS YOUR WORK HERE WITH CREATING THE DRAFT OF THE MANUAL.

RIGHT NOW WE'RE IN THIS PHASE HERE OF NOW CONVERTING THAT INTO THE REGULATIONS, PREPARING VARIOUS DOCUMENTS THAT HAVE TO EXPLAIN WHY EXACTLY WE CAME UP WITH THE PROVISIONS WE CAME UP WITH, WHAT'S OUR AUTHORITY FOR DOING SO, AND WHAT WE INTEND TO DO BECAUSE ONCE THAT GETS PUBLISHED BY THE OFFICE OF ADMINISTRATIVE LAW, THAT SETS IN MOTION OUR TIMELINES. SO THE PUBLIC WILL HAVE ABOUT A MONTH AND A HALF WHERE WE DO NOTHING WITH IT AND WE JUST SIT AND WAIT AND HEAR BACK BECAUSE WHAT HAPPENS THEN IS FOR EVERY SINGLE PUBLIC COMMENT THAT THE AGENCY RECEIVES ONCE THIS PERIOD BEGINS, THE AGENCY MUST CRAFT A RESPONSE, EXPLAINING EITHER WHY WE DIDN'T FOLLOW THE RECOMMENDATION; OR IF WE DID, HOW WE MADE THE CHANGE AND HOW WE THINK THE CHANGE AFFECTS THE SUGGESTION THAT

WAS MADE.

ANY TIME WE MAKE ANYTHING BUT THE MOST RUDIMENTARY OR TECHNICAL CHANGE TO OUR DRAFTS THROUGH OUR REGULATIONS, THAT OPENS UP A NEW 15-DAY CHANGE RIGHT HERE FOR COMMENT. SO, AS YOU CAN SEE, WHAT THIS MEANS IS IT'S SORT OF A RATCHETING DOWN OF THE PROCESS. IT STARTS WITH THE 45 DAYS. YOU MAKE A GROUP OF CHANGES. OPENS UP FOR PUBLIC COMMENT AGAIN. THAT'S ANOTHER 15 DAYS. SO YOU KEEP POSTING UNTIL YOU THINK YOU'VE GOT IT ALL SET. THEN IT COMES BACK TO THE ICOC FOR A FINAL ROUND AND PERHAPS, DEPENDING, WE MAY ACTUALLY COME BACK TO THE GROUP FOR A LITTLE ADVICE, BUT HOPEFULLY JUST TO THE ICOC FOR FINAL APPROVAL. AND THEN WE GO THE BACK TO THE OFFICE OF ADMINISTRATIVE LAW. AND IT WILL REVIEW ALL THOSE REGULATIONS FOR CLARITY AND NECESSITY AND AUTHORITY AND MAKE SURE THAT WE'VE RESPONDED APPROPRIATELY TO ALL OF THE PUBLIC COMMENT, AT WHICH POINT, ASSUMING THAT THAT PASSES, THEN IT'S OFFICIALLY PUBLISHED ABOUT 30 DAYS AFTERWARDS.

SO THIS 45-DAY PROCESS IS WHAT WE'RE GEARING UP FOR. THAT WILL PROBABLY START ABOUT THE END OF THE MONTH. THIS 45-DAY CHANGE PERIOD WILL CONCLUDE ABOUT MIDDLE OF SEPTEMBER, AND THEN WE'LL HAVE A SERIES OF A FEW PROBABLY 15-DAY ADDITIONAL COMMENT PERIODS, AND

HOPEFULLY BRING IT BACK TO THE ICOC FOR PERMANENT ADOPTION AT ITS DECEMBER MEETING.

AND THAT'S WHERE WE STAND.

DR. HALL: THANKS VERY MUCH, SCOTT. IT'S FUNNY. YOU THINK YOU GET $3 BILLION AND ALL YOU HAVE TO DO IS GIVE IT OUT, BUT THIS IS QUITE A BIT OF WORK DONE. AND PARTICULARLY ARLENE, GIL, AND SCOTT HAVE DONE A TREMENDOUS AMOUNT OF WORK ON THE GRANTS ADMINISTRATION POLICY, PUTTING THIS DOCUMENT TOGETHER. I THINK WHEN YOU READ IT, YOU'LL REALIZE AND APPRECIATE IT IF YOU DO READ IT. BUT AT ANY RATE, ALL THE WORK THAT'S GONE INTO IT, BUT IT IS THE BASIS FOR OUR GIVING OUT MONEY, AND VERY IMPORTANT FOR OUR NEXT STEPS.

SO WITH THAT SORT OF UPDATE ON OUR ACTIVITIES, UNLESS THERE ARE ANY QUESTIONS ABOUT WHAT'S GOING ON, I'D LIKE TO TURN THE MEETING OVER TO JOAN AND TO STU AND TO HAVE THEM CONTINUE.

DR. SVENDSEN: ONE QUESTION ON THE TIMING. YOU SAID A YEAR FROM NOW IT WILL BE IN THE SUPREME COURT, OR YOU THINK A YEAR FROM NOW IT WILL BE THROUGH THE SUPREME COURT?

DR. HALL: THROUGH, WE HOPE.

DR. SVENDSEN: THAT'S INCLUDING THE TIME IT MIGHT TAKE.

DR. HALL: SO I THINK WITH LUCK WE WILL HAVE

THE MONEY A YEAR FROM NOW. IS THAT FAIR, BOB?

MR. KLEIN: ACTUALLY HAVE MONEY. HOPEFULLY WE WILL BE THROUGH THE COURT OF APPEALS BY THE END OF DECEMBER, BEGINNING OF JANUARY. SO A YEAR IS HOPEFULLY A REASONABLY CONSERVATIVE TIME.

CO-CHAIR ORKIN: AFTER THAT THERE'S NO RECOURSE.

MR. KLEIN: THE STATUTE OF LIMITATIONS ON ADDITIONAL CHALLENGES TO FUNDING RAN A YEAR AGO JULY. SO THE NEXT THREE YEARS THEY CANNOT CHALLENGE THE FUNDING ON CONSTITUTIONAL GROUNDS.

CO-CHAIR SAMUELSON: DO YOU FEEL FAIRLY CONFIDENT THAT THERE'S NO OTHER WAY THEY CAN BLOCK THAT? I'M ASSUMING THERE WILL BE OTHER THINGS THROWN AT US, INCLUDING LEGAL CHALLENGES, BUT NOT NECESSARILY THAT CAN STOP THE FUNDING, THE BOND ISSUING PROCESS.

MR. KLEIN: YES. JOAN IS APPROPRIATELY FOCUSING ON THE FACT THAT THIS IS A GROUP WHOSE GOALS ARE DELAY. AND THEY'VE FILED A SUIT AGAINST THE UNIVERSITY OF CALIFORNIA SYSTEM TO TRY AND DEAL WITH THAT DELAY. WE'VE NOW FILED AN ACTION TO BRING THEM BACK INTO JUDGE SABRAW'S COURT TO SEE IF WE CAN EXPEDITE DISPOSITION OF THAT. WE DON'T KNOW THE OUTCOME OF THAT ACTION, BUT SUFFICE IT TO SAY THAT WE SHOULD PROCEED WITH OUR NEXT ROUND OF FUNDING HERE

SHORTLY THROUGH THE PRIVATE PLACEMENT OF BONDS TO BRING IT UP TO $50 MILLION. THAT GIVES ABOUT APPROXIMATELY ANOTHER 30, $35 MILLION OF FUNDS TO DEAL WITH.

AND WE DO NOT BELIEVE THEY'RE GOING TO BE ABLE TO MAINTAIN INJUNCTIONS UNDER ANY OTHER PROCEDURAL CHALLENGE SO THAT WE SHOULD BE ABLE TO WORK PROFESSIONALLY AND THOUGHTFULLY THROUGH OUR PROCESS, ISSUE OUR GRANTS, ISSUE OUR CHECKS, AND LET THE LEGAL PROCESS GO ON.

THE WAY WE'RE STRUCTURED, WE SHOULD BE ABLE TO CONTINUE BUSINESS WITH DEEP RESPECT FOR YOUR TIME AND TREMENDOUS CONTRIBUTION. WE SHOULD BE SUCCESSFUL IN GETTING THE MONEY OUT TO THE INSTITUTIONS.

DR. HALL: WE HAVE IT OUT NOW. WE HAVE GRANTS OUT THERE NOW. AND SO I THINK THERE -- MY SENSE FROM BOB IS THERE MAY BE DELAYS THAT ARE ANNOYING, BUT THE FUNDAMENTAL BUSINESS OF RAISING BONDS CANNOT BE CHALLENGED ONCE THIS DECISION IS MADE, SO THAT WE'LL BE IN GOOD SHAPE.

MR. KLEIN: IN ALL LIKELIHOOD, IN THE SPRING OF NEXT YEAR, WE'LL DO ANOTHER 50 MILLION TO FURTHER DRIVE THE GRANT PROGRAM. SO WE'RE LOOKING AT APPROXIMATELY A 12-MONTH CYCLE WHERE THERE'S $100 MILLION IN THE PROCESS. SO THERE'S A REAL SUBSTANTIVE, GROUNDED, MEANINGFUL GRANT PROGRAM IN PROCESS.

DR. HALL: OKAY.

CO-CHAIR SAMUELSON: OKAY. AS I THINK I'VE SAID BEFORE, IT'S INCREDIBLY HUMBLING FOR ME TO THINK OF LEADING A DISCUSSION INCLUDING THE PEOPLE WITH THE RESUMES THAT MANY OF YOU IN THIS ROOM HAVE. AND I'M REMINDED OF IT WHEN THE FIRST SLIDE BEFORE MINE WAS OF THAT CHART, WHICH IS THE WORK PRODUCT OF MY PROFESSION, LAWYER, AND BOB DESCRIBES ANOTHER WORK PRODUCT IN MY PROFESSION, DELAYING LAWSUITS. SO IT'S AUDACIOUS OF ME TO THINK OF TRYING TO LEAD THIS, BUT I HAVE A FEW THOUGHTS AND A COUPLE SLIDES. AND SO I THOUGHT I'D SORT OF SET THE CONTEXT THAT I SEE FOR US IN PREPARING FOR TOMORROW'S CONFERENCE, WHICH IS ON THE SUBJECT OF SCIENTIFIC CHALLENGE FROM BASIC SCIENCE TO THE CLINIC, WHICH IS AN IMMENSE ONE.

AND THE FIRST THING I WANT TO DO IS TELL A STORY, WHICH I FIRST HEARD A COUPLE WEEKS AGO ON C SPAN WHEN HELEN THOMAS, THE WELL-KNOWN DEAN, FORMER DEAN, OF THE WHITE HOUSE PRESS CORPS, WAS ON T.V. AT A BOOK SIGNING IN WASHINGTON FOR HER LATEST BOOK. IT SEEMS VERY APT TO ME. SHE WAS ASKED, AMONG OTHER THINGS, TO SAY WHICH PRESIDENT WAS HER FAVORITE PRESIDENT DURING THE TIME SHE WAS COVERING THE WHITE HOUSE AND TO TELL A STORY ABOUT THAT PRESIDENT.

SHE SAID IT WAS JOHN F. KENNEDY, AND THE

STORY WAS AS FOLLOWS. THE PRESIDENT, SHORTLY AFTER HE WAS INAUGURATED, HAD THE MERCURY VII ASTRONAUTS AND THEIR WIVES IN FOR DINNER. AND AS THE PRESIDENT AND JACKIE WERE HANDING OUT COCKTAILS AND SCHMOOZING WITH THE ASTRONAUTS AND THEIR WIVES, PRESIDENT KENNEDY SAID TO THEM, "DO YOU THINK WE COULD EVER GO TO THE MOON?" AND AS THE MERCURY VII ASTRONAUTS RELAYED BACK TO HELEN THOMAS, BECAUSE THAT'S HOW SHE FOUND OUT ABOUT IT, THEY SAID, "YOU KNOW, YOU DON'T SAY NO TO THE PRESIDENT." SO THEY SAID, "SURE, MR. PRESIDENT." AND HE SAID, "OKAY. THANK YOU. THANK YOU. IT'S INTERESTING."

AND AS THEY LEFT THEY SAID TO EACH OTHER, "IS HE NUTS?" THAT STRUCK HOME FOR ME. WHY DON'T YOU GO BACK TO THAT FIRST ONE? WE HAVE A VERY DEMANDING CHALLENGE BEFORE US, AND THIS IS ONE PARAGRAPH FROM PROP 71. THERE'S SEVERAL THAT REFER TO THE END GOAL OF THE INITIATIVE, AND THIS ONE GOES RIGHT TO THE HEART OF IT, AS I SEE IT, IN THAT WE ARE MAKING GRANTS TO REALIZE THERAPIES, PROTOCOLS, AND OTHER MEDICAL PROCEDURES THAT WILL RESULT IN AS SPEEDILY AS POSSIBLE THE CURE AND MITIGATION OF MAJOR DISEASES AND SO ON.

AND ELSEWHERE IN THE INITIATIVE IT REFERS SPECIFICALLY TO A FEW DISEASES AND THEN MENTIONS 70 OTHERS WHICH COULD BE AFFECTED BY THE SPENDING OF THIS MONEY AND THE GRANTING OF THE RESEARCH GRANTS. A

TERRIBLY, DESPERATELY IMPORTANT GOAL AND, AS YOU KNOW FAR BETTER THAN I DO, DREADFULLY HARD TO ACCOMPLISH. SO THAT'S WHY I WENT DOWN THE THOUGHT PROCESS I DID WHEN I HEARD THAT STORY BY HELEN THOMAS BECAUSE, OF COURSE, THAT WAS REGARDED AS PROBABLY IMPOSSIBLE BY MAYBE EVEN THOSE ASTRONAUTS WHO WERE IN THE ROOM. BUT WE ALL KNOW THE REST OF THE STORY.

JUST A FEW MONTHS LATER THE PRESIDENT, SPEAKING BEFORE THE JOINT SESSION OF CONGRESS, COMMITTED VERY PUBLICLY, AUDACIOUSLY TO THAT GOAL. AND WITHIN THE DECADE AND THE NEXT YEAR, HE WAS DEDICATING THE NEW MANNED SPACECRAFT CENTER AND TALKING ABOUT WHY IT WAS IMPORTANT TO DO THAT. AND THIS QUOTE REALLY RESONATED FOR ME. IT STRUCK ME AS VERY PARALLEL TO THE CHALLENGE THAT WE HAVE, WHICH IT'S A CHALLENGE THAT WE ARE WILLING TO ACCEPT, ONE THAT WE ARE WILLING TO POSTPONE, AND ONE WHICH WE INTEND TO WIN.

I DON'T THINK WE CAN OVERSTATE WHAT I BELIEVE ABOUT WHY CALIFORNIANS PASSED THAT INITIATIVE. FOR THOSE OF YOU WHO AREN'T IN CALIFORNIA, YOU MAY FEEL THAT CALIFORNIANS WILL PASS MOST ANYTHING AND THAT IT ISN'T NECESSARILY DONE WITH A LOT OF THOUGHT. BUT, IN FACT, THE VAST MAJORITY OF THOSE INITIATIVES ARE DEFEATED HANDILY. THERE WAS ONE IN THE LAST ELECTION FOR PRESCHOOL FOR ALL CALIFORNIAN YOUNGSTERS THAT WAS

DEFEATED BY A LARGE MAJORITY, AND THERE ARE THE LOTS OF GOOD REASONS FOR IT AND IT WAS A LOT LESS MONEY, AND THERE ARE LOTS OF OTHER EXAMPLES.

CALIFORNIANS REALLY FEEL VERY PERSONALLY CONNECTED TO PROP 71 AND PERSONALLY INVESTED IN THE OUTCOME AND VERY SERIOUS ABOUT IT. THEY DON'T JUST WILLY-NILLY COMMIT TO $3 BILLION FOR SOMETHING. TO THE CONTRARY. AND WHEN I TALKED TO NEIGHBORS AND JUST STRANGERS AND PEOPLE I RUN INTO FOR WHATEVER REASONS, AND THEY FIND OUT THAT I'M AFFILIATED WITH THIS ENTERPRISE, THEY TALK ABOUT IT IN THE FIRST PERSON. THEY SAY, "I DON'T WANT YOU TO WASTE THAT MONEY. I DON'T WANT YOU TO BUILD A LOT OF BUILDINGS. I WANT YOU TO GET THIS JOB DONE. YOU'RE GOING TO FUND CURES, RIGHT?" AND I THINK THERE ARE A COUPLE OF INTERESTING THINGS ABOUT THAT. ONE IS THAT THEY FEEL SO STRONGLY ABOUT IT, BUT I THINK THE OTHER IS THAT THEY VIEW THEMSELVES AS PARTNERS IN THIS ENTERPRISE. AND I'LL COME BACK TO THAT.

SO THEN THE REST OF THE STORY, WITHIN THE DECADE, JULY 21, 1969, BUZZ ALDRIN AND NEIL ARMSTRONG VISITED THE MOON, AS WE ALL KNOW, AND THEY GOT THERE WITHIN THE TIME ALLOTTED, TEN YEARS, WHICH IS A FAMILIAR TIMEFRAME FOR US SINCE THAT'S ROUGHLY ABOUT THE AMOUNT OF TIME THAT WE HAVE TO SPEND THE $3

BILLION, ASSUMING THAT DOESN'T CHANGE BY FURTHER DELAYS. AND SO THEY GOT IT DONE IN TIME AND PROBABLY WAY OVER BUDGET. AND IT'S A GREAT ACHIEVEMENT FOR AMERICANS AND FOLKS BEYOND.

SO WHAT IS THE OTHER RELEVANCE THAT RESONATES IN ME TO THIS STORY? I KNOW THAT THE MOONSHOT IS OFTEN TALKED ABOUT AS AN ANALOGY, SOME KIND OF RELEVANCE FOR A CHALLENGE LIKE GETTING CURES FOR DISEASES. AND I KNOW THAT OFTEN SCIENTISTS RESIST THAT BECAUSE THEY'RE THINKING ABOUT THE DIFFERENCES BETWEEN THE SCIENTIFIC CHALLENGES PRESENTED IN THAT CASE AND THE TREMENDOUSLY DIFFICULT ONES THAT WE HAVE BEFORE US IN THE CASE OF PROP 71. AND I THINK THAT IT'S THAT PARTNERSHIP WITH A VARIETY OF STAKEHOLDERS WHO BELIEVE THAT THEY ARE PARTNERS IN THIS ENTERPRISE, AND AS A RESULT INTEND TO HELP GET IT ACCOMPLISHED. AND I THINK THAT'S IMPORTANT BECAUSE I'VE NOTICED IN THE 15 YEARS I'VE BEEN INVOLVED IN PARKINSON'S ADVOCACY HOW VERY, VERY DIFFICULT IT IS TO GET FROM A CONCEPT ABOUT HOW TO HAVE ANY BASIC INFORMATION ABOUT A GIVEN DISEASE AND TO TAKE THAT THE MANY DIFFICULT STEPS TO THE POINT OF HAVING SOME EFFECTIVE TREATMENT.

AND WHAT I'VE OBSERVED IS THAT OFTEN THE OBSTACLES THAT DERAIL IT AND DELAY IT ARE NOT, IN FACT, AS IT SEEMS TO ME AS A NONSCIENTIST, SCIENTIFIC

OBSTACLES. THEY'RE NONSCIENTIFIC OF ALL SORTS. I IN THINKING ABOUT THAT MADE A LIST. MONEY, NOT HAVING ENOUGH, NOT HAVING ENOUGH IN THE RIGHT PLACE AT THE RIGHT TIME; INADEQUATE INFORMATION AND COORDINATION, SORT OF SERENDIPITY OF FOCUS WHERE SCIENTISTS WILL BE FOCUSED ON AN IMPORTANT SCIENTIFIC QUESTION AND THEN THEY DIE OR THEY RETIRE OR THEY SHIFT FOCUS BECAUSE THE FUNDING SHIFTS, AND IT MAY BE DECADES BEFORE THE SAME ISSUES ARE PICKED UP AGAIN. LACK OF INFORMATION, SCIENTISTS WORKING -- AND THESE ARE THINGS THAT I'VE NOTICED IN THE PARKINSON'S FIELD WHERE AN IMPORTANT DISCOVERY IS DELAYED BECAUSE A SCIENTIST DIDN'T KNOW THAT SOMEONE ELSE HAD STUDIED THE SAME AREA AND HAD ACTUALLY PUBLISHED ON IT. BLOCKED ACCESS TO PATENTED PRODUCTS, DUPLICATION OF EFFORT.

AND THEN ANOTHER CATEGORY, THE LEGAL AND POLITICAL AND REGULATORY DELAYS. AND WE'VE TALKED ABOUT SOME OF THOSE TONIGHT. THERE ARE MANY OF THEM, AND OBVIOUSLY THEY DERAIL AND DELAY VARIOUS SCIENTIFIC ENTERPRISES TRYING TO GET EFFECTIVE THERAPIES AND CURES.

CONTROVERSY, REACTIONS TO ADVERSE SIDE EFFECTS AND DEATHS. AND WITHOUT A COUNTERVAILING AWARENESS OF THE ADVERSE EFFECTS OF SIMPLY THE STATUS QUO, THE AMOUNT OF SUFFERING AND DEATH THAT GOES ON

ANYWAY, AND GIVING THE PUBLIC OR THE PRESS A WAY OF BALANCING THAT AND SEEING IT IN A DIFFERENT LIGHT.

AND THEN ANOTHER BIG CATEGORY, LACK OF INFRASTRUCTURE, LACK OF CAPITAL, BUILDINGS, LACK OF EQUIPMENT, LACK OF TRAINED PERSONNEL.

I'VE WATCHED -- THE SCIENTISTS IN THE PARKINSON'S FIELD HAVE STRUGGLED TO TRY TO GET EFFECTIVE THERAPIES FOR ME AND THE OTHER MILLION AMERICANS AND MILLIONS MORE BEYOND ELSEWHERE IN THE WORLD AND HAD TO DELAY USING THE BRILLIANCE IN THEIR SCIENTIFIC MINDS BECAUSE THEY WERE STOPPED BY THESE, AS I SEE THEM, NONSCIENTIFIC OBSTACLES.

I THINK THAT IF WE ARE COMMITTED TO A PLAN THAT TRULY IS GOING TO BE ATTEMPTING TO ACHIEVE THE VISION THAT'S SET OUT IN PROP 71, GETTING EFFECTIVE THERAPIES AND CURES WITHIN A REASONABLE AMOUNT OF TIME, AND THE PUBLIC BELIEVES THAT, THAT THERE IS A HUGE AMOUNT OF FURTHER TIME AND TALENT AND ENERGY THAT PEOPLE IN THE LEGISLATURE, IN THE PATIENT COMMUNITIES, IN SIMPLY THE VOTING PUBLIC WILL BE WILLING TO INVEST IF THEY SEE THAT VISION OUT THERE AND SEE THAT THERE, IN FACT, IS A PLAN ATTEMPTING TO ACHIEVE IT.

SO THAT THEN LEADS BACK TO THE BASIC QUESTION, WHICH IS WHAT ARE THE SCIENTIFIC OBSTACLES IN THE WAY? AND I HAVE A VISION FOR HOW WE WOULD GET TO

THE OTHER SIDE, WHICH WOULD INVOLVE AT LEAST AS AUDACIOUS, I THINK, AN EFFORT AS THE MOONSHOT AND CERTAINLY AS DIFFICULT, WHICH WOULD BE TRYING TO MARSHAL THE SCIENTIFIC BRILLIANCE AROUND THE WORLD WHO ARE ALL WORKING ON THE SAME PROBLEM AND AVOID DUPLICATION AND GET THE BENEFIT OF INFORMATION AND ACHIEVEMENTS THAT ALREADY HAVE BEEN MADE ELSEWHERE TO WORK IN GETTING TO THE POINT OF EFFECTIVE THERAPIES IN CALIFORNIA. AND I CAN ONLY IMAGINE HOW DIFFICULT THAT MIGHT BE, BUT IT ALSO SEEMS LIKE PERHAPS THE ONLY WAY THAT IT MIGHT BE ACHIEVED IN A REASONABLE AMOUNT OF TIME AND FOR THE AMOUNT OF MONEY THAT THAT'S GOING TO COST. $3 BILLION ISN'T GOING TO BUY CURES FOR 70 DIFFERENT DISEASES OBVIOUSLY.

SO THEN THE QUESTION IS BACK TO ALL OF YOU. I THINK THAT IF THERE IS A PLAN THAT REALLY HAS THAT GOAL IN MIND AND HAS A WAY OF ACHIEVING IT SCIENTIFICALLY, THAT THE OTHER PROBLEMS CAN BE TACKLED. THAT'S NOT BY ANY MEANS TO UNDERESTIMATE HOW DIFFICULT IT WILL BE; BUT I THINK IF THE PLAN IS AUDACIOUS ENOUGH TO REALLY BE ATTEMPTING TO DO THAT, I THINK THE PUBLIC WILL BE AT OUR SIDE.

SO THEN THE QUESTION IS WHAT ARE THOSE SCIENTIFIC QUESTIONS THAT NEED TO BE ANSWERED? WHAT ARE THE OBSTACLES IN THE WAY? AND HOW DOES A STRATEGIC

PLAN BE USED TO CREATE A ROAD MAP THAT REALLY WILL TACKLE THEM IN A WAY THAT WILL CONTINUE TO EXCITE THE PUBLIC IMAGINATION AND BRING THE PUBLIC IN AS A PARTNER?

AND THE OTHER THING THAT I DID TO THINK ABOUT THIS WAS CREATED A BUNCH OF QUESTIONS, WHICH YOU ALL HAD FOR A COUPLE DAYS, AND THAT'S ONE WAY OF THINKING ABOUT IT. BUT WHAT I REALLY WANTED TO DO IS JUST OPEN IT UP TO YOU BECAUSE YOU ARE THE ONES WHO HAVE BEEN IN THE TRENCHES THINKING ABOUT THIS PROBLEM IN A VARIETY OF CONTEXTS AND YOUR OWN PRACTICES, YOUR OWN WORK, YOUR OWN RESEARCH. SO I OPEN IT UP TO YOU.

CO-CHAIR ORKIN: I GUESS SOME OF THIS MAY COME OUT TOMORROW, I THINK, IN THE DISCUSSIONS, BUT I GUESS ONE OF THE QUESTIONS TOO, I'M NOT SURE I HAVE THE ANSWER, BUT TO THINK ABOUT WHICH ASPECTS OF THESE CHALLENGES OR OBSTACLES ARE ACTUALLY IN THE DIRECTION OF THE STEM CELL FIELD AND STEM CELL DISORDERS AS OPPOSED TO BASICALLY ALL THE REST OF MEDICINE. I BELIEVE TEASING OUT WHICH ONES MAY BE UNIQUE MIGHT BE ONE WAY TO SORT OF HELP JUMP START THE EFFORT TO CAPITALIZE ON THE CALIFORNIA INITIATIVE.

I'M NOT SURE I KNOW MYSELF. MAYBE OTHERS WILL HAVE SOME SUGGESTIONS ON THAT, BUT I THINK THERE ARE ISSUES THAT A LOT OF THESE SAME SORT OF NOTIONS

ABOUT HAVING A LARGE PROJECT EQUIVALENT TO GOING TO THE MOON AS SORT OF BEING THE BASIS OF THE CANCER WORLD FOR THE LAST 30 YEARS UNDER NIXON'S WAR ON CANCER. AND THERE'S PROGRESS, BUT THE WAR ISN'T OVER, AND THERE ARE THINGS THAT ARE DONE IN THAT COMMUNITY IN TERMS OF HAVING CENTERS WHICH ARE INTEGRATED TOGETHER AND WORK TOGETHER, WHICH IS CERTAINLY A MODEL FOR OTHER SORT OF LARGE TRANSLATIONAL EFFORTS, BUT THAT'S NOT UNIQUE CERTAINLY IN THAT FIELD, AND I THINK COULD BE REPLICATED IN THE STEM CELL FIELD, BUT I'M NOT CERTAIN IT WOULD BE DIFFERENT.

SO I GUESS THE FIRST QUESTION IS WHICH OBSTACLES AND WHICH CHALLENGES ARE REALLY UNIQUE? AND IS THERE SOMETHING SPECIAL THAT CAN BE DONE HERE WITH THE RESOURCES THAT CAN'T BE DONE IN OTHER PLACES? THROW THAT OUT.

DR. KIMBLE: I THINK THAT IT'S VERY IMPORTANT TO BE THINKING. THIS IS A GREAT ANALOGY; HOWEVER, THIS IS VERY FOCUSED. AND THE INITIATIVE, AS I UNDERSTAND IT, FOR THE STEM CELL INITIATIVE IS NOT FOCUSED. IT'S WE WANT TO PUT MONEY INTO STEM CELLS BECAUSE WE CAN'T DO IT THROUGH NIH BASICALLY. AND USE STEM CELLS -- CURE DISEASES WHERE WE CAN, BUT WE DON'T KNOW WHERE WE CAN YET.

AND SO ONE POSSIBILITY WOULD BE TRYING TO

FOCUS THIS EFFORT, BUT IN A SENSE I THINK IT'S TOO EARLY TO DO THAT. AND MY GUESS IS THAT IF WE PUT MONEY INTO INITIATIVES THAT CANNOT BE FUNDED BY NIH, WHICH IS REALLY THE GOAL OF THIS, THAT THAT WILL THEN FEED ITSELF PROBABLY IN THE NEXT YEAR OR EVEN TWO TO NEW RESEARCH THAT CAN HAVE A VISION OF THERAPIES, AND WE DON'T KNOW WHICH OF THESE 70 DISEASES OR OTHERS, BUT HOPEFULLY ONES THAT WILL BE OF BROAD IMPACT, NOT JUST THE ODD ONE OR TWO PEOPLE, BUT REALLY BROAD IMPACT DISEASES, LIKE DIABETES, FOR EXAMPLE, BUT REALLY USING THE STEM CELLS AND USING THIS MONEY FOR RESEARCH THAT WON'T BE FUNDED BY NIH. BUT UNFORTUNATELY WE DON'T HAVE A GOAL LIKE THE MOON. I WISH WE DID.

CO-CHAIR ORKIN: WE CAN CHOOSE ONE OF THE 70 DISEASES, BUT WE'D BE LIKELY WRONG.

DR. KIMBLE: WE'D BE LIKELY WRONG. EXACTLY. AND I THINK THAT IT'S TOO EARLY.

CO-CHAIR ORKIN: DIFFERENT ADVOCATES, PARTICULARLY IN A PUBLIC SETTING LIKE THIS, I'M SURE THAT IF WE CHOSE ONE, THOSE INTERESTED IN THE OTHER 69 ARE GOING TO HAVE ISSUES.

DR. KIMBLE: MAYBE IN FIVE YEARS WE'LL BE ABLE TO SAY WE WILL HAVE MADE PROGRESS, AND WE CAN SAY, YES, PARKINSON'S AND DIABETES AND HEART DISEASE ARE THE ONES THAT WE REALLY WANT TO FOCUS ON. IN MY VIEW IT'S

REALLY TOO EARLY. I DON'T KNOW WHAT YOU THINK. I LOVE THIS ANALOGY, AND I WISH THAT WE -- BECAUSE I THINK IF WE HAD SOMETHING THAT WAS THIS DEFINED, WE PROBABLY COULD GO AFTER IT LIKE THAT, BUT, YOU KNOW, IT'S HARD IN THIS PARTICULAR FIELD. I DON'T KNOW OTHER PEOPLE THINK ABOUT THIS.

MR. SHEEHY: I JUST WONDER IF -- BECAUSE ZACH ACTUALLY IN ONE OF HIS STRATEGIC PLANNING MEETINGS HAD AN IDEA ABOUT COMPETING -- A VERTICAL COMPETITION VERSUS HORIZONTAL. AND I WONDER -- THAT SEEMS LIKE A VERY INTRIGUING IDEA, BUT I CAN'T REALLY JUST, YOU KNOW, DESCRIBE THE WAY THAT YOU PROBABLY COULD.

DR. HALL: I THINK IT IS AN ISSUE THAT WE HAVE DISCUSSED. THAT IS, THE QUESTION OF WHAT IS THE BEST WAY. OUR ULTIMATE AIM IS OBVIOUSLY TO HAVE THERAPIES FOR DISEASES. AND SO HOW DO WE GET THERE, AND WHAT POINT -- SAME POINT YOU'RE MAKING, WHAT POINT DO YOU FOCUS OR YOU MAKE A CHOICE OR DO THAT?

TWO THINGS, I'M GOING TO MAKE ANOTHER POINT AND I'LL COME TO THAT. AT OUR MAY 25TH MEETING, WE HAD A REALLY INTERESTING TALK FROM MIKE RUDNICKI WHO HEADS THE CANADIAN STEM CELL PROJECT, SOME OF YOU UNDOUBTEDLY KNOW HIM, BUT THEY STARTED OUT BY FOCUSING ON SPECIFIC DISEASES, AND THEY GAVE IT UP TO FOCUS ON WHAT THEY CALLED ENABLING TECHNOLOGIES. IT DIDN'T MEAN YOU

WEREN'T WORKING ON DISEASE. YOU OFTEN WERE, BUT THE CRITERIA OR THE REASON FOR CONCENTRATING WAS NOT CHOSEN BECAUSE OF THAT DISEASE, BUT BECAUSE OF THE BREADTH AND THE ULTIMATE SIGNIFICANCE OF THE PARTICULAR PROJECT THAT WAS BEING CARRIED OUT.

BUT ONE OF THE CHALLENGES WE ALSO, AND IT'S NOT SPECIFIC TO US, WE'RE TALKING ABOUT DIFFERENT -- WHAT'S UNIQUE ABOUT STEM CELLS, ONE OF THE PROBLEMS THAT EVERYBODY FACES IS THE WHOLE QUESTION OF HOW YOU GET FROM LABORATORY WORK TO THE CLINIC. AND WE WILL SPEND SOME TIME TOMORROW, I THINK, TALKING ABOUT SOME OF THOSE ISSUES. BUT ONE OF THE IDEAS WE TALKED ABOUT WAS NOT TOO DIFFERENT FROM THE COMPREHENSIVE CANCER CENTERS WHERE YOU CONSCIOUSLY ORGANIZE AS ONE OF YOUR MECHANISMS OF FUNDING, NOT THE ONLY ONE, BUT ONE OF THEM, TO SAY WHAT WE'RE LOOKING FOR IS A GROUP THAT CAN TAKE THINGS FROM A LABORATORY OVER A PERIOD OF TIME, FROM A LABORATORY TO A PRECLINICAL PHASE ON INTO A CLINICAL PHASE. AND SO WE CHALLENGE YOU TO PUT TOGETHER THE VERY BEST GROUP YOU CAN, COMBINING FOR YOUR PARTICULAR PROBLEM ALL THE VARIOUS ELEMENTS ACROSS THE STATE, AND IF YOU CAN GET FUNDING FROM OTHER SOURCES OUTSIDE THE STATE AS WELL, AND THEN TO SAY WHICH AMONG THESE, INDEPENDENT OF WHAT THE PARTICULAR DISEASES ARE, WHAT ARE THE STRONGEST PROPOSALS THAT WE

HAVE AND WHAT ARE THE PLACES WHERE WE CAN PUT THE MONEY AND HOPE TO SEE SOME PROGRESS BASED ON WHAT'S HERE.

SO THE IDEA WAS NOT FOR US TO SIT HERE AND IN OUR WISDOM SAY WE THINK THE BEST CHANCE, AS YOU SAID, STU, 70 TO 1 YOU'RE WRONG, BUT TO SAY WHICH IS THE BEST ONE, BUT TO SIMPLY TRY TO MOBILIZE THE RESOURCES OF THE COMMUNITY BUT IN A PARTICULAR WAY THAT COMMITS TO A TRACK FROM OVER A PERIOD OF TIME. AND THESE WOULD BE PRESUMABLY GRANTS THAT WOULD RUN FIVE, SIX, SEVEN, EIGHT YEARS, BUT YOU WOULD EXPECT TO SEE PROGRESS DURING THAT PERIOD OF TIME AND EXPECT TO SEE IT LAID OUT. WE'VE TALKED ABOUT THAT. IF PEOPLE HAVE THOUGHTS OR IDEAS ABOUT IT, WE'D BE PLEASED TO HEAR IT.

DR. SVENDSEN: JUST THE ANALOGY. I DON'T WANT TO GO TOO FAR WITH THE ANALOGY. I THINK WE HAVE A PRETTY RICKETY SPACESHIP RIGHT NOW IN EMBRYONIC STEM CELL IF THAT'S WHERE WE'RE FOCUSING. AND THEN WE DON'T HAVE JUST ONE TARGET. WE HAVE A SERIES OF SHOTS, AND I THINK YOUR STRATEGY SEEMS QUITE REASONABLE. PEOPLE OR GROUPS WHO CAN PUT TOGETHER GOING FROM A STEM CELL TO A TARGET DISEASE. ONE MIGHT BE TRYING TO ACHIEVE A MOONSHOT, SOMEBODY ELSE COULD BE AIMING FOR JUPITER. BUT WITHIN THAT, EACH ONE SHOULD BE A FOCUSED STRATEGY, AND WE SHOULDN'T BE SELECTING THE DISEASES, BUT JUST WAIT AND SEE WHAT COMES IN AND PUTS TOGETHER THE BEST

RATIONAL APPROACH FOR DEALING WITH THAT DISEASE BECAUSE EACH PART IS GOING TO TAKE A DIFFERENT STRATEGY, BUT IT'S A CONTINUITY, MILESTONE-TYPE APPROACH TO GET TO AN END POINT THAT COULD BE REVIEWED AT REGULAR PERIODS AS WELL OF PROGRESS.

DR. HALL: THE OTHER POINT IS I THINK PARTICULARLY EARLY ON WHAT ONE NEEDS IS A STRONG EXAMPLE. WHAT WE NEED MORE THAN ANYTHING ELSE IS A SUCCESS THAT SAYS THIS IS GOING TO WORK. HERE'S AN EXAMPLE OF HOW IT WORKS.

DR. SVENDSEN: ARE WE REALLY -- IS CIRM NOT FUNDING THINGS OUTSIDE OF THE EMBRYONIC STEM CELL LINES THAT ARE CURRENTLY APPROVED?

CO-CHAIR ORKIN: I THINK IT WILL.

MR. KLEIN: WE HAVE COMPLETE AUTHORITY TO FUND AS LONG AS THE NIH IS NOT FUNDING IT ADEQUATELY, TIMELY, OR COMPLETELY. SO IT'S WRITTEN SO THERE'S COMPELLING SCIENTIFIC OPPORTUNITY.

CO-CHAIR SAMUELSON: MOST ANYTHING.

DR. KIMBLE: WE HAVE NO --

MR. KLEIN: WHAT WE SHOULD REALIZE TOO IS THAT WE HAVE THIS GREAT LEGACY FROM THE ADULT STEM CELL FIELD WHERE THERE ARE MANY APPLICATIONS THAT ARE BEING EXPANDED, THAT THEY NEED, ALTHOUGH THE PROOF OF CONCEPT IS AN ADULT STEM CELL, THEY NEED EMBRYONIC STEM CELL

RESEARCH TO EXPAND THERAPEUTIC TREATMENT. DR. RICHARD BURT FROM NORTHWESTERN PUBLISHED IN ABOUT FEBRUARY A PAPER ON LUPUS WITH AN ADULT STEM CELL TREATMENT WHERE HE HAD SUBSTANTIAL REMISSION OF SYMPTOMS FOR THREE TO FIVE YEARS WITH 50 PERCENT OF HIS PATIENTS. BUT HE CAME TO CALIFORNIA DURING THE CAMPAIGN AND HELPED US RAISE FUNDS BECAUSE HE SAID, "LOOK, I'M WORKING IN CROHN'S AND MS AND LUPUS. I CAN'T TELL YOU WHAT THE RESULTS ARE." AT THAT TIME HE HADN'T PUBLISHED THE LUPUS PAPER OBVIOUSLY, VERY ENCOURAGING, "BUT I CAN ONLY REACH 10 TO 15 PERCENT OF MY POTENTIAL PATIENTS BECAUSE I NEED ALMOST AN EXACT IMMUNE SYSTEM MATCH."

WE HAVE POTENTIALLY THE OPPORTUNITY HERE TO CREATE A STRATEGY THAT DEALS WITH EXPANDING OFF OF AND GETTING SOME EARLIER RETURNS BY BROADENING THE APPLICATIONS OF ADULT STEM CELL RESEARCH THROUGH COMPLEMENTARY EMBRYONIC STEM CELL RESEARCH AT THE SAME TIME THAT WE'RE WORKING ON REPLACEMENT CELL THERAPY OR OTHER APPROACHES IN THE EMBRYONIC AREA. IT'S A MUCH MORE TARGETED ISSUE IF YOU'RE DEALING WITH IMMUNE SYSTEM MATCHES ON ADULT THERAPIES THAT HAVE ALREADY BEEN SHOWN CONCEPTUALLY, AT LEAST IN CLINICAL TRIALS, TO WORK.

SO WE MAY HAVE A CONTINUUM OF STRATEGIES, BUT CERTAINLY, AS I THINK HAS BEEN REFERENCED BY SEVERAL

PEOPLE, IT WOULD BE HIGHLY BENEFICIAL TO PATIENTS AND FOR SUPPORT FOR THE CALIFORNIA VOTER IF SOME OF THOSE LOOKED AT NEAR-TERM, MORE FOCUSED PROBLEMS THAT CAN BE ADDRESSED.

CO-CHAIR ORKIN: I THINK IF THERE ARE ANY LOW-HANGING FRUIT, OBVIOUSLY THOSE WOULD BE NICE TO PICK OFF JUST TO HAVE AN EASY WIN IF THERE'S SOMETHING THERE. OF COURSE, AS YOU EXPAND TO IMMUNODEFICIENCIES AND CELL REPLACEMENT AND EVERYTHING, $3 BILLION DOESN'T GO ALL THAT FAR, BUT THE NIH SPENDS 11, 12 BILLION A YEAR, 20 BILLION.

DR. HALL: NOW 20.

CO-CHAIR ORKIN: TWENTY BILLION A YEAR, AND IT'S NOT SUFFICIENT. SO, AGAIN, I THINK FOCUSING IS GOING TO BE WHERE WE ARE.

MR. KLEIN: I'D ALSO LIKE TO JUST MAKE THE POINT THAT I THINK WE NEED MODELS AT EACH STAGE OF THIS PROCESS. LIKE YOU SAY, IT'S VERY EARLY, AND WE'RE GOING TO HAVE A DIFFERENT MODEL FOR EARLY DISCOVERY OF THE SPECTRUM OF OPPORTUNITIES THAN THE MODEL FOR IMPLEMENTATION ONCE THERE'S SOME REAL PROMISING PROOFS OF CONCEPT ON AN EXPERIMENTAL APPLIED SCIENCE LEVEL. BUT THERE ARE A NUMBER OF MODELS THAT POTENTIALLY WE COULD -- INSTEAD OF LOOKING AT WHAT THE OBSTACLES ARE, MAYBE WE CAN LOOK AT THE MODELS OF SUCCESS, LIKE

HERCEPTIN, AND SAY HERE ARE TEN DIFFERENT MODELS OF SUCCESS. EACH OF THEM IS RELEVANT TO OUR TASK IN SOME MEASURE, AND OTHER COMPONENTS OF THAT MODEL ARE NOT RELEVANT. IF WE CAN LOOK AT MODELS OF SUCCESS, WE SEE HOW PEOPLE HAVE PENETRATED THOSE OBSTACLES, ALL IN DIFFERENT PERSPECTIVES WITH DIFFERENT CHALLENGES, AND WE CAN AGGREGATE THE LESSONS FROM THOSE TO APPLY TO OUR JUDGMENTS OF WHERE WE HAVE THE MOST PROMISING OUTCOME.

DR. STEINDLER: SOMEONE MENTIONED EXTENDING CIRM TO THE WORLD. AND I THINK THAT CAN BE INCREDIBLY IMPORTANT FOR THIS STAGE OF WHAT WE'RE DOING RIGHT NOW, WHAT YOU'RE TRYING TO DO. I TALKED TO THE HEAD OF THE MEDICAL RESEARCH CONSUL FROM GREAT BRITAIN A COUPLE DAYS AGO. AND HE TOLD ME HOW THE WORLD IS LOOKING TOWARDS YOU GUYS TO SHOW HOW REGENERATIVE MEDICINE IS GOING TO LEAD TO THE THERAPEUTICS THAT YOU MENTIONED, JOAN.

AND IF YOU COULD EXTEND CIRM TO BE A VIRTUAL INSTITUTE FOR REGENERATIVE MEDICINE AROUND THE WORLD WHERE, OF COURSE, THE RESEARCH IS FUNDED HERE, BUT BY WORKSHOPS AND FELLOWSHIPS THAT COULD BE COLLABORATIVE TO LABORATORIES IN OTHER PARTS OF THE WORLD, THAT IN ITSELF $3 BILLION WOULD BE WELL SPENT.

CO-CHAIR SAMUELSON: WOULD BE WELL SPENT?

DR. STEINDLER: YEAH, BECAUSE YOU NOW THEN

HAVE MUCH MORE BANG FOR YOUR BUCK. AND I BELIEVE --

DR. HALL: SO MAKE SOME SUGGESTIONS. FOLLOW THAT UP A LITTLE BIT IF WE COULD BECAUSE WE HAVE -- WHAT'S THE COUNT, BOB, 14, 15 WE'RE UP TO OF COUNTRIES THAT HAVE CONTACTED US ABOUT INTERESTED IN PARTNERSHIPS OF VARIOUS SORTS. WE ARE GOING TO HAVE TO TAKE ON ADDITIONAL PERSONNEL JUST TO KEEP UP WITH THEM. I'M BEING FACETIOUS, BUT WE ARE VERY INTERESTED IN DOING THAT. AND WE ARE CONSTRAINED OBVIOUSLY THAT OUR MONEY HAS TO BE SPENT IN CALIFORNIA. AND ONE OF THE RESULTS OF THE LAST WORKSHOP THAT WAS VERY CLEAR WHERE WE HAD A NUMBER OF GROUPS, JDRF AND THE HIQ FOUNDATION AND OTHERS. THERE ARE A NUMBER OF GROUPS THAT WOULD BE WILLING TO PARTNER WITH US IN VARIOUS WAYS.

SO ONE OF THE QUESTIONS IS HOW COULD WE SET UP STRUCTURES OR ENCOURAGE THOSE PARTNERSHIPS IN WAYS THAT WOULD NOT JUST, AS WE WERE TALKING EARLIER TONIGHT ABOUT GIVING GRANTS FOR COLLABORATIVE PROJECTS FOR THE SAKE OF COLLABORATION, BUT NOT JUST TO SAY LOOK AT WE HAVE AN INTERNATIONAL PROJECT, BUT TO REALLY MAKE SOMETHING HAPPEN THAT WOULDN'T HAPPEN OTHERWISE. SO WE'RE VERY OPEN TO ANY THOUGHTS YOU MIGHT HAVE ABOUT HOW TO DO THAT.

DR. STEINDLER: I HAVE THAT SAME PROBLEM IN THAT I HAVE MONEY IN THE PLACE THAT I WORK, AND I'M

ONLY SUPPOSED TO SPEND IT WITHIN MY PLACE. WHAT I'M TRYING TO DO IS CREATE A VIRTUAL INSTITUTE AT THE SAME TIME WHERE WE HAVE THINK TANKS AND FELLOWSHIPS WHERE PEOPLE COME IN AND CAN JOIN INVESTIGATORS THAT ARE WITHIN THE INSTITUTE I WORK IN TO DO COLLABORATIVE WORK. AND WE FUND FELLOWSHIPS AS LONG AS THERE'S A COLLABORATOR WITHIN HOUSE. SO THINK TANKS COULD BE A WAY TO DO THAT WHERE YOU HAVE FELLOWS WHO ACTUALLY GO BACK AND FORTH BETWEEN LABS AROUND THE WORLD. THEY ARE PART OF A VIRTUAL WORLDWIDE INSTITUTE THAT IS, IN ESSENCE, A THINK TANK.

MR. KLEIN: ANOTHER POSSIBILITY IS THERE ARE COUNTRIES LIKE CANADA WHO HAVE THIS NETWORK SET UP WHERE THEY RECOGNIZE THEY DON'T HAVE THE PRODUCT DEVELOPMENT AND COMMERCIALIZATION CAPACITY THAT WE HAVE IN CALIFORNIA. THEY DON'T HAVE THE GMP FACILITY, THEY DON'T THE VENTURE CAPITAL TO COME IN AND PARTNER SO THAT THERE IS SOME DISCUSSION AMONG THE CANADIAN SCIENTISTS TO TRY AND HAVE A COLLABORATION WHERE THEY PASS ON PROOFS OF SCIENTIFIC CONCEPT TO CALIFORNIA TO TRY AND LET CALIFORNIA THEN DRIVE THE NEXT PART OF THE PROCESS WHERE WE HAVE MORE ASSETS IN PLACE AND WE HAVE THE SCIENTIFIC AND CAPITAL STRUCTURE TO REALLY MOVE THE THERAPY FORWARD RATHER THAN SITTING IN CANADA WITHOUT THE POTENTIAL TO IMPLEMENT IT.

DR. HALL: WE'VE HAD SOME AT LEAST PRELIMINARY DISCUSSIONS ACTUALLY AT SORT OF AN ADMINISTRATIVE LEVEL WITH THE CANADIANS WHO ARE INTERESTED IN THE POSSIBILITY OF SETTING UP A CANCER STEM CELL PROJECT. ONE OF THE ADVANTAGES WE ALSO HAVE IS THAT THEY CAN'T DO SCNT THERE. SO THERE ARE SOME POSSIBILITIES, AND WE HAVE AT LEAST TALKED ABOUT IN A SORT OF VAGUE WAY IS, I THINK IT WILL HAPPEN, BUT WE JUST HAVEN'T MADE ANY CONCRETE PLANS, IS TO TRY TO GET TOGETHER A CONFERENCE OF CANADIAN AND CALIFORNIA SCIENTISTS TO TALK ABOUT HOW -- COULD ONE REALLY GET MORE THAN -- WHAT AM I TRYING TO SAY? -- COULD ONE REALLY LEVERAGE ASSETS IN TWO DIFFERENT PLACES TO GET SOMETHING THAT'S MORE THAN THE SUM OF THE PARTS.

WE ALSO ARE PARTICIPATING WITH A MEETING WITH THE UK IN NOVEMBER. SIXTEEN CALIFORNIA SCIENTISTS, 16 UK SCIENTISTS ON STEM CELL DIFFERENTIATION -- SELF-RENEWAL AND DIFFERENTIATION.

DR. BRIVANLOU: I LIKE THE HERCEPTIN EXAMPLE VERY MUCH, AND I THINK THAT WE CAN FIND MAYBE A COMMON DENOMINATOR IN WHICH WE CAN BRING FOCUS AT THE SAME TIME AS THE LOW-HANGING FRUIT APPROACH. AND I AGREE WITH THE POINT THAT THE BIGGEST POTENTIAL THAT CIRM CAN SHOW IS TO CURE A DISEASE AND SET AN EXAMPLE, EVEN IF IT'S NOT THE MOST IMPRESSIVE ONE, BECAUSE EVERYTHING

ELSE WILL FALL IN PLACE AFTER THAT. EVERYTHING WILL BE MUCH EASIER TO FOLLOW AFTER THAT.

SO MAYBE THINKING ABOUT CELL-BASED THERAPY OR REGENERATIVE MEDICINE THE WAY WE'RE TALKING ABOUT IT MIGHT NOT BE THE MOST DIRECT WAY TO FOCUS ON A SHORT-TERM REWARD. MAYBE THE DERIVATION OF EMBRYONIC STEM CELLS FROM DISEASE BACKGROUND CAN BE USED AS A PHARMACOLOGICAL PLATFORM TO FIND DRUGS THAT WILL FIX THE PROBLEM AT THAT LEVEL AND BRING THOSE DRUGS TO A CLINICAL APPLICATION AS PERHAPS THE SHORTEST DISTANCE BETWEEN TWO POINTS.

I THINK THAT THERE IS NO REASON NOT TO HAVE 70 LINES FROM 70 DISEASES. AND WE CAN START PLAYING LOTTERY. JUST BOMBARD IT WITH WHAT WE CAN. AND THE FIRST ONE THAT HITS THE TARGET IS THE ONE THAT IS PRIORITY TO FOLLOW UP. MAYBE THAT'S ONE WAY TO FOCUS THE EFFORT ON THE KIND OF THING NIH WILL NEVER BECAUSE NIH DOES NOT FUND MONEY FOR DERIVATIONS AND PROVIDE THE PLATFORM. IN FACT, THAT WILL EVEN ENCOURAGE SENDING THOSE CELL LINES TO EVERYBODY IN THE WORLD, AND WHOEVER GETS THERE FIRST.

DR. HALL: WE HAVE SEVERAL GROUPS WITHIN THE STATE THAT -- YOU PROBABLY KNOW BETTER THAN I DO, THAT ARE INTERESTED IN PURSUING THIS. AND I PERSONALLY SEE IT AS VERY PROMISING AND MAYBE EVEN ULTIMATELY, WHO

KNOWS, BUT IT ULTIMATELY MAY BE A RICHER VEIN TO MINE THAN EVEN CELL-BASED THERAPIES, USING THE CELLULAR MODELS OF DISEASE.

DR. BRIVANLOU: BECAUSE THESE DRUGS CAN THEN BE USED AS CHEMICAL PROBES, AND IT WILL SATISFY THE BASIC SCIENTISTS ABOUT THEIR UNDERSTANDING OF THE SIGNALING PATHWAYS OR OTHER THINGS THEY'RE INTERESTED DOING OR INTERESTED IN THE INITIAL STAGES OF THE APPLICATION OF IT. I THINK YOU CREATE A PLATFORM WHERE EVERYBODY GETS ENERGIZED TO WORK GETTING TO SOMEWHERE AS QUICKLY AS WE POSSIBLY CAN WITH WHAT WE HAVE IN HAND AND NOT TRY TO COME UP WITH SOMETHING IN ADVANCE OF THAT.

DR. HALL: ONE OF THE THINGS THAT I THINK WE HAVE THE LUXURY OF DOING, AS PAUL BERG MENTIONED IN OUR MEETING LAST OCTOBER, WE HAD A SORT OF SCIENTIFIC PRIORITY SETTING MEETING, WHICH WE INVITED A LOT OF PEOPLE, IT WAS THE FIRST STEP IN OUR STRATEGIC PLAN TO TALK ABOUT WHAT SHOULD WE BE DOING. AND PAUL BERG MADE THE POINT. HE SAID, A LITTLE BIT IN CONTRAST WHAT WE WERE SAYING BEFORE, YOU DON'T HAVE TO PUT ALL YOUR CHIPS IN ONE PILE. YOU HAVE ENOUGH FUNDS THAT YOU CAN MAKE MORE THAN ONE BET, AND I DON'T SEE THOSE AS BEING BETS ON DISEASES SPECIFICALLY, BUT ON TECHNOLOGIES AND ON PUSHING TO SEE IN THESE BASIC THINGS WHAT'S GOING TO

GIVE AND WHAT'S GOING TO WORK. AND SO I THINK THAT BOTH CELL REPLACEMENT THERAPY AND USING DISEASE-SPECIFIC CELLS AS MODELS FOR DISEASE TO LEARN ABOUT PATHOGENESIS AND/OR TO LEARN ABOUT GENETICS OR TO DEVELOP DRUGS, ALL OF THOSE THINGS, IT SEEMS TO ME, ARE VERY MUCH POSSIBLE.

DR. BRIVANLOU: MIGHT ALSO ADDRESS HEAD-ON THE CURRENT DICHOTOMY THAT EXISTS BETWEEN A CLINICAL APPROACH TO A PROBLEM VERSUS THE BASIC SCIENCE APPROACH TO A DISEASE. TO A LARGE EXTENT, POLITICIANS AND OBVIOUSLY THE BEST DOCTORS AND HOSPITALS WANT TO CURE A DISEASE AND A BASIC SCIENTIST WANTS TO FIGURE OUT, WELL, WHAT ARE THE SIGNALS FOR SUCH AND SUCH WITH A BASIC PROTOCOL GUIDE. WE CAN BRING THESE TWO ROLES TOGETHER IF WE CREATE A PLATFORM IN WHICH BOTH CAN GET ALONG.

MR. SERRANO-SEWELL: IT SEEMS QUITE CHALLENGING TO DO THAT. I DON'T MEAN TO INTERRUPT. I'VE HEARD THIS DISCUSSION IN A LOT OF DIFFERENT FORUMS, THE BASIC SCIENCE APPROACH AND THOSE QUESTIONS AND HOW OBSCURE THEY CAN REALLY BECOME, OR NOT OBSCURE, BUT AS LAYPERSON JUST CAN'T REALLY APPRECIATE IT AS MUCH AS A BASIC RESEARCHER CAN, OF COURSE. AND THEN ALSO DISEASE-SPECIFIC CLINICAL MODELS. AND IT'S A REAL CHALLENGE TO JOIN THE TWO AND SATISFY BOTH

CONSTITUENCIES AND ALSO EXPLAIN TO OUR BROADER CONSTITUENCY IN CALIFORNIAN AND THE WORLD, WHATEVER, WHAT WE'RE DOING IS THE DECISIONS, THE PRIORITIES THAT WE'RE MAKING TODAY WILL PAY DIVIDENDS TOMORROW. I DIDN'T MEAN TO INTERRUPT YOU, BUT IT SEEMS LIKE IT'S REALLY QUITE COMPLICATED.

DR. BRIVANLOU: IT'S NOT GOING TO BE EASY, BUT I THINK IT'S A PLACE TO START.

DR. JOYNER: WE'RE KIND OF TALKING ABOUT AN RFA TO CHALLENGE PEOPLE TO COME UP WITH WAYS TO PUT ALL THAT TOGETHER. I THINK JUST PUTTING AN RFA OUT JUST TO DO MORE STEM CELL RESEARCH IS JUST MORE OF THE SAME. IF WE COULD TACKLE THIS AND ACTUALLY COME UP WITH WAYS TO SOLVE THAT. AGAIN, THAT WILL SET AS AN EXAMPLE FOR THE REST OF THE WORLD.

CO-CHAIR SAMUELSON: CAN YOU SAY YOU WANT MEAN A LITTLE MORE?

DR. JOYNER: THAT BRINGS YOU FROM BENCH TO BEDSIDE, THAT CLEARLY HOW CAN YOU ACTUALLY BRING THESE PEOPLE WHO THINK QUITELY DIFFERENTLY, DO DIFFERENT PARTS OF THE PROCESS TO ACTUALLY FUNCTION TOGETHER AS A UNIT AND SEE SOMETHING GO FROM BASIC SCIENCE THROUGH TO THE CLINIC. AND IT REALLY TAKES DIFFERENT EXPERTISE, BUT THE KEY IS HOW YOU GET THOSE DIFFERENT EXPERTS TALKING AND INTERACTING IN AN EFFECTIVE WAY THAT FEEDS

OFF EACH OTHER TO MAKE IT GO FURTHER.

CO-CHAIR SAMUELSON: SO IS THAT SOME KIND OF A TEAM BUILDING?

DR. HALL: SO WE CAN'T -- LET ME JUST -- WE CAN'T MAKE IT HAPPEN. WE CAN'T MAKE PEOPLE DO THIS. WE CAN DANGLE MONEY OUT THERE.

DR. JOYNER: IF YOU CAN.

DR. HALL: IF YOU CAN PUT IT TOGETHER IN A COMPELLING WAY THAT THIS DISTINGUISHED GROUP CAN PASS A FAVORABLE JUDGMENT ON IT, THEN WE WILL FUND IT, SOMETHING LIKE THAT.

DR. JOYNER: I THINK THE FEAR THERE IS THAT YOU CAN'T GO OUT SAYING WE'RE GOING TO SPEND THIS MUCH MONEY REGARDLESS BECAUSE YOU COULD END UP SPENDING MONEY ON CRAP. AND WE HAVE TO BE WILLING TO SAY NO.

DR. HALL: AN ACCEPTABLE ANSWER IS THAT NONE OF THESE ARE GOOD ENOUGH.

DR. JOYNER: GIVE ALL THE MONEY OUT, AND WITH THIS, YOU'D HAVE TO GO INTO IT WITH A MIND WE MAY NOT GIVE MUCH OUT.

MR. KLEIN: THERE'S ALSO AN OPPORTUNITY TO LOOK FOR CASES THAT ARE FAR DOWNSTREAM. USE OF CARDIOMYOCYTES DEVELOPED THROUGH EMBRYONIC STEM CELL LINES FOR TOXICITY TESTING FOR THE DEVELOPMENT OF THERAPEUTICS TO DO AN EARLY SCREENING OF TOXICITY TO

POTENTIALLY REDUCE THE COST OF GOING FAR DOWNSTREAM TO HUMAN TRIALS AND FINDING THAT THERE'S A REAL HUMAN TOXICITY. THE VENTURE CAPITAL WORLD HAS WRITTEN IN THEIR PRESS THAT THERE ARE VERY LARGE POTENTIAL SAVINGS IN THIS AREA. I DON'T KNOW THAT THAT'S CORRECT OR NOT CORRECT. BUT IT'S A CONCEPT THAT'S SIMPLE ENOUGH THE PUBLIC CAN UNDERSTAND IT. IT'S A FUNCTIONAL DELIVERY OF SOMETHING THAT COULD POTENTIALLY, BECAUSE IT'S FAR DOWNSTREAM AT THIS POINT, IF WE JUST ACCELERATE THE DEVELOPMENT BE A DELIVERABLE THAT'S DEFINED AND HAS A VERY SPECIFIC TARGET IN A REASONABLE TIMEFRAME.

SO IT'S POSSIBLE WE CAN IDENTIFY SOME OF THOSE OPPORTUNITIES, PUT THEM INTO A LIMITED CATEGORY OF FUNDS, BUT WHERE WE'RE NOT SHARING THE WHOLE COST, BUT A SMALL PORTION OF THE COST, BUT HAVE SOME EARLY DELIVERABLES.

CO-CHAIR SAMUELSON: IS THERE PRECEDENT FOR DIVIDING UP THE WORK OF MAKING THOSE ASSESSMENTS AMONG SCIENTIFIC GROUPS IN AND OUTSIDE CALIFORNIA?

DR. SVENDSEN: I'M HEARING SOME DIFFERENT THINGS. THAT SEEMS LIKE A PARTNERSHIP WITH INDUSTRY, THAT YOU PROVIDE SEED MONEY. IT'S SORT OF LIKE CONTACTS TO GET INDUSTRY INVOLVED. SO YOU GIVE THEM A LITTLE MONEY TO SET UP A SCREEN. JAMIE THOMPSON HAS COMPANIES ALREADY DOING CARDIOMYOCYTE SCREENING.

DR. MAXON: A LOT OF COMPANIES.

DR. SVENDSEN: SO THAT'S HAPPENING. SO I THINK THE SEED IDEA IS GOOD BECAUSE THEN THE COMPANY CAN TAKE IT, THE VENTURE CAPITAL PEOPLE COME IN AND GIVE FULL FUNDING. THAT SEEMS TO BE A DIFFERENT AREA. I KNOW FOX AND OTHERS DIVIDE UP THEIR RFA'S, THEIR INDUSTRIAL RFA'S NOW, ACADEMIC RFA'S, SO IT'S SATISFYING. THE SCREENING IDEA WOULD BE MUCH MORE -- THE BASIC SCIENTISTS WOULD BE SO INTERESTED IN DOING THAT.

DR. KIMBLE: CAN I ASK JUST A GENERAL QUESTION? I'M TRYING TO UNDERSTAND WHAT OUR GOALS ARE IN THIS DISCUSSION. SO, YOU KNOW, WE'RE TALKING ABOUT A LOT OF DIFFERENT THINGS. ARE WE TRYING TO FIGURE OUT THE GUIDELINES FOR RFA'S? WHAT ARE WE TALKING ABOUT HERE? WHERE ARE WE GOING WITH THIS DISCUSSION?

CO-CHAIR ORKIN: I'LL JUST SPEAK FOR WHAT I THINK. I THINK WE'RE TRYING TO GIVE ADVICE OR SUGGESTIONS TO CIRM ABOUT HOW THEY MIGHT THINK ABOUT EITHER ORGANIZING PROGRAMS OR CONCEPTUALIZING RFA'S.

DR. KIMBLE: IS THIS TO TRY AND ARTICULATE WHAT THE RFA'S WILL BE ABOUT?

DR. HALL: PART OF IT IS, JUDY. WE'RE SORT OF IN AN INFORMATION GATHERING PHASE, LOOKING FOR IDEAS. AND SO I THINK ALL OF THOSE THINGS ARE COUPLED.

THAT IS, WHAT ARE THE SCIENTIFIC PROBLEMS THAT NEED TO BE SOLVED AND THAT WE COULD IDENTIFY AND GO AFTER? THE OTHER, WHAT KINDS OF STRUCTURES SHOULD WE TRY TO ENCOURAGE?

ONE OF THE THINGS THAT WE WILL END UP TALKING ABOUT IS HOW MUCH SHOULD IT BE DIRECTED VERSUS UNDIRECTED. TO WHAT EXTENT SHOULD WE PUT OUT SPECIFIC RFA'S VERSUS SAYING GIVE US YOUR BEST IDEAS? WE DON'T PRESUME TO KNOW WHAT THEY ARE. YOU TELL US, YOU KNOW, THE SORT OF TRADITIONAL NIH WAY.

DR. KIMBLE: SO GIVEN THE TIMEFRAME WE'RE IN, WHEN DO WE ACTUALLY NEED TO PUT OUT THE FIRST RFA'S, AND WHEN DO WE NEED TO BE MAKING THESE DECISIONS? IS THIS NINE MONTHS AWAY?

DR. HALL: OUR SCHEDULE IS WE'D LIKE TO FINISH THE STRATEGIC PLAN BY THE END OF THE YEAR AND THEN --

DR. KIMBLE: AND THEN HAVE OUR RFA'S GOING OUT IN JANUARY?

DR. HALL: WELL, GIVE US MAYBE SIX WEEKS. THE RFA'S WOULD GO OUT, BUT THE GOAL WOULD BE, IN MY MIND, IF WE CAN DO IT, WOULD BE TO HAVE A FIRST ROUND AT LEAST OF GRANTS LINED UP AND READY TO GO WHEN THE MONEY COMES IN, SO WE DON'T HAVE TO THEN SAY, OH-HO, LET'S GET STARTED. NOW LET'S PUT OUR RFA, BUT THAT WE

WOULD HAVE THEM.

A QUESTION WE WILL HAVE TO ANSWER, NOT NECESSARILY RIGHT NOW, BUT AT SOME POINT, IS WHAT SHOULD THOSE BE. THAT IS, WHAT ARE THE MOST IMMEDIATE NEEDS TO BE MET, OR HOW SHOULD WE STRUCTURE THAT?

ALSO, I GUESS THIS IS PART OF A BROADER DISCUSSION, AND THIS IS REALLY -- I THINK JOAN SHOULD BE THE ONE IN A WAY WHO SPEAKS TO THIS SINCE SHE WAS PUTTING TOGETHER THE FRAMEWORK FOR TONIGHT. IT MAY BE OF SOME HELP. IN YOUR PACKAGE, I THINK, ARE A LIST OF QUESTIONS RATHER BROAD AND GENERAL THAT WE PUT IN AND WE'LL COME BACK TO TOMORROW AFTER WE'VE HEARD SOME OF THE SPEAKERS AND TALK. JOAN, WHY DON'T YOU -- WHAT IS YOUR AIM FOR THE EVENING?

CO-CHAIR SAMUELSON: TO TRY TO START FROM SCRATCH IN THIS SESSION, IF NOT THE OTHERS, BECAUSE IT SEEMS TO ME THERE'S SO VERY MANY WAYS THAT WE COULD GO IN SPENDING THIS MONEY, THAT THERE MAY BE SOME SORT OF SHUTTING OFF OF OPTIONS IN THE COURSE OF, YOU KNOW, SORT OF DEFINING WHAT WE'RE DOING. AND SO I THINK THAT, YOU KNOW, THERE ARE TONS OF DIFFERENT WAYS TO LOOK AT IT AND DEFINE IT. AND I THINK IT'S GOOD TO JUST FOR A LITTLE AMOUNT OF TIME THROW IT OPEN.

DR. KIMBLE: JUST CURIOUS. WE'RE MEANDERING AROUND, AND I WAS JUST TRYING TO FIGURE OUT WHERE WE'RE

GOING.

DR. HALL: WELL, WE HOPE IT'S A PRODUCTIVE MEANDER. ONE ISSUE I'D LIKE TO COME BACK TO IS WE TALKED AT THE BEGINNING A LITTLE BIT ABOUT NEEDING A SUCCESS, ABOUT WANTING TO GET A THERAPY. SO WHAT'S A REALISTIC -- WHAT'S A REALISTIC TIMELINE HERE? CLIVE, YOU, PROBABLY AS MUCH AS ANYBODY, HAVE SORT OF THOUGHT ABOUT THIS AND ARE IN THE MIDDLE OF THIS. WHAT ARE YOUR THOUGHTS? IN A REALISTIC SENSE, WHEN MIGHT ONE HAVE A REAL THERAPY SPECIFICALLY FOR HUMAN EMBRYONIC STEM CELLS AS CELL REPLACEMENT THERAPY, LET'S JUST SAY?

DR. SVENDSEN: I THINK THERE'S A LOT MORE WORK NEEDS TO GO ON WITH THE CELLS, AND THERE ARE A LOT OF SAFETY ISSUES.

DR. HALL: CAN YOU ELABORATE ON THOSE?

DR. SVENDSEN: THERE'S COMPLETE ROADBLOCKS. I MEAN FIRST IS TERATOMA FORMATION HAS TO BE DEALT WITH. AND THE SECOND IS IMMUNE ISSUES, PROTECTION FOR ANYTHING OUTSIDE THE BRAIN. THE OTHER TYPE OF STEM CELL, I WAS AT STANFORD TODAY WITH IRV WEISSMAN AND THOSE GUYS, AND, YOU KNOW, THEY'RE GOING AHEAD, BUT THERE IS A STEM CELL TRIAL WITH FETAL-DERIVED STEM CELLS FOR BATTEN'S DISEASE, THE LOW-HANGING FRUIT. THEY'VE GOT FDA APPROVAL. THE CELLS ARE GOING TO GO INTO THE KIDS IN JANUARY. IRONICALLY STANFORD CAN'T

GET INVOLVED. THEIR IRB HASN'T LET THEM THE GO AHEAD, SO THEY ARE STILL BEING PRETTY CONSERVATIVE BECAUSE THEY'RE FETAL DERIVED.

DR. HALL: THEIR IRB --

DR. SVENDSEN: HAS SAID NO. THEY CAN'T DO ANY TRANSPLANTS IN STANFORD, SO IT'S GOING TO BE IN OREGON. SO EVEN THERE THERE'S ISSUES. YOU DON'T ALWAYS -- YOU CAN'T ALWAYS GO AHEAD IN YOUR PARTICULAR STATE OR YOUR PARTICULAR UNIVERSITY, DEPENDING ON THE IRB. SO THAT'S THE FIRST TRIAL THAT I KNOW OF THAT'S NOT ADULT STEM CELL DERIVED OR BONE MARROW DERIVED THAT'S GOING AHEAD. AND THAT'S FOR BATTEN'S, WHICH IS AN ENZYME DEFICIENCY AND IS REALLY LOW-HANGING FRUIT IN ONE SENSE. I HATE THAT TERM IN A WAY. IT IS SOMETHING THAT IS NOT GOING TO WORK, I DON'T THINK, BUT IT MAY PROVIDE SOME RELIEF BECAUSE YOU CAN GET THE ENZYME PRODUCED BY THE STEM CELL. THEY'RE NOT TRYING TO REDESIGN CIRCUITS.

SO IN THAT TIMEFRAME, IT'S PRETTY SHORT FOR DOING IT. THEY'VE GONE FROM MANUFACTURING THE CELLS. STEM CELLS, INC. IS HEADING IT UP. IT'S A COMPANY. SIX PATIENTS. I SAW THIS GO THROUGH NIH A NUMBER OF YEARS AGO. ARLENE REMEMBERS. IT DIDN'T QUITE GET THROUGH THERE. THEY'VE MANAGED TO DO IT WITHOUT NIH SUPPORT THROUGH RAISING MONEY THROUGH A COMPANY.

MR. KLEIN: PRIVATE DONORS.

DR. SVENDSEN: AND PRIVATE DONORS. SO I THINK IT'S A BREAKTHROUGH, THAT PARTICULAR TRIAL. WE ALWAYS FORGET ABOUT FETAL STEM CELLS. WE GO EMBRYONIC AND THEN ADULT. THERE'S A FETAL STAGE. AND THE NICE THING OF THOSE CELLS IS THEY'RE ONLY MAKING NEURAL TISSUE. THEY'RE NOT MAKING ANYTHING ELSE, AND THEY DON'T MAKE TERATOMAS.

CO-CHAIR ORKIN: JUST REMIND ME. THE ONES IN THOSE EXPERIMENTS WOULD BE --

DR. CHIU: FETAL.

CO-CHAIR ORKIN: THEY WERE FETAL CELLS, RIGHT?

DR. CHIU: THEY WERE FETAL TISSUE, SO IT'S A HETEROGENEOUS MIXTURE.

CO-CHAIR ORKIN: THERE'S NOT MUCH DIFFERENCE.

DR. SVENDSEN: THEY'RE VERY DIFFERENT. IN THE EYES OF THE FDA, VERY DIFFERENT BECAUSE THERE'S NO MANUFACTURING PROCESS. SO AS SOON AS YOU TAKE A RAW FETAL TISSUE AND JUST TRANSPLANT IT, AS SOON AS YOU PUT YOUR FETAL TISSUE IN A DISH AND EXPOSE IT TO, SAY, MICE TO GET THE STEM CELLS GROWING, YOU COME UNDER THE FDA REGULATIONS.

DR. HALL: THAT'S AN IMPORTANT DISTINCTION I HAD NOT APPRECIATED. THAT'S VERY INTERESTING.

DR. SVENDSEN: JUST TO ANSWER YOUR QUESTION, THE TIMEFRAME COMPLETELY DEPENDS ON WHAT, YOU KNOW, YOUR MOONSHOT IS AND HOW -- YOU KNOW, AND ONES GOING AHEAD, THE ALS PROGRAM WE'RE INVOLVED WITH IS IN THE MIDDLE PHASE WHERE THEY'RE GOING BACK AND FORTH TO THE FDA ABOUT LARGE ANIMAL TOX STUDIES. THE GOAL IS QUITE LOW THERE, PUTTING CELLS IN THAT CAN MAKE A GROWTH FACTOR.

THERE IS RISK WITH ANY CELL YOU PUT IN THE BRAIN, AND THEY'VE ACCEPTED THE RISK OF FETAL CELLS. AND I THINK ONE OF THE OPTIONS THAT CIRM HAS, I THINK, IS EMBRYONIC STEM CELLS, I THINK, IS A GREAT IDEA TO DO THINGS YOU CAN'T DO RIGHT, NOW WHICH IS TO GENERATE LINES. WE CAN LEARN A LOT ABOUT THAT. GENERATE THEM TO PROVIDE STEM CELLS. THAT'S ONE THING.

YOU KNOW, SUPPORTING THE BASIC CORE NEEDS FOR PEOPLE. WE TALKED ABOUT CORE FACILITIES AND DRIVING THESE ROADBLOCKS, WHICH WE ALL KNOW ABOUT, IMMUNE REJECTION AND TERATOMAS AND GETTING ON WITH IT. IF WE GET THAT DONE, THAT WILL HELP OPEN UP THE FIELD FOR THE TRANSLATION. IT'S A BLACK HOLE, VALLEY OF DEATH WE ALL FACE WITH FUNDING.

DR. STEINDLER: FOR THIS TIMELINE ISSUE, ANDERS BJORKLAND AT THE EUROPEAN NEUROSCIENCE MEETING YESTERDAY GAVE A WONDERFUL TALK WHERE HE'S USING THIS

LMX 1 EMBRYONIC STEM CELL LINE FOR PARKINSON'S DISEASE AND WAS ASKED BY SOMEONE IN THE AUDIENCE AFTER HIS TALK WHERE HE HAD A BEAUTIFUL EMBRYONIC STEM CELL DERIVED, DOPAMINE DERIVED, ALMOST A HUNDRED PERCENT EFFICIENCY GENERATED FROM THE ES CELL FROM THIS LMX LINE. ASKED BY, I DON'T KNOW IF IT WAS A REPORTER, WHEN DO YOU THINK THIS IS GOING TO REACH THE CLINIC? AND ANDERS BJORKLAND, WHO IS EXTREMELY CONSERVATIVE, SAID TWO TO FIVE YEARS. AND THE REASON HE DIDN'T SAY TWO TO FIVE MONTHS WAS THAT AMIDST ALL THE BEAUTIFUL DOPAMINE IN HIS TRANSPLANTS WERE THESE TERATOMAS. SO --

CO-CHAIR ORKIN: A SMALL PROBLEM.

DR. STEINDLER: SO IN TWO TO FIVE YEARS, HE IMAGINES THAT HE WILL USE THE FRUITS OF WHAT WE'RE TALKING ABOUT HERE WHERE THERE WILL BE LARGE-SCALE SCREENING AND HIGH THROUGHPUT SCREENING OF WAYS IN WHICH YOU CAN GET PURIFIED POPULATIONS THROUGH FACTS OR GOD KNOWS WHAT ELSE TO GET RID OF ALL OF THE CELLS THAT ARE UNDIFFERENTIATED FROM THESE. HE THINKS THAT WILL TAKE TWO TO FIVE YEARS.

CO-CHAIR ORKIN: I'LL ADDRESS THE TIMEFRAMES A LITTLE TOMORROW.

DR. CHIU: COUPLE OF POINTS. ONE IS N TERA 2'S, YOU MAY REMEMBER ABOUT TEN YEARS AGO, THEY WERE CARCINOMIC CELLS THAT WERE PREDIFFERENTIATED INTO

NEURONS. AND THEN THERE WAS A PHASE I TRIAL FOR STROKE, AND THEY INTRODUCED THEM INTO BRAIN, AND THEN IT WAS DROPPED. NOTHING HAPPENED. THE POINT IS THEY JUST SAT THERE AND NOTHING HAPPENED. SO THERE COULD BE TRIALS WHERE THERE WAS SAFETY, AND THEN IT ENDS RIGHT THERE TOO. AND WE SHOULD BE PREPARED THAT SOME TRIALS MIGHT JUST DIE LIKE THAT.

AND A SECOND THING --

DR. HALL: SORRY. CAN YOU -- I'M NOT SURE I GOT THE POINT, THAT YOU THINK THEY WERE ABANDONED UNFORTUNATELY OR --

DR. CHIU: FORTUNATELY. WE MIGHT FIND THINGS IN PHASE I, THAT EVEN THOUGH WE GET INTO TRIALS, THAT'S THE END OF THAT. WE MIGHT LEARN THINGS THAT WE HAVE TO GO BACK TO THE BENCH OR THAT PARTICULAR LINE OF CELLS, BE IT TERATOMAS OR WHATEVER, CANNOT PROCEED ANYMORE, AND WE HAVE TO GO BACK TO THE BENCH TO SEE WHAT WE CAN DO WITH IT. THEY LEARNED A LOT. THEY LEARNED THAT THESE CELLS JUST SAT THERE. THEY DIDN'T MIGRATE, SO IT WOULDN'T WORK WITH BATTEN'S. THEY JUST DIDN'T FORM SYNAPSES. THEY JUST SAT THERE AND DIDN'T HURT THE PATIENTS, BUT IT DIDN'T HELP THEM EITHER.

DR. SVENDSEN: COMPANY WENT BANKRUPT.

DR. HALL: DIDN'T HELP THE COMPANY.

DR. CHIU: THE OTHER THING WAS IT'S

INTERESTING YOU SAID THAT ABOUT THE LMX 2 CELLS IS THAT AT ISSCR WE HEARD THAT SINGAPORE HAS DEVELOPED A SERIES OF MONOCLONAL ANTIBODIES AGAINST UNDIFFERENTIATED HUMAN ES CELLS. AND OF THE BANK, THAT SMALL SET OF MONOCLONALS, ONE OF THEM KILLS UNDIFFERENTIATED ES CELLS. SO THAT MIGHT BE A VERY FAST WAY OF WIPING OUT THOSE GUYS BEFORE YOU PUT SOME IN TOO. SO THERE MAYBE THAT TWO TO FIVE YEARS, IT PROBABLY WILL BE TWO TO FIVE YEARS, BUT THESE ARE THE SORTS OF INCREMENTS THAT ARE BASIC RESEARCH, BUT WILL HELP CLEAN UP SOMETHING FOR CLINICAL RESEARCH.

MR. KLEIN: IN TERMS OF WHERE OUR SCOPE IS, SEPARATE FROM, ZACH, THE TIMETABLE YOU JUST DESCRIBED, I DON'T KNOW IF YOU WERE ADDRESSING THE BOARD'S PRIOR DISCUSSION ON INNOVATION GRANTS WHERE WE WENT OUT TO LOOK FOR AN EARLY STAGE, WE NEED TO INVENTORY THE IDEAS THAT ARE OUT THERE BECAUSE AS THE REFERENCES, UNTIL YOU SEE WHAT THE IDEAS ARE THAT ARE OUT THERE, WHERE DO YOU SEE -- HOW YOU DEFINE YOUR OPPORTUNITY. AND PARTICULARLY BECAUSE OF THE STRICT NIH GUIDELINES ON LACK OF ANY FEDERAL FUNDS OR USE OF FEDERAL EQUIPMENT OR FEDERAL SUPPLIES, THE SCIENTISTS IN CALIFORNIA NEED SEED MONEY FUNDING TO JUST GET THEIR INITIAL CONCEPT EXPERIMENTAL DATA TO BE ABLE TO COME BACK WITH A LATER WELL-DEVELOPED PROPOSAL.

SO AS AN INITIAL STRATEGIC STEP HERE, IS THE BOARD GOING THE WRONG DIRECTION, OR DON'T WE NEED TO BE ABLE TO PUT SEED MONEY OUT THERE IN A ROUND THAT IS WIDE OPEN AND INVENTORIES ALL THE IDEAS FROM THOSE PEOPLE WHO COME IN BECAUSE WE'RE PRESUPPOSING WHAT IS THE OPPORTUNITY WITHOUT PROVIDING THE OPPORTUNITY TO REALLY BRING IN THE BRILLIANT NEW IDEAS THAT ARE OUT THERE ACROSS THE STATE AND GIVE PEOPLE THE FUNDS TO GET EXPERIMENTAL DATA TO AT LEAST SHOW SOME PRELIMINARY PROOFS OF THE DIRECTION THEY WANT TO GO.

CO-CHAIR SAMUELSON: I'D LIKE TO FOLLOW UP ON THE ANDERS BJORKLAND EXAMPLE. SEVERAL OF YOU SAID THAT IT'D BE GREAT TO HAVE ONE SUCCESS, AND ANDERS IS A REPUTABLE GUY. LET'S SAY THAT THERE'S ENORMOUS MERIT TO THIS TWO- TO FIVE-YEAR TIMELINE OF HIS. WHAT OTHER WORK SHOULD BE GOING ON NOW IN THE NEXT FEW YEARS THAT WOULD PREPARE THAT FOR PRIME TIME?

DR. STEINDLER: FINDING THE SURVIVAL FACTORS THAT ARE GOING TO KEEP THOSE CELLS ALIVE AFTER YOU'VE BEEN SUCCESSFUL GRAFTING AND YOU DON'T GET TERATOMA FORMATION. SO HE'S VERY HAPPY NOW THAT HE'S FOUND A BETTER NONFETAL CELL FROM PARKINSON'S TRANSPLANTATION MODELS THAT LOOKS LIKE IT'S VERY ROBUST IN ITS GENERATION OF NEURONS AND ALL KINDS OF OTHER THINGS, BUT WE STILL DON'T KNOW IF THAT CELL WILL SURVIVE IN AN

ADULT UNHAPPY BRAIN CELL. SO THERE'S GOING TO HAVE TO BE LARGE-SCALE SCREENING OF SURVIVAL FACTORS FOR DISCOVERY OF DRUGS, SOME OF WHICH MAY ALREADY BE FDA 1 APPROVED, TO KEEP THOSE GUYS HAPPY ONCE THEY'RE GRAFTED. WOULD YOU AGREE?

DR. SVENDSEN: YEAH. I'M NOT SURE THAT, EVEN IF YOU HAVE THE IDEAL DOPAMINE ON THE BRAIN, THAT IT'S GOING TO WORK. THERE ARE A LOT OF DATA ON THE SIDE EFFECTS. SO IT'S A COMPLICATED FIELD.

LET'S GO BACK TO BOB'S POINT, AGAIN, GOING BACK TO WHY WE'RE TALKING, JUDITH'S POINT, IT SOUNDS TO ME LIKE WE'RE BOUNCING AROUND, BUT I THINK IT JUST SEEMS LIKE I CAN SEE FOCUSES COMING IN A FEW SPECIFIC RFA AREAS, AND MAYBE A WILD CARD RFA WHICH IS GOING TO TRY AND GET THESE AMAZING IDEAS THAT ARE OUT THERE IN, SAY, CALIFORNIA. I THINK MAYBE THREE RFA'S. AND, AGAIN, THIS IS NOT -- I'M SURE YOU GUYS ARE DOING THIS, THINKING ALONG THESE LINES -- OF HAVING A WILD CARD RFA RATHER LIKE THE FOX FOUNDATION HAS ITS OPEN -- ALTHOUGH I'M ON THE REVIEW PANEL, THERE'S 250 APPLICATIONS.

DR. HALL: WHICH FOUNDATION?

DR. SVENDSEN: THE FOX FOUNDATION. THEY HAD 250 APPLICATIONS THIS YEAR FOR THE SHORT-TERM GRANTS.

MR. CLAEYS: WHICH IS ABOUT AVERAGE. THEY DO AN ANNUAL INVESTIGATOR INITIATED PROGRAM EVERY YEAR

LIKE CLOCKWORK AND GET ABOUT 200, 250 APPLICATIONS.

DR. HALL: AS NIH BUDGETS GET TIGHTER, I DON'T THINK --

CO-CHAIR ORKIN: HOW MANY DID THEY FUND?

DR. SVENDSEN: THIS YEAR IT'S GOING TO BE AROUND 20 TO 25 OF THOSE IS WHAT I'M HEARING. THEY'VE ACTUALLY DONE AN INTERESTING THING WHICH IS RELEVANT AS WELL IS THAT THEY SHIFTED. THEY USED TO GIVE THREE-YEAR AWARDS. THEY'RE ONLY GIVING ONE-YEAR AWARDS NOW, AND IT'S SUBJECT TO REVIEW AFTER A YEAR. SO I THINK IT'S A REASONABLE IDEA. WE HAD A LONG DISCUSSION ABOUT IT. I THINK A HUNDRED THOUSAND --

DR. HALL: IS IT RENEWED BY THIS COMMITTEE?

DR. SVENDSEN: YEAH, BY THIS COMMITTEE. THE IDEA IS THAT AFTER A YEAR, YOU CAN GET RENEWAL FOR THE NEXT YEAR AND THE NEXT YEAR IF YOU SHOW PROGRESS AFTER A YEAR, BUT THEY'RE MUCH STRICTER THAN NIH. NIH IS LIKE JUST HAND IN YOUR UPDATE FOR THE YEAR. THEY ARE REALLY TAKING TO IT TO TASK, AND THE LAST SET OF GRANTS, ONLY ABOUT 50 PERCENT MANAGED TO GET SECOND-YEAR FUNDING. THE FIRST WENT BY THE WAYSIDE BECAUSE THEY DIDN'T PRODUCE ANYTHING IN A YEAR.

CO-CHAIR ORKIN: IT'S WHERE THEY HAVE THE BAR FOR THE SECOND YEAR BECAUSE IF IT'S TOO TIGHT, THEY'RE GOING TO THROW AWAY A LOT OF THEIR FUNDING.

DR. SVENDSEN: THAT'S THE TRICK. OUR SCARE IS LIKE THREE YEARS ISN'T ENOUGH, A YEAR ISN'T ENOUGH TO DO ANYTHING. BUT ACTUALLY IT REALLY STIMULATED PEOPLE TO PRODUCE IN THE FIRST YEAR. SO JUST TO GET SOMETHING OUT THE DOOR. AND I THINK IT'S NOT A -- IT'S A REASONABLE IDEA TO THINK ABOUT FOR CIRM. PRODUCTIVITY -- YOU GOT A LOT OF MONEY. AND MY WORRY, A LOT OF PEOPLE'S WORRY, IS THAT THIS IS GOING TO GO TO THE TOP 10 PERCENT. THE LAST TIME 50, 60 PERCENT OF GRANTS COMING IN WERE GETTING FUNDING. YOU HAVE TO KEEP THAT ENERGY GOING. THIS MAY BE A WAY TO FUND A LARGE NUMBER OF GRANTS, BUT THEN IN A YEAR BE SELECTIVE AND CAN START DOING SOME REALLY HEAVY DECISIONS AND MAKING PEOPLE REALIZE THIS ISN'T A SLUSH FUND.

DR. HALL: WILLING TO EVERY YEAR TO CHECK SEVERAL HUNDRED GRANTS?

MR. CLAEYS: IT'S AN INTERACTIVE PROCESS TOO BECAUSE THE INVESTIGATOR GETS A CHANCE TO EXPLAIN WHY THEY HAVEN'T HAD PROGRESS, IF THEY HAVEN'T.

DR. HALL: THAT WOULD BE GOOD. WE COULD HAVE THEM COME HERE BEFORE OUR STUDY SECTION.

CO-CHAIR ORKIN: I THINK OUR TERM IS UP.

DR. STEINDLER: THIS SOUNDS FAMILIAR. THERE WAS A PROGRAM DIRECTOR AT NIH WHO USED TO READ PROGRESS REPORTS EVERY YEAR, AND SHE DIDN'T GIVE US OUR MONEY

EITHER.

DR. CHIU: MICHAEL J. FOX REVIEWS AFTER ONE YEAR. AND I JUST THOUGHT THAT'S A LOT OF WORK FOR NOT VERY MUCH MONEY, AND YOU NEED THAT MANPOWER TO REVIEW. HOW ARE WE GOING TO DO THAT? I AGREE THAT IT'S VERY STRINGENT, AND IT WOULD BE NICE TO BE ABLE TO MONITOR THAT TIGHTLY. BUT GIVEN OUR -- WHAT'S IN PROPOSITION 71, IF WE DID THAT, EVEN FOR A SEGMENT OF THE GRANTS, HOW DO YOU THINK YOU COULD DO IT?

MR. KLEIN: ARLENE, POSSIBLY TO ANSWER YOUR QUESTION, THE TIMING OF THIS, ON CLIVE'S EXAMPLE, WITH A ONE-YEAR GRANT, WE WILL BE COMING UP AT THE END OF THAT YEAR ON THE TIMETABLE WHEN THERE COULD BE LEGISLATIVE ENHANCEMENTS WHERE, IN FACT, THE INTERPRETATION OF ENHANCEMENTS OF THE MANNING OF OUR GRANT REVIEW COMMITTEE COULD BE EXPANDED SO THAT THERE COULD BE -- IN FACT, THE PEOPLE ON OUR GRANT REVIEW COMMITTEE COULD POTENTIALLY BECOME THE COORDINATING POINT FOR INDIVIDUALS THAT ARE REPORTING TO THEM SO THAT YOU COULD FURTHER DIVERSIFY AND ADD TO YOUR MANPOWER.

I THINK, FROM THE INFORMATION THAT I HAVE, GIVEN THE VOLUME OF WORK, WE'RE GOING TO NEED A LEGISLATIVE ENHANCEMENT THAT PROVIDES SOME ABILITY TO EXPAND THE SCIENTIFIC MANPOWER ON THIS COMMITTEE.

ZACH, IS THAT YOUR READ?

DR. HALL: ABSOLUTELY. ACTUALLY WE HAD TO STOP THE DISCUSSION AT THE MAY 25TH MEETING. EVERYBODY KEPT SAYING YOU GUYS ARE NEVER GOING TO BE ABLE TO REVIEW ALL THESE GRANTS WITH 15 PEOPLE. THAT IS A PROBLEM WE HAVE TO SOLVE.

DR. KIMBLE: HOW MANY GRANTS ARE WE TALKING ABOUT, AND WHAT ARE THE SIZE OF THE GRANTS? HAS THERE BEEN DISCUSSION OF THIS AT ALL?

DR. HALL: WE HAVEN'T SORT OF GOTTEN TO THAT.

DR. KIMBLE: BECAUSE THAT SEEMS LIKE IT WILL BE IMPORTANT, ESPECIALLY IF WE WANT TO START FUNDING INFRASTRUCTURE AND LABORATORIES WITH NONFEDERALLY FUNDED EQUIPMENT AND LAB SPACE. THOSE ARE GOING TO BE LARGE GRANTS.

DR. HALL: UP TO 10 PERCENT CAN BE USED FOR FACILITIES.

DR. KIMBLE: MAYBE THAT SHOULD BE THE FIRST THING THAT HAPPENS.

MR. KLEIN: WELL, THERE'S A FACILITIES COMMITTEE THAT DEALS WITH BUILDINGS. AND IF THEY NEED INPUT, THEY'RE GOING TO COME TO YOU FOR OVERALL PROGRAM EVALUATION INPUT. IN FACT, DAVID IS THE CO-CHAIR OF THE FACILITIES COMMITTEE WITH PERSONNEL WHO HAVE BACKGROUND IN DEVELOPING SPECIALIZED FACILITIES FOR

RESEARCH AND/OR MAJOR REAL ESTATE INFRASTRUCTURE.

BUT IN TERMS OF THE SIZE OF THE GRANTS, TO THE EXTENT THAT THE ORIGINAL GRANTS ARE INNOVATION GRANTS, FASTER CURES, FOR EXAMPLE, HAS A FAIRLY SHORT, RELATIVELY RAPID REVIEW PROCESS FOR SMALL SEED MONEY.

DR. KIMBLE: WHAT DO YOU MEAN SMALL?

MR. KLEIN: IT'S A HUNDRED TO 200,000 ARE WHAT THEY'RE DEALING WITH.

DR. KIMBLE: PER YEAR?

DR. HALL: WE'VE CONSIDERED 200,000 A YEAR FOR TWO YEARS, LET'S SAY, AS A SMALL GRANT. AND I THINK WE WILL -- I THINK WE HAVE NOT SAT DOWN AND REALLY TRIED TO FIGURE OUT THE MONEY ON THIS AND TO TRY TO MAKE THE ANALYSES, BUT I THINK WE WILL HAVE THE ABILITY TO GIVE GRANTS THAT ARE PERHAPS A BIT BIGGER THAN NIH IF WE WANT TO DO THAT. BUT I THINK THE POINT, THE REAL POINT, IS WHAT DO WE WANT TO DO, AND THEN WE WILL COME BACK AND TRY TO PUT DOLLAR FIGURES ON THEM AND SEE WHAT MAKES SENSE.

DR. KIMBLE: DO YOU THINK THERE'S ANY REASON TO INSIST THAT THEY BE MULTIDISCIPLINARY AND THAT THERE BE BASIC AND CLINICAL SCIENCE IN EVERY GRANT, FOR EXAMPLE?

DR. BRIVANLOU: I CAN ANSWER THAT. THAT DOESN'T WORK IN THE EXAMPLE OF THE HANK GREENBERG AND

OTHERS, DONATION FOR THE TRI-INSTITUTION STEM CELLS BETWEEN ROCKEFELLER, CORNELL, AND MEMORIAL SLOAN. AND THE DONOR HAD WISHED THAT THE CONDITION SHOULD BE THAT THEY WOULD BE A COLLABORATION AMONG CLINICIANS, NO. 1; AND, NO. 2, ONE MEMBER PER UNIVERSITY. WHAT ENDED UP HAPPENING IS THAT IT WAS, FOR REASONS TOO LONG TO EXPLAIN, SOME OF THEM PERHAPS NOT EVEN UNDERSTOOD, A LOT OF THOSE MARRIAGES WERE MARRIAGES OF CONVENIENCE, NOT OF SYNERGY. AND SO IN THAT SENSE A LOT OF GRANTS WERE FUNDED, BUT IN A VERY WEIRD WAY. MAYBE TWO OUT OF 49 COULD HAVE NOT BEEN FUNDED BY THE NIH. EVERYTHING ELSE WOULD HAVE BEEN FUNDED BY THE NIH.

SO BY CREATING THESE ARTIFICIAL COALITIONS, YOU CREATE SCENARIOS THAT ARE VERY UNPREDICTABLE BECAUSE PEOPLE COME TOGETHER BASED ON NECESSITY, NOT BASED ON THE PENETRANCE OF THEIR IDEAS. AND NECESSITY BECOMES HUGE WHEN NIH HAS A BUDGET CUT, SO EVERYBODY AND THEIR DOGS WHO CANNOT GET THEIR GRANTS ANYMORE FINDS A COLLABORATOR AND ATTACH THEMSELVES TO STEM CELLS. THAT'S THE LAST THING YOU WANT.

DR. HALL: WE HAVE A LOT OF -- I'VE ALREADY SEEN SOME OF THAT, NOT FROM THIS POSITION, BUT WHEN I WAS AT USC. ONCE THE PROPOSITION 71 WAS ANNOUNCED, IT WAS LIKE CONVERSION IN THE STREETS. PEOPLE WHO HADN'T BEEN FUNDED FOR YEARS WERE TALKING ABOUT HOW SUDDENLY

THEY WERE REALLY INTERESTED IN STEM CELLS. I THINK THAT IS SOMETHING WE HAVE TO BE A LITTLE BIT CAREFUL ABOUT, BUT I DON'T THINK THAT'S A REAL PROBLEM IF SOMEBODY, AS ALEX, I THINK, SAID EARLIER, I THINK WE HAVE TO BE WILLING TO SAY AT TIMES WE'RE NOT PRECOMMITTING TO A CERTAIN AMOUNT OF MONEY. WE'RE PRECOMMITTING TO A CERTAIN LEVEL OF QUALITY. YOU DON'T HAVE THAT QUALITY, WE WON'T SPEND THE MONEY.

AGAIN, THROUGH PROPOSITION 71 WE CAN HOLD THAT MONEY OVER, AND WE DON'T HAVE TO SPEND IT ALL.

CO-CHAIR SAMUELSON: I GUESS I'M WONDERING, IN ANSWERING QUESTIONS LIKE HOW BIG SHOULD GRANTS BE, HOW MUCH IS KNOWN AND HOW FEASIBLE IS IT TO DO AN ASSESSMENT OF WHAT OTHER FUNDING ENTITIES THAT ARE THAT ARE FUNDING PIECES OF THE SAME QUESTIONS OR THE WHOLE SAME AREA? AND ARE THERE CERTAIN NICHES THAT REALLY ARE IN GREATER NEED THAN OTHERS, EVEN SOME ROAD MAP OF WHAT'S NEEDED?

DR. HALL: WELL, I GUESS, WHAT I SAID BEFORE. MY VIEW IS THAT YOU START WITH THE QUESTION OF NOT THE SIZE THE GRANTS, BUT WHAT'S THE PROBLEM. HOW ARE WE GOING -- WHAT DO WE WANT OUT OF IT? AND IF YOU WANT TO HAVE A VERTICAL STRUCTURE, IF YOU DECIDE THAT'S WHAT YOU WANT TO DO TO TRY TO GET THESE TEAMS, THAT'S A LOT OF MONEY. IF YOU WANT TO DO AS BOB SAID AND WHAT CLIVE

CALLED, I THINK, THE INNOVATION GRANTS OR THE WILD CARD RFA'S SORT OF, THEN YOU OBVIOUSLY ARE NOT GOING TO PUT HUGE AMOUNTS OF MONEY INTO THAT UNLESS YOU'RE CONVINCED IT'S GOT A PRETTY GOOD CHANCE.

SO I THINK, AT LEAST IN MY VIEW, YOU WOULD START BY SAYING WHAT DO WE WANT TO ACCOMPLISH? WHAT DO WE WANT TO ACHIEVE? AND THEN SAY HOW MUCH MONEY WILL IT TAKE TO DO THAT? AND WE ARE, I THINK, FORTUNATE IN THAT $300 MILLION A YEAR IS A LOT, AND WE WON'T HIT THAT IMMEDIATELY, BUT IT'S A SIZABLE AMOUNT. IT'S NOT A LOT IF YOU THINK IN TERMS OF THE WHOLE WORLD OF STEM CELL RESEARCH OR 70 DISEASES; BUT IF YOU THINK IN TERMS OF, I WOULD SAY, AND THIS IS JUST FOLLOWING UP ON CONVERSATION AT THE DINNER TABLE TONIGHT, THAT THERE'S A BIT OF A LAG BECAUSE, FOR VARIOUS REASONS, THAT THE FIELD IS UNDERDEVELOPED IN THIS COUNTRY. YOU CAN'T JUST AT ONE SWITCH ZOOM IT WAY UP. YOU'RE NOT GOING TO GET A+ -- WE'RE NOT GOING TO GET 500 A+ APPLICATIONS.

SO I THINK ALL THESE ARE SORT OF STRATEGIC QUESTIONS THAT WE WILL HAVE TO DEAL WITH, HOW TO TURN IT UP ENOUGH TO REALLY STOKE IT, BUT WITHOUT SACRIFICING QUALITY AND WITHOUT COMMITTING MONEY THAT YOU ARE GOING TO BE SORRY IN THREE YEARS YOU COMMITTED BECAUSE --

CO-CHAIR SAMUELSON: IS IT NOT RELEVANT WHAT

OTHER FUNDERS ARE DOING IN THE SAME AREA, OR IS IT JUST THAT IT'S JUST A LOT OF EFFORT THAT MIGHT NOT REALLY BE USEFUL?

DR. HALL: IT'S NOT THE MONEY SO MUCH. I THINK THE IDEA THAT WE'RE INTERESTED IN AND THAT WE GOT A LOT OF INFORMATION AT THE MAY 25TH MEETING IS WHAT'S WORKED. GIVE US MODELS OF SUCCESSFUL WAYS OF DOING THINGS. AND ACTUALLY WE'RE GOING TO HEAR AN EXAMPLE, AT LEAST ONE, TOMORROW OF SUCCESSFUL WAYS OF DOING THINGS. AND THEN IF WE'RE CONVINCED IT WORKS, THEN I THINK WE THEN SAY, OKAY, LET'S TRY TO PUT A PRICE TAG ON IT AND SEE HOW MUCH OF THIS WE CAN DO. BUT YOU SEE WHAT I'M SAYING? RATHER THAN START WITH THE QUESTION OF LET'S DO THE FINANCIAL ANALYSIS, LET'S DO THE SCIENTIFIC ANALYSIS AND SAY WHAT KINDS OF DEVICES HAVE BEEN SUCCESSFUL? WHAT THINGS HAVE REALLY MADE THINGS HAPPEN? AND THEN GO FROM THERE.

MR. KLEIN: AND IN TERMS OF THIS RAMPING-UP PROCESS, IF YOU LOOK AT THE ORIGINAL BUSINESS PLAN THAT WE SUBMITTED TO THE LEGISLATIVE ANALYST'S OFFICE, IN THE FIRST TWO YEARS, AT LEAST IN THAT BUSINESS PLAN, WHICH THE BOARD HAS TO YET LOOK AT INDEPENDENTLY AND MAKE DECISIONS ON, THERE IS A MANDATE TO MEET IN THE INITIATIVE OF GETTING NEW FACILITIES OUT THERE TO GET INDEPENDENT SPACE FREE OF NIH RESTRICTIONS AND

INDEPENDENT MAJOR EQUIPMENT FREE OF NIH RESTRICTIONS, SOME OF WHICH YOU KNOW IS EXTRAORDINARILY EXPENSIVE. BUT A HUNDRED TO $125 MILLION A YEAR IN THE FIRST TWO YEARS IS GOING INTO BUILDING AND HEAVY EQUIPMENT. SO YOU ARE NOT GETTING UP TO THE $250 MILLION LEVEL EVEN UNTIL THREE YEARS OUT WHILE YOU'RE MEETING THESE BASIC STRUCTURAL CONSTRAINTS AND CREATING INSULATION FROM THE VOLATILITY OF THE FEDERAL.

DR. HALL: LET ME ACTUALLY ASK THIS GROUP A QUESTION WE'VE ASKED IN SEVERAL CONTEXTS BEFORE, BUT I'D BE CURIOUS TO HEAR YOUR REACTION TO IT. AND THAT IS TO WHAT EXTENT SHOULD WE -- WHAT PORTION OF OUR BUDGET OR HOW SERIOUSLY OR SHOULD WE DO IT AT ALL FUND NOT PROJECT-BASED SCIENCE, BUT SAY HERE IS A GROUP OF REALLY GOOD PEOPLE OR HERE'S A REALLY GOOD PERSON WHO HAS A GREAT RECORD. WE'RE NOT GOING TO ASK FOR 40 PAGES OF DOCUMENTATION ABOUT WHAT THEY'RE GOING TO DO. WE'RE GOING TO ASK FOR A GENERAL PLAN AND LOOK FOR A DISTINCTION IN PAST ACCOMPLISHMENT AND SAY WE'LL FUND THIS PERSON FOR FIVE YEARS OR WHATEVER IT IS. IT'S A SEMI-HHMI MODEL, IF YOU WANT TO CALL IT THAT, AND I THINK ONE CAN THINK OF IT IN SEVERAL CONTEXTS.

ONE IS WITH ESTABLISHED INVESTIGATORS WHOSE REPUTATIONS ARE SECURE AND WHERE YOUR BETS ARE PRETTY EASILY MADE IN SOME SENSE. THE OTHER, I THINK, IS WITH

YOUNG PEOPLE, AND I THINK WE HAVE A PARTICULAR NEED THERE BECAUSE PEOPLE HAVE BEEN DISCOURAGED FROM COMING INTO THE FIELD. AND I THINK TO BE ABLE TO GIVE PEOPLE BOTH SALARY SUPPORT, IF NECESSARY, BUT PARTICULARLY TO GIVE THEM MONEY FOR SEVERAL YEARS AND LET THEM TAKE CHANCES. I ACTUALLY THINK THAT'S WHERE YOU DO NOT WANT TO ASK PEOPLE TO COME IN AFTER ONE YEAR FOR YOUNG PEOPLE. I THINK THAT'S A KILLER THERE. YOU REALLY WANT TO LET THEM MAKE SOME MISTAKES AND LET THEM TRY OUT WILD CARD IDEAS, BUT TO GET REALLY GOOD PEOPLE.

AND THEN ANOTHER AREA THAT IS OF PARTICULAR INTEREST ARE YOUNG CLINICAL FACULTY, PEOPLE DOING PATIENT-BASED RESEARCH. THEY DON'T HAVE FTE'S IN MOST UNIVERSITIES, AND SO THEY'RE PUSHED BY THEIR CHAIRS TO MAKE THEIR SALARIES BY GOING INTO THE CLINIC. IN MY EXPERIENCE AT UCSF IN WORKING WITH THESE PEOPLE, THE BIGGEST NEED WAS NOT MONEY FOR TECHNICIANS OR LAB OR WHATEVER, IT WAS JUST TO BUY TIME SO THEY COULD HAVE THE TIME TO WORK. SO THAT IS ANOTHER OPTION, TO PUT SOME MONEY INTO SUPPORTING GOOD PEOPLE RATHER THAN GOOD PROJECTS WITH THE IDEA THAT REALLY GOOD PEOPLE WILL DO GOOD THINGS EVEN IF YOU DON'T KNOW QUITE WHAT THEY ARE OR CAN'T PREDICT THEM. IT'S WORTH THAT INVESTMENT.

OBVIOUSLY I THINK WE CAN'T -- WE'RE NOT GOING TO BE THE HOWARD HUGHES INSTITUTE. WE'RE NOT GOING TO

DO THAT ACROSS THE BOARD; BUT WHETHER WE CONSIDER DOING IT AT ALL, I'D BE INTERESTED IN THE THOUGHTS OF THIS GROUP ABOUT THAT.

CO-CHAIR ORKIN: I THINK IT'S A VERY INTERESTING IDEA. OBVIOUSLY ESTABLISHED INVESTIGATORS ARE GOING TO WANT THAT BECAUSE THEY'RE GOING TO WANT TO BE FUNDED IN PERPETUITY. I THINK THE HUGHES EXPERIENCE IN THEIR COMPETITIONS HAS BEEN THAT THE MORE JUNIOR YOU GO, THE HIGHER THE FAILURE RATE. AND SO YOU HAVE TO BE VERY SURE WHERE YOU TARGET, AND YOU MAY NOT WANT TO TARGET SOMEBODY JUST EXITING A POST DOC. YOU MAY WANT TO TARGET SOMEBODY WHO'S BEEN IN THE FIELD FOR TWO OR THREE YEARS.

DR. KIMBLE: OR FIVE YEARS.

CO-CHAIR ORKIN: OR FIVE YEARS. SO THAT'S PROBABLY WHERE YOU'RE GOING TO GET THE MOST BANG FOR THE BUCK, I SUSPECT. FAILURE IS JUST TOO HIGH AT THE LOWER LEVEL.

CO-CHAIR SAMUELSON: IT'S FAILURE THAT THEY AREN'T REALLY --

CO-CHAIR ORKIN: THEY'RE NOT AS GOOD AS THEY APPEAR.

DR. HALL: THE PROBLEM IS YOU CAN'T TELL.

CO-CHAIR ORKIN: THESE PEOPLE ARE ALL GOING TO COME FROM EXCELLENT LABORATORIES. THEY'LL LOOK

REALLY GOOD, BUT YOU CAN'T TELL HOW MUCH IS THEM AND HOW MUCH IS THE LAB.

DR. KIMBLE: YOU WANT PEOPLE THAT HAVE BEEN OUT FOR FIVE YEARS AS INDEPENDENT INVESTIGATORS TO SEE WHAT THEIR TRACK RECORD IS ON THEIR OWN.

DR. JOYNER: THERE'S ALSO JUST THAT FIRST THREE YEARS OF ANY YOUNG INVESTIGATOR. SO MUCH OF THAT IS FIGURING OUT HOW TO RUN A LAB, NOT BEING PRODUCTIVE.

CO-CHAIR ORKIN: I THINK THE HUGHES EXPERIENCE WAS ALSO IF YOU DROP HALF A MILLION DOLLARS ON SOME NEW INVESTIGATOR, THEY TEND TO SORT OF HIRE ANYBODY WHO HAS A HEARTBEAT, AND THAT'S NOT NECESSARILY IN THEIR BEST INTEREST. SO THEY MAY EXPAND TOO SOON.

DR. HALL: BUT I THINK CONTINUITY IS VERY IMPORTANT THERE, AND CERTAINLY I ASSUME WE ALL KNOW REALLY GOOD YOUNG PEOPLE IN SOME CASES WHO START OUT WHO JUST HAVE A TERRIBLE TIME GETTING GOING, GETTING THEIR FIRST GRANTS. SOMETIMES IT'S BECAUSE THEY'RE REALLY GOOD SCIENTISTS AND THEY'RE NOT SUCH GOOD GRANTS PEOPLE.

CO-CHAIR ORKIN: USUALLY WHAT HAPPENS IS YOU GO TO A PLACE, YOU GET A GOOD START-UP PACKAGE, SO YOU DO HAVE THAT FIRST PERIOD OF TIME. THE REAL ISSUE IS WHAT HAPPENS AT THAT THREE- TO FIVE-YEAR WINDOW, I THINK, AND THAT'S WHERE YOU CAN MAKE THE MOST

DIFFERENCES.

DR. BRIVANLOU: PUSHING THE HUGHES ANALOGY A LITTLE BIT FARTHER, WHAT ABOUT WHAT THEY'RE DOING NOW IN THAT FARM WHERE YOU CREATE A NUCLEUS WHERE -- IT'S AN INSTITUTE. I'M SORRY.

DR. KIMBLE: JANELIA FARM.

DR. BRIVANLOU: CREATE AN INSTITUTE WHERE MAYBE IT'S SLIGHTLY DIFFERENT, NOT THAT PEOPLE ARE PERMANENTLY BASED THERE FOREVER, BUT THAT YOU CAN RECRUIT FOR CHUNKS OF TIME PEOPLE WHO ARE INTERESTED IN DOING THIS KIND OF WORK WHO COULD NOT DO IT OTHERWISE IN THEIR OWN INSTITUTIONS BECAUSE OF NIH. I THINK THAT CAN ACCOMPLISH TWO THINGS. FIRST, YOU SELECT THE HARD CORE ONES WHO ARE WILLING TO MOVE AROUND TO GET THE JOB DONE AND WILLING TO GO THE EXTRA MILE. SECOND, YOU CAN MAXIMIZE THE OUTPUT BY CREATING A CENTRAL FACILITY WHERE PEOPLE CAN SHARE THINGS IN THE CORE FACILITIES AS OPPOSED TO PROVIDING THE SAME MONEY TO TEN DIFFERENT LABS TO BUY TEN MICROSCOPES.

DR. HALL: SO THERE ARE SORT OF TWO IDEAS WE'RE DISCUSSING, AND I'D ACTUALLY BE INTERESTED IN THE VIEWS OF PATIENT ADVOCATES OF BOTH THE KINDS OF THINGS THAT ALI IS DESCRIBING WHERE YOU REALLY TRY TO FORM AN INTEGRATED SCIENTIFIC COMMUNITY. I'M NOT QUITE SURE HOW WE WOULD DO THAT. MAYBE WE COULD SAY WE WOULD GIVE

MONEY TO A UNIVERSITY TO DO IT.

DR. BRIVANLOU: CIRM CANNOT HAVE ITS OWN INSTITUTES?

DR. HALL: NO. WE'RE LIMITED TO 50 PEOPLE THAT ARE PAID BY US DIRECTLY. SO THAT WE CAN'T DO EASILY. MAYBE WE COULD CHANGE THE LEGISLATION OR SOMETHING. I DON'T KNOW.

MR. KLEIN: NOT EASILY.

(SIMULTANEOUS DISCUSSION.)

CO-CHAIR ORKIN: EVEN IF WE COULD DO THAT, I THINK IT WOULD PROBABLY CONSUME TOO MUCH OF YOUR BUDGET PER YEAR. I THINK THE OTHER THING IS AS YOU GET CLOSER TO ACTUALLY DOING SOME CLINICAL INTERVENTION, YOU WANT TO BE CLOSER TO THE PATIENTS THAN IN SOME BUILDING SEPARATE FROM.

DR. HALL: WHAT ABOUT SUPPORTING PEOPLE? WHAT'S YOUR SENSE OF THAT?

MS. DE LAURENTIS: NO. I THINK THERE'S REALLY SOMETHING TO BE SAID FOR PUTTING MONEY IN THE FIELD TO ATTRACT THE INVESTIGATORS, AND ALL OF THESE YOUNG PEOPLE THAT ARE COMING UP ARE NOT GOING TO GO INTO A FIELD THAT DOESN'T HAVE FUNDING. THAT'S OBVIOUS. I THINK THAT'S AN ISSUE THAT REALLY SHOULD BE LOOKED AT SERIOUSLY.

DR. HALL: WHAT ABOUT FUNDING OF ESTABLISHED

INVESTIGATORS?

CO-CHAIR SAMUELSON: IF THEY HAVE A TRACK RECORD OF ACCOMPLISHMENT THAT SEEMS PARALLEL, WHICH I THINK MAY NEED SOME CLINICAL PIECE OR MAYBE NOT, MAYBE NOT. I WONDER IF GETTING TOO FOCUSED MAY UNDERMINE SOMETHING ESSENTIAL TO THE INTELLECTUAL ENTERPRISE OF SCIENCE, YOU KNOW, JUST SITTING IN A CORNER AND DREAMING BIG DREAMS AND GETTING THE BIG IDEA.

MS. DE LAURENTIS: I LOVE THE IDEA OF TAKING A BET ON SOMEONE THAT'S REALLY SMART AND GIVE THIS MONEY AND SAY GO FOR IT. AND THEN ON THE OTHER HAND, HAVING ANOTHER CHANNEL WHERE YOU'RE GIVING YOUNG INVESTIGATORS MONEY TO GET THEM STARTED IN THE FIELD.

DR. HALL: TO COME BACK TO --

MR. CLAEYS: IT'S GREAT TO HAVE THE WHEREWITHAL TO DO SOME OF THOSE THINGS SIMULTANEOUSLY. SO --

DR. HALL: I WANT TO JUST PICK UP ON WHAT JOAN SAID AND ALSO THE MAN IN THE MOON ANALOGY BECAUSE IT IS -- THERE ARE TWO KINDS OF IDEAS THAT WE, I THINK, WILL NEED TO BALANCE. ONE IS TO SAY WE KNOW WHAT THE TARGET IS EVEN IF IT'S 70 OF THEM, BUT THE TARGET IN OUR CASE, YOU COULD SAY, WOULD BE, AT LEAST ONE OF THEM, WOULD BE TO HAVE THERAPIES BASED ON STEM CELL RESEARCH. CELL REPLACEMENT THERAPIES AT SOME EARLY

STAGE IN THE CLINIC. THAT SEEMS A VERY DIRECTED THING FOR US.

BUT ON THE OTHER HAND, AS JOAN POINTS OUT, WE ALL KNOW THAT SOME OF THE BEST IDEAS COME FROM THINGS WE DON'T KNOW ABOUT AND THAT WE WON'T KNOW ENOUGH TO ASK ABOUT. AND SO ONE WILL NEED TO HAVE MECHANISMS THAT GIVE YOU BOTH UNEXPECTED RESULTS AND MECHANISMS THAT WILL LEAD YOU TOWARD A GOAL THAT YOU CAN SEE PRETTY CLEARLY.

MR. SHEEHY: TO ME IT SEEMS LIKE THERE SEEMS TO BE SOME SORT OF MILESTONES. THAT JUST SEEMS JUST TO LET PEOPLE GO OFF MAKES ME A LITTLE BIT NERVOUS. YOU KNOW, MAYBE IT'S MY EXPERIENCE AT UCSF. BUT, YOU KNOW, I JUST -- AND ESPECIALLY WITH THE ESTABLISHED INVESTIGATORS BECAUSE A LOT OF TIMES IT SEEMS LIKE A LOT OF PEOPLE KEEP GETTING NIH FUNDING, THEY HAVE A PARTICULAR ALMOST A PASSION THAT'S ALMOST A FETISH, AND IT JUST NEVER SEEMS TO REALLY GO ANYWHERE. WE GET REALLY BRIGHT PEOPLE AND THEY HAVE GREAT IDEAS AND THEY MAKE INTERESTING DISCOVERIES AND THEY GET PUBLISHED, BUT AT THE END OF THE ROAD, NOBODY HAS REALLY BEEN MATERIALLY AFFECTED, AND THEY'RE REALLY GREAT PEOPLE USUALLY TOO, GREAT PERSONALITIES.

DR. HALL: I HESITATE TO ASK WHO THAT WOULD BE.

MR. SHEEHY: BUT ONE THING I THOUGHT WAS INTERESTING IS IF WE WERE GOING TO DO SOMETHING LIKE THIS, IF THERE WERE SOME WAY TO THROW ALL THESE PEOPLE TOGETHER ON A REGULAR BASIS. SO IF WE WERE TO KIND OF MAKE IT AS A COHORT, THREE- TO FIVE-YEAR-OUT INVESTIGATORS, THAT WE ASSEMBLED AT VARIOUS TIMES AND LET THEM KIND OF TELL EACH OTHER WHAT THEY'RE DOING AND KIND OF STIMULATE A COMMUNITY AND KIND OF PUSH THESE PEOPLE THROUGH THIS TEN YEARS OF OUR FUNDING, SO TO SPEAK. AND KIND OF -- BUT I THINK IT'S -- ONE OF THE PROBLEMS I ALWAYS SEE IS THAT THERE'S SO MANY SILOS, AND EVERYBODY DOES THEIR THING, AND WE JUST SEND SOMEBODY OFF TO DO THEIR THING. IT SEEMS THE COMMON THING THAT'S COMING OUT IS IF WE'RE REALLY GOING TO GET FROM BENCH TO BEDSIDE, WE'RE GOING TO HAVE TO BREAK DOWN SOME OF THE SILOS.

DR. HALL: YOU KNOW, IT IS --

MR. SHEEHY: THE ONE I DO THINK IS A GREAT IDEA IS BUYING THE TIME. I THINK THAT'S GOING TO BE ABSOLUTELY NECESSARY BECAUSE THERE WERE TWO PIECES TO THAT. I DO THINK -- I THINK IT'S A REAL PROBLEM FOR CLINICIANS TO BE ABLE TO DO RESEARCH, AND I THINK -- WE'RE SEEING IT IN HIV WHERE THEY END UP GOING INTO PRACTICE AND DOING SOMETHING ELSE. SO I THINK THAT'S A BIG PIECE ACTUALLY.

DR. HALL: IT IS TRUE, JEFF, AND OTHERS MAY WANT TO COMMENT OR EVEN DISAGREE, IF YOU WANT TO, THAT THE WAY SCIENCE HAS DEVELOPED, CERTAINLY DURING MY CAREER, IS THAT IT IS MUCH, MUCH, MUCH MORE COLLABORATIVE THAN IT USED TO BE. WHEN I WAS A STUDENT, EACH LAB WAS A SORT OF INDEPENDENT LITTLE UNIT COMPETING MORE OR LESS INDEPENDENTLY AGAINST EVERYBODY ELSE. NOW EVERYBODY HAS GOT COLLABORATIONS BECAUSE THEY NEED TECHNOLOGIES, THEY NEED REAGENTS, THEY NEED THINGS. AND IT'S BEEN A GOOD DEVELOPMENT. I THINK THAT'S PART OF WHAT'S EXCITING ABOUT THE FIELD.

SO I THINK PEOPLE ARE OPEN TO IT IF YOU GIVE THEM A PUSH AND PROVIDE VENUES FOR THEM TO GET TOGETHER.

DR. JOYNER: BUT THAT WOULD BE ONE WAY TO DO THIS INSTEAD OF WRITING UP A REPORT AND HAVING TO REVIEW IT. IF YOU HAD MEETINGS, LIKE EVERYONE WHO'S FUNDED HAS TO COME, AND ONLY A COUPLE OF US WOULD HAVE TO BE AT ANY ONE, YOU KNOW, MEETING.

DR. HALL: THIS WOULD BE GOOD. AS THEY TALK, YOU WOULD DECIDE IF THEY WOULD GET FUNDED FOR THE NEXT YEAR OR NOT.

DR. JOYNER: I THINK THERE WOULD BE THREE THINGS OUT OF IT. YOU'D GET THAT. YOU'D GET SHARING OF INFORMATION AND STIMULATING COLLABORATIONS AND

IDEAS, AND GET RID OF, YOU KNOW, THINGS GETTING DONE TWICE. I THINK IT WOULD SOLVE A LOT OF THINGS, AND WE WOULD PROBABLY GET A LOT OUT OF IT. IT COULD BE QUITE AN INTERESTING DAY OF TALKS.

DR. KIMBLE: YOU MIGHT BE ABLE TO COUPLE IT WITH A RETREAT WITH STUDENTS TO HAVE INVESTIGATORS AND THE STUDENTS WHO WERE BEING FUNDED. THEY COULD BE VERY SYNERGISTIC.

DR. HALL: FOR PEOPLE WHO HAVE BEEN PART OF THINGS LIKE THE CIRL (PHONETIC) OR A FEW OF THESE OTHER THINGS, THOSE ARE FUN AND REALLY GREAT FOR YOUNG PEOPLE.

DR. JOYNER: THAT'S PART OF WHAT I HAD TO SIGN. I WOULD GO ONCE A YEAR AND GIVE A TALK ON WHAT I HAD DONE, ACCOMPLISHED. SO THAT PUTS ME ON THE BALL. I KNOW NEXT MAY I HAVE TO BE ABLE TO GIVE A TALK.

DR. SVENDSEN: I JUST WANT TO FINISH THIS THOUGHT OF THIS IDEA OF WHETHER WE HAVE TO DO THE REVIEWS AND THE FRIGHTENING ASPECT OF DOING THAT. ONE WAY AROUND THAT IS TO SET THE SPECIFIC MILESTONES THE PROGRAM CAN ACTUALLY ASSESS. IN OTHER WORDS, YOU SET YOUR FIRST-YEAR MILESTONES. AND INTERNALLY, AGAIN GOING BACK TO FOX, THEY DO A PRETTY GOOD JOB OF SCREENING GRANTS. THEY HAVE VERY EDUCATED PEOPLE ON THEM. WE HAVE SCIENTISTS AT CIRM WHO CAN REVIEW TO A

LEVEL AND SAY, YEAH, THEY MET THEIR MILESTONES. AND THOSE ONES THAT COME ON THE LINE GET REVIEWED MORE CAREFULLY. I THINK YOU CAN DO THIS PROGRAMMATICALLY IF YOU SET REVIEWS INITIALLY AND SAY ARE THOSE REALISTIC MILESTONE? OKAY. THAT'S ACHIEVABLE. THEY CAN DO THAT. IF THEY DON'T, THEN WE SET PRIORITIES AND CUTOFFS MUCH MORE RIGIDLY.

DR. HALL: IT MIGHT BE ALSO POSSIBLE ALSO TO DO SOME OF THAT AT THE STAFF LEVEL AND THEN BRING THE PROBLEM CASES TO YOU.

DR. SVENDSEN: EXACTLY. WE GET THE PROBLEMS, AND SO THE MAJORITY MAYBE YOU CAN SOLVE PROGRAMMATICALLY WITH THE STAFF HERE. AND I THINK THAT WOULD BE A WAY TO MAKE IT FLOW BETTER, GIVE RESPONSIVENESS. I'M JUST WORRIED, LIKE YOU ARE, THAT IF WE JUST GIVE FREE REIN -- I LOVE THIS IDEA OF JUST GIVING SOME, NO GRANT WRITING, GIVE THEM A MILLION DOLLARS. I THINK THAT WOULD WORK ONE OUT OF FIVE. IT'S LIKE VENTURE CAPITAL. BUT PRACTICALLY FOR CALIFORNIA, FOR THE PUBLIC, WHO ARE WATCHING YOU WITH A MICROSCOPE BIGGER THAN ANY WE COULD BUY, THEY'RE GOING TO WANT TO KNOW WHAT HAPPENED TO THE MONEY. AND I THINK THAT IS GOING TO BE YOUR PROBLEM. WHEN YOU REPORT BACK WHAT HAPPENED, WELL, WE GAVE MONEY TO THIS GUY BECAUSE HE'S GREAT.

DR. HALL: I THINK THOSE ARE TWO SEPARABLE THINGS; THAT IS, GIVING MONEY ON THE BASIS OF A PROJECT, SPECIFIC PROJECT, VERSUS ON THE BASIS OF A CAREER OF PRODUCTIVITY DOES NOT MEAN THAT YOU'RE NOT EQUALLY ACCOUNTABLE IN THE TWO CASES. IT IS IN THE ONE CASE THAT YOU MAY BE MORE TIED TO A SPECIFIC THING, AND THE OTHER -- I MEAN, YOU KNOW, IF DAVID BALTIMORE HAS MONEY FROM US, IF HE DOESN'T DO WHAT HE SAID HE'S GOING TO DO, BUT DOES SOMETHING TWICE AS INTERESTING, I'M JUST AS HAPPY.

DR. STEINDLER: AS A REVIEWER, I LIKE THE SECOND, THIS STAFF RELIANCE ISSUE. SO ALSO AS A REVIEWER FOR FOX FOUNDATION, WHEN I, FOR YOUR POINT, ALEX, SIT IN FROM OF THE INVESTIGATORS, I DON'T HAVE TO SIT AND WRITE HUGE REPORTS. STAFF HAS DONE A HUGE AMOUNT FOR US. WE GO IN THE ROOM AND IT'S VERY SIMPLE. SO I TRUST THE STAFF OF THIS ORGANIZATION TO DO THE SAME BECAUSE WE DON'T HAVE THE TIME TO DO THAT.

MR. KLEIN: IN TERMS OF THE PUBLIC IN CALIFORNIA, THE FUNDAMENTAL ECONOMICS IN TERMS OF RETURN TO THE STATE WAS REALLY FOCUSED AROUND ENHANCING KNOWLEDGE OF PROGRESSION OF DISEASE, DEVELOPMENT OF DISEASE, SO YOU COULD ENHANCE THERAPEUTICS AND CLINICAL TREATMENTS BECAUSE EVEN AT THE MARGIN, IF YOU CAN REDUCE THE COST OF TREATMENT BY 5 PERCENT OR GET

SOMEONE OUT OF THE HOSPITAL 5 PERCENT EARLIER, THOSE ARE MAJOR IMPACTS ON THE COST OF CLINICAL CARE. SO WE HAVE PRODUCTS THAT ARE SEPARATE FROM NEW THERAPIES THAT ARE KNOWLEDGE THAT ALLOW US TO ENHANCE OUR ABILITY TO APPLY CURRENT THERAPIES AND HOW TO ADDRESS CLINICALLY TREATMENTS BECAUSE WE UNDERSTAND THE DISEASE PROGRESSION BETTER.

AND THAT'S A WHOLE AREA WHERE WE HAVE CLINICIANS WHO ARE FUNDED FOR RESEARCH TO INTERFACE WITH SCIENTISTS, AND WE CAN GET THE RIGHT QUESTIONS ASKED BY THE CLINICIANS, AND THE SCIENTISTS CAN DRIVE TOWARDS RESULTS ON SPECIFIC QUESTIONS, WE CAN HAVE SOME VERY EFFECTIVE RESULTS FROM THE PATIENT PERSPECTIVE, FROM THE CALIFORNIA LEGISLATIVE AND VOTER PERSPECTIVE. AND IF WE CAN DRIVE RESULTS IN THIS AREA OR WITH TOXICITY TESTING OR FUNCTIONALLY REDUCE THE COST OF DEVELOPING THERAPIES, EARLY RESULTS CAN HAVE HUGE REWARDS IN TERMS OF ENHANCING THIS PROGRAM.

IN THE CALIFORNIA HOUSING AND FINANCE AGENCY CASE, THE ORIGINAL AUTHORIZATION I WAS ABLE TO GET WAS $500 MILLION. IT'S NOT GONE THROUGH $20 BILLION ALL BASED UPON POSITIVE FEEDBACK AND PERFORMANCE OF WHAT WAS CONSIDERED A VERY HIGH RISK, WHICH IS AFFORDABLE HOUSING, WHERE THE RISK IS NOW ONE-TENTH OF THE RISK FOR CONVENTIONAL APARTMENTS FOR THE REGULAR MARKET

RATE.

SO I THINK THAT ONE OF THE THINGS WE NEED TO LOOK AT STRATEGICALLY HERE IS SOME OF OUR BEST IDEAS ARE GOING TO TAKE 20 YEARS. AND WE NEED A PLATFORM THAT DRIVES ENOUGH RESULTS IN THE FIRST FIVE YEARS THAT WE GET AN EXTENSION OF OUR FRANCHISE HERE BASED UPON INCREMENTAL, MEASURABLE RETURNS, COST RETURNS THAT MAY NOT BE NEW THERAPIES AT ALL, BUT MAY BE THE KNOWLEDGE TO ENHANCE EXISTING CLINICAL TREATMENTS.

CO-CHAIR SAMUELSON: WHICH IS PEOPLE HAVING LESS SUFFERING AND LONGER LIVES. THERE'S A REAL CONCRETE EFFECT.

MR. KLEIN: ABSOLUTELY.

MR. SERRANO-SEWELL: ZACH, I THINK THERE'S ENOUGH TO THE QUESTION YOU SORT OF POSED TO THE ICOC MEMBERS OF THE GRANTS WORKING GROUP, AS I UNDERSTOOD IT. I THINK, YES, THERE'S A ENOUGH RESOURCES IN THE BONDS. THERE'S ENOUGH TO SAY, YEAH, WE COULD DO THAT, CERTAINLY. AND I'M INTRIGUED BY THE IDEA OF JUST HAVING REALLY SMART PEOPLE SORT OF GO OFF AND DO THEIR THING AND COME BACK AT SOME POINT AND SHARE WITH US WHAT THEY'RE THINKING OF. THAT'S JUST EXCITING BEING IN THE ROOM, BUT I HAVE TO ASK AT THE END OF THE DAY WHERE IS IT ALL LEADING TO. SO WHAT? THAT'S GREAT. I DON'T CARE. IT HAS TO BE RELEVANT TO OUR, LIKE,

SHORT-TERM OBJECTIVES, AS YOU SAY, BOB. SO I WANT TO BALANCE IT WITH OUR FIRST FIVE YEARS. WHAT IS THAT WE HAVE TO ACCOMPLISH? WHAT IS IT THAT WE HAVE TO DEMONSTRATE? WHAT'S THE -- I ALSO WANT TO FIND ANOTHER WORD FOR LOW-HANGING FRUIT. I DON'T LIKE IT EITHER BECAUSE IT'S SO LOADED, AND IT'S GOING TO CREATE NOTHING BUT HEADACHES FOR US. SO WE'VE GOT TO FIND SOME OTHER WAY TO PHRASE THAT.

SO I THINK THESE INITIAL OBJECTIVES AND GOALS SORT OF OUTWEIGH THE SHOULD WE FUND THIS SORT OF SINGLE PERSON, WHETHER THEY BE ESTABLISHED OR -- I'M GOING ALL OVER THE MAP TOO BECAUSE I LIKE WHAT SUSAN SAID. WE NEED TO BRING PEOPLE INTO THE FIELD AS WELL; AND IF THERE'S NOT MONEY THERE, WE'RE NOT GOING TO DO THAT.

DR. HALL: I THINK IF IT HAS SOME MERIT, I THINK WE WOULD EXPLORE DOING SOME OF THAT. AND I THINK JUST SEE HOW IT SORTS OUT ONCE THE BUDGET THING.

JOAN, IT'S GETTING RATHER THAN LATE. DO YOU WANT TO SORT OF TRY TO PULL US ALTOGETHER HERE?

CO-CHAIR SAMUELSON: I'VE GOT ONE LITTLE FOLLOW-UP QUESTION, AND MY REACTION TO THOSE SORT OF FINAL THINGS IS THAT EVERYBODY ALREADY KNOWS THOSE THINGS. AND MAYBE IF WE'VE ABOUT REACHED THAT POINT, WE SAY GOOD NIGHT, SEE YOU IN THE MORNING.

DR. HALL: AS YOU WISH. THE FLOOR IS YOURS.

HOWEVER YOU WANT TO DO IT.

CO-CHAIR SAMUELSON: LET ME JUST ASK THIS ONE QUESTION, WHICH IS WHY WOULD WE MAYBE NOT SPEND SOME OF THE MONEY DOING A LOT OF CONVENING ON AN INTERNATIONAL LEVEL? WE'VE GOT FREE MOSCONE CENTER, FREE DISCUSSION ROOMS AT THE AIRPORT, FREE ACCESS TO CONSULATES AND ALL OF THAT INTERNATIONAL DIMENSION. WHY WOULD WE NOT BRING INTO THESE WORKSHOPS FOLKS THAT ARE WORKING ON THE SAME STUFF WHO MIGHT HAVE GREAT IDEAS AND CHALLENGE THE GRANTEES THAT WE ARE FUNDING?

DR. HALL: I THINK WE WANT TO, JUST AS WE DID LAST OCTOBER. WE BROUGHT IN PEOPLE FROM ALL OVER.

DR. KIMBLE: THE QUESTION IS IS THAT DIFFERENT FROM WHAT'S ALREADY GOING ON BECAUSE THERE ARE LOTS OF MEETINGS. WE HAVE TONS OF MEETINGS TO GO TO.

CO-CHAIR SAMUELSON: JUST FOR THE GOAL OF NOT DUPLICATING EFFORT. I HEAR YOU, AND YOU DON'T WANT TO DO IT JUST TO DO IT.

DR. KIMBLE: EXACTLY. YOU HAVE TO HAVE SOMETHING DIFFERENT.

CO-CHAIR SAMUELSON: I'M THINKING OF THE PEOPLE THAT ARE WORKING IN THE SAME AREA IN SWEDEN OR KOREA OR WHEREVER.

DR. KIMBLE: THERE'S LOTS OF INTERNATIONAL

MEETINGS. MAYBE THERE'S A DIFFERENT VENUE.

CO-CHAIR SAMUELSON: DOING IT VIRTUALLY ON THE WEB OR SOMETHING.

DR. HALL: ONE OF THE THINGS WE'RE DOING WITH THE UK, AND WE'LL SEE HOW THIS WORKS, IS THERE ARE GOING TO BE 16 SCIENTISTS FROM CALIFORNIA, 16 FROM THERE. WE'RE COMMITTED THAT THEY'LL BE ALL THE WAY FROM VERY JUNIOR TO VERY SENIOR, AND WITH AN OPPORTUNITY IN GREAT BRITAIN FOR VISITING LABS, IF NECESSARY, AS PART -- NOT IF NECESSARY, IF DESIRABLE, IT CAN BE ARRANGED. AND SO IT IS IN PART A WAY OF NOT JUST HAVING EVERYBODY COME AND GIVE THEIR TALK AND GO HOME, BUT TRYING TO ENCOURAGE PEOPLE TO SEEK OUT OTHERS WITH COMMON INTEREST. AND MY HOPE, PARTICULARLY FOR THE YOUNG PEOPLE, THAT THIS WILL BE GOOD EXPERIENCE.

MR. KLEIN: ARE THERE LARGE NUMBERS OF JUNIOR RESEARCHERS WHO GET CUT OUT OF INTERNATIONAL MEETINGS BECAUSE YOU CAN'T GET THE BUDGET SUPPORT?

DR. KIMBLE: NOT IF THEY'RE GOOD.

MR. KLEIN: EVEN ON AN INTERNATIONAL BASIS?

DR. KIMBLE: THAT'S MY OPINION. IF THEY'RE REALLY GOOD, THEY GO. IF THEY'RE NOT SO GOOD.

DR. HALL: THEY GOT A STORY TO TELL, PEOPLE WANT TO HEAR IT.

CO-CHAIR SAMUELSON: WELL, THANK YOU.

DR. JOYNER: MORE KIND OF THINK TANKS WITH A CERTAIN GOAL. THERE ARE ENOUGH JUST REGULAR STEM CELL MEETINGS, SO YOU HAVE TO STRUCTURE IT IN SOME WAY THAT THIS MEETING IS TO TRY AND COME UP WITH THESE IDEAS AT THE END. I'VE BEEN TO A FEW AROUND GENOMICS AND STUFF, AND IT'S REALLY FUN AND STIMULATING, BUT THEY'RE STRUCTURED FROM THE BEGINNING. AND THERE'S SOME TALKS, BUT IT'S TALKS. WE'RE TOLD KIND OF WHAT THE TALKS ARE SUPPOSED TO BE ABOUT BECAUSE THEY'RE ABOUT PROBLEMS THAT YOU ARE TRYING TO SOLVE.

CO-CHAIR SAMUELSON: SO THERE MIGHT BE AN RFA FOR IDEAS ABOUT BRINGING TOGETHER --

DR. JOYNER: NO. NO. NOT AN RFA, JUST A THINK TANK, MORE OF A MEETING. FOR A DAY OR TWO YOU SIT AND HAVE EXPERTS GIVE THEIR OWN SPIEL AND THEN DISCUSSION, BREAK-OUT DISCUSSION. I DON'T KNOW. IT SEEMS TO ME IN THIS WHERE YOU HAVE ALL THESE GOALS, YOU COULD STRUCTURE.

DR. HALL: MAYBE JOAN MEANT TO HAVE AN ISSUE TO CALL TO SAY WE ARE OPEN TO -- IF YOU WANT TO MONEY TO ORGANIZE A MEETING THAT WOULD BE LIKE THAT.

DR. JOYNER: SURE. YOU COULD DO THAT.

DR. KIMBLE: AND THERE WOULD BE A VENUE HERE TO DO THAT.

MR. KLEIN: WE MIGHT EVEN GET THEM TO GO IF

WE SAID IT WOULD BE IN CARMEL.

CO-CHAIR SAMUELSON: SO IT MIGHT BE THAT IF WE GATHER THOSE SMART PEOPLE, WE MIGHT TEASE OUT A SOLUTION THAT WOULD COME QUICKER THAN JUST --

DR. KIMBLE: SO THERE USED TO BE A GROUP OF MEETINGS IN MADRID. USUALLY THEY GET 25 PEOPLE TOGETHER AND STICK THEM THERE FOR THREE DAYS, AND THE TALKS WERE YOU'D HAVE A 25-MINUTE TALK THAT WAS FOLLOWED BY A 25-MINUTE PERIOD OF DISCUSSION. AND THAT SEEMED VERY ODD TO ME WHEN I FIRST WENT, BUT PEOPLE WERE TALKING. WE HAD TO STOP THE DISCUSSION AFTER 25 MINUTES BECAUSE IT GAVE YOU TIME TO REALLY TALK ABOUT IT. PEOPLE WERE KEPT TO THEIR 25 MINUTES. IT WAS FABULOUS. AND THEN AFTER YOU GOT THREE TALKS THAT WERE EACH OF THEM AN HOUR WITH A LOT OF DISCUSSION, THEN THERE WOULD BE DISCUSSION ON THE WHOLE AREA. SOMETHING LIKE THAT COULD WORK REALLY WELL. AND I HAVEN'T BEEN TO A MEETING LIKE THAT IN A LONG TIME. MAYBE I HAVEN'T BEEN INVITED. I THINK BECAUSE THERE'S SO MANY PEOPLE NOW, YOU JUST DON'T DO THAT ANYMORE.

DR. SVENDSEN: THERE'S A ROUTE 28 MEETING, WHICH SOME OF YOU MAY HAVE HEARD ABOUT. ACTUALLY I REALLY VIEW THOSE AS FACULTY, AND THEY'RE REALLY CLEVER. AND THIS MIGHT BE A SPIN-OFF THAT ONE COULD THINK OF FOR CIRM. THAT IS, AS A SERIES. LAST ONE I

WENT TO WAS SPINAL CORD INJURY. SO THERE'S A THEME THAT RUNS THROUGH IT, BUT THE IDEA IS THE STUDENTS, A LOT OF YOUNG STUDENTS ARE THERE, AND THEY LISTEN. THEY HAVE TO COME UP WITH A GRANT PROPOSAL, LIKE AN RO 1 OR A CIRM GRANT, DURING THE FIVE-DAY MEETING. AT THE END THEY WRITE UP THE GRANT. THEY HAVE ACCESS TO THE INTERNET. THEY LOOK UP REFERENCES. THEY PUT TOGETHER A GRANT, A MINI GRANT, IN FIVE TEAMS, AND THEN THAT GOES TO STUDY SECTION, WHICH IS THE FACULTY THAT ARE TEACHING, AND THEY GET REVIEWED, AND THEY GET FEEDBACK. I WAS THINKING IF --

DR. HALL: WE'D ACTUALLY GIVE THEM MONEY.

DR. SVENDSEN: WE'D ACTUALLY GIVE THEM MONEY. SO WE CAN ACTUALLY HAVE IN ONE PACKAGE A GROUP OF JUNIOR SCIENTISTS GET TOGETHER AND TRY AND COME UP WITH THEMES, INTERACTIONS, AND COME UP WITH A GRANT IN FIVE DAYS. THAT'S A CHALLENGE.

MR. KLEIN: WHAT IS IT CALLED?

DR. SVENDSEN: ROUTE 28. IT'S ORGANIZED BY THEO PALMER AND PHIL HORNER, EX-GATES GUYS.

DR. STEINDLER: THIS YEAR IT'S ON AN ISLAND NEAR MUNICH.

DR. SVENDSEN: IT'S A MONASTERY.

DR. STEINDLER: IT'S A MONASTERY.

DR. SVENDSEN: IT'S A GREAT PLACE TO GO AND

NOT BE DISTRACTED. THAT'S SORT OF RADICAL, BUT I THINK IT WOULD BE FUN TO COME UP WITH SOME DIFFERENT THEMES. AND THAT'S THE CHALLENGE. IF YOU COME UP WITH A GOOD PROPOSAL IN SEVEN DAYS TO CIRM, MAYBE IT MIGHT BE FUNDED.

DR. KIMBLE: WE COULD GET OUR SCHOLARS TO GO TO THEM.

MS. DE LAURENTIS: WE ALWAYS DEVELOPED OUR RFA'S FROM SMALL THINK TANK MEETINGS. AND WE WOULD HAVE THEM IN A FABULOUS PLACE. NO ONE WAS EVER ALLOWED TO SHOW SLIDES. IT WAS SHORT TALKS. EVERYONE DISCUSSED EVERYTHING. YOU HAD GREAT MEALS, AND IT WAS FOR TWO AND A HALF DAYS, AND IT WAS JUST GREAT. PEOPLE FROM ALL DIFFERENT DISCIPLINES WOULD COME TOGETHER TO TALK ABOUT SPECIFIC PROBLEMS ABOUT PEDIATRIC AIDS, BUT IT WOULD CERTAINLY NOT BE PEDIATRIC AIDS RESEARCHERS ALL THE TIME.

CO-CHAIR SAMUELSON: MAYBE YOU COULD CONVENE THOSE FOR AN INTERNATIONAL GROUP THAT WOULD DESIGN AN RFA IN FIVE DAYS.

MR. CLAEYS: THAT'S HOW THE FOX FOUNDATION CAME UP WITH THEIR FIRST RFA'S WITH A SMALL GROUP.

DR. HALL: I'VE GOT IT. A STRATEGIC PLAN IN FIVE DAYS.

DR. SVENDSEN: YOU'RE NOT GETTING OUT OF IT.

CO-CHAIR SAMUELSON: GIVE THEM A WEEK. IT'S AN INTERESTING IDEA.

DR. HALL: JOAN, YOU STRUCK A CORD THERE. WE HAD MORE ANIMATED DISCUSSION ABOUT PEOPLE EXCITED ABOUT INTERESTING MEETINGS THEY HAVE BEEN TO. THAT'S GREAT.

CO-CHAIR SAMUELSON: WELL, THANK YOU ALL AND SEE YOU TOMORROW MORNING.

DR. HALL: THANKS PARTICULARLY TO THE EAST COASTERS FOR BEARING WITH US, AND WE'LL SEE YOU TOMORROW.

(THE MEETING WAS THEN CONCLUDED AT 09:28 P.M.)

REPORTER'S CERTIFICATE

I, BETH C. DRAIN, A CERTIFIED SHORTHAND REPORTER IN AND FOR THE STATE OF CALIFORNIA, HEREBY CERTIFY THAT THE FOREGOING TRANSCRIPT OF THE PROCEEDINGS BEFORE THE SCIENTIFIC AND MEDICAL RESEARCH FUNDING WORKING GROUP OF 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

CALIFORNIA INSTITUTE FOR REGENERATIVE MEDICINE
210 KING STREET
SAN FRANCISCO, CALIFORNIA
ON
JULY 12, 2006

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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