Eunice Kennedy Shriver National Institute of Child Health and Human Development

NATIONAL ADVISORY CHILD HEALTH AND HUMAN DEVELOPMENT COUNCIL

MINUTES OF MEETING

June 4, 2015

DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
***EUNICE KENNEDY SHRIVER* NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT**
NATIONAL ADVISORY CHILD HEALTH AND HUMAN DEVELOPMENT COUNCIL
SUMMARY MINUTES
June 4, 2015[1]

The National Advisory Child Health and Human Development (NACHHD) Council convened its 156th meeting at 8:00 a.m., Thursday, June 4, 2015, in Building 31, Conference Room 6, of the National Institutes of Health (NIH) in Bethesda, Maryland. The meeting was open to the public from 8:00 a.m. to 12:10 p.m. As provided in Sections 552b(c)(4) and 552b(c)(6), Title 5, U.S.C., and Section 10(d) of Public Law 92-463, for the review, discussion, and evaluation of grant applications and related information, the meeting was closed to the public from 1:05 p.m. until 4:50 p.m.

Dr. Alan Guttmacher, Chair, NACHHD Council, and Director, *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD), presided.

Council members present:

Dr. Anne Case
Ms. Barbara Collura
Dr. Bonnie Duran
Dr. Patricia Flynn
Dr. Walter Frontera
Dr. Melissa Gilliam
Dr. Gregory Kopf
Ms. Wendy Lazarus
Dr. Ruth Lehmann
Dr. Ken Muneoka
Dr. Stephen Petrill (virtual)
Dr. Piero Rinaldo
Dr. Frederick Rivara
Dr. George Saade
Dr. Paul Wise
Ms. Sheila Zimet
Dr. Carmen Greene (NABMRR Liaison)

Council member absent:

Dr. Diana Bianchi

Council Roster (attached)

Ex officio members present:

Dr. Patricia Dorn, Department of Veterans Affairs

[1] Members absent themselves from the meeting when the Council discusses applications from their own institutions or when a conflict of interest might occur. The procedure applies only to individual applications discussed, not to *en bloc* actions.

Dr. Michael Lu, Maternal and Child Health Bureau, Health Resources and Services Administration, Department of Health and Human Services (HHS)

Ex officio members absent:
Dr. Jay D. Kerecman, Uniformed Services University of the Health Sciences, Department of Defense

Invited guests:
Joe Laakso, Endocrine Society
Ethan Jorgensen-Earp, American Academy of Pediatrics

Others present:
Members of Staff, NICHD
Members of Staff, NIH

I. CALL TO ORDER AND INTRODUCTORY REMARKS

NICHD Director Dr. Alan E. Guttmacher welcomed Council members and staff. He announced that the meeting would be open to the public for the morning portion and closed to the public in the afternoon for the consideration of grant applications. The public portion was videocast. Dr. Guttmacher stated that Dr. Jan Nisbet had withdrawn her nomination to the Council. He also welcomed guests from several professional societies.

A. Review of Confidentiality and Conflict of Interest

NICHD Deputy Director Dr. Catherine Y. Spong reminded Council members that material furnished for review and discussion during the closed portion of the meeting is considered privileged information. Advisors and consultants serving as members of a public health advisory committee may not participate in situations in which any violation of conflict of interest laws and regulations might occur. The responsible staff ensures that a Council member does not perform duties or render advice that might have a direct and predictable effect on the interests of an organization or institution in which he or she has a financial interest. In particular, Council members should not participate in the evaluation of grant applications for federal support that will affect the interests of such organizations or institutions. Dr. Spong reminded Council members that at the end of the closed session of the meeting, all members were required to certify that they had not been involved in any conflict of interest situations during the review of grant applications.

B. Council Minutes - Meeting of January 22, 2015

Dr. Spong moved to approve the *Summary Minutes of Meeting* for the January 22, 2015 meeting. The Council voted unanimously to accept the document as written. Dr. Spong reminded the Council that the August meeting will be virtual and the September meeting would take place over two days.

C. Future Meeting Dates

The Council agreed to the following future meeting dates:

August 27, 2015 (virtual)	(Thursday)
September 17-18, 2015	(Thursday-Friday)
January 21, 2016	(Thursday)
June 9, 2016	(Thursday)
September 21, 2016	(Wednesday)
January 19, 2017	(Thursday)
June 8, 2017	(Thursday)
September 22, 2017	(Thursday)

II. NICHD DIRECTOR'S REPORT AND DISCUSSION

News from NIH

Dr. Harold Varmus stepped down as Director of the National Cancer Institute (NCI). Dr. Varmus had previously been the director of the National Institutes of Health (NIH) and had been head of NCI since the beginning of President Obama's first term. He is returning to New York City to be a full time researcher. Dr. Douglas Lowy is the Acting Director. Because this is a presidential appointee, there will not be a formal search committee; the appointment will come from the White House.

A new director has been selected for the National Institute on Minority Health and Health Disparities (NIMHD). Acting Director, Dr. Yvonne T. Maddox, retired from the NIH. She accepted the position of Vice President of Research at the Uniformed Services University of Health Sciences. The new NIMHD director is Eliseo Perez-Stable, M.D. He will assume the positon of director in September. Dr. Perez-Stable's research interests are in health disparities, particularly in aging populations.

The Precision Medicine initiative was introduced by President Obama in the State of the Union address. This vision of this initiative is to build a broad research program that will effectively guide clinical practice for the individual patient. It takes a two-pronged approach: an immediate focus on common childhood and adult cancer and a longer-term goal of a longitudinal study with at least a million people. The working group is co-chaired by Drs. Rick Lifton, Bray Patrick-Lake, and Kathy Hudson. They are charged to articulate the vision and determine details of launching a study, with a report in September 2015. The list of public workshops, past and future, are available at: http://www.nih.gov/precisionmedicine/events.htm.

News from NICHD

Dr. Guttmacher reported that a selection for the Director of Division of Extramural Research (DER) has been made but the official appointment had not yet been finalized. Later in the morning, Dr. Guttmacher received notification that the DER appointment was official, and he announced that Dr. Della Hann is the new Director of the DER. She will start full time in

September. She had not originally applied, and in fact was chairing the search committee, but at Dr. Guttmacher's urging, she stepped down from the search committee and applied. Her background is in Experimental Psychology with an emphasis in early childhood development. She formerly served as Acting Director in the Office of Autism Research within National Institutes of Mental Health (NIMH). Dr. Guttmacher thanked the search committee for their work.

Dr. Alan Hinnebusch, an Intramural Principal Investigator (PI) was elected to the National Academy of Sciences.

Dr. Steven Gilman from Harvard School of Behavioral Health will be Acting Chief of the Health Behavior Branch in the Division of Intramural Population Health Research (IPHR). His research focuses on identifying interventions in childhood that decrease health disparities.

N-DASH, the centralized resource to store end access de-identified study data, will launch with 14 studies at the end of June. This centralized repository will have many benefits, including data access and enabling grantees to comply with NIH data sharing policies.

NICHD is now on the social media site Pinterest. Approximately a quarter of all Americans use Pinterest. NICHD shares visually engaging content on a range of topics. Dr. Guttmacher gave thanks to Paul Williams, Chief of the Public Communications Branch. The site can be found at: www.pinterest.com/NICHD_NIH.

NICHD launched its first complete Spanish language site. While NICHD has had a Spanish presence, this is the first official website. This is part NICHD's commitment to serving the Spanish-speaking community.

The second meeting of the Human Placenta Project took place April 27-28th with more than 300 participants. The goal of the project is to monitor placenta function in real time. This meeting concentrated on the use of –omics and imaging. New technologies and techniques still need to be developed and bioinformatics will be essential to the effort. The third meeting will be April 14-15, 2016 at the Natcher Conference Center, NIH campus. The focus will be on imaging, bioinformatics, and new technologies. There will be breakout groups, poster sessions, and technology demonstrations, a new activity.

NICHD is in the early stages of developing a new research project;to better understand pregnancy. While internally called MyPregnancy, the name will change, but it is unknown at this time. The project will be a crowd-sourced, interactive mobile app that will:

- Detail the natural history of human pregnancy through mothers' self-reports of the experiences during pregnancy
- Provide accurate information about pregnancy to expectant mothers from trusted sources
- Let pregnant women know about opportunities to engage in targeted research

NICHD already has more than 15 partner organizations signed on to help with this new effort

Budget and Legislative Update

To date, there is no FY2016 budget. The House and Senate are currently working on appropriations bills. Without action from congress, sequestration caps will return in FY2016.

The most recent House version of the 21st Century Cures Act includes:

- An increase for NIH funding to $31.811 billion in FY16, $33.331 billion in FY17, and $34.851 billion in FY18.
- A call for the NIH Director to develop a five-year NIH Research Strategic Plan that will identify strategic focus areas to expand knowledge about human health
- The act will also make IC Director (except for NCI Director) appointments for five-year terms. They can be removed earlier or reappointed with no limit as to number of terms
- NIH would be mandated to establish Pediatric Research Networks; which have to be new (may not use existing networks)
- NIH would be required to partner with European Medicine Agency to support Global Pediatric Trials Network
- NIH would be required to hold workshop on appropriate age groupings to be included in research studies and report on demographics information for children participating in NIH-supported research

Sens. Lindsey Graham and Dick Durbin co-chair the Senate's newest caucus dedicated specifically to the NIH. This may be a unique focus for a caucus. The caucus will seek bipartisan help to restore NIH's capacity to fund research after losing 25 percent of its purchasing power since 2003.

Council Discussion

A member asked about the mandate to start Pediatric Research networks. Dr. Guttmacher stated that research works best when driven by a particular question and needs are clearly articulated, something that does not always happen with mandates. If there is a need for more networks, it is better to find out what the current networks are not doing. With that information NICHD can address what needs to be done to further science. He stated that this is not the ideal mechanism for securing funding, if that is the intent.

Council member Ms. Wendy Lazarus asked for an update on the National Children's Study (NCS). Dr. Guttmacher responded that the study is being closed down under the supervision of Dr. David Murray. It is moving forward effectively, with the legal closure of contracts and ensuring the retention of data and samples so that they can be used for future use. For FY2015, $160 million of funding was allocated for the NCS. The NIH may use those funds to achieve goals of Children's Health Act of 2000. Various programs applied for that funding from across the NIH. The Human Placenta Project was allocated $41.5 million of that money.

III. REPORT OF THE DIVISION OF EXTRAMURAL RESEARCH (DER)

Report of the Acting Director, DER

Dr. Catherine Spong presented the DER updates for Acting DER director, Dr. Caroline Signore. Dr. Spong introduced three new staff members. Dr. Esther Eisenberg is a medical doctor who received her training at Albert Einstein College of Medicine in New York. She was part-time with NICHD while at Vanderbilt University and now joins the Fertility and Infertility Branch full-time. Dr. Maggie Brewinski-Isaacs joins the Office of Global Health. She had been with the Office of Women's Health where she oversaw the Building Interdisciplinary Research Careers in Women's Health (BIRCWH) Program. Dr. Tracy King, a pediatrician from the Johns Hopkins University joined the Intellectual and Developmental Disabilities Branch.

Dr. Spong provided an update on the Contraceptive Research Review. This review examined the contraceptive research at NICHD and established an intra-NICHD working group to evaluate the findings from the panel's recommendations, determine next steps, and develop implementation strategies. The group has had numerous meetings and identified a number of goals:

- Foster communication between branches
- Discuss metrics for existing programs
- Review go/no-go decisions
- Collaborate on planning and drafting initiatives
- Meet with NCATS to explore opportunities
- Developing a system for monitoring contracts
- Introduce a new mechanism for early contraceptive pipeline

Dr. Spong also described the ongoing review of NICHD training programs. Dr. Dennis Twombly, Office of Extramural Policy, is leading a task force to review NICHD Extramural training programs as they relate to NICHD's mission. The task force members include NICHD and NIH staff and NICHD Council members.

The questions the task force is considering include:

- How to define success for NICHD training programs?
- Is the amount NICHD commits to training enough?
- Is NICHD supporting the correct ratio of awards at different career stages? Has this changed over time?
- Are there appropriate levels of commitment to the different training mechanisms?
- Are there workforce needs that have been addressed or that still need to be addressed?
- Are there fiscal pressures in the near future that have potential to impact NICHD's mix of training programs?

The task force will consider these issues and prepare a report that will be presented during the September 2015 Council meeting.

Finally, Dr. Spong outlined that although rarely exercised in the past, there will be an August Council meeting. Legislative changes to SBIR/STTR mandate a shorter time period from application to award, making it necessary for the Council to make use of the August meeting. Going forward there will likely always be an August meeting, held virtually, to vote on the *en bloc* SBIR/STTR portfolio. In some cases, RFAs will also be presented at August Council. This year's August Council meeting will also include some RFA discussions and will be held by teleconference. Council actions will be posted on the website, reviewers will be assigned, and there will be full council discussion and voting.

Gabriella Miller Kids First Pediatric Research Program

Dr. Lorette C. Javois, Developmental Biology and Structural Variation Branch, presented background information on the Gabriella Miller Kids First Pediatric Research Program. The program is named in memory of a 10-year old girl from northern Virginia who had a pediatric brain tumor. Before her death, she lobbied Congress for support to sponsor more pediatric research. The Gabriella Miller Kids First Act was signed into law in April 2014. It ended taxpayer contribution to presidential nominating conventions and transferred the $126 million remaining to a Pediatric Research Fund. The law also authorized Congress to appropriate annually $12.6 million over 10 years to the NIH Common Fund for pediatric research. The first appropriation was received in FY 2015.

Dr. Collins and NIH staff began planning in January 2015 and established a trans-NIH working group to move the program forward. Ideas coalesced around the need to develop a pediatric data resource consisting of well-curated clinical and genetic sequence data. The focus is on structural birth defects and pediatric cancer data, with leadership provided by NICHD, National Institute of Heart Lung and Blood (NHLBI), National Human Genome Research Institute, and the NCI. This data resource will contain well-curated phenotype and sequence data that will help determine the biological basis of structural defects and childhood cancers using the following:

- Cohort identification and enrichment
- Data Resource Development integrating genomic and other data with community portal
- Pilot projects using the data resource to mine, aggregate, link, and analyze data

For FY2015, funding opportunity PAR-15-259 was announced, soliciting X01 applications (resource access awards). An administrative supplement to an NHGRI-funded sequencing center will support the sequencing of cohorts proposed through the X01 solicitation.

Dr. Guttmacher applauded Dr. Javois for her efforts and credited her for setting up the trans-NIH Structural Birth Defects Working Group that oversees the Pediatric Research Initiative.

IV. NICHD OD REVIEW AND DISCUSSION

Dr. Spong presented on the review of the structure of the NICHD Office of the Director (OD). The purpose of the review is to determine if the current structure and resource allotments best meet NICHD needs. In addition, the review is evaluating whether the current OD function best aligns with NICHD goals, specifically are there functions that should be moved into or out of the

OD. Evaluation of its structure and function are important for proper alignment and to improve functionality. The 2012 restructuring of the NICHD did not include the OD. There may now be redundancies, or functions that remain in the OD that are now mostly being handled by other areas.

As part of the review, NICHD looked at other ICs with similar budgets and compared full time equivalents (FTEs). NICHD has a staff of similar size when compared to these ICs. There was no single approach to running the OD across ICs (.e.g., each had a different number of FTEs vs contract workers), and the functions and organizational structure of the OD offices differed across ICs.

All NICHD staff were asked to participate in the review and respond to a series of questions. Some of the areas that were identified include that the OD's office is not well understood, and staff made several suggestions about reorganizing the Office of Science Policy, Analysis, and Communication (OSPAC), and realigning some of the scientific and grant functions from OD to the DER.
An overview of the themes from the review and the specific comments were given to each office with a request for their input. This input will be used to determine if any changes should be made to the OD and will be presented at the September Council meeting.

Council Discussion

Dr. Melissa Gilliam asked whether there is an outside expert to whom the OD could turn? Dr. Guttmacher stated that the duties of OD are so idiosyncratic that it is difficult to bring someone in from outside NIH. The best approach may be to ask about specific courses of action from those who understand it.

Dr. Carmen Green said that it would be helpful to have input from the business sector to examine OD functions. She also said that although NICHD has stated its commitment to health disparities, she has not seen it on the agenda. The current population has never been as diverse as it is now; which is both an opportunity and challenge. She also asked if there is an evaluation of efficacy for existing offices. Dr. Guttmacher responded that the Office of Health Equity is under the OD and plays a central role in NICHD research. It even manages its own grants, which is not typical for an OD office. But it is important to ask questions about placement and function within the OD, given that equity issues cut across all NICHD research. Dr. Spong mentioned that the issue that an OD office is isolated from intramural and extramural offices has been raised. If it is found that an OD office needs to interact more with other offices, then it may be important to restructure by putting them together.

A Council member asked about how often issues have to go up the OD for resolution before they trickle back down and whether that is inefficient, given that the research community needs to move quickly. Dr. Guttmacher agreed that he wants open communication and accessibility, which is why NICHD offices, which use the OD, have been engaged. The review is examining whether the OD is as open as it thinks it is while still maintaining leadership.

Dr. Bonnie Duran stated that one reason to have the Equity Office in OD is to develop a strategic plan for eliminating health disparities. She then asked if there is a specific plan in place.

Dr. Guttmacher responded there is an NIH plan that NICHD contributes to but no NICHD specific plan. He also said that there isn't such a plan for any of NICHD's other functions.

Ms. Wendy Lazarus asked what is different about NICHD now compared to 10 years ago. She also said that this is a chance to articulate to the Council what the changes are in the NIH environment that the OD can address moving forward. He noted that it had been five years since the last strategic plan and that NICHD needs to evaluate how it has done and develop next steps.

Dr. Spong said that the structure of NICHD is different as a result of the 2012 restructuring. She said that now that NICHD has a new structure, the question to ask is what needs to change with the OD to fit this new structure. Dr. Guttmacher added that there have been no new additions to NIH, so the external environment has not changed; all changes have been internal. He also said that in 2005, the community was just coming off of doubling of the NIH budget and had expectations that it would continue. The challenges have been dealing with a flatter budget. Dr. Guttmacher stated that NICHD had been maintaining functions, making decisions about what positions to retain and which to sunset in response to this leaner budget.

Dr. Carmen Green asked how the OD was making decisions about filling positions and wondered whether the OD would get smaller, or larger? She further asked how those decisions will be made and how the Council could be supportive. Dr. Guttmacher said that decisions are made strategically: defining exactly what the current and projected need is for a role and balancing it with other needs across the institute.

V. NICHD DIVISION OF INTRAMURAL RESEARCH (DIR) REOGRANIZATION AND DISCUSSION

Dr. Constantine Stratakis, Scientific Director, DIR, presented an update on the DIR reorganization. He stated that it has been a two-year-long process, with the majority of the faculty participating in committees and town hall meetings. The milestones for the review were:

- July/August 2013 - finalization of the Blue Ribbon Panel Report
- Fall 2013/Winter 2014 - strategic planning launched through town hall meetings, formation of working groups, and support of an outside consultant
- Summer 2014 - draft proposals for: administrative structure, site visits, evaluation metrics, mission statement, recruitment, and translational research
- October 2014 - launched the Office of the Clinical Director reorganization
- November 20, 2014 - held DIR Town Hall meeting
- December 5, 2014 - presentations of staff's proposals to Board of Scientific Counselors (BSC)
- January 2015 – finalization of DIR organizational structure and changes for FY2016 implementation, following mandatory reviews

The updated mission of the DIR is "to plan and conduct the Institute's laboratory and clinical research programs to seek fundamental knowledge about the nature and behavior of living systems through basic, clinical, and population-based research and determine how to apply such knowledge to illuminate developmental origins of health and disease and help ensure that women

and men have good reproductive health, that children are born healthy, and that people develop to live healthy and productive lives."

Dr. Stratakis then described the current organizational structure of the DIR and delineated the proposed new organizational structure, which needs to be approved. He stated that labs are now grouped under areas of science that are served by the respective Associate Scientific Directors (ASD), which are newly created positions. This structure now puts labs under divisions that reflect their physical locations under each ASD. Individual labs are also organized around intellectual Affinity Groups (AG). Each PI is a member of a primary AG but may participate in as many secondary AGs as they wish. The new structure will foster collaborations between the AGs, offices, and cores; facilitate the sharing of technology and joint projects; also allowing groups to coalesce around scientific questions and hold research seminars. Along with the administrative restructuring there is a reorganization of the NICHD intramural clinical and training programs; for example, training programs now are administratively under the Office of the Scientific Director and supervised for their clinical activities by the Office of the Clinical Director.

Council Discussion

Dr. Frederick Rivara said that the mission statement lists population-based research, and asked where this was reflected in the organizational structure. Dr. Stratakis replied that this was under the Division of Intramural Population Health Research (DIPHR); DIPHR is still a separate division, but it did participate in the DIR reorganization. Dr. Guttmacher said that while it might look like population health PIs are intramural scientists, they are also separate from intramural: they span both intra- and extramural functions, and thus its organization reflects its function. Dr. Germaine Buck Louis, Director, DIPHR, stated that she agreed and said that population health really comprises two programs doing cross-domain research, and that they collaborate with clinical scientists in the DIR.

Dr. Walter Frontera stated that NIH embraced medical rehabilitation research more than 20 years ago and asked whether the NIH Clinical Research Center will fill that clinical research role or if NICHD will have its own. Dr. Guttmacher said that an institute cannot cover all parts of the clinical mission and be scientifically excellent. He said that there are components within the Clinical Center that meet the needs of medical rehabilitation research. Similarly, some of NICHD's neuroscience research also contributes to that goal. Dr. Stratakis said that they do work very closely with the Clinical Center's medical rehabilitation program; he added that a number of intramural laboratories, such as those focused on biophysics and neuroscience, are engaged in science that support rehabilitation research .

Dr. Ann Case noted the challenges of the old organization and asked how the new structure addresses current needs. Dr. Stratakis said the reorganization reflects the new, collaborative science model, but it also allows for greater efficiency. He said that NICHD, like other ICs, expanded under the NIH budget doubling era in a way that was not always optimal. The reorganization offered a chance to relocate PIs closer to their affinities and core facility needs, and to address the current needs of the clinical program under a stable (or decreasing) budgetary support.

Dr. Gregory Kopf asked how the reorganization may have an impact on promotion and tenure decisions especially with regards to credit and team science approaches. Dr. Stratakis stated that there was no new set of criteria that addressed team science, but that NICHD DIR is working with guidance from the NIH Central Tenure Committee, as well as the experience of extramural institutions. Dr. Guttmacher added that the NIH employs criteria similar to academic institutions' promotion and tenure policies and that the NIH is still searching for the best ways to reward team science in tenure and other promotion decisions.

Dr. Carmen Green asked about tenure-track scientists that are presently in the pipeline, and whether they were developing appropriately. Dr. Stratakis said that with the reorganization all training has been moved under the Office of the Scientific Director for better oversight. For recruitment, a new committee was created; the committee will also oversee diversity and mentoring issues. Dr. Stratakis then mentioned the successes in diversity of the DIR: half of the newly appointed ASDs are female; and half of the NICHD Board of Scientific Councilors members are female. Clinical fellows are of very diverse backgrounds, and across all training programs there is wide support of trainees of diverse backgrounds. Dr. Stratakis acknowledged that lots remains to be done on diversity, especially with regards to new tenure-track scientists, but he expressed his hope that the new committee will be successful in that regard, too.

VI. TRIBUTE

Dr. Guttmacher brought Mary Plummer's retirement this coming August to the attention of the Council. He mentioned that she directed the NICHD Committee Management Office. Dr. Guttmacher acknowledged her many, and behind the scenes, efforts. He stated that Council meetings worked in part because of the work she does, which is done so seamlessly that it often is unnoticed. Dr. Guttmacher and Dr. Spong thanked Mary and presented her with certificate of recognition.

VII. NIH BRAIN INITIATIVE UPDATE AND DISCUSSION

Dr. Frances Jensen, Chair and Professor, Department of Neurology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, and member of the NIH BRAIN Initiative Multi-Council Working Group, attended as a virtual presenter and provided an update on the BRAIN Initiative. Dr. Jensen said that the burden of neurological and psychiatric disorders is growing; it is larger than any other condition in terms of its healthcare burden. She said that part of this is driven by problems in early development and part by those encountered towards the end of life. She noted that chronic, non-communicable diseases will be the 21st century version of infectious diseases in the 20th century and that brain disorders, neurodevelopmental and neurodegenerative, will be the most disabling and costly of these chronic diseases.

The goal of the BRAIN Initiative is to develop tools and a basic understanding of the wiring of the brain. It is a public-private partnership with many participating organizations. The first five years will emphasize technology development and the second five years will emphasize discovery-driven science, to apply what we learn to health and disease.

Dr. Jensen discussed the seven high priority research areas, all of which involve development, and principles for how to accomplish these goals. She said that NICHD needs to encourage investigators to apply for these grants to understand changes during development. Right now the Initiative's grants are not hypothesis driven, they are about developing tools that can be used for hypothesis driven research. The budget will, hopefully, grow to $500 million through 2025 with large contributions from the private sector. She also reviewed recommendations of the Steering Committee. She said that there were six funding opportunities in 2014 and 10 in 2015; there have already been several high profile publications, demonstrating rapid success of the Initiative.

Council Discussion

Dr. Carmen Green commented that this seems like an opportunity to link brain health to the Human Placenta Project. Dr. Guttmacher agreed and said that there are tools and functional similarities which are important; the brain, like the placenta, is a developmental organ that, and rather than being static, changes throughout time. He said the hope is that the tools developed for both initiatives will have crossover functionality. Dr. Green stated that there are some visible markers for potential problems in childbirth and using these observations could aid in the development of biomarkers. Dr. Jensen agreed that predictive biomarkers are crucially important. Dr. Green questioned if there were common threads among the placenta, brain, and rehabilitation medicine; connecting these things could have huge cost savings. Dr. Guttmacher said that NICHD itself is really the nexus of child health, maternal health, and rehabilitation; it has staff and Council members that provide those important perspectives. Dr. Jensen agreed that it has been recognized, but that NICHD can play a key role in sharpening that emphasis, but this may not be possible until the second five-year period. She also asked the Council to pass along suggestions, which she will present at a meeting in July.

VIII. PEOPLE AND PROJECT DISCUSSION

R35 Update

Dr. Eugene Hayunga provided an update of the R35 Working Group (WG) discussions since the last Council meeting. Their initial recommendations were supportive of the R35 mechanism to support investigators instead of projects. In order for the R35 award to be effective they recommended the full level of support allowed by NIH policy (i.e., up to 8 years, up to $750,000 per year, with at least 50 percent effort by the PI).

The WG is still considering the most appropriate career stage for this award. They examined data provided by OSPAC on the number of NICHD-supported PIs who will be approaching first renewal compared to the number who are further along. During their discussions, the WG addressed how best to foster innovation; how PIs reduce the time spent applying for grants; and

how to protect PIs during vulnerable stages of their research careers. In identifying the most appropriate career stage to target, the WG envisioned two tiers: a) emerging science leaders and b) those who are well established. They then emphasized the importance of developing clear review criteria for each type of PI. The next steps will entail continued discussion by the WG with a view towards developing a small scale pilot of the R35 mechanism with appropriate evaluation. The WG also noted the importance of learning from the experiences of other ICs that have begun their own R35 programs.

The NIGMS Maximizing Investigators' Research Award: An Experiment in Funding Research Programs Instead of Specific Projects

Dr. Jon Lorsch, Director, National Institute of General Medical Sciences (NIGMS) presented on NIGMS's funding experiment using the R35 mechanism. He said that NIGMS's mission is to promote fundamental research on living systems and develop the best trained biomedical workforce possible.

Dr. Lorsch described the five-year plan recently developed by NIGMS. One initiative is to refocus funding on investigator-initiated research, by examining award data and trends since 1990. He said NIGMS is trying to rebalance their portfolio. This is particularly important because their success rate for applications had dropped by almost half since 2004; he noted that the success rate has begun to improve in the last year as a result of this rebalancing.

Dr. Lorsch said that the main issue seems to be the way biomedical research is funded. The current model of funding does not fit with the way science is conducted. The current model is project based funding: PIs break-up the work in their lab into particular projects, specifying five years in advance exactly what experiments they will do. He suggested instead that science seems to work best when investigators have the flexibility to follow where their findings lead.

He then presented detailed data on the distribution of funding to show that the top 20 percent of NIGMS grantees have half of the NIH direct cost (but this is an NIH wide phenomenon). This means the money is going to just a few places. Much of this support goes to investigators with at least $500,000 of NIGMS funding. Recouping just a portion of that would significantly improve NIGMS paylines. He then presented evidence that productivity and impact do not necessarily correlate with funding above a certain threshold. He cited that return on investment (measured in research publications) for an R01 awarded to a PI who already has one grant will add one additional research paper. In contrast an R01 awarded to a PI who does not already have a grant will result in five papers. Using a different analysis, the NHLBI found similar discrepancies in productivity comparing new vs. established investigators.

He then asked what an institute's metric of funding should be, suggesting that it should be the number of investigators funded rather than the number of grants. Dr. Lorsch said that NIGMS tried an experiment where NIGMS investigators were given one grant per PI with the hope of increasing the stability of funding. Other potential benefits included increasing flexibility for PIs to follow new research, encouraging grant committees to be less conservative, improving the distribution of funding by decreasing risk and maximizing the chance for good outcomes, decreasing the amount of time spent writing grants, and reducing the time spent reviewing grant applications.

NIGMS used the R35 mechanism in a program called MIRA (Maximizing Investigators' Research Award). It supported one grant per PI, for five years, with direct costs up to $750,000, which was not tied to specific aims. The review was based on track record and overall research ideas, and the budget could be modulated based on competing reviews in order to avoid abrupt termination of research groups. In addition, there were separate panels and a modified review process for early stage investigators. He said they also looked at how efficiently PIs were using funds. Dr. Lorsch said that this pilot will be for established PIs with two NIGMS grants (or one worth more than $400,000) and for new investigators.

Council Discussion

One Council member expressed appreciation for the data about 'return on investment" because it provided evidence for what many have suspected. When asked if the findings from basic research also held true for clinical research, Dr. Lorsch noted similar findings by those who have examined data for clinical research. Another member commented that the bump in publications from the first grant is not surprising, but the small increase with additional funding is very surprising. Dr. Lorsch agreed that the shallow slope is really the surprising finding (of additional funding).

One Council member expressed concern over measuring impact, and asked if there are metrics beyond publications, such as impact and whether this approach might exclude certain populations. Dr. Lorsch agreed that just counting papers may not be the best measure. In this case they were aggregating over a large set, so it was less of a concern. There are several metrics that show the same result, such as impact factor, for instance. This pilot does take funds away from those with lots of support with an eye toward redistributing. NIGMS continues to look at diversity, across all dimensions of the portfolio. So it is being considered in their analyses. In addition, NIGMS is working on implicit bias training and other issues raised in the Ginther report. (*See* Ginther, et al., 19 August 2011, *Science* **333**: 1015-1019)

One member asked if this model would change the number of PIs funded over time, and noted that the data presented might be interpreted as saying an optimal strategy would be to support everyone with $250,000. Dr. Lorsch said that NIGMS is looking at what the best distribution of funds would be. They need to empirically, and with modeling, determine what the "sweet spot" is. When asked if he had a sense that NIMGS would actually increase the number of research portfolios, Dr. Lorsch replied they would increase by closing the initiative driven grants and returning those funds to investigator initiated grant pools. By doing so, NIGMS should be able to increase the average funding amount and the number of investigators.

A final comment from Council was the concern by a number of investigators who were worried about the risk these new mechanisms carried. For example, what will happen to investigators who aren't renewed and where would those investigators then look for funding, by seeking R01 support, or by going to other institutes? Dr. Lorsch said that MIRA is a renewable mechanism; PIs won't face a sharp cliff. If their funding is reduced, they can keep working, reapply and perhaps increase funding levels. In the future, it will be hard for PIs to maintain multiple R01s.

Dr. Guttmacher thanked Dr. Lorsch for sharing his thoughtful insights and for the valuable discussion by Council.

IX. STATEMENT OF UNDERSTANDING (Annual Review)

Mr. Bryan Clark, Chief, Grants Management Office, reviewed the Statement of Understanding, an agreement between NICHD and the Advisory Council. Mr. Clark noted that there have been no revisions since last year and that the document was posted on the Council Member Website for their review. He reviewed the sections of the Statement, including Council Membership and Structure, actions that are considered individually by the membership, actions that do not require action by Council, options to Council when considering action, and expedited review, interim reviews, concept review, and, when warranted, emergency procedures.

Dr. Guttmacher introduced the motion to accept and the Council unanimously voted to accept.

X. CONCEPT CLEARANC REVIEW AND DISCUSSION

Council discussed and unanimously endorsed three concepts as detailed below:

Population Dynamics Centers Research Infrastructure
(Presented by Dr. Rebecca Clark)

The purpose of this RFA is to support research infrastructure at already established population research centers. The primary objectives are to:

- Increase scientific impact, innovation, and productivity of population research
- Increase competitiveness for external peer review funding
- Foster research independence for junior scientists
- Minimize time burden associated with the administration of research grants

Specialized Centers in Research in Pediatric Developmental Pharmacology
(Presented by Dr. Katerina Tsilou)

The purpose of this RFA is to propose a re-competition of the funded centers to investigate the fundamental mechanisms of change in drug disposition and response over the course of development. The Centers will also serve as a resource for training pediatric developmental pharmacologists.

Identification and Assessment of Novel Biomarkers to Assess Placental Structure and Function Across Gestation
(Presented by Dr. David Weinberg)

The purpose of this RFA will be for proof of concept studies using a particular -omic (or combination) for assessment of human placenta function and structure across gestation. This RFA is aimed at established investigators.

Council Discussion

Dr. Ruth Lehmann noted that RFAs favor those with resources and do not spread money evenly. She said that in the future, at the point of renewal alternative mechanisms should be considered. Dr. Guttmacher agreed that this was something that needed to be discussed as things progress and stated that future awards would not automatically be issued under RFAs. Dr. Spong noted that some funding mechanisms can't be presented as unsolicited.

XI. COMMENTS OF RETIRING MEMBER

Dr. Guttmacher presented Dr. Carmen Green, liaison from NABMRR, with a certification of appreciation as she retires from the Council.

Dr. Green stated that it was a pleasure to sit on the Council. She thanked Dr. Guttmacher for asking her to serve. Dr. Green stated that she learned a great deal by participating and thanked those that support the Council for their efforts.

Dr. Guttmacher noted that Department of Defense ex officio representative Dr. Jay D. Kerceman who was not able to attend the June meeting, is rotating off of the Council. Dr. Guttmacher thanked him for his work and stated that his certificate of appreciation was previously mailed to him.

XII. REVIEW OF APPLICATIONS

A total of 1,682 applications were initially assigned to the NICHD. Applications that were transferred out, withdrawn, noncompetitive, unscored, or not recommended for further consideration by the initial review groups were not considered by the Council. Council reviewed 826 applications requesting $401,251,305 in total costs. Council favorably recommended 826 new, renewal, and supplemental research and training grant applications with requested total costs of $401,251,305.

XIII. ADJOURNMENT

There being no further business, the meeting adjourned at 4:50 p.m. on Thursday, June 4, 2015. The next meeting is scheduled for September 17-18, 2015.

Attachment: Council Roster Attachment I
Statement of Understanding Attachment II

I hereby certify that, to the best of my knowledge, the foregoing minutes and attachments are accurate and complete.[2]

_____ _____

Alan E. Guttmacher, M.D. Date
Chair, National Advisory Child Health and Human Development Council
Director, *Eunice Kennedy Shriver* National Institute of Child Health and Human Development

[2]These minutes will be formally considered by the Council at its next meeting, and any corrections or notations will be incorporated in the minutes of that meeting.

Mary Plummer
Committee Management Officer, NICHD