

**BETH C. DRAIN, CA CSR NO. 7152**

BEFORE THE  
SCIENCE SUBCOMMITTEE 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: VIA ZOOM

DATE: SEPTEMBER 1, 2023  
11 A.M.

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

FILE NO.: 2023-27

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**I N D E X**

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<b>OPEN SESSION</b>	
1. CALL TO ORDER	3
2. ROLL CALL	3
3. CONSIDERATION OF PROPOSED REMIND PILOT CONCEPT PLAN FOR NEUROPSYCHIATRIC DISEASE	8
4. PRIORITIZATION KICKOFF DISCUSSION	25
5. PUBLIC COMMENT	NONE
6. ADJOURNMENT	66

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SEPTEMBER 1, 2023; 11 A.M.

CHAIRMAN GOLDSTEIN: OKAY. THEN, LANA,  
CAN YOU CALL THE ROLL. AND WE HAVE A SUBSTITUTE,  
MONICA CARSON, AND WILL BRIEFLY INTRODUCE HERSELF AT  
THAT POINT, AND THEN PICK UP AFTER THAT.

MS. MORALEZ: HAIFAA ABDULHAQ. MARIA  
BONNEVILLE.

VICE CHAIR BONNEVILLE: PRESENT.

MS. MORALEZ: MONICA CARSON.

DR. CARSON: PRESENT. MONICA CARSON, I'M  
PROFESSOR AND CHAIR OF BIOMEDICAL SCIENCES AT UC  
RIVERSIDE SCHOOL OF MEDICINE. AND JUST MY EXPERTISE  
OF HERE, I THINK LONG-TERM INTEREST IN  
NEURO-INFLAMMATION. I'M EDITOR IN CHIEF OF THE  
JOURNAL OF NEURO-INFLAMMATION.

CHAIRMAN GOLDSTEIN: THANK YOU.

MS. MORALEZ: ELENA FLOWERS. MARK  
FISCHER-COLBRIE.

MR. FISCHER-COLBRIE: HERE.

MS. MORALEZ: JUDY GASSON.

DR. GASSON: HERE.

MS. MORALEZ: LARRY GOLDSTEIN.

CHAIRMAN GOLDSTEIN: I'M HERE.

MS. MORALEZ: DAVID HIGGINS.

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DR. HIGGINS: PRESENT.

MS. MORALEZ: VITO IMBASCIANI.

CHAIRMAN IMBASCIANI: PRESENT. AND  
WELCOMING MONICA.

MS. MORALEZ: PAT LEVITT.

DR. LEVITT: PRESENT.

MS. MORALEZ: SHLOMO MELMED. CHRISTINE  
MIASKOWSKI.

DR. MIASKOWSKI: PRESENT.

MS. MORALEZ: KAROL WATSON. KEITH  
YAMAMOTO.

DR. YAMAMOTO: HERE.

CHAIRMAN GOLDSTEIN: OKAY. THANK YOU,  
LANA. THANK YOU ALL WHO ARE ATTENDING.

WE HAVE A LIVELY AND INTERESTING AGENDA  
TODAY. THE FIRST ITEM THAT WE'RE GOING TO TAKE UP  
IS CONSIDERATION OF A CONCEPT PLAN CALLED REMIND  
THAT ROSA CANET-AVILES AND HER COLLEAGUES HAVE  
DEVELOPED TO DEVELOP A GRANTING PROGRAM FOR  
NEUROPSYCHIATRIC DISEASE AS YOU WILL SEE.

BEFORE WE GET TO THAT, I WANT TO JUST GIVE  
YOU SOME CONTEXT AND BACKGROUND FOR WHERE THIS HAS  
EMERGED BECAUSE IT CAME FROM THE TASK FORCE ON  
NEUROSCIENCE AND NEUROMEDICINE THAT WE'VE BEEN  
DEVELOPING. I'M GOING TO SHARE MY SCREEN. YOU ALL

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1 WERE ABLE TO DOWNLOAD THE DOCUMENT THAT WE POSTED, I  
2 HOPE. IT STARTS WITH A CHARGE TO THE TASK FORCE ON  
3 NEUROSCIENCE AND NEUROMEDICINE. AND I WANT TO START  
4 WITH THAT BECAUSE THERE ARE TWO KEY POINTS THAT PART  
5 OF THE CONTEXT FOR THE CONCEPT PLAN THAT WE'LL BE  
6 EVALUATING.

7 THE FIRST IS THAT THE TASK FORCE NEEDS TO  
8 DEVELOP A GENERAL PLAN FOR THE ONE AND A HALF  
9 BILLION SET-ASIDE THAT WAS STATED IN PROP 14, ONE  
10 AND A HALF BILLION OUT OF FIVE AND A HALF BILLION.  
11 AND WE'RE WORKING AWAY ON THAT GENERAL PLAN. AND  
12 I'LL GIVE YOU JUST A BRIEF UPDATE OF THAT IN A  
13 MOMENT.

14 AND THEN THE SECOND ITEM THAT'S VERY  
15 IMPORTANT IN OUR CHARGE IS THAT WE ARE CHARGED TO  
16 IDENTIFY UNUSUAL OPPORTUNITY FOR HIGH IMPACT IN  
17 THESE AREAS FOR ENHANCED INVESTMENT. AND THAT  
18 STATEMENT IS, AS YOU WILL SEE, THE BASIS FOR A  
19 CONCEPT PLAN FOR NEUROPSYCHIATRIC DISEASE THAT WE'LL  
20 SEEING -- THAT ROSA WILL BE PRESENTING IN A FEW  
21 MINUTES.

22 NOW, TO GIVE YOU A SENSE OF WHAT OUR  
23 PROGRESS HAS BEEN, FIRST, AS INDICATED IN THE FIRST  
24 COUPLE SENTENCES HERE, IF YOU LOOK AT OR JUST DO THE  
25 SIMPLE ARITHMETIC OF ONE AND A HALF OUT OF FIVE AND

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1 A HALF BILLION, IT'S ABOUT A 27-PERCENT FRACTION  
2 THAT'S MANDATED BY PROP 14. AND SIMPLY CIRM USING  
3 THE GRANTS WORKING GROUP TO SELECT AMONG THE  
4 SUBMITTED PROPOSALS, THUS FAR IT'S RUNNING AT ABOUT  
5 THE RIGHT FRACTION. SO IN PRINCIPLE, IF I WE DID  
6 NOTHING, WHICH I'M NOT SUGGESTING WE DO, WE'VE HIT  
7 THE RIGHT. BUT THERE ARE SOME REALLY INCREDIBLE  
8 OPPORTUNITIES THAT THIS CHARGE OPENS UP.

9 AND ONE OF THE THINGS THAT WAS IMPORTANT  
10 THAT WE LEARNED FROM A BRIEF PORTFOLIO ANALYSIS THAT  
11 CIRM PUT TOGETHER IS THAT NEUROPSYCHIATRIC DISEASE,  
12 WHICH HAS JUST BECOME TRACTABLE WITH STEM CELL  
13 TECHNOLOGIES, IN MY VIEW, MORE ABOUT THAT IN A  
14 MOMENT, TURNS OUT WAS COMPLETELY UNDERREPRESENTED IN  
15 THE CIRM PORTFOLIO. THERE WERE ZERO GRANTS THAT HAD  
16 BEEN MADE IN THIS AREA. AND USING DALY, DISABILITY  
17 ADJUSTED LIFE YEAR BURDEN, WHICH IS ONE WAY OF  
18 LOOKING AT IMPACT OF A DISORDER, THE DALY NUMBER  
19 JUST DWARFED EVERY OTHER NEURO DISEASE THAT WE HAVE  
20 BEEN FUNDING. AND SO IT'S A VERY STRAIGHTFORWARD  
21 COMBINATION OF A HIGH BURDEN. AND WE DON'T HAVE  
22 MUCH OF A PRESENCE IN THAT AREA.

23 AND WHAT WE DID WAS REALLY VET THE AREA.  
24 SO WE HAD A SERIES OF EXPERTS IN THE TECHNOLOGIES  
25 AND IN NEUROPSYCHIATRIC DISEASE COME IN AND TALK TO

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1 US OVER THE COURSE OF SEVERAL MEETINGS. AND THEY  
2 ESTABLISHED THAT STEM CELL TECHNOLOGIES AND RELATED  
3 TECHNOLOGIES HAVE REALLY REACHED THE POINT WHERE  
4 ALONG WITH BETTER UNDERSTANDING OF THE GENETICS OF  
5 NEUROPSYCHIATRIC DISEASE, A REALLY TERRIFIC  
6 OPPORTUNITY HAS PRESENTED ITSELF FOR US TO  
7 POTENTIALLY MAKE AN IMPACT. AND YOU'LL HEAR MORE  
8 ABOUT THAT FROM ROSA IN A MOMENT.

9 BUT IT'S VERY CLEAR THAT THERE'S ENOUGH  
10 GENETICS THAT RARE VARIANTS WITH STRONG EFFECTS HAVE  
11 BEEN IDENTIFIED AS WELL AS MULTIPLE MORE COMMON  
12 VARIANTS WITH SMALLER IMPACT, A PIECE, BUT TOGETHER  
13 IN ONE PERSON CAN REALLY MAKE A DIFFERENCE IN THEIR  
14 SUSCEPTIBILITY TO DISEASE. IN THAT SENSE, IT'S LIKE  
15 A LOT OF SO-CALLED SPORADIC DISEASES THAT WE ALL  
16 KNOW AND WOULD LIKE TO DEVELOP THERAPIES FOR.

17 FINALLY, ROSA WILL NOW TELL YOU ABOUT A  
18 CONCEPT PLAN FOR THIS AREA THAT WE THINK MAKES IT  
19 ATTRACTIVE FOR WORKERS IN THIS AREA TO PUT TOGETHER  
20 INTERDISCIPLINARY TEAMS TO WORK ON THESE PROBLEMS  
21 AND, IN OUR VIEW, WILL ATTRACT CIRM SUPPORT GIVEN  
22 THE IMPORTANCE OF THE AREA AND THE QUALITY OF THE  
23 TECHNOLOGIES THAT CURRENTLY EXIST.

24 SO THAT'S ALL I WANT TO SAY IN TERMS OF  
25 PREAMBLE. UNLESS ANYBODY HAS A QUESTION, WHAT I'D

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1 LIKE TO DO NOW IS TURN THE PODIUM OR WHATEVER THIS  
2 IS OVER TO ROSA TO PRESENT THE CONCEPT PLAN. SHE'LL  
3 PRESENT, WE'LL THEN TAKE QUESTIONS, I'LL THEN ASK  
4 FOR A MOTION TO PASS, WE'LL HAVE FURTHER AND FINAL  
5 DISCUSSION, PUBLIC COMMENT, AND THEN WE'LL VOTE. SO  
6 THAT WILL BE THE PROGRESSION OF HOW WE'RE GOING TO  
7 WORK.

8 SO LET ME STOP SHARING MY SCREEN AND GO  
9 BACK TO THE MAIN SCREEN. ROSA, ARE YOU READY? YOU  
10 ARE.

11 DR. CANET-AVILES: WE ARE READY. I WOULD  
12 LIKE TO THANK YOU, DR. GOLDSTEIN AND THE MEMBERS,  
13 FOR SUCH A WONDERFUL SUMMARY AND ALSO TO THE MEMBERS  
14 OF THE SCIENCE SUBCOMMITTEE FOR THE OPPORTUNITY TO  
15 PRESENT THE CONCEPT FOR THIS FIRST NEURO PROGRAM,  
16 FOCUSED DISCOVERY PROGRAM.

17 SO THE PRESENTATION TODAY IS GOING TO BE A  
18 SPLIT BETWEEN ME AND DR. CHAN LEK TAN, WHO IS A  
19 SENIOR SCIENCE OFFICER IN OUR TEAM AND WHO HAS BEEN  
20 ALSO WORKING ON THE DEVELOPMENT OF THIS CONCEPT.

21 SO AS YOU KNOW, THE NEURO DISCOVERY  
22 PROGRAM, ALSO KNOWN AS REMIND, WHICH STANDS FOR  
23 RESEARCH USING MULTIDISCIPLINARY, INNOVATIVE  
24 APPROACHES IN NEURO DISEASES, IS PART OF THE TASK  
25 FORCE EFFORTS TO IDENTIFY UNUSUAL OPPORTUNITIES FOR



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1 HIGH IMPACT IN NEUROSCIENCE AREAS FOR ENHANCED  
2 INVESTMENT BY THE STEM CELL AGENCY IN CALIFORNIA.  
3 FOR THOSE MEMBERS THAT WERE NOT ABLE TO  
4 ATTEND LAST FRIDAY'S TASK FORCE ON NEUROSCIENCE AND  
5 NEUROMEDICINE, THIS CONCEPT HAS BEEN DEVELOPED OVER  
6 THE PAST EIGHT MONTHS AND INCORPORATED ALL THE INPUT  
7 AND FEEDBACK FROM THE TASK FORCE.

8 THIS PRESENTATION IS A COMPLEMENT TO THE  
9 CONCEPT DOCUMENT THAT WAS DISTRIBUTED LAST FRIDAY  
10 AND CONTAINS THE BACKGROUND AND DETAILS  
11 COMPLEMENTARY TO THIS PRESENTATION.

12 SO JUST AS A REMINDER, THE REMIND  
13 INITIATIVE CORRESPONDS TO THE DISCOVERY PHASE OF  
14 CIRM'S NEURO STRATEGY. AND THE TRANSLATION AND  
15 CLINICAL AREAS WILL BE ADDRESSED SEPARATELY.

16 CIRM'S NEUROSCIENCE STRATEGY HAS BEEN  
17 DEVELOPED IN THE CONTEXT OF OUR MISSION STATEMENT,  
18 WHICH IS TO ACCELERATE WORLD-CLASS SCIENCE TO  
19 DELIVER TRANSFORMATIVE REGENERATIVE MEDICINE  
20 TREATMENTS IN AN EQUITABLE MANNER TO A DIVERSE  
21 CALIFORNIA AND THE WORLD. AND IT INTEGRATES WITHIN  
22 OUR FIRST THEME OF ADVANCING WORLD-CLASS SCIENCE.

23 THE VISION OF THE REMIND PROGRAM HAS BEEN  
24 INFORMED BY MULTIPLE STAKEHOLDER DISCUSSIONS OF THE  
25 PAST YEARS AS I MENTIONED. AND THE GOAL OF THIS

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1 PROGRAM REFLECTS INCORPORATION OF ALL MAJOR  
2 TAKEAWAYS FROM THIS DISCUSSION, INCLUDING THE PAST  
3 EIGHT MONTHS. THE GOAL IS TO ACCELERATE THE  
4 DISCOVERY OF MECHANISMS UNDERLYING NEUROPSYCHIATRIC  
5 DISORDERS LEADING TO THE IDENTIFICATION AND  
6 VALIDATION OF NOVEL TARGETS AND BIOMARKERS WITH A  
7 GOAL TO PROVIDE NEW AVENUES AND RIGOROUS FOUNDATIONS  
8 FOR FUTURE TRANSLATIONAL AND CLINICAL  
9 INVESTIGATIONS.

10 AND THE SPECIFIC OBJECTIVES TO ACHIEVE  
11 THESE GOALS ARE TO ACCELERATE FOUNDATIONAL  
12 SCIENTIFIC UNDERSTANDING OF NEUROPSYCHIATRIC DISEASE  
13 MECHANISMS, ALSO DEVELOP RELEVANT, INFORMATIVE TOOLS  
14 OR TECHNOLOGIES THAT WILL ULTIMATELY HELP US  
15 ACCELERATE THE UNDERSTANDING OF THESE DEVASTATING  
16 DISEASES. TO CATALYZE MULTIDISCIPLINARY INNOVATION,  
17 ATTRACTING NEW TALENT AND IDEAS INTO  
18 NEUROPSYCHIATRIC RESEARCH AND SEEDING NEW  
19 PARTNERSHIPS, AND TO DRIVE OPEN AND COLLABORATIVE  
20 SCIENCE BY LEVERAGING CIRM-FUNDED AND ALSO  
21 EXTERNALLY FUNDED INFRASTRUCTURE FOR DATA,  
22 RESOURCES, AND KNOWLEDGE SHARING.

23 SOME OF THE WORK OF THE NEURO TASK FORCE  
24 OVER THE PAST FEW MONTHS HAS BEEN DISCUSSIONS AROUND  
25 THE WAYS IN WHICH WE CAN ACHIEVE THESE GOALS AND

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1 OBJECTIVES. AND THE PROGRAM STRUCTURE ACTUALLY  
2 ANSWERS TO THESE OBJECTIVES OF ENABLING  
3 MULTIDISCIPLINARY LARGE TEAMS TO WORK TOGETHER AND  
4 INCORPORATES ALL THE FEEDBACK FROM THE PAST MONTH'S  
5 DISCUSSIONS, INCLUDING ALLOWING FOR A LARGER AMOUNT  
6 OF TIME TO DO THE WORK AND LARGER AMOUNTS OF  
7 FUNDING.

8 THE STRUCTURE OF THIS INITIATIVE PROGRAM  
9 RESPONDS TO THOSE PRIORITIZATION ELEMENTS AND  
10 INCLUDES TWO FUNDING OPPORTUNITIES WITH DISTINCT  
11 AWARD STRUCTURES THAT WILL BE OFFERED THROUGH  
12 INDEPENDENT REQUESTS FOR APPLICATIONS OR RFA'S.

13 THE FIRST ONE, THE REMIND-L, L STANDING  
14 FOR LARGE, COLLABORATIVE TEAMS, WILL SUPPORT  
15 EXPANSIVE, CROSS-DISCIPLINARY STUDIES LED BY LARGE  
16 COLLABORATIVE TEAMS THAT WILL APPLY -- BY APPLYING A  
17 RANGE OF TECHNOLOGIES AND APPROACHES LEADING TO  
18 NOVEL BIOLOGICAL INSIGHTS, FURTHERING OUR CURRENT  
19 UNDERSTANDING OF DISEASE MECHANISMS, AND EXPANDING  
20 RESEARCH TO INCLUDE THE STUDY OF DIVERSE POPULATIONS  
21 AS WELL AS IDENTIFYING AND VALIDATING NOVEL  
22 THERAPEUTIC HYPOTHESES, TARGETS, OR BIOMARKERS.

23 THE OTHER REQUEST FOR APPLICATIONS PROGRAM  
24 IS THE REMIND-X RFA, WHICH WILL SUPPORT HIGH RISK  
25 EXPLORATORY, THAT'S WHAT THE X IS FOR, STUDIES LED

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1 BY SMALL MULTIDISCIPLINARY TEAMS. THE PROJECTS, THE  
2 PROPOSED PROJECTS WILL BE EXPECTED TO LEAD TO  
3 INITIAL VALIDATION OR PROOF OF CONCEPT OF NOVEL  
4 MODELS, TOOLS, TECHNOLOGIES, OR HYPOTHESES.

5 FOR THE REMIND-L, WE PROPOSE FOUR YEARS  
6 WITH A BASE COMPONENT OF \$2 MILLION A YEAR PER  
7 PROJECT AND UP TO \$8 MILLION TOTAL IN DIRECTS WITH  
8 AN EXPECTED NUMBER OF SIX AWARDS AWARDED. FOR THE  
9 REMIND-X, CIRM EXPECTS TO FUND DIRECT PROJECT COSTS  
10 OF UP TO ONE MILLION TOTAL, HALF A MILLION DOLLAR  
11 PER AWARD PER YEAR, FOR UP TO TWO YEARS OF DURATION.  
12 AND WE ESTIMATE EXPECTED NUMBER OF 12 AWARDS.

13 NOW, THERE IS AN EXTRA OPTION FOR THE  
14 REMIND-L, THE LARGE COLLABORATIVE PROJECTS, THAT WE  
15 ARE PROPOSING, WHICH IS AN OPTION THAT COULD ALLOW  
16 FOR SUPPLEMENTAL FUNDING. IN THIS CASE, ADDITIONAL  
17 FUNDING OF UP TO HALF A MILLION DOLLARS PER AWARD  
18 PER YEAR MAY BE REQUESTED IF AN EQUIVALENT OR LARGER  
19 AMOUNT OF MATCHING FUNDS IS PROVIDED AND THE  
20 RESEARCH ACTIVITIES SUPPORTED BY THIS SUPPLEMENTAL  
21 BUDGET ARE DESCRIBED AND WILL BE WELL JUSTIFIED.

22 MATCHING FUNDS COULD BE CONTRIBUTED BY  
23 CALIFORNIA OR NON-CALIFORNIA FOR-PROFIT OR NONPROFIT  
24 ORGANIZATIONS. ONE OF THE INTENTIONS OF THIS  
25 MATCHING FUND IS TO INSTIGATE COLLABORATIVE EFFORTS

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1 WITH EXTERNAL ORGANIZATIONS.

2 THE REMIND-X, WE'LL FUND DIRECT PROJECT  
3 COST -- SORRY. I'VE ALREADY SAID THAT.

4 SO FOR THE REMIND-L WITH THESE POTENTIAL  
5 MATCHING FUNDS, THE TOTAL AMOUNT, POTENTIAL AMOUNT  
6 FOR FUNDING PER YEAR IS UP TO \$2.5 MILLION IN  
7 DIRECTS WITH A TOTAL OF \$10 MILLION TOTAL AWARD IN  
8 FOUR YEARS. THIS CORRESPONDS TO \$88.2 MILLION IF WE  
9 INCLUDE INDIRECTS AND FACILITIES COSTS AND \$22.5  
10 MILLION FOR THE REMIND-X PROJECT.

11 THIS IS A TIMELINE. THIS IS JUST TO SHOW  
12 THAT YOU CAN ESSENTIALLY THINK OF THIS AS STARTING  
13 THE PROGRAM IN 2024 AS YEAR ONE IN WHICH WE WOULD  
14 LAUNCH THE FIRST SET OF REMIND-L AWARDS AND THEN  
15 REMIND-X COULD BE LAUNCHING IN 2025.

16 NOW I'D LIKE TO INTRODUCE DR. CHAN LEK  
17 TAN, WHO'S BEEN WORKING IN THE DEVELOPMENT OF THIS  
18 CONCEPT AND WILL PRESENT SOME IMPORTANT SLIDES  
19 REGARDING ELIGIBILITY. CHAN.

20 DR. TAN: THANK YOU, ROSA. AND GOOD  
21 MORNING, EVERYONE. IN THE NEXT FEW SLIDES, I WILL  
22 SPEAK TO SOME OF THE SPECIFICS OF THE PROGRAMS  
23 STARTING WITH THE ELIGIBILITY REQUIREMENTS FOR  
24 APPLICANT TEAMS.

25 FIRSTLY, ALL NONPROFIT AND FOR-PROFIT

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1 CALIFORNIA RESEARCH ORGANIZATIONS ARE ELIGIBLE TO  
2 APPLY FOR THESE AWARDS. IN TERMS OF COMPOSITION, AS  
3 AGREED WITH THE TASK FORCE, ALL TEAMS WILL NOMINATE  
4 A SINGLE PRINCIPAL INVESTIGATOR WHO WILL MANAGE THE  
5 PROJECT AND SERVE AS THE PRIMARY CIRM CONTACT. IN  
6 ADDITION, THE TEAM MUST INCLUDE AT LEAST FOUR  
7 CO-INVESTIGATORS FOR REMIND-L AND AT LEAST ONE  
8 CO-INVESTIGATOR FOR REMIND-X.

9 IN TERMS OF INVESTIGATOR EFFORT AND IN  
10 AGREEMENT WITH TASK FORCE FEEDBACK AND AGREEMENT,  
11 PI'S FOR REMIND-L MUST DEVOTE AT LEAST 15 PERCENT  
12 EFFORT AND CO-INVESTIGATORS HAVE TO DEVOTE AT LEAST  
13 10 PERCENT. FOR REMIND-X, BOTH PI AND  
14 CO-INVESTIGATORS HAVE A 5-PERCENT MINIMUM EFFORT  
15 REQUIREMENT.

16 LASTLY, IN TERMS OF TEAM COMPOSITION, WE  
17 ASK THAT AT LEAST ONE MEMBER OF THE OVERALL REMIND-L  
18 TEAM TO HAVE RELEVANT CLINICAL EXPERTISE AND ONE  
19 MEMBER TO HAVE RELEVANT COMPUTATIONAL OR RELATED  
20 EXPERTISE, AND SUCH MEMBERS CAN BE EITHER THE PI  
21 ITSELF OR CO-INVESTIGATORS OR OTHER KEY PERSONNEL.  
22 FOR REMIND-X WE WILL ENCOURAGE IN THE RFA  
23 APPLICATIONS FROM INVESTIGATORS WHO WILL BRING NEW  
24 TECHNOLOGIES, RESOURCES, OR FRAMEWORKS TO THE STUDY  
25 OF NEUROPSYCHIATRIC DISORDERS OR IN VITRO MODELS OF

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1 THE HUMAN CNS.  
2 IN TERMS OF PROJECT ELIGIBILITY AND IN  
3 ALIGNMENT WITH OUR CONCEPT DOCUMENT, PROJECTS MUST  
4 ADDRESS A KNOWLEDGE GAP OR RESEARCH BOTTLENECK IN  
5 OUR UNDERSTANDING OF NEUROPSYCHIATRIC DISORDERS.  
6 PROJECTS MUST EMPLOY STEM CELLS OR GENETIC RESEARCH  
7 AS PART OF THE CENTRAL APPROACH. AS PART OF THIS  
8 MULTIDISCIPLINARY PROGRAM, WE ARE ENCOURAGING A  
9 MULTITUDE OF APPROACHES; HOWEVER, APPLICANTS WILL  
10 NEED TO JUSTIFY SEGMENTS OF THE OVERALL PROJECT THAT  
11 DOES NOT DIRECTLY INVOLVE STEM CELL OR GENETIC  
12 APPROACHES. FOR EXAMPLE, THEY WOULD JUSTIFY SUCH  
13 STUDIES IN TERMS OF HOW THEY MIGHT COMPLEMENT OR  
14 IMPROVE THE VALIDITY OF THE CENTRAL STEM CELL  
15 GENETIC APPROACH.

16 AND FINALLY, THE REMIND PROGRAM  
17 PRIORITIZES STUDIES BASED ON HUMAN DATA, HUMAN  
18 MODELS, AND HUMAN TISSUE SAMPLES ALTHOUGH STUDIES  
19 USING NONHUMAN MODELS WILL BE PERMITTED. WE DO ASK  
20 THAT TEAMS VALIDATE FINDINGS DERIVED FROM THESE  
21 APPROACHES USING HUMAN CELLS AND TISSUES DURING THE  
22 COURSE OF THE AWARD. AND AS SUGGESTED DURING THE  
23 PRIOR TASK FORCE DISCUSSION, THE RFA LANGUAGE WILL  
24 ALSO REFLECT THIS EMPHASIS ON HUMAN MODELS.

25 AND ON THE LAST SLIDE, DATA SHARING AND

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1 KNOWLEDGE SHARING, AS ROSA SAID, IS KEY TO ADVANCING  
2 THE FIELD OF REGENERATIVE MEDICINE AND ACCELERATING  
3 THE DEVELOPMENT OF TREATMENTS. SINCE THE PASSAGE OF  
4 PROP 14, CIRM HAS IMPLEMENTED A SET OF GUIDELINES TO  
5 SHARE AND MANAGE DATA WITH A VISION TO SUPPORT THE  
6 BROADER COLLABORATIVE RESEARCH ECOSYSTEM THAT THE  
7 REMIND PROGRAM WILL BE A PART OF. AS SUCH, WE WILL  
8 BE REQUIRING DATA SHARING AND MANAGEMENT PLANS BASED  
9 ON CIRM GUIDELINES, AND WE WILL ALSO FACILITATE  
10 COORDINATION BETWEEN AWARDEES AND OTHER DATA  
11 INITIATIVES.

12 FINALLY, THE REMIND PROGRAM WILL ALSO  
13 UPHOLD THE PRINCIPLES OF DIVERSITY, EQUITY, AND  
14 INCLUSION, AND THE APPLICANTS WILL BE REQUIRED TO  
15 INCLUDE PLANS TO ADDRESS DEI CONSISTENT WITH THE  
16 OTHER PROGRAMS WITHIN CIRM'S OFFERINGS. AND WITH  
17 THAT, I'LL HAND IT BACK TO ROSA.

18 DR. CANET-AVILES: THANK YOU SO MUCH,  
19 CHAN.

20 FROM WHAT CHAN WAS TALKING ABOUT IS  
21 FACILITATING THE COORDINATION WITH INITIATIVES.  
22 THIS LEADS TO SHOWING HOW THE VISION OF THIS PROGRAM  
23 WILL LEAD TO ACCELERATING WORLD-CLASS SCIENCE AND TO  
24 FURTHER ACCELERATE THE DISCOVERY OF NOVEL INSIGHTS  
25 INTO MECHANISMS OF NEUROPSYCHIATRIC DISEASES. THE



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1 REMIND PROGRAM, WHICH IS HERE SHOWN BY THESE LARGE  
2 PROJECT TEAMS AT THE EARLIER PROJECTS LIKE REMIND-X  
3 AND REMIND-L AIMS TO ESTABLISH COLLABORATIVE  
4 NETWORKS OF MULTIDISCIPLINARY RESEARCH TEAMS THROUGH  
5 NEW FUNDING STRUCTURES THAT ARE COMPLEMENTARY TO OUR  
6 CURRENT DISCOVERY STAGE AWARDS, WHICH ARE THE DISC-0  
7 FOUNDATION AWARDS AND THE DISC2 QUEST AWARDS.

8 FURTHERMORE, WE HOPE THAT WE WILL BE ABLE  
9 TO LEVERAGE CIRM FUNDING INFRASTRUCTURE ELEMENTS,  
10 SUCH AS THE SHARED RESOURCE LABS, THE DATA  
11 COORDINATION AND MANAGEMENT CENTERS OR DATA  
12 INITIATIVES, AND OTHERS, AS WELL AS EXTERNAL  
13 CONSORTIA WHICH COULD BE LEADING ULTIMATELY TO  
14 DRIVING THE OBJECTIVES THAT WE WERE TALKING ABOUT  
15 INITIALLY OF CATALYZING COLLABORATION, DRIVING  
16 INNOVATION FROM THESE MULTIDISCIPLINARY TEAMS THAT  
17 COULD LEAD TO THE DISCOVERY OF NOVEL TARGETS AND  
18 BIOMARKERS AND INCREASING ULTIMATELY THE EFFICIENCY  
19 AND THE SUCCESS OF CLINICAL TRIALS FOR  
20 NEUROPSYCHIATRIC DISORDERS. THIS OVERALL CONNECTS  
21 OUR THREE PILLARS OF RESEARCH AND DEVELOPMENT FROM  
22 DISCOVERY TO TRANSLATION TO THE CLINICAL.

23 THIS LAST SLIDE OR ONE BEFORE THE LAST IS  
24 A SUMMARY OF THE PROGRAM BUDGET THAT REFLECTS THE  
25 CHANGES THAT WERE MADE BASED FROM THE TASK FORCE

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1 FEEDBACK. IN JUNE THE AGENCY'S RESEARCH BUDGET HAD  
2 A PLACEHOLDER OF \$62.2 MILLION FOR THE REMIND  
3 CONCEPT PLAN, A NUMBER THAT AT THE TIME WAS  
4 UNDERSTOOD TO BE SUBJECT TO REVISION AS THE CONCEPT  
5 PLAN WAS STILL FURTHER REFINED WITH THE BENEFIT OF  
6 FURTHER WORK FROM THE NEUROSCIENCE AND NEUROMEDICINE  
7 TASK FORCE, THE ACTUAL PROGRAM BUDGET IS NOW CLEAR  
8 AND WILL REQUIRE 26 MILLION MORE FOR THE REMIND-L  
9 FISCAL YEAR 23/24 BUDGET, COMING UP TO 88.2 MILLION.  
10 AND THIS ADDITIONAL ALLOCATION WILL BE SOUGHT OF THE  
11 FULL BOARD AT THE SEPTEMBER ICOC CONSIDERATION OF  
12 THIS CONCEPT PLAN, ASSUMING, OF COURSE, THAT THIS  
13 SCIENCE SUBCOMMITTEE RECOMMENDS BRINGING THE CONCEPT  
14 TO THAT MEETING.

15 JUST AS A CLARIFICATION, THE REMIND-X  
16 BUDGET REQUEST WILL BE MADE NEXT YEAR AS PART OF THE  
17 FISCAL YEAR 24/25 RESEARCH BUDGET. SO THERE ARE NO  
18 CHANGES TO THE REQUEST FROM THE BOARD AT THIS TIME.

19 FINALLY, THE REQUESTED ACTION FROM THE  
20 SCIENCE SUBCOMMITTEE IS THAT CIRM REQUEST THE BOARD  
21 TO APPROVE THE PROPOSED REMIND PROGRAM CONCEPT.

22 WITH THAT, I WOULD LIKE TO LEAVE TIME FOR  
23 QUESTIONS. THANK YOU VERY MUCH FOR YOUR ATTENTION  
24 AND FOR YOUR SUPPORT.

25 CHAIRMAN GOLDSTEIN: THANK YOU, ROSA AND

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1 CHAN. EXCELLENT PRESENTATION.

2 I'LL JUST ADD THAT THE TASK FORCE DID A  
3 VERY THOROUGH JOB OF WORKING WITH ROSA AND HER TEAM  
4 TO VET THIS CONCEPT PLAN. I'M NOT GOING TO CLAIM  
5 THAT IT THOUGHT OF EVERYTHING, BUT IT DEFINITELY  
6 MADE SOME GOOD SUGGESTIONS THAT ALTERED ITS COURSE.

7 SO QUESTIONS FROM THE SCIENCE SUBCOMMITTEE  
8 PLEASE. CHRISTINE.

9 DR. MIASKOWSKI: THANK YOU FOR THE  
10 EXCELLENT PRESENTATION. I HAVE TWO QUESTIONS. ONE  
11 IS RELATED TO WHY THE STAGGERED TIMELINE FOR THE TWO  
12 SETS OF PROJECTS? WHY CAN'T THEY START AT THE SAME  
13 TIME?

14 AND THEN MAYBE THIS ONE IS A LITTLE  
15 SELF-SERVING BY BEING ON THE GRANTS WORKING GROUP.  
16 WHO IS THE INTENDED REVIEW GROUP FOR THESE GRANTS?  
17 ARE YOU GOING TO INCORPORATE IT INTO OUR CURRENT  
18 STRUCTURE, OR ARE YOU INTENDING TO CREATE A SEPARATE  
19 REVIEW GROUP?

20 DR. CANET-AVILES: THANK YOU VERY MUCH FOR  
21 THE QUESTIONS. VERY RELEVANT, DR. MIASKOWSKI.

22 SO THEY ARE RELATED, BOTH QUESTIONS. THE  
23 REASON WHY THEY ARE STAGGERED IS BECAUSE THE SCOPE  
24 OF THE AWARDS IS VERY DIFFERENT. SO THE REVIEW  
25 TEAMS COULD BE VERY DIFFERENT. AND FOR CAPACITY OF

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1 THE REVIEW TIMELINES, WE HAVE SEPARATED THEM. ALSO,  
2 FOR CONSULTATIONS, THIS REQUIRES STAFF TO CONSULT  
3 AND TO WORK HAND IN HAND. AND OUR TEAM ALSO IS FOR  
4 CAPACITY PURPOSES, SO WE WANT TO DO A GOOD JOB. SO  
5 THAT'S THE ANSWER TO THE FIRST QUESTION.

6 THE SECOND IS, THE ANSWER, IF MY  
7 COLLEAGUE, DR. GIL SAMBRANO, DOESN'T MIND, I'LL  
8 ANSWER, BUT I'M HAPPY IF YOU WANT TO ADD ANYTHING  
9 ELSE, GIL. IT COULD BE THE SAME GRANTS WORKING  
10 GROUP PROCESS. HOWEVER, WE'VE BEEN RECRUITING NEW,  
11 NOT ONLY BECAUSE OF THIS INITIATIVE, BUT ALSO  
12 BECAUSE OF THE PROP 14'S MANDATE FOR NEUROSCIENCE,  
13 WE'VE BEEN ACTUALLY WORKING VERY ACTIVELY IN THE  
14 RECRUITMENT OF SPECIALIZED REVIEWERS, NOT ONLY FOR  
15 NEUROSCIENCE, BUT ALSO FOR COMPUTATIONAL BIOLOGY,  
16 DATA SCIENCES, ET CETERA. SO THE COMPOSITION WILL  
17 BE DIFFERENT, BUT IT WILL ALSO INCLUDE SOME OF THE  
18 DISCOVERY REVIEWERS, I IMAGINE.

19 GIL, DO YOU HAVE ANYTHING ELSE TO ADD?

20 DR. SAMBRANO: NO. THAT WAS ALL  
21 APPROPRIATE. THANK YOU.

22 DR. MIASKOWSKI: THANKS VERY MUCH.

23 CHAIRMAN GOLDSTEIN: GREAT. THANK YOU,  
24 ROSA AND GIL.

25 OTHER QUESTIONS FOR ROSA? SEEING NONE,

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1 DOES ANYBODY WANT TO MAKE A MOTION TO RECOMMEND THAT  
2 WE SEND THIS ON TO THE FULL ICOC?

3 DR. MIASKOWSKI: SO MOVED.

4 CHAIRMAN GOLDSTEIN: I HEARD CHRISTINE'S  
5 VOICE, BUT I DON'T KNOW WHO THE OTHER ONE WAS.

6 DR. LEVITT: IT WAS PAT, BUT YOU CAN MARK  
7 DOWN CHRISTINE. SHE HAD A GOOD QUESTION. SHE  
8 DESERVES THE REWARD, BUT I CAN SECOND IT, RIGHT?

9 CHAIRMAN GOLDSTEIN: THAT'S RIGHT. YOU'LL  
10 HAVE TO SPLIT THE PRIZE MONEY. OKAY. GOOD.

11 ANY FURTHER DISCUSSION NOW THAT THIS HAS  
12 BEEN MOVED AND SECONDED?

13 DR. LEVITT: I JUST WANT TO ADD THAT, I  
14 DON'T THINK ROSA MENTIONED THIS, THAT THE STAFF DID  
15 REALLY AMAZING DUE DILIGENCE. NOT ONLY THE EXPERTS  
16 WHO CAME IN TO SPEAK TO THE NEUROSCIENCE WORKING  
17 GROUP, BUT ALSO ENGAGING WITH NIH AND OTHER FUNDERS  
18 WHO HAVE BEEN SPENDING MANY YEARS TRYING TO FIGURE  
19 OUT THE BEST WAYS OF PROVIDING SUPPORT TO MAKE  
20 BREAKTHROUGH DISCOVERY. SO THEY REALLY DID, I  
21 THINK, A REALLY THOROUGH JOB OF GETTING INPUT FROM A  
22 LOT OF DIFFERENT SOURCES TO COME UP WITH THIS PLAN.  
23 I JUST WANTED TO SAY THAT AND CONGRATULATE THE TEAM.

24 CHAIRMAN GOLDSTEIN: COMPLETELY AGREE.  
25 THANK YOU, PAT. JUDY.

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1 DR. GASSON: I JUST WANT TO SECOND WHAT  
2 PAT SAID AS A FELLOW MEMBER OF THE NEUROSCIENCE TASK  
3 FORCE. I THINK ROSA AND CHAN AND THEIR TEAM REALLY  
4 INTERACTED WELL WITH THE MEMBERS OF THE TASK FORCE.  
5 AND I ALSO WANT TO THANK LARRY WHO DID A TERRIFIC  
6 JOB OVER THE EIGHT MONTHS OF BRINGING IN THE  
7 SPEAKERS, A LOT OF REALLY THOUGHTFUL DISCUSSION, AND  
8 DRIVING OUR GOAL TO REALLY HAVE AN IMPACT ON THESE  
9 VERY SERIOUS DISORDERS. SO THANKS TO ALL OF YOU.  
10 GREAT JOB.

11 CHAIRMAN GOLDSTEIN: THANK YOU, JUDY.

12 OTHER DISCUSSION POINTS FROM THE SCIENCE  
13 SUBCOMMITTEE PLEASE. OKAY. HEARING AND SEEING  
14 NONE --

15 VICE CHAIR BONNEVILLE: I THINK DAVID HAS  
16 A COMMENT.

17 CHAIRMAN GOLDSTEIN: OH. DAVID, PLEASE.

18 (A PAUSE IN THE PROCEEDING.)

19 DR. HIGGINS: OKAY. SORRY ABOUT THAT. I  
20 WAS HAVING SOME TECHNICAL TROUBLES HERE.

21 I ACTUALLY DON'T WANT A POINT OF  
22 DISCUSSION. I WANTED TO BACK UP WHAT PAT AND  
23 CHRISTINE AND OTHERS HAVE SAID, BUT I'D LIKE TO GIVE  
24 IT A SLIGHTLY DIFFERENT PERSPECTIVE. AND THE  
25 PURPOSE OF MY SAYING THIS IS SIMPLY TO UNDERSCORE

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1 HOW IMPORTANT THIS IS TO PATIENTS. IT'S ONE THING  
2 TO TALK ABOUT GOOD SCIENCE, AND I THINK WE DO AN  
3 ADMIRABLE JOB OF BRINGING FORTH THE GREAT SCIENCE,  
4 BUT I'LL TELL YOU. ME PERSONALLY, I'M THE  
5 PARKINSON'S REPRESENTATIVE ON THE BOARD. I HAVE  
6 PARKINSON'S DISEASE MYSELF. AND TO HEAR THE  
7 ORGANIZATION AND THE DEDICATION AND THE  
8 PURPOSEFULNESS OF THIS GROUP AND HOW YOU'RE GOING  
9 ABOUT GATHERING THE INFORMATION YOU NEED TO IT TURN  
10 IT INTO SOMETHING THAT CAN BE A PRODUCT, I KNOW  
11 PRODUCTS ARE FAR DOWN THE STREAM. AND I THINK MOST  
12 PEOPLE RECOGNIZE THAT. BUT I JUST WANT YOU TO KNOW  
13 THAT FROM THE PATIENT'S POINT OF VIEW, FROM A PERSON  
14 WITH PARKINSON'S WHO I KNOW WITHIN THE NEXT 10, 20  
15 YEARS I'M GOING TO DIE, THE NOTION THAT PARKINSON'S  
16 IS NOT LETHAL IS BULLSHIT. EXCUSE ME. BUT IT WARMS  
17 MY HEART TO LOOK AT THIS COMPUTER SCREEN AND SEE ALL  
18 THESE PEOPLE WHO GOT UP TODAY AND CARED ENOUGH TO  
19 SHOW UP AND PUT OUT. SO FOR THAT THANK YOU.

20 CHAIRMAN GOLDSTEIN: THANK YOU, DAVID.  
21 VERY NICE OF YOU. AND I ALSO AGREE WITH YOU, OF  
22 COURSE.

23 OTHER COMMENTS BEFORE WE GO TO PUBLIC  
24 COMMENT? LET'S SEE. WHO'S IN CHARGE OF THE PHONE  
25 LINE? LANA?

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1 MS. MORALEZ: IF WE HAVE ANYBODY FROM THE  
2 PUBLIC THAT WOULD LIKE TO MAKE A COMMENT, JUST PRESS  
3 STAR NINE. NO PUBLIC COMMENT.

4 CHAIRMAN GOLDSTEIN: WE ARE CLEAR. SO  
5 WE'VE GOT A MOTION, SECONDED. DISCUSSION. I THINK  
6 WE ARE READY TO VOTE. LANA, CALL THE ROLL PLEASE.

7 MS. MORALEZ: HAIFAA ABDULHAQ.

8 DR. ABDULHAQ: YES.

9 MS. MORALEZ: MARIA BONNEVILLE.

10 VICE CHAIR BONNEVILLE: YES.

11 MS. MORALEZ: MONICA CARSON.

12 DR. CARSON: YES.

13 MS. MORALEZ: MARK FISCHER-COLBRIE.

14 MR. FISCHER-COLBRIE: YES.

15 MS. MORALEZ: ELENA FLOWERS.

16 DR. FLOWERS: YES.

17 MS. MORALEZ: JUDY GASSON.

18 DR. GASSON: YES.

19 MS. MORALEZ: LARRY GOLDSTEIN.

20 CHAIRMAN GOLDSTEIN: YES.

21 MS. MORALEZ: DAVID HIGGINS.

22 DR. HIGGINS: YES TO BOTH.

23 MS. MORALEZ: VITO IMBASCIANI.

24 CHAIRMAN IMBASCIANI: YES.

25 MS. MORALEZ: PAT LEVITT.



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1 DR. LEVITT: YES.  
2 MS. MORALEZ: CHRISTINE MIASKOWSKI.  
3 DR. MIASKOWSKI: YES.  
4 MS. MORALEZ: KARL WATSON.  
5 DR. WATSON: YES.  
6 MS. MORALEZ: KEITH YAMAMOTO.  
7 DR. YAMAMOTO: YES.  
8 MS. MORALEZ: SHLOMO MELMED.  
9 OKAY.  
10 CHAIRMAN GOLDSTEIN: ALL RIGHT. THANK YOU  
11 ALL FOR YOUR ATTENTION TO THIS IMPORTANT PROGRAM.  
12 WE WILL BE FOLLOWING UP AT SOME POINT WITH FURTHER  
13 REPORTS FROM THE TASK FORCE, WHICH IS NOW GOING TO  
14 TACKLE NEURONAL INJURY DISORDERS AND  
15 NEURODEGENERATIVE ORDERS, EACH AS A CLASS, AND WILL  
16 GIVE YOU AN UPDATE IN THE NEXT FEW MONTHS.  
17 THE NEXT ITEM ON THE AGENDA IS THE  
18 PRIORITIZATION KICKOFF DISCUSSION. MARK  
19 FISCHER-COLBRIE, THAT'S YOU.  
20 DR. FISCHER-COLBRIE: SORRY ABOUT THAT.  
21 THANK YOU VERY MUCH FOR THE OPPORTUNITY TO TALK  
22 ABOUT A GENERAL TOPIC, WHICH IS MEANT TO BE AN OPEN  
23 DISCUSSION AND IN SOME WAYS PIGGY-BACKS OFF OF THE  
24 ACTIVITIES AND PROCESS RELATED TO THE NEURO TASK  
25 FORCE, WHICH THE TEAM DID A TERRIFIC JOB ON. SO

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1 THIS IS MEANT TO BE AN OPEN, GENERAL DISCUSSION.  
2 WITHIN THAT CONTEXT, I WOULD LIKE TO PROVIDE SOME  
3 CONTEXT, SOME BACKGROUND INFORMATION AS A QUICK WAY  
4 OF INTRODUCTION, WHILE I'M HOPEFULLY PULLING UP THE  
5 SCREEN HERE, IT'S A SITUATION WHERE JUST AN  
6 INTRODUCTION OF MYSELF. FOR THOSE OF YOU WHO DON'T  
7 KNOW ME, I'M THE TYPE 1 DIABETES PATIENT  
8 REPRESENTATIVE FOR CIRM AND OBVIOUSLY ON THE BOARD  
9 AND THE GRANTS WORKING COMMITTEE.

10 BUT WITH THAT IN MIND, JUST WANTED TO GIVE  
11 SOME CONTEXTUAL BACKGROUND INFORMATION AROUND  
12 DISCUSSION AROUND DISEASE AND DIAGNOSTIC AND  
13 PRIORITIZATION PROCESSES RELATED TO THINGS THAT WE  
14 MIGHT WANT TO CONSIDER AROUND CIRM MODELS. AND SO  
15 IF YOU'LL BEAR WITH ME A LITTLE BIT ON BACKGROUND, I  
16 THINK WE ARE QUITE FAMILIAR WITH THE FACT THAT CURE  
17 RESEARCH AND IN THIS CONTEXT, THIS TERMINOLOGY IS  
18 COVERING BOTH DIAGNOSTICS AND TOOLS, COVERING THE  
19 WHOLE REMIT OF WHAT CIRM DOES.

20 BUT CURE RESEARCH IS OBVIOUSLY VERY  
21 COMPLEX AND HIGHLY UNPREDICTABLE AS WE ALL KNOW.  
22 THIS IS A STRUGGLE THAT EVERYBODY IS DEALING WITH,  
23 WHETHER IT'S ACADEMICS RUNNING ALL THE WAY THROUGH  
24 PHARMA FIRMS. AND EVERYBODY HAS BEEN WORKING  
25 TOWARDS THE MODELS OF WHAT MAKES THE MOST SENSE FOR

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1 ACCELERATING THE DISCOVERY PROCESS.

2 THE INHERENT LIMITATIONS THAT ARE LEADING  
3 TO THE DIFFICULTIES AROUND COMING UP WITH PROVEN  
4 MODELS HAS TO DO WITH THE FACT THAT OBVIOUSLY THERE  
5 ARE MANY, MANY GAPS IN TERMS OF THE KNOWLEDGE AND  
6 THE SYSTEMS THAT ARE EMPLOYED IN ORDER TO ADVANCE  
7 DISEASE THERAPEUTICS. AND STARTING, OBVIOUSLY, WITH  
8 BASIC BIOLOGICAL KNOWLEDGE IS INCOMPLETE. I'M  
9 ACTUALLY QUITE AMAZED, FOR EXAMPLE, THAT INNATE  
10 IMMUNE SYSTEMS AND A CRITICAL FUNCTION OF TOTAL LIFE  
11 RECEPTORS WEREN'T DISCOVERED TILL THE LATE '90S,  
12 THAT BRAIN LYMPHATIC SYSTEM WASN'T DISCOVERED UNTIL  
13 THE LAST 24 MONTHS, THE UNDERSTANDING AND  
14 ACKNOWLEDGMENT OF THE ROLE OF THE MICROBIOME IS A  
15 RELATIVELY NEW MODALITY, IF YOU ARE LOOKING AT THAT.

16 IN TERMS OF THE OTHER AREAS OF GAPS, TOOLS  
17 IS A CRITICAL AREA, AND THAT IS EITHER LACKING OR  
18 DIDN'T EXIST. I THINK EVERYONE IS AWARE THAT CRISPR  
19 IS NEW AND IS REALLY ONLY STARTING TO HIT ITS PRIME  
20 HERE IN THE LAST HANDFUL OF YEARS.

21 THE OTHER NASCENT AREA IS ARTIFICIAL  
22 INTELLIGENCE. THAT'S GATHERING STEAM AND  
23 ACCELERATION AND IS A VERY PROMISING AREA OF BEING  
24 ABLE TO USE AS AN ACCELERANT TO THE DISCOVERY  
25 PROCESS, BUT AS OF THE MOMENT, THERE'S A LIMITED

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1 IMPACT AS TO HOW THAT'S BEEN PROSECUTED TO DATE.

2 THE OTHER HAS TO DO WITH THE FACT OF THE  
3 BOTTLENECK OF THE DUAL PHENOMENON. ANIMAL MODELS  
4 ARE BOTH LESS AND LESS PREDICTIVE OF THE IMPACT ON  
5 HUMANS. AND, IN ADDITION, WHILE THERE IS AN  
6 EXPANSION OF IN VITRO MODELS, THERE'S A TREMENDOUS  
7 GAP THERE IN TERMS OF THE QUALITY OF THOSE IN VITRO  
8 MODELS IN TERMS OF HOW THAT MIGHT PREDICT TOXICITY  
9 AND EFFICACY IN HUMANS.

10 FINALLY, THERE'S ALSO CONTINUING TO BE A  
11 VERY DISTURBING LACK OF REPRODUCIBILITY OF  
12 EXPERIMENTAL RESULTS BECAUSE OF INHERENT LIMITATIONS  
13 OF MANY EXPERIMENTS BEING DONE ANNUALLY AND ALSO THE  
14 RELATIVELY POOR DATA RECORDINGS THAT CAN OCCUR IN  
15 DIFFERENT ORGANIZATIONS.

16 AS WE ALSO KNOW, THERE'S RESEARCH AND  
17 FUNCTIONAL SILOS RELATED TO THAT. I THINK EVERYONE  
18 IS FAMILIAR WITH THE FACT THAT, FOR EXAMPLE, IN  
19 CANCER IT WASN'T UNTIL CAR-T CAME ALONG THAT THERE  
20 WAS INCREASED INVOLVEMENT BETWEEN IMMUNOLOGISTS AND  
21 OTHER CANCER SPECIALISTS. MORE BROADLY, IT'S A  
22 REFLECTION OF THE FACT THAT THERE ARE OPPORTUNITIES  
23 FOR MORE AND MORE INTERACTIONS ACROSS FUNCTIONAL  
24 SILOS AS WELL AS DISEASE SILOS.

25 THE OTHER BIG INFLUENCE HERE IS FUNDING

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1 MODELS ARE EXTREMELY UNCERTAIN. FOR ACADEMICS,  
2 BECAUSE OF LIMITATIONS ON NIH FUNDING, WE ARE AT ONE  
3 POINT ONLY 6 PERCENT OF RESEARCH PROPOSALS WERE  
4 GETTING APPROVED BY THE NIH. THAT'S A SITUATION  
5 WHERE RESEARCHERS MAY HAVE A TENDENCY TO DIAL BACK  
6 AGGRESSIVE, NOVEL CONCEPTS TO INCREASE FUNDING. SO  
7 YOU START DOING EXPERIMENTS THAT ARE MORE  
8 INCREMENTAL BREAKTHROUGH. THE OBVIOUS PROBLEM OF  
9 PEOPLE NOT GETTING THEIR FIRST NIH GRANT TILL THEIR  
10 MID-40S IS ACTUALLY CAUSING RESEARCHERS TO LEAVE THE  
11 FIELD. AND SO THE FUNDING MODEL SITUATION IS  
12 PROBLEMATIC.

13 THIS IS EXACERBATED BY THE SITUATION OF  
14 THE OPPORTUNITY FOR TERRIFIC IDEAS THAT HAVE BEEN  
15 DISCOVERED IN ACADEMIA TO ACTUALLY PROGRESS ALL THE  
16 WAY THROUGH TO POTENTIAL THERAPY. AND THIS  
17 WELL-KNOWN PHENOMENON OF THE MILLIONS TO TENS OF  
18 MILLIONS REQUIRED TO STEP THROUGH THIS PROCESS, THE  
19 VALLEY OF DEATH, AS TO HOW THAT'S GOING TO GET  
20 FUNDED. EVERYONE'S FAMILIAR WITH THAT APPROACH.  
21 AND, THEREFORE, IT ENDS UP BEING A HEAVY, HEAVY  
22 RELIANCE ON PRIORITIZATION FROM PHARMA COMPANIES  
23 THAT ARE SEEKING TO FIGURE OUT A WAY TO DEAL WITH  
24 THE PROBLEM OF \$2.5 BILLION IN A 15-YEAR TIMELINE TO  
25 GET A THERAPY TO MARKET. THIS CAUSES A LOT OF PULLS

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1 AND SHIFTS AND CONSEQUENCES OF VERY PROMISING DRUG  
2 AND DISEASE THERAPIES THAT NEVER GET PROSECUTED  
3 FURTHER BECAUSE OF THE FACT THAT THEY HAVE GREAT  
4 PROMISE, BUT THEY'RE SHELVED FOR NONSCIENTIFIC AND  
5 OFTEN FOR FINANCIAL REASONS.

6 THAT'S A LITTLE BIT OF BACKGROUND. I  
7 THINK EVERYONE HERE IS FAMILIAR WITH THOSE ELEMENTS.  
8 I APOLOGIZE FOR RECAPPING THAT.

9 BUT THE SITUATION ON CIRM AND HOW THIS  
10 RELATES TO CIRM IS ALSO THEN IN THE CONTEXT OF A  
11 LITTLE BIT BACKGROUND THAT THERE ARE VERY WELL  
12 ESTABLISHED AND RESPECTED PROCESSES IN PLACE WITH  
13 CLEAR GUIDELINES AND RULES OF ENGAGEMENT FOR HOW TO  
14 EFFECT THE SPECIFIC GOALS OF PROP 71 AND PROP 14.  
15 THE STRATEGIC PLAN DOES AN OUTSTANDING JOB OF  
16 DELINEATING THE OVERALL CONTEXT OF THE MISSION FOR  
17 THE ORGANIZATION WITHIN THE FRAMEWORK OF THE FIVE  
18 PILLARS. THERE'S REALLY BEEN GREAT WORK AT  
19 DELINEATING DISC AND TRAN AND CLIN THAT COVER THREE  
20 OF THE AREAS THAT ARE ON THE RESEARCH FOCUS ELEMENT.  
21 AND THE TEAM'S DONE AN OUTSTANDING JOB AT THIS.

22 THAT PRIORITIZATION PROCESS, JUST FOR THE  
23 REMINDER FOR PEOPLE, HAS FLEXED OVER TIME. IN THE  
24 EARLY DAYS OF PROP 71, FUNDING REQUIRED A VERY, VERY  
25 HEAVY INFRASTRUCTURE INVESTMENT IN FACILITIES AND

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1 BUILDINGS. THERE WAS A SHIFT AS PROP 71 STARTED TO  
2 WIND DOWN TO FOCUS ON CLINICAL TRIALS. AND EVEN  
3 SEPARATELY, DUE TO COVID, FUNDING PRIORITIZATION  
4 AROUND COVID ACTIVITY. SO IT'S AN ELEMENT OF  
5 ACKNOWLEDGING THAT THERE CONTINUES TO BE FLEX IN HOW  
6 DECISIONS ARE MADE ABOUT PRIORITIZATION RELATED TO  
7 THE DEFINED, VERY WELL-DEFINED OUTLINES. THE TEAM'S  
8 DONE AN OUTSTANDING JOB OF DELINEATING THIS.

9 A LITTLE BIT OF BACKGROUND. OBVIOUSLY WE  
10 ALL KNOW ABOUT THE \$1.5 BILLION. AND NOW THE  
11 QUESTION IS WHAT ARE OUR OPTIONS AND OPPORTUNITIES.  
12 OBVIOUSLY WITH THE NEURO TASK FORCE, WE'VE ALREADY,  
13 IN EFFECT, CREATED A SLIGHTLY DIFFERENT MECHANISM  
14 FOR WORKING ON APPROVALS AND HOW TO BE ABLE TO, IN  
15 FACT, TAKE A MORE PROACTIVE ROLE IN HOW WE LOOK AT  
16 THE PROGRAMS THAT WE REVIEW AND APPROVE. BUT IN  
17 GENERAL, CERTAINLY TO DATE THE CURRENT CIRM FUNDING  
18 MODEL RELIES ON INCOMING APPLICATIONS TO MAKE  
19 ALLOCATION DECISIONS, AND THAT NATURALLY CREATES  
20 LIMITATIONS.

21 WHAT THAT MEANS IS TYPICALLY APPLICATIONS  
22 ARE COMING IN FROM SINGLE FUNCTIONS OR SINGLE  
23 ORGANIZATIONS. SO THERE'S A REDUCED CAPABILITY OF  
24 DIRECTING AND MANAGING AREAS THAT MIGHT REQUIRE  
25 STRONGER CROSS-TEAM, CROSS-ORGANIZATION FUNCTION.

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1 IT'S VERY RELIANT ON THE INBOUND APPLICATIONS. I  
2 CAN PERSONALLY ATTEST TO THE FACT THAT EVEN TODAY  
3 PEOPLE ARE STILL NOT NECESSARILY AWARE OF THE  
4 STANDARD REMIT OF PROP 14 WITH CELL THERAPY AND  
5 OTHER MODIFICATION TO CELLS THAT CAN BE FUNDED.  
6 SOME PEOPLE ACTUALLY ALSO GAVE UP ON APPLYING TO  
7 CIRM FUNDING AS PROP 71 WAS WINDING DOWN BECAUSE OF  
8 THE FACT THAT FUNDING GRANTS WERE GETTING DIRECTED  
9 IN A DIFFERENT DIRECTION. AND SOME PEOPLE ARE ALSO,  
10 I WAS SURPRISED, NOT UP TO SPEED ON THE ALLOCATION  
11 OF THE \$1.5 BILLION IN NEURO.

12 WHAT THAT MEANS IS THERE'S A UNIVERSE OF  
13 APPLICATIONS AND RESEARCHERS THAT ARE NOT EVEN  
14 THINKING ABOUT SENDING THEIR APPLICATIONS IN. SO  
15 IT'S NOT AS IF THE APPLICATION PROCESS TODAY  
16 REPRESENTS THE ENTIRE UNIVERSE OF WHAT MIGHT BE  
17 POSSIBLE RELATED TO EVALUATE WITHIN THAT OR A MORE  
18 REACTIVE MODE.

19 SORRY FOR THE LONG PREAMBLE, BUT I WOULD  
20 LIKE TO STIMULATE A DISCUSSION FOR FOLKS AND REALLY  
21 START TO USE THIS AS A MECHANISM FOR AN ONGOING SET  
22 OF MEETINGS TO HAVE DISCUSSIONS AROUND WHAT ARE  
23 POSSIBILITIES. AND THAT MIGHT BE, HEY, SHOULD WE  
24 LOOK AT DIFFERENT APPROACHES TO ACHIEVING THE  
25 MISSION? SHOULD CIRM BE A SPARKPLUG AND AN



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1 INSTIGATOR, FORMING CONSORTIA. WE'RE IN A WAY  
2 SEEING A LITTLE BIT OF THAT WITH NEUROPSYCHIATRIC  
3 ACTIVITY. THIS IS SOMETHING THAT WE MIGHT WANT TO  
4 CONSIDER EXPANDING. IF SO, HOW DO YOU PICK A  
5 DISEASE AREA AND FOCUS AREA? AND THOSE KINDS OF  
6 THINGS REQUIRE SIGNIFICANT STAFF INVESTMENT OF TIME  
7 AND RESOURCES TO REALLY PROPERLY SUPPORT. IF, IN  
8 FACT, THERE IS A DESIRE TO DO SOMETHING LIKE THIS,  
9 THEN HOW DO YOU SUPPORT THOSE EFFORTS?

10 SHOULD CIRM REALLY TRY TO WORK EVEN  
11 FURTHER ON LEVERAGE? AND CIRM ALREADY DOES THIS  
12 WITH THE REQUIREMENTS OF ADDING ORGANIZATIONS BEING  
13 ABLE TO PROVIDE ADDITIONAL FUNDING AND OTHER  
14 ELEMENTS. BUT ARE THERE OTHER ASPECTS OF LEVERAGE  
15 THAT PEOPLE MIGHT CONSIDER? DO WE TAKE AN APPROACH  
16 OF, HEY, WE'D LIKE TO USE THE NORTH STAR. SOMETHING  
17 LIKE, HEY, WE WANT TO DO THE MOST GOOD FOR THE MOST  
18 PEOPLE IN THE SHORTEST AMOUNT OF TIME; I.E., FOCUS  
19 HEAVILY ON CLINICAL TRIALS AND FOCUS HEAVILY ON  
20 BROADER NUMBERS OF PEOPLE. YOU CAN GET A LITTLE BIT  
21 OF A FLAVOR OF THAT LOOKING AT THE SOCIOECONOMIC  
22 DATA AROUND HEALTH IMPACT, FOR EXAMPLE, THAT POINTS  
23 A LITTLE BIT IN THAT DIRECTION THAT WE DID WITH THE  
24 NEURO WORK.

25 THE OTHER ONE IS DO WE FOCUS IN ON FUNDING

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1 CRITICAL GAPS? AND SOMETIMES THESE ARE EXTREMELY  
2 NONSEXY GAPS, AND THEY'RE GAPS THAT ARE ELEMENTS  
3 THAT DON'T GET FUNDING FROM OTHER ELEMENTS. AND  
4 THIS REQUIRES, THEN, CONDITIONS LIKE ON THE NEURO,  
5 THE GAP IS TRYING TO BE FILLED FOR, HEY, LET'S  
6 ENCOURAGE PEOPLE TO COME IN WITH A DISCOVERY ON VERY  
7 KEY AND ESSENTIAL PROCESSES THAT WITHIN THE BRAIN  
8 CONTEXT ARE CURRENTLY MISSING. AND THAT'S A  
9 CRITICAL GAP THAT COULD BE EXPANDED INTO OTHER  
10 DISEASE AREAS EFFECTIVELY.

11 OR IS IT A SITUATION OF, HEY, YOU REALLY  
12 WANT TO INCREASE A PORTFOLIO ALLOCATION TO KEY TOOLS  
13 DEVELOPMENT AND FOCUS IN ON THAT? SO THAT GETS BACK  
14 TO THE SITUATION OF THAT DEARTH OF IN VIVO ANIMAL  
15 MODELING BEING VERY INEFFECTIVE IN DIFFERENT AREAS.

16 ANOTHER SET OF LEVERAGE POINTS IS DO WE  
17 LOOK AT MORE FORMAL TIE-INS SO WITH DIFFERENT  
18 ORGANIZATIONS, NON-PROFITS, THE NATIONAL CENTER FOR  
19 ADVANCING TRANSLATIONAL SCIENCES. THIS DOES NOT  
20 MEAN THAT WE'RE NOT CURRENTLY DOING THIS. THIS HAS  
21 TO DO WITH A QUESTION IS THERE PERHAPS WITHIN A  
22 CONSORTIA ELEMENT OR SOME TARGET THAT WE GO AFTER  
23 THAT WE DRAW PEOPLE IN ON A MORE FORMAL BASIS.

24 DO WE LOOK AT HOW WE MIGHT BE ABLE TO  
25 ACCELERATE AND ENCOURAGE NASCENT AI INTEGRATION OF

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1 THE DRUG DEVELOPMENT PROCESS AS A FURTHER  
2 ACCELERANT? DO WE LOOK AT FUNDING WHERE A CERTAIN  
3 MECHANISM OF ACTION OF DISEASE, EVEN THOUGH IT MIGHT  
4 BE FOR A RARE DISEASE, COULD, IN FACT, THEN BE  
5 APPLIED TO A POSSIBILITY OF MANY DISEASES. SO WE  
6 ARE LOOKING FOR LEVERAGE WITHIN THOSE CONTEXTS.

7 SO THAT'S A BIT OF BACKGROUND. THAT'S  
8 ENOUGH OF ME TALKING AND WOULD LOVE TO GET FEEDBACK  
9 AND RESPONSE TO THE SET OF ACTIVITY HERE TO HAVE A  
10 LITTLE BIT OF DISCUSSION AND THEN OBVIOUSLY START TO  
11 ASK CONSIDERATION ABOUT OF HOW WE MIGHT FRAME THE  
12 NEXT STEPS FOR FUTURE DISCUSSION POINTS. SO WITH  
13 THAT, I'D OPEN UP TO QUESTIONS AND COMMENTS.

14 CHAIRMAN GOLDSTEIN: COMMITTEE MEMBERS  
15 PLEASE.

16 DR. LEVITT: I'LL START.

17 CHAIRMAN GOLDSTEIN: THANK YOU, PAT.

18 DR. LEVITT: MY FIRST COMMENT IS WOW  
19 BECAUSE YOU TOUCHED UPON SO MANY PRESSURE POINTS IN  
20 UNDERSTANDING HOW WE MOVE OUT OF OUR WORLD OF  
21 INCREMENTAL ADVANCEMENT IN BIOMEDICAL SCIENCES AND  
22 RESEARCH. AND THAT'S SORT OF WHERE WE'VE BEEN SINCE  
23 THE NIH WAS INSTITUTED IN THE '50S. THEY HAVEN'T  
24 CHANGED THEIR MODEL VERY MUCH, WHICH IS ONE OF THE  
25 MAJOR PROBLEMS BECAUSE THE WAY SCIENCE IS DONE HAS

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1 CHANGED DRAMATICALLY. AND THEY REALLY HAVE NOT  
2 CHANGED THEIR MODEL.

3 I WOULD SAY THE OTHER THING IS THAT -- AND  
4 A LARGE PART OF THE MODEL, MOST OF THE FUNDING GOES  
5 TO INCREMENTAL SCIENCE. AND THERE'S A LACK OF  
6 WILLINGNESS TO RECOGNIZE THAT INNOVATION -- ATTEMPTS  
7 AT INNOVATION MOSTLY FAIL. BUT IF YOU DON'T DO  
8 THAT, THEN YOU'LL NEVER SUCCEED. ANYBODY WHO'S READ  
9 ALL THE BOOKS ABOUT ALL THE INNOVATORS, THAT'S JUST  
10 PART OF THE FORMULA. AND THE MAJOR FUNDERS ARE  
11 UNWILLING TO TAKE THAT RISK. AND CERTAINLY BIG  
12 PHARMA IS UNWILLING TO TAKE THAT RISK, WHICH IS WHY  
13 IN THE AREA OF NEUROSCIENCE, WHICH I KNOW WELL, MANY  
14 LARGE PHARMA COMPANIES HAVE CLOSED THOSE PROGRAMS  
15 DOWN BECAUSE THEY'RE, AS I SAY, TOO RISKY. SO  
16 THERE'S SORT OF A PHILOSOPHICAL, CULTURAL ISSUE  
17 AROUND THIS.

18 THE OTHER THING I JUST WANT TO MENTION IS  
19 THAT SCIENCE HAS GOTTEN MUCH MORE EXPENSIVE IN A  
20 VERY SHORT PERIOD OF TIME. IT'S VERY EXPENSIVE TO  
21 DO SCIENCE NOW. THE NIH HAS NOT RESPONDED AT ALL.  
22 THE NSF HAS NOT RESPONDED AT ALL. PRIVATE  
23 FOUNDATIONS BY AND LARGE HAVE -- A FEW HAVE  
24 RESPONDED, BUT WITH VERY SMALL PROGRAMS. SO THAT'S  
25 SOMETHING TO CONTEMPLATE BECAUSE WHAT WE JUST HEARD

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1 IN TERMS OF THE NEURO CONCEPT FOR NEUROPSYCHIATRY, I  
2 VERY STRONGLY SUPPORT IT. IT SOUNDS LIKE A LOT OF  
3 MONEY; BUT WHEN YOU START ADDING UP THE COSTS, MUCH  
4 OF WHICH IS PERSONNEL AND THEN MATERIALS AND  
5 SUPPLIES THAT ARE SPECIALIZED FOR THIS KIND OF  
6 RESEARCH, THE MONEY EVAPORATES.

7 I THINK THE OTHER THING YOU TOUCHED UPON,  
8 MARK, IS SORT OF TRYING TO IDENTIFY THE KNOWLEDGE  
9 GAPS, OF WHICH THERE ARE MANY. AND THE ONES YOU HAD  
10 ON YOUR LIST ARE CERTAINLY NOT MAJOR KNOWLEDGE GAPS.  
11 THAT'S PROBABLY AN EASIER DISCUSSION TO HAVE THAN  
12 THESE OTHER ISSUES THAT YOU BROUGHT UP. BUT I JUST  
13 WANTED TO APPLAUD YOU FOR DOING A REALLY THOROUGH  
14 JOB AT BRINGING UP REALLY THE SIGNIFICANT PRESSURE  
15 POINTS. I'LL STOP THERE AND LET OTHERS COMMENT.

16 CHAIRMAN GOLDSTEIN: THANK YOU, PAT.  
17 OTHER THOUGHTS?

18 DR. MIASKOWSKI: MARK AND PAT, I AGREE  
19 WITH PAT'S COMMENTS. AND THE THINGS THAT APPEAL TO  
20 ME IS CAREFULLY THINKING ABOUT THE CONUNDRUM THAT  
21 PRECLINICAL RESEARCH DOESN'T TRANSLATE TO THE HUMAN.  
22 IT'S A REAL, REAL ISSUE FOR US TO THINK THROUGH.

23 I AGREE WITH PAT ABOUT THE NIH'S STRUCTURE  
24 AND PARTICULARLY WITH REGARD TO THE FACT THAT IT'S  
25 DISEASE FOCUSED. I THINK THERE ARE A NUMBER, AND I

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1 THINK YOU RAISED THIS IN YOUR SLIDE, MARK, WHAT I  
2 WOULD CALL UBIQUITOUS MECHANISMS. THAT IF WE BEGIN  
3 TO FIGURE THEM OUT, WE'LL CUT ACROSS A VARIETY OF  
4 HUMAN CONDITIONS, INFLAMMATION BEING ONE. ALL THE  
5 MAJOR CHRONIC CONDITIONS HAVE A BASIS, A PART OF  
6 THEIR BASIS IN THEIR PATHOPHYSIOLOGY IN  
7 INFLAMMATION.

8 I'M GOING TO OFFER ONE AREA WHICH IS AN  
9 AREA THAT'S NEAR AND DEAR TO MY HEART. WHEN LARRY  
10 PRESENTED THE CASE FOR NEUROPSYCHIATRIC CONDITIONS,  
11 THE ONE THAT CAME TO MIND FOR ME THAT HAS AS BIG  
12 CONUNDRUM IS CHRONIC PAIN. AND THIS IS ANOTHER  
13 AREA, AND I WAS CURIOUS IF THE NEUROSCIENCE TASK  
14 FORCE DID LOOK AT THIS BECAUSE IT'S A LITTLE  
15 PAROCHIAL BECAUSE IT'S SOMETHING I STUDY CLINICALLY.  
16 AND I DON'T KNOW HOW MANY OF YOU KNOW THAT ONE IN  
17 FIVE AMERICANS HAVE CHRONIC PAIN. IT COSTS THE  
18 UNITED STATES \$150 BILLION A YEAR, AND IT  
19 DISPROPORTIONATELY AFFECTS PEOPLE FROM DIVERSE  
20 BACKGROUNDS.

21 SO I PERSONALLY WOULD LIKE US TO THINK  
22 ABOUT THESE UBIQUITOUS MECHANISMS THAT WE MIGHT BE  
23 ABLE TO GAIN SOME LEVERAGE IN AS WELL AS THINGS THAT  
24 COST THE AMERICAN PEOPLE A LOT, BOTH IN TERMS OF  
25 DOLLARS AS WELL AS IN TERMS OF THE BURDEN OF ILLNESS

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1 ON THEM. I'M SURE THERE'S A NUMBER OF THEM THAT WE  
2 COULD LOOK AT.

3 CHAIRMAN GOLDSTEIN: THOSE ARE GREAT  
4 POINTS, PARTICULARLY THE ONE ABOUT PAIN. I JUST  
5 ADDED IT TO MY LIST OF THINGS FOR THE TASK FORCE TO  
6 THINK ABOUT.

7 DR. MIASKOWSKI: I'M NOT AN EXPERT ON  
8 THIS, STEM CELL OR GENETICS. I DID A QUICK SEARCH,  
9 AND THERE SEEMS TO BE DISCOVERY IN THIS SPACE. BUT  
10 I CAN TELL YOU THE BURDEN IN TERMS OF INDIVIDUALS,  
11 AND THE COMPLEXITY OF CHRONIC PAIN IS COMPARABLE, I  
12 THINK, TO NEUROPSYCHIATRIC DISORDERS.

13 CHAIRMAN IMBASCIANI: AND THE LACK OF  
14 TRULY EFFECTIVE NONADDICTIVE DRUGS.

15 DR. MIASKOWSKI: YEAH.

16 AND THE OTHER THING I WANTED TO MENTION  
17 RELATED TO THAT, LARRY, IS THERE HAS NOT BEEN A NEW  
18 DRUG TO MANAGE CHRONIC PAIN SINCE VIOXX WAS REMOVED  
19 FROM THE MARKET IN 2004. SO WE'RE TALKING 20 YEARS.  
20 AND THE PHARMACEUTICAL INDUSTRY WILL NOT TOUCH THIS  
21 PROBLEM BECAUSE OF THE OPIOID EPIDEMIC. AND, AGAIN,  
22 THAT COULD LINK TO THE NEUROPSYCHIATRIC STUFF IN  
23 TERMS OF OPIOID USE DISORDERS.

24 CHAIRMAN GOLDSTEIN: IT'S A GREAT POINT.  
25 OTHER -- KEITH, GOOD. THANK YOU. I WAS GOING TO

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1 CALL ON YOU ANYWAY.

2 DR. YAMAMOTO: I JUST WANT TO UNDERSCORE A  
3 POINT THAT PAT MADE. I THINK THERE -- I HAVE TWO  
4 THINGS TO SAY ABOUT THE NIH THAT I THINK THAT CIRM  
5 ALREADY IS ON A PATHWAY TO ADDRESS. THE FIRST IS  
6 THAT IN THE ENDLESS FRONTIERS DOCUMENT THAT VANNEVAR  
7 BUSH WROTE IN 1945. HE WAS RESPONDING, BY THE WAY,  
8 TO AN INQUIRY FROM PRESIDENT ROOSEVELT THAT ASKED,  
9 YOU, DR. BUSH, WERE REALLY INSTRUMENTAL IN BRINGING  
10 A GOVERNMENT INTERFACE TO SCIENCE DURING THE WAR,  
11 WORLD WAR II. AND NOW THAT THAT WAR IS OVER, SHOULD  
12 THE FEDERAL GOVERNMENT CONTINUE ITS INTERFACE,  
13 EXTEND OR CONTINUE ITS INTERFACE WITH SCIENCE OR  
14 NOT? AND IF SO, WHAT SHOULD THAT INTERFACE LOOK  
15 LIKE?

16 AND WHAT THEN SCIENCE ENDLESS FRONTIER  
17 ESSAY SAID WAS THAT, YES, THE FEDERAL GOVERNMENT  
18 SHOULD CONTINUE TO INTERACT WITH SCIENTISTS, SHOULD  
19 CONTINUE TO SUPPORT SCIENCE, AND SPECIFICALLY IT  
20 SHOULD DO TWO THINGS. IT SHOULD SUPPORT BASIC  
21 DISCOVERY RESEARCH, FUNDAMENTAL RESEARCH, AND IT  
22 SHOULD SUPPORT THE TRAINING OF THE NEXT GENERATION  
23 OF SCIENTISTS. AFTER THAT, BUSH SAID, INDUSTRY WILL  
24 TAKE OVER. THE PRIVATE SECTOR WILL TAKE OVER. THEY  
25 WILL LOOK AT THESE DISCOVERIES AND SEE WAYS THAT



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1 THOSE DISCOVERIES COULD BE APPLIED IN WAYS THAT WILL  
2 INCREASE THE HEALTH AND WELL-BEING OF THE AMERICAN  
3 PEOPLE.

4 AND IF THAT WAS EVER TRUE, IT IS  
5 DEFINITELY NOT TRUE NOW. AND THAT WAS ONE OF THE  
6 POINTS THAT PAT WAS MAKING. AND CIRM ACTUALLY GOES  
7 A LONG WAY IN MOVING THROUGH THAT -- ADVANCING ON  
8 THAT PROBLEM THAT THE NIH HAS ACTUALLY STAYED AWAY  
9 FROM. AND THAT IS REALLY DEVELOPING APPLICATIONS OF  
10 DISCOVERIES. THE NIH IS THE GREATEST KNOWLEDGE  
11 DISCOVERY ENGINE IN THE BIOMEDICAL SCIENCES IN THE  
12 WORLD. THERE'S JUST NO DOUBT ABOUT THAT. YOU CAN  
13 LOOK AT ANY MEASURE YOU WANT IN TERMS OF SIGNIFICANT  
14 DISCOVERIES, NUMBERS OF PAPERS PUBLISHED, BLAH,  
15 BLAH, BLAH, AWARDS KNOWN AS NOBEL PRIZES UNDER NIH  
16 FUNDING, AND IT'S TERRIFIC. BUT MOVING FORWARD FROM  
17 THAT HAS NOT DONE WELL. SO SORT OF IN RESPECT TO  
18 THE MANDATE THAT THE VANNEVAR BUSH DOCUMENT SET.

19 AND THIS IS SOMETHING THAT I THINK THAT  
20 CIRM TAKES A DIRECT SHOT AT WITH ITS MULTIPRONGED  
21 APPROACH OF DISCOVERY, TRANSLATION, AND CLINICAL AND  
22 MOVING THROUGH TO CLINICAL TRIALS AND BEGINNING TO  
23 DERISK SOME OF THE STUFF THAT INDUSTRY WON'T TOUCH  
24 FOR VARIOUS REASONS THAT WE ALL KNOW.

25 SO THAT'S GOOD. AND THE QUESTION IS

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1 WHETHER THAT CAN BE EXTENDED IN SOME WAY TO BE ABLE  
2 TO REALLY HAVE A STRONG STRATEGY OF FORMING  
3 PARTNERSHIPS WITH THE PRIVATE SECTOR THAT ACTUALLY  
4 GO BEYOND SUPPORTING CLINICAL TRIALS THAT THEY MIGHT  
5 NOT SUPPORT OR AT LEAST PUTTING ENOUGH SUPPORT  
6 BEHIND THEM THAT THE TRIALS CAN GET DONE AND WHERE  
7 CAN IT EXTEND FURTHER. THAT'S POINT 1.

8 POINT 2 PAT DIRECTLY ADDRESSED, AND THAT  
9 IS THE INCREMENTALISM OF NIH RESEARCH AND ITS  
10 FAILURE TO REALLY TAKE BIG RISKS THAT CAN ACTUALLY  
11 HAVE VERY BIG PAYOFFS, KNOWING THAT MANY OF THOSE  
12 RISKS, BY DEFINITION, ARE GOING TO LEAD TO FAILURE.  
13 IT'S A TREMENDOUSLY RISK AVERSE AGENCY, AND THAT  
14 LEADS TO REALLY SPENDING A LOT OF THAT BUDGET, OVER  
15 \$45 BILLION NOW, ON QUITE LINEAR PEDESTRIAN  
16 RESEARCH. WE ALL WRITE THE GRANTS IN THAT WAY  
17 BECAUSE WE KNOW THAT'S THE ONLY WAY THEY'RE GOING TO  
18 GET FUNDED. BUT I THINK THAT CIRM HAS THE  
19 OPPORTUNITY TO REALLY FOCUS HARD ON GOING FOR RISKY  
20 PROJECTS, BECOMING KNOWN AS AN AGENCY THAT'S LOOKING  
21 FOR THAT.

22 I RUN A SMALL FUNDING PROGRAM AT UCSF IN  
23 BASIC SCIENCE. I'VE RUN IT FOR 25 YEARS. AND FOR  
24 THE FIRST SEVEN OR EIGHT YEARS IN OUR CALL FOR  
25 PROPOSALS WE ACTUALLY HAD IN THERE THAT SAID WE ARE

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1 ONLY LOOKING FOR GRANT PROPOSALS THAT THE NIH WILL  
2 LAUGH OUT OF THE ROOM. I WAS ENCOURAGED TO DROP  
3 THAT LANGUAGE AFTER A FEW YEARS UNFORTUNATELY, BUT  
4 THAT IS WHAT WE'RE LOOKING FOR. AND PEOPLE GOT TO  
5 KNOW THAT. AND THE \$7 MILLION A YEAR, WHICH IS NOT  
6 MUCH OF OUR, IT'S 1 PERCENT OR HALF A PERCENT OF OUR  
7 BASIC RESEARCH REVENUE IS REGARDED AS THE MOST  
8 VALUABLE MONEY THAT UCSF RESEARCHERS CAN GET,  
9 WRITING TWO PAGES AND GETTING A COUPLE HUNDRED  
10 THOUSAND DOLLARS TO TRY OUT A BOLD AND CRAZY IDEA.

11 AND I HOPE THAT -- I WOULD LIKE IF CIRM  
12 GOT TO BE REALLY KNOWN FOR THAT, THAT THAT'S WHAT  
13 THEY'RE LOOKING FOR. IF YOU'VE GOT AN IDEA THAT'S A  
14 GOOD NIH GRANT, WRITE AN NIH GRANT. IF YOU HAVE AN  
15 IDEA THAT THEY'LL LAUGH OUT OF THE ROOM, WRITE A  
16 CIRM GRANT. I THINK THAT KIND OF FOCUS MIGHT BE  
17 SOMETHING THAT, IN A GENERAL WAY, NO MATTER WHAT  
18 AREAS WE FOCUS ON, COULD REALLY HAVE A BIG IMPACT.

19 CHAIRMAN GOLDSTEIN: THANK YOU, KEITH. I  
20 WONDER IF I MIGHT FOLLOW UP WITH YOU ON ONE POINT.  
21 AS MANY OF THE FOLKS ON THIS CALL KNOW, THERE'S  
22 LEGISLATION CALLED BAYH-DOLE, WHICH ESTABLISHES A  
23 PROCESS THAT WAS HOPED TO REALLY EXPAND INVOLVEMENT  
24 OF INDUSTRY IN THE DEVELOPMENT OF THERAPIES BASED ON  
25 DISCOVERIES MADE IN ACADEMIA.

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1 I GUESS THE QUESTION FOR YOU, KEITH, IS DO  
2 YOU THINK THE TIME HAS COME TO DO SOMETHING ABOUT  
3 IT? CHANGE BAYH-DOLE? SCRAP BAYH-DOLE? REPLACE IT  
4 WITH AN ENTIRELY NEW PROCESS? WHAT DO YOU THINK?

5 DR. YAMAMOTO: ABSOLUTELY. I THINK THAT  
6 IN ONE SENSE, THE TIME HAS COME TO DO SOMETHING  
7 ABOUT IT. POLITICALLY IT'S NOT A GOOD TIME. IT  
8 DOESN'T MEAN THAT IT WOULDN'T BE A GOOD IDEA TO  
9 START WORKING ON IT. AND THERE ARE MEMBERS OF  
10 CONGRESS THAT AGREE WITH THAT AND I THINK WOULD BE  
11 VERY WILLING TO SIT DOWN AND START LOOKING AT HOW  
12 BAYH-DOLE COULD BE MODIFIED OR SCRAPPED, AS YOU  
13 SAID, TO ACTUALLY FACILITATE.

14 I THINK WHAT THEY STARTED OUT WANTING TO  
15 DO, BUT OBVIOUSLY IT HASN'T SERVED. AND SO I THINK  
16 THAT WOULD BE A FINE THING FOR PEOPLE THAT ARE  
17 WORKING IN SCIENCE POLICY, AS I DO, TO BEGIN TO PUT  
18 SOME FOCUS ON IT.

19 CHAIRMAN GOLDSTEIN: THANK YOU.

20 MARIA BONNEVILLE HAD HER HAND UP THERE FOR  
21 A WHILE BUT THEN TOOK IT DOWN. I'M GOING TO PUT HER  
22 ON THE SPOT HERE.

23 VICE CHAIR BONNEVILLE: THANKS, LARRY. A  
24 COUPLE OF THINGS. I THINK, DEPENDING ON WHERE WE  
25 END UP TODAY, I THINK A VERY CLEAR ASK OF THE

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1 INTERNAL TEAM OF INFORMATION THAT YOU WOULD LIKE  
2 THEM TO BRING BACK TO THE BOARD SO THAT WE CAN  
3 CONTINUE OUR CONVERSATIONS AND START TO MAKE SOME  
4 DECISIONS I THINK IS REALLY IMPORTANT. SO AS CLEAR  
5 AS WE CAN BE SO THAT MARIA CAN DIRECT THE INTERNAL  
6 TEAM AS TO INFORMATION TO BRING BACK.

7 THE SECOND WOULD BE IF WE DID NOTHING,  
8 WHERE WOULD WE BE? LIKE IF WE JUST CONTINUE TO FUND  
9 THE WAY WE HAVE BEEN FUNDING, WHAT DOES THAT LOOK  
10 LIKE? WHAT DOES OUR PORTFOLIO LOOK LIKE?

11 I THINK WE'VE TALKED ABOUT DIFFERENT  
12 SCENARIOS BEFORE, BUT WHAT ARE THOSE SCENARIOS  
13 BECAUSE I THINK, WITHOUT KNOWING THAT, I'M NOT SURE  
14 THAT WE CAN COME TO A LOT OF DECISIONS ABOUT WHAT  
15 MAY OR MAY NOT BE MISSING OR WHAT DIRECTION WE WANT  
16 TO GO.

17 THE OTHER THING IS RIGHT NOW THE BOARD  
18 DOES RIGHT NOW HAVE THE ABILITY TO SAY NO TO  
19 APPLICATIONS THAT HAVE GONE THROUGH THE PROCESS,  
20 THAT HAVE RECEIVED FUNDING -- RECOMMENDATIONS TO  
21 FUND, BUT WE MAY NOT -- THEY MAY NOT BE NECESSARY  
22 FOR OUR PORTFOLIO CURRENTLY. THOSE ARE HARD  
23 DECISIONS THAT THE BOARD WOULD HAVE TO MAKE IN  
24 PUBLIC, BUT THAT IS AN OPTION THAT THE BOARD HAS.  
25 JUST AS WE HAVE THE OPTION IF THERE'S SOMETHING THAT

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1 RECEIVED PERHAPS AN 83, NOT AN 85, BUT FITS WITHIN  
2 OUR PORTFOLIO, WE CHOOSE TO FUND THOSE SOMETIMES AS  
3 WELL.

4 SO WE DO HAVE A MECHANISM BY WHICH WE CAN  
5 START TO NARROW PORTFOLIO IF THAT'S SOMETHING THAT  
6 WE CHOOSE IS IMPORTANT TO DO.

7 CHAIRMAN GOLDSTEIN: THANK YOU, MARIA.  
8 VITO.

9 CHAIRMAN IMBASCIANI: HI, EVERYONE. LET  
10 ME SPEAK FROM A THIRTY THOUSAND POINT OF VIEW. I  
11 HAVE THREE COMMENTS I WANT TO MAKE. NO. 1 TO MARK.

12 MARK, YOU DID SUCH A BROAD -- YOUR  
13 PRESENTATION WAS SO WONDERFUL IN ITS BREADTH AND  
14 DEPTH THAT I HESITATE TO COMMENT, EVEN TO COMPLIMENT  
15 YOU ON IT SORT OF EXTEMPORANEOUSLY BECAUSE I THINK  
16 THE WORK YOU PUT INTO THAT DESERVES CONSIDERED  
17 RESPONSE. BUT, ANYWAY, HATS OFF.

18 AND I WANT TO AMPLIFY SOME OF THE THINGS  
19 YOU SAID AND DRAW FROM THE COMMENTS THAT PAT AND  
20 CHRISTINE MADE FOLLOWING. BEFORE I DO THAT, I WANT  
21 TO THANK KEITH. I THINK, KEITH, YOU CONTINUE TO  
22 GIVE US LESSONS FROM HISTORY. AFTER A YEAR ON THE  
23 BOARD WITH YOU, I THINK I'M GOING TO ASK FOR A  
24 MASTER'S IN HISTORY THANKS TO YOU. YOUR COMMENTS  
25 WERE GERMANE, AND I LOVE THE KICK THEM OUT OF THE

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1 ROOM THING.

2 AND, MARK, IF I CAN MARRY UP KEITH'S LAST  
3 COMMENT WITH ONE OF YOUR BULLET POINTS ABOUT CAN WE  
4 THE MOST QUICKLY FOR THE MOST NUMBER OF PEOPLE. AND  
5 HERE'S WHERE I'M COMING IN AT THE 3,000 LEVEL. I  
6 HAVEN'T SPOKEN TO OUR PRESIDENT YET OR TO OTHER  
7 MEMBERS OF THE LEADERSHIP TEAM. BUT I'M WONDERING,  
8 I WANT TO ENCOURAGE THIS TASK FORCE, THIS  
9 SUBCOMMITTEE, EXCUSE ME, TO CONSIDER WHETHER, AS WE  
10 START OUR THIRD DECADE NEXT YEAR AT CIRM, WHETHER WE  
11 CAN NOW, AND I HAVE TO BOW TO CONSIDERED SCIENTIFIC  
12 OPINION, IS THE CAR-T, FOR EXAMPLE, AND I'M JUST  
13 GIVING EXAMPLES, HAS ENOUGH RESEARCH BEEN DONE  
14 ACROSS THE BOARD THAT THAT LEVEL OF RESEARCH MAY NOT  
15 NEED AS MUCH SUPPORT? HAS THE RESEARCH INTO SMALL  
16 DRUGS, FOR EXAMPLE, ARE ENOUGH OTHER PEOPLE OUTSIDE  
17 CIRM ENGAGED IN THAT, THAT WE CAN PULL BACK A LITTLE  
18 BIT FROM THERE? WHY? TO FOCUS, TO MEET THE  
19 CHALLENGE OF YOUR BULLET POINT.

20 BECAUSE I'M ALSO CONCERNED AS BOARD CHAIR,  
21 I SEE NUMBERS OF HOW LONG AT OUR PRESENT BURN RATE,  
22 HOW LONG WILL OUR MONEY LAST? SOME PEOPLE GIVE ME  
23 AN ESTIMATE OF TEN YEARS. OTHER PEOPLE MAY SAY ONLY  
24 SEVEN YEARS. SEVEN YEARS SCARES ME. IT REALLY  
25 DOES. TEN YEARS IS THE MINIMUM. BUT MAYBE -- I

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1 KNOW OUR MISSION SAYS ACCELERATE, AND I KNOW I'M ALL  
2 OVER THE MAP WITH THIS COMMENT, BUT I WANT TO COME  
3 UP WITH SOMETHING THAT'S GOT IMPACT INTO REAL  
4 PEOPLE'S LIVES IN THE TIME, IN THE LIFE SPAN THAT  
5 CIRM HAS WITHOUT BANKING ON YET A THIRD RENEWAL.

6 SO I'M GOING TO ENCOURAGE THIS  
7 SUBCOMMITTEE TO CONTINUE THINKING ABOUT IT AND MAYBE  
8 EVEN GO SO FAR, BE SO BOLD, THROW THEM OUT OF THE  
9 ROOM, TELL THE BOARD TO CONSIDER CLOSING THE DOOR TO  
10 CERTAIN APPLICATIONS. NOW, THAT MAY BE PRETTY BOLD  
11 FOR THIS. DID I GO TOO FAR?

12 DR. FISCHER-COLBRIE: GREAT COMMENTS FIRST  
13 OF ALL. SECOND, CLOSE THE DOOR TO APPLICATIONS, BUT  
14 ALSO BE THAT MAGNET TO DRAW IN NEW ONES THAT WE  
15 OTHERWISE MIGHT MISS KIND OF THING.

16 I THINK RELATED TO YOUR COMMENTS -- BY THE  
17 WAY, THANK YOU VERY MUCH FOR VERY KIND WORDS. I  
18 CONTINUE TO BE INCREDIBLY IMPRESSED WITH, EXTREMELY  
19 IMPRESSED WITH THE CIRM STAFF. AND THEY'VE GIVEN  
20 COLLECTIVELY A LOT OF THOUGHT TO THIS IN THE  
21 STRATEGIC PLANNING PROCESS AND IN OTHER ELEMENTS.  
22 AND THERE WOULD NATURALLY BE A TREMENDOUS MARRIAGE  
23 ON ANY SORT OF SUBCOMMITTEE OR DISCUSSION WORK THAT  
24 WOULD WANT TO WORK HAND IN HAND WITH THE STAFF. IN  
25 FACT, WOULD LOVE TO GET ANY COMMENTS ON MARIA AT



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1 THIS JUNCTURE AS WELL.

2 DR. MILLAN: THANK YOU VERY MUCH. AND I  
3 ALSO ECHO THE REMARKS THAT THAT WAS AN EXCELLENT  
4 STARTING POINT FOR THIS DISCUSSION, YOUR  
5 PRESENTATION.

6 I THINK THAT IN ADDITION TO CONSIDERING  
7 WHERE WE SHOULD IDENTIFY AREAS WHERE WE MAYBE  
8 REDIRECT FOCUS FROM AND INTO, I THINK, MOST  
9 IMPORTANTLY IS WHERE ARE THE KEY OPPORTUNITIES.

10 YOU BROUGHT UP IN ONE OF THE SLIDES SOME  
11 PARTNERSHIP OPPORTUNITIES BECAUSE THERE IS A  
12 CONSIDERABLE AMOUNT OF PROGRESS BEING MADE ACROSS  
13 MULTIDISCIPLINARY AS WELL AS MULTI -- INCORPORATING  
14 TECHNOLOGIES AND VARIOUS STAKEHOLDERS AND VARIOUS  
15 AREAS. AND HAS BEEN CIRM PRESENTED THE OPPORTUNITY  
16 TO PARTNER WITH SOME OF THESE PROGRAMS. SO HAVING  
17 THE AVENUE FOR A DELIBERATE PARTNERSHIP THAT ALLOWS  
18 FOR THAT WOULD BE REALLY SOMETHING THAT'S WORTHWHILE  
19 CONSIDERING BECAUSE WE DON'T HAVE TO BUILD  
20 EVERYTHING FROM SCRATCH. THERE'S A LOT OF EXTREMELY  
21 BRIGHT MINDS OUT THERE AND A LOT OF INVESTMENT  
22 THAT'S BEEN PUT IN AND IT'S PRESENTED TO US.

23 BUT CURRENTLY WHAT WE HAVE IS THE  
24 OPPORTUNITY TO HAVE THOSE PARTNERSHIPS IF IT FALLS  
25 INTO OUR CURRENT PILLAR STRUCTURE, INTO OUR CURRENT

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1 STRUCTURE OF HOW WE FUND PROGRAMS ACROSS THE  
2 PILLARS, WHICH WORKS VERY WELL IN TERMS OF AN ENGINE  
3 TO GENERATE WHAT IT HAS. BUT IN TERMS OF CRAFTING  
4 STRATEGICS IN SPECIFIED AREAS WHERE YOU CAN PROMOTE  
5 MULTIDISCIPLINARY, I THINK, PUTTING PARAMETERS  
6 AROUND PRIORITIES AS WELL AS STRUCTURE OF THOSE  
7 TYPES OF PARTNERSHIPS, I THINK, WILL BE REALLY  
8 ENABLING AND COULD REALLY ACCELERATE BY USING THAT  
9 FORMAT.

10 TO MARIA'S POINT OF PLEASE LET US KNOW  
11 WHAT WE CAN BRING FORWARD TO ASSIST IN THIS  
12 DISCUSSION, THE MEMBERS OF THE LEADERSHIP TEAM AND  
13 MEMBERS OF THE TEAM REALLY HAVE A LOT OF REALLY  
14 GREAT IDEAS THAT IN SOME FORMAT WOULD LOVE TO SHARE  
15 WITH THE SCIENCE SUBCOMMITTEE FOR CONSIDERATION AS  
16 YOU GO THROUGH THIS AS WELL.

17 SO FOR NOW THAT'S ALL I HAVE, AND THANK  
18 YOU FOR THE OPPORTUNITY TO WEIGH IN.

19 CHAIRMAN GOLDSTEIN: THANK YOU, MARIA.  
20 MONICA.

21 DR. CARSON: JUST VERY IMPRESSED BY THIS  
22 WHOLE DISCUSSION FIRST AND FOREMOST BY THE  
23 PRESENTATION AND ALL THE CONTEXT. PLEASE FORGIVE  
24 ANY NAIVETE I HAVE FOR DISCUSSIONS THAT YOU MAY  
25 ALREADY HAVE HAD. BUT WHAT I WAS JUST STRUCK BY IS

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1 BOTH AN ALMOST A VERY IDENTICAL CONVERSATION THAT  
2 WAS HAD ON A MUCH SMALLER DOLLAR LEVEL BY THE  
3 NATIONAL MULTIPLE SCLEROSIS SOCIETY SOME YEARS AGO  
4 WHEN THEY LAUNCHED THEIR FAST FORWARD PROGRAM, AND I  
5 SERVED ON THOSE STUDIES SECTIONS.

6 AND LISTENING TO ALL OF THESE THINGS IN  
7 ADDITION TO ALL THE THINGS YOU'RE SAYING, LOOKING AT  
8 HOW OTHER FUNDING AGENCIES OUTSIDE OF NIH HAVE TRIED  
9 TO GET THAT INNOVATIVE, THAT LAUGHS OUT OF THE ROOM,  
10 BUT ALSO THE PRAGMATISM OF IT. AND ONE OF THE  
11 THINGS WITH FAST FORWARD WAS THAT THE PARTNERS HAD  
12 TO COME SHOWING THEY HAD PROTECTED IP OR IP THAT  
13 COULD BE RAPIDLY PROTECTED BECAUSE IF IT CAN'T BE,  
14 YOU'RE NOT GETTING THAT TO THERAPIES AS FAST AS  
15 POSSIBLE AND ACTUALLY WHY THIS COULDN'T BE FUNDED BY  
16 VENTURE CAPITAL BY THESE OTHER KINDS OF STUFF. IT  
17 HAD A LITTLE BIT OF A HIGH RISK, HIGH REWARD THING  
18 THAT THE ARPA-H AND SOME OF THE OTHER OLDER NIH  
19 MECHANISMS TRIED TO DO.

20 SO ONE OF THE THINGS I WAS CURIOUS ABOUT  
21 IS HAVE THERE BEEN AN INVESTIGATION OF OTHER FUNDING  
22 AGENCIES IF THEY'VE DONE IT SMALLER OR EVEN WHAT  
23 ARPA-H IS TRYING TO DO AND WE DO IT HERE SMALLER  
24 THAT CAN BE APPLIED TO ACTUALLY BRIDGE WHATEVER  
25 EVERYBODY CALLS THAT VALLEY OF DEATH BETWEEN THE

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1 FINDINGS, BIOMEDICAL FINDINGS, AND THE ACTUAL  
2 THERAPIES. SO THANK YOU. I JUST WAS VERY IMPRESSED  
3 BY THE DISCUSSION.

4 CHAIRMAN GOLDSTEIN: GOOD POINT. I MIGHT  
5 POINT OUT THAT CIRM HAS DONE WHAT I THINK IS  
6 ACTUALLY A VERY GOOD JOB OF TRYING TO BRIDGE THE  
7 VALLEY OF DEATH BY FUNDING IN THE TRANSLATIONAL  
8 SPACE PRIOR TO ANY INDUSTRY INVOLVEMENT. AND A  
9 CONVERSATION THAT I'VE HAD WITH SOME OF THE FOLKS ON  
10 THIS CALL, BUT NOT EVERYBODY, IS DO WE ALWAYS REALLY  
11 NEED INDUSTRY TO DEVELOP A THERAPY? ONE OF THE  
12 PROBLEMS WITH RELYING ON INDUSTRY AND VENTURE  
13 CAPITAL IS THAT YOU CAN HAVE A GREAT IDEA; BUT IF  
14 IT'S NOT PROTECTABLE WITH A PATENT SUITE, IT'S GOING  
15 TO BE REALLY HARD TO GET IT DEVELOPED, BUT IT MIGHT  
16 BE A TERRIFIC IDEA OR THERAPY, OR, FOR EXAMPLE,  
17 REPURPOSING ALREADY APPROVED FDA DRUGS.

18 IF YOU FIND THAT AN EXISTING DRUG HAS A  
19 REALLY GREAT EFFECT IN A STEM CELL MODEL OF SOME  
20 DISEASE, BUT IT'S BEEN ON THE MARKET FOREVER, IF YOU  
21 RELY ON INDUSTRY TO DO IT, YOU HAVE NO PATENT  
22 PROTECTION AND YOU CAN'T GET THEM INTERESTED. I  
23 WONDER WHETHER THIS IS A PLACE WHERE CIRM OR CIRM IN  
24 PARTNERSHIP WITH OTHER AGENCIES THAT ARE PERHAPS  
25 DISEASE SPECIFIC COULD FUND THOSE LAST FEW STEPS IN

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1 SOME CASES TO BRING A THERAPY TO APPLICATION THROUGH  
2 DEVELOPMENT IN AN ACADEMIC HEALTH CENTER AS OPPOSED  
3 VIA INDUSTRY. JUST A COMMENT.

4 CHRISTINE.

5 DR. MIASKOWSKI: I WANTED TO DISCUSS A  
6 LITTLE FURTHER THIS NOTION OF FUNDING HIGH RISK,  
7 HIGH REWARD PROJECTS. AND I'M GOING TO OFFER AS AN  
8 EXAMPLE, I SIT ON THE SCIENTIFIC BOARD FOR THE  
9 AMERICAN CANCER SOCIETY, AND I'VE BEEN AN AMERICAN  
10 CANCER SOCIETY PROFESSOR. AND ONE OF THE THINGS  
11 THAT THEY LAUD QUITE BROADLY IS THE FACT THAT THEIR  
12 PORTFOLIO OFTEN FUNDS HIGH RISK, HIGH REWARD  
13 PROPOSALS, AND THOSE HAVE PRODUCED 25 NOBEL  
14 LAUREATES.

15 CURRENTLY, IN TERMS OF MY WORK ON THAT  
16 BOARD, THEY ARE FRAMING THEIR PORTFOLIO TO BE MORE  
17 DIRECTED IN TERMS OF WHAT I WOULD CALL TARGETED  
18 OPPORTUNITIES IN THE SCIENTIFIC SPACE NEEDED FOR  
19 CANCER RESEARCH. SO THEY'VE DONE -- THE STAFF HAS  
20 DONE SOME DELIBERATE WORK TRYING TO IDENTIFY GAPS,  
21 AND THEN THEY'RE DOING REQUESTS FOR PROPOSALS BASED  
22 ON THOSE IDENTIFIED GAPS, BOTH ON THE TRAINING SIDE  
23 IN TERMS OF JUNIOR INVESTIGATORS OR YOUNG  
24 INVESTIGATORS AS WELL AS IN TERMS OF THE GRANT  
25 PORTFOLIO. AND THEY STILL HAVE THEIR GENERIC CALL,

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1 BUT THEY'RE PUTTING SET-ASIDE MONIES FOR THAT. SO  
2 THAT MIGHT BE A MODEL, I THINK, WE'VE TALKED ABOUT  
3 AND COULD CONSIDER IN OUR WORK.

4 CHAIRMAN GOLDSTEIN: I'LL JUST NOTE THAT  
5 MY FIRST EVER GRANT WAS FUNDED BY THE ACS AND  
6 LAUGHED OUT OF THE ROOM AT THE NIH.

7 DR. MIASKOWSKI: YEAH. IT'S A VERY  
8 INTERESTING ORGANIZATION IN TERMS OF HOW THEY DO  
9 THEIR PORTFOLIO.

10 CHAIRMAN GOLDSTEIN: YES. KEITH.

11 DR. YAMAMOTO: FIRST TO COMMENT ON YOUR  
12 POINT ABOUT WHETHER EVERYTHING TO AT THE END OF THE  
13 DAY BE SUPPORTED BY INDUSTRY. AND I THINK CLEARLY  
14 THE ANSWER IS NO. AND CIRM ALREADY IS IN THAT SPACE  
15 WITH THE SUPPORT IT'S GIVEN TO VARIOUS SCID  
16 PROJECTS. THE NOTABLE ONE THAT WE'RE ALL AWARE OF  
17 IS ORCHARD THERAPEUTICS AND WHAT HAPPENED TO THAT.  
18 AND I THINK THAT I'VE HAD GOOD CONVERSATION WITH  
19 MARIA ABOUT THIS. THIS IS AN EXAMPLE THAT I THINK  
20 CIRM SHOULD NOT SHY AWAY FROM. NOT ONLY THAT, WE  
21 SHOULD BE PROUD OF THE FACT THAT WE'VE CARRIED A  
22 PROJECT TO THE POINT WHERE THIS DILEMMA HAS JUST  
23 BLOWN UP IN A VERY PUBLIC WAY WHERE A COMPANY WAS  
24 WILLING TO TAKE ON A CERTAIN AMOUNT OF RISK UNTIL  
25 THEY REALLY BEGAN TO SEE THE DIMENSIONS OF IT AND

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1 THEN JUST BALED AND LEFT THE INTELLECTUAL PROPERTY.

2 I GUESS IT EVENTUALLY DID RETURN IT TO UCLA.

3 BUT THERE'S GOING TO BE A WHOLE RANGE OF  
4 DISEASES AND DISORDERS THAT CIRM COULD TAKE ON, LIKE  
5 THE SCID DISORDERS. THERE'S MORE THAN THE ONE THAT  
6 UCLA HAS TAKEN ON. THEY'RE SUPPORTING ONE FROM UCSF  
7 RIGHT NOW. AND WHERE THERE'S NOT GOING TO BE AN  
8 ENDPOINT THAT SAYS, ALL RIGHT, WE CARRIED THIS  
9 THROUGH THE PATHWAY AND NOW INDUSTRY CAN TAKE OVER.  
10 INSTEAD, IT'S GOING TO HAVE TO BE SOMETHING LIKE  
11 BEING ABLE TO CARRY FORWARD IN AN ACADEMIC MEDICAL  
12 CENTER SETTING OF SOME SORT THAT I THINK CAN  
13 DEFINITELY BE ARRANGED.

14 SO CERTAINLY AN AREA WHERE INDUSTRY IS  
15 REALLY RETICENT IS IN RARE DISEASES, VERY SMALL  
16 PATIENT GROUPS AND VERY RARE DISEASES LIKE SCID  
17 WHERE THERE'S ONLY A FEW PATIENTS A YEAR IN THE  
18 UNITED STATES FOR THE VARIOUS SPECIFIC SCID  
19 DISORDERS.

20 AND I THINK THAT CIRM, AS I SAID, SHOULD  
21 BE PROUD THAT THEY'VE CARRIED THE BALL TO REACH TO  
22 PUT A HEADLINE UNDER THESE KINDS OF PROBLEMS AND  
23 SHOULD BE THINKING HARD AND NEGOTIATING WITH  
24 ACADEMIC GROUPS AND OTHERS, NON-PROFITS, TO BE ABLE  
25 TO SAY, ALL RIGHT, NOW THAT WE'VE GOTTEN THROUGH

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1 THIS CLINICAL TRIAL AND INDUSTRY HAS REALLY SHOWN  
2 THAT IT'S NOT GOING TO CARRY THINGS FORWARD, WHAT DO  
3 WE DO AND WHAT CAN CIRM DO TO REALLY BE ABLE TO  
4 CREATE A SMOOTH PATHWAY FOR THESE THINGS THEN TO BE  
5 ABLE TO GO FORWARD AND BE ABLE TO MAKE USE OF THE  
6 TREATMENTS AND CURES THAT ARE GENERATED UNDER CIRM  
7 RESEARCH.

8 SO I THINK THAT'S -- RARE DISEASES IN  
9 GENERAL ARE A GREAT EXAMPLE OF THE KINDS OF THINGS  
10 THAT CIRM CAN DO, NOT JUST TO CROSS THE VALLEY OF  
11 DEATH, BUT THEN TO GO BEYOND IT TO ENSURE THAT THESE  
12 TREATMENTS ACTUALLY REACH PATIENTS.

13 CHAIRMAN GOLDSTEIN: INTERESTINGLY, THE  
14 SCID TECHNOLOGY HAS ALSO BEEN APPLIED TO CYSTINOSIS  
15 SUCCESSFULLY. AND ONE CAN SEE THAT THESE  
16 TECHNOLOGIES DEVELOPED IN RARE POPULATIONS CAN THEN  
17 EXPAND TO OTHER DISEASES AND I SUSPECT ULTIMATELY TO  
18 COMMON DISEASES.

19 MARIA MILLAN.

20 DR. MILLAN: SO I CAN'T RESIST A FOLLOW-ON  
21 TO THAT BECAUSE IN CONTINUATION TO THAT CONVERSATION  
22 YOU AND I HAD, KEITH, THERE HAVE BEEN MANY  
23 CONVERSATIONS WITH MANY MEMBERS OF THE BOARD AND OF  
24 THE INTERNAL TEAM. AND SO ONE OF THE THINGS, AGAIN  
25 IN RESPONSE TO WHAT THINGS WE CAN BRING TO THE



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1 COMMITTEE THAT MAY BE USEFUL, DR. ABLA CREASEY,  
2 WHO'S HEAD OF THE THERAPEUTICS DEVELOPMENT PROGRAM,  
3 HAS BEEN REALLY LOOKING AT DIFFERENT WAYS THROUGH  
4 OUR CURRENT FUNDING MECHANISM AS WELL AS OTHER  
5 AVENUES AND IS ARRANGING A WORKSHOP ACTUALLY IN  
6 NOVEMBER TO INFORM THAT. THE BOARD MEMBERS WILL BE  
7 INVITED TO THAT. BUT AT SOME POINT WE WELCOME THE  
8 OPPORTUNITY FOR DR. CREASEY AND OTHER MEMBERS OF THE  
9 TEAM TO BRING SOME IDEAS TO THE SUBCOMMITTEE TO  
10 CONSIDER IN THIS TOPIC, IN THIS AREA, AS WELL AS IN  
11 CONSIDERATION OF ALTERNATE MODELS.

12 AND THEN I'D LIKE TO ALSO SUPPORT THE  
13 NOTION THAT SUCCESS DOESN'T ALWAYS MEAN THAT IT'S  
14 SUCCESSFUL IN THE BIOPHARMA MODEL. I THINK THAT  
15 THERE MAY BE SUCCESSES THAT WE HAVE IN DELIVERING  
16 TRANSFORMATIVE AND CURATIVE TREATMENTS TO PATIENTS  
17 THAT ARE NOT DIRECTLY BROUGHT ALL THE WAY THROUGH  
18 BIOPHARMA. WE HAVE EXAMPLES OF THAT IN OTHER MODELS  
19 THAT ARE OUT THERE IN HEALTHCARE, SUCH AS ORGAN  
20 TRANSPLANTATION, WHICH IS THE AREA WHERE I STARTED,  
21 WHERE BIOPHARMA CERTAINLY IN TERMS OF  
22 IMMUNOSUPPRESSIVE MEDICINES, ET CETERA, IS VERY  
23 CRITICAL TO THE SUCCESS OF TRANSPLANTS, BUT THE  
24 DELIVERY AND THE ACTUAL IMPLEMENTATION IN THE  
25 HEALTHCARE IS WITHIN THE ACADEMIC AND HEALTHCARE

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1       SETTING.  THANK YOU.

2                   CHAIRMAN GOLDSTEIN:  MARIA, YOU BROUGHT UP  
3 THE POSSIBILITY THAT ABLA AND HER TEAM WOULD LIKE TO  
4 PRESENT TO THE SCIENCE SUBCOMMITTEE.  DO YOU THINK  
5 THAT SHOULD BE BEFORE OR AFTER THIS PROPOSED  
6 NOVEMBER MEETING?

7                   DR. MILLAN:  IT'S REALLY -- I THINK -- I  
8 LIKE TO KIND OF HAVE A CONVERSATION INTERNALLY.  I  
9 THINK THERE'S ALWAYS OPPORTUNITIES TO HAVE  
10 CONVERSATIONS ALONG THE WAY.  CERTAINLY THE NOVEMBER  
11 MEETING WILL BE VERY INFORMATIVE, BOTH EXTERNAL  
12 STAKEHOLDERS AND OTHERS WHO ACTUALLY, WHEN YOU'RE  
13 TALKING ABOUT POTENTIAL PARTNERSHIPS AND OTHERS WHO  
14 HAVE BEEN DRIVING POTENTIAL SOLUTIONS, I THINK THAT  
15 WILL BE INFORMATIVE AND MAY BE HELPFUL TO BE  
16 INVOLVED IN THAT CONVERSATION AND THEN BRING IT  
17 BACK.  AND THE SCIENCE SUBCOMMITTEE MAY FIND THAT TO  
18 BE USEFUL.

19                   BUT I CAN ALSO CIRCLE BACK WITH ABLA AND  
20 LET YOU KNOW IF SHE THINKS THAT -- I DON'T KNOW THE  
21 SCHEDULE FOR THE SCIENCE SUBCOMMITTEE DISCUSSIONS.  
22 MARK, WE ARE ALWAYS AT YOUR DISPOSAL IF YOU'D LIKE  
23 FOR ABLA AND OTHER MEMBERS OF THE TEAM TO PRESENT  
24 EVEN A PREVIEW.  THANK YOU.

25                   CHAIRMAN GOLDSTEIN:  MARIA, SO, YES, WHY

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1 DON'T YOU SPEAK TO ABLA AND THEN CIRCLE BACK WITH  
2 US. THIS IS AN IMPORTANT TOPIC. SO WE SHOULD WORK  
3 ON IT.

4 PAT.

5 DR. LEVITT: THANKS. JUST I THINK THREE  
6 THINGS. ONE IS PROGRAMMATIC CHANGES, MODIFICATIONS,  
7 WHICH SOUND LIKE THERE'S A LOT OF ENTHUSIASM FOR  
8 THINKING THIS THROUGH, REALLY NEEDS TO BE LINKED TO  
9 CHANGES IN HOW REVIEWS ARE DONE. THAT'S REALLY  
10 IMPORTANT. AND THE CASE STUDY IS THE R21 MECHANISM  
11 AT NIH, WHICH WAS ORIGINALLY DEVELOPED TO DO EXACTLY  
12 WHAT KEITH WAS TALKING ABOUT WITH HIS INTERNAL  
13 FUNDS, NO PILOT DATA NEEDED, GREAT IDEAS, ETC., AND  
14 IT MORPHED INTO THE SAME OLD, SAME OLD WITH -- AND  
15 IT'S JUST BEEN PERVERTED FROM MY PERSPECTIVE. AND  
16 I'VE BEEN ON MANY STUDY SECTIONS, A LOT OF YOU HAVE  
17 AS WELL. YOU SIT THERE AND SAY, WELL, BUT THE  
18 INSTRUCTIONS DON'T SAY YOU NEED PILOT DATA. AND  
19 THAT'S A CASE WHERE THERE'S A MISALIGNMENT BETWEEN  
20 WHAT THE PROGRAM WANTS TO SEE AND WHAT THE REVIEWERS  
21 ARE USED TO DOING. SO THAT'S A REALLY IMPORTANT  
22 THING, I THINK.

23 THE OTHER IS THAT ACADEMIC INSTITUTIONAL  
24 DOLLARS FOR WHAT WE USED TO DO IN TERMS OF INTERNAL  
25 SUPPORT TO GENERATE NEW IDEAS IS SHRINKING PRETTY

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1 DRAMATICALLY, PARTICULARLY AT MEDICAL CENTERS WHERE  
2 HOSPITALS ARE STRUGGLING, ALL HOSPITALS. SO THAT'S  
3 SOMETHING TO KEEP IN MIND IN TERMS OF -- AS WE THINK  
4 ABOUT THE KINDS OF THINGS WE WOULD WANT TO  
5 IMPLEMENT.

6 AND THEN THE THIRD THING IS A METAPHOR FOR  
7 SPENDING MONEY THAT DOESN'T GET ONE ANYWHERE IS A  
8 WASTE OF MONEY, SO WE MIGHT AS WELL NOT SPEND IT.  
9 SO THE EXAMPLE I GIVE -- I DO A LOT OF POLICY TALKS  
10 ABOUT CHILD DEVELOPMENT, BRAIN DEVELOPMENT TO  
11 POLICYMAKERS, LEGISLATORS AND EDUCATORS, ETC. I  
12 SAID THE BIGGEST WASTE -- ONE OF THE BIGGEST WASTES  
13 OF MONEY IN THIS COUNTRY IS THE TEACHING OF FOREIGN  
14 LANGUAGE. WHY? BECAUSE IN ALMOST SCHOOL SYSTEMS,  
15 NOT ALL, BUT IN ALMOST ALL SCHOOL SYSTEMS, FOREIGN  
16 LANGUAGE IS INTRODUCED DURING PUBERTY, WHICH IS WELL  
17 PAST THE OPTIMAL TIME FOR THE BRAIN TO DEVELOP A  
18 SECOND LANGUAGE. AND IT'S BILLIONS OF DOLLARS THAT  
19 ARE SPENT ON TEACHING SECOND LANGUAGES AND THIRD  
20 LANGUAGES AT A TIME WHEN THE BRAIN IS COMPLETELY  
21 SUBOPTIMAL FOR LEARNING.

22 THERE'S AN EXAMPLE WHERE THEY SPEND A LOT  
23 OF MONEY. THE INTENTIONS ARE -- I UNDERSTAND THE  
24 INTENTIONS. SECOND LANGUAGES ARE REALLY IMPORTANT.  
25 SOMETIMES PEOPLE MISUNDERSTAND WHAT I'M SAYING.

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1 LEARNING A SECOND OR THIRD LANGUAGE IS GREAT. IT  
2 IMPROVES ONE'S MATHEMATICAL SKILLS AND COMPUTATIONAL  
3 AND COGNITIVE SKILLS. BUT LOOK AT WHERE IT'S BEING  
4 SPENT. SO WHATEVER WE DECIDE IN TERMS OF  
5 RECOMMENDATIONS TO THE BOARD WE HAVE TO THINK REALLY  
6 CAREFULLY ABOUT WHETHER WHAT WE'RE GOING TO SPEND IS  
7 REALLY OPTIMAL IN TERMS OF OUTCOME. IF IT'S  
8 INNOVATION AND A RECOGNITION THAT SOME OF THIS WILL  
9 FAIL, THAT'S OKAY AS LONG AS WE HAVE AN  
10 UNDERSTANDING OF HOW -- WHAT OUR GOALS ARE. THAT'S  
11 IT.

12 CHAIRMAN GOLDSTEIN: THANK YOU. MARIA  
13 BONNEVILLE.

14 VICE CHAIR BONNEVILLE: MARIA MILLAN  
15 BROUGHT UP A POINT ABOUT RARE DISEASE AND HOW THERE  
16 HAS BEEN SOME THINKING INTERNALLY ABOUT WHAT TO DO  
17 IN THAT AREA. SO, AGAIN, THIS IS AN INSTANCE WHERE  
18 UNDERSTANDING THE DIFFERENT THINGS THAT ARE BEING  
19 CONTEMPLATED INTERNALLY IS REALLY IMPORTANT BEFORE  
20 WE START A SUBJECT ABOUT PRIORITIZATION ONLY BECAUSE  
21 IF THERE ARE THINGS THAT THE TEAM BELIEVES ARE OR  
22 THEY'RE IN THE WORKS OR THEY'RE MOVING FORWARD OR  
23 THERE ARE CONSTANT PLANS THAT ARE BEING CONSIDERED,  
24 IT'S IMPORTANT FOR THE BOARD TO KNOW WHAT THOSE ARE.  
25 SO, MARIA, IN WHATEVER FORM WE CAN DO THAT, IT WOULD

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1 BE HELPFUL, ESPECIALLY IF WHAT WE ARE STARTING TO DO  
2 IS GO DOWN A CONVERSATION ABOUT PRIORITIZATION  
3 BECAUSE RARE DISEASE IS CLEARLY IMPORTANT. WE'RE  
4 GOING TO DO A WORKSHOP. THE BOARD KNOWING ABOUT IT  
5 NOW IS GREAT. WE ARE STARTING DOWN A PATH OF  
6 STARTING TO TALK ABOUT THIS. SO IF THERE'S ANYTHING  
7 ELSE, IT'S IMPORTANT FOR THE BOARD TO UNDERSTAND  
8 WHAT THAT IS.

9 SO AN OVERVIEW OF WHAT'S PLANNED FOR THE  
10 NEXT YEAR OR SO WOULD PROBABLY A GOOD PLACE TO START  
11 AND AT LEAST HAVE A CONVERSATION WITH THE SCIENCE  
12 SUBCOMMITTEE.

13 CHAIRMAN GOLDSTEIN: GREAT POINTS, MARIA.  
14 THANK YOU.

15 OTHER COMMENTS? YOU KNOW I'D LIKE TO  
16 CIRCLE BACK TO MARK FISCHER-COLBRIE. SORRY FOR  
17 PUTTING YOU ON THE SPOT, MARK. WHAT DO YOU THINK  
18 WOULD BE APPROPRIATE NEXT STEPS FOR THIS COMMITTEE  
19 TO TAKE TO TRY TO ADDRESS SUBSTANTIVELY SOME OF THE  
20 ISSUES YOU BROUGHT UP? OR WHAT SORTS OF FURTHER  
21 CONVERSATIONS DO YOU THINK WE SHOULD HAVE?

22 DR. FISCHER-COLBRIE: I THINK WE NEED TO  
23 TAKE THIS INPUT AND CREATE A BIT OF A MATRIX WITH  
24 THE FEEDBACK AND PUT THAT DOWN ON PAPER AND USE THAT  
25 FOR THE NEXT JUMPING OFF POINT RELATED FOR HOW DO

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1 YOU TRANSLATE THIS, IF AT ALL, BECAUSE YOU MIGHT  
2 DECIDE TO STAY THE COURSE, INTO ANY CHANGES RELATED  
3 TO THE CIRM PROCESS AND CIRM MECHANISM.

4 I THINK WHAT'S KIND OF EXCITING, THERE'S  
5 OBVIOUSLY BROAD SCALE POTENTIAL OPPORTUNITIES HERE.  
6 AND HAVING THAT NEXT FORMAL CONVERSATION ALONE WILL  
7 CONTINUE TO FEED IMAGINATION AND HAVE THE QUESTION  
8 OF WHAT'S THE RIGHT PROCESS, IF YOU WILL, FOR  
9 MAKING, IMPLEMENTING ANY CHANGES HERE BECAUSE THIS  
10 ISN'T NECESSARILY A SUBCOMMITTEE DRIVEN EVENT.  
11 THOSE ARE IDEAS AND INPUTS THAT WOULD BE FED INTO  
12 STAFF AND HAVE A MUTUAL FEEDBACK PROCESS LEADING TO  
13 BOARD CONCURRENCE AROUND THOSE ELEMENTS.

14 SO I THINK, LARRY, WOULD LIKE TO GET YOUR  
15 THOUGHTS AND YOUR FEEDBACK ON THIS. YOU KIND OF IN  
16 A WAY PIONEERED SOME OF THIS BY GOING THROUGH THE  
17 NEURO TASK FORCE ELEMENT. I WOULD LIKE TO GET YOUR  
18 SENSE AND OTHER'S SENSE ON, OKAY, THIS IS A GREAT  
19 CONVERSATION, A LOT OF FUN. HOW DO WE TRANSLATE  
20 THIS INTO ACTUALLY SOMETHING CONCRETE?

21 CHAIRMAN GOLDSTEIN: YES. GREAT POINT.  
22 IT'S EXACTLY WHAT WE NEED TO DO. QUESTION IS HOW TO  
23 GET THERE.

24 MARIA MILLAN, YOUR STAFF HAVE BEEN  
25 OBVIOUSLY THINKING VERY HARD ABOUT THESE SORTS OF

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1 PROBLEMS. WOULD YOU BE WILLING TO HAVE A STAFF  
2 PRESENTATION TO THIS SUBCOMMITTEE, SAY, FOR AN  
3 OCTOBER OR NOVEMBER MEETING JUST TO KIND OF KEEP  
4 SOME MOMENTUM AND GET IT BUILDING?

5 DR. MILLAN: YES, ABSOLUTELY. FOR THE  
6 OCTOBER SCIENCE SUBCOMMITTEE MEETING, BRING IN SOME  
7 POTENTIAL AREAS FOR CONSIDERATION? I THINK THAT'S A  
8 GREAT IDEA BECAUSE I THINK IT ALSO, BY BRINGING IN  
9 SPECIFIC USE CASES, IT ALSO ADDRESSES SOME BROAD  
10 QUESTIONS THAT WERE BROUGHT UP IN THE OPENING  
11 PRESENTATION TODAY. SO --

12 CHAIRMAN GOLDSTEIN: GREAT. IT'S A DATE.

13 DR. MILLAN: IT'S A DATE. I CAN WORK WITH  
14 WHOEVER, MARK AND THE BOARD GOVERNANCE TEAM AND THEN  
15 MY TEAM TO KIND OF PROPOSE WHAT THAT WOULD LOOK LIKE  
16 AND THEN GET THAT ON THE AGENDA FOR OCTOBER.

17 CHAIRMAN GOLDSTEIN: GREAT. THAT WOULD BE  
18 GREAT BECAUSE I THINK THAT WILL HELP US KEEP SOME  
19 MOMENTUM AS WELL.

20 MARIA BONNEVILLE.

21 VICE CHAIR BONNEVILLE: IS THAT JUST FOR  
22 BIG IDEA AREAS, OR ARE WE GOING TO ALSO TALK ABOUT  
23 FUNDING LEVELS, THE PROPORTION OF DOLLARS THAT GO  
24 OUT TO THIS DIFFERENT PILLARS, THINGS LIKE THAT  
25 BECAUSE I THINK THAT'S ALSO PART OF WHAT WE NEED TO



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1 LOOK AT TO UNDERSTAND SORT OF WHERE THE MONEY -- HOW  
2 THE MONEY GOES OUT, TO WHAT IT GOES OUT, AND HOW  
3 THAT CHANGES BASED ON ANY NEW IDEAS THAT COME IN.  
4 SO I THINK IT'S SORT OF IMPORTANT LOOK AT IN A BIG  
5 CONTEXT.

6 CHAIRMAN GOLDSTEIN: MY VIEW IS THAT WE  
7 OUGHT TO BE AGNOSTIC ABOUT THIS MOVING FORWARD AND  
8 LOOK FOR THE THINGS THAT WE THINK WILL HAVE THE  
9 HIGHEST IMPACT INDEPENDENT OF WHAT THE MECHANISM IS  
10 OR WHAT THE RIGHT TWEET IS. CIRM IS FUNDING A LOT  
11 OF REALLY GOOD STUFF, AND SOME OF IT HAS, IN FACT,  
12 MOVED THROUGH CLINICAL TRIALS AND INTO APPROVALS IN  
13 A FEW CASES. AND WE OBVIOUSLY WANT TO SEE MORE OF  
14 THAT. SO ANY ATTEMPT OR ANY APPROACH THAT WILL HELP  
15 US GET THERE I THINK WE OUGHT TO GET ON THE AGENDA  
16 AND TALK ABOUT. AND MARIA'S STAFF HAVE DONE A GREAT  
17 JOB OF IDENTIFYING IMPORTANT THINGS TO TALK ABOUT,  
18 AND THIS IS ONE OF THE MOST IMPORTANT TOPICS WE CAN  
19 DEAL WITH. I'M COMPLETELY AGNOSTIC ON HOW WE SHOULD  
20 TACKLE THIS.

21 OTHER THOUGHTS, COMMENTS? WE HAVE PLENTY  
22 OF AIRTIME AVAILABLE IF WE NEED IT. ALL RIGHT. SO  
23 CONVERSATION TO BE CONTINUED IN OCTOBER. PUBLIC  
24 MEETING, IT SOUNDS LIKE, ALSO COMING UP IN NOVEMBER.  
25 MARK, THANK YOU FOR THE EFFORT YOU'VE PUT INTO THIS.

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1 I THINK YOU 'VE GOT THE DIALOGUE UP AND RUNNING, AND  
2 LET'S KEEP MOMENTUM BUILDING. I THINK WITH THAT,  
3 THANK YOU ALL FOR YOUR WORK TODAY. CIAO.

4 DR. FISCHER-COLBRIE: THANK YOU ALL.  
5 APPRECIATE IT.

6 (THE MEETING WAS THEN CONCLUDED AT 12:36 P.M.)

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**REPORTER'S CERTIFICATE**

I, BETH C. DRAIN, A CERTIFIED SHORTHAND REPORTER IN AND FOR THE STATE OF CALIFORNIA, HEREBY CERTIFY THAT THE FOREGOING TRANSCRIPT OF THE VIRTUAL PROCEEDINGS BEFORE THE SCIENCE SUBCOMMITTEE OF THE INDEPENDENT CITIZEN'S OVERSIGHT COMMITTEE OF THE CALIFORNIA INSTITUTE FOR REGENERATIVE MEDICINE IN THE MATTER OF ITS REGULAR MEETING HELD ON SEPTEMBER 1, 2023, 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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