National Institutes of Health
National Eye Institute
Minutes of the National Advisory Eye Council
One Hundred Fifty-Seventh Meeting
February 12, 2021

The National Advisory Eye Council (NAEC) convened for its 157th meeting at 10:00 a.m. on Friday, February 12, 2021. The entire meeting was broadcast by the National Institutes of Health (NIH) videocast system, and all observers and participants, including members of the public, attended virtually. Michael Chiang, MD, Director of the National Eye Institute (NEI), presided as Chair, and Kathleen Anderson, PhD, served as the Executive Secretary. The meeting was open to the public from 10:00 a.m. until 1:20 p.m. The meeting was closed to the public from 2:00 p.m. until 4:00 p.m. for the review of grant and cooperative agreement applications.

Council Members Present:

Dr. Michael Chiang, Chair
Dr. Kathleen Anderson, Executive Secretary
Dr. Eduardo Alfonso
Dr. Jose-Manuel Alonso
Dr. Teresa Borras
Dr. James Coughlan
Dr. Katia Del Rio-Tsonis
Dr. Thomas Gardner
Dr. Mary Elizabeth Hartnett
Dr. Renu Kowluru
Dr. Carol Mason
Dr. Mary Ann Stepp
Dr. Benjamin Teller
Dr. Russell Van Gelder

NIH Staff Members Present:

Dr. Neeraj Agarwal
Dr. Houmam Araj
Dr. Steven Becker
Dr. Sangeeta Bhargava
Dr. Brian Brooks
Dr. Emily Chew
Ms. Karen Colbert
Dr. Mary Frances Cotch
Mr. Donald Everett
Dr. Martha Flanders
Dr. Ashley Fortress
Dr. James Gao
Dr. Nataliya Gordiyenko
Dr. Shefa Gordon
Dr. Tony Gover
Dr. Tom Greenwell
Ms. Lateefah Hill
Dr. Brian Hoshaw
Dr. Jeanette Hosseini
Dr. Jimmy Le
Dr. Paek Lee
Dr. Ellen Liberman
Dr. George McKie
Dr. Sheldon Miller
Dr. Lisa Neuhold
Dr. Maryann Redford
Dr. Annie Schaffner
Dr. Jennifer Schiltz
Dr. David Schneeweis
Dr. Grace Shen
Ms. Karen Smith
Dr. Hongman Song
Dr. Michael Steinmetz
Mr. Brian Trent
Dr. Santa Tumminia
Dr. Cheri Wiggs

Ms. Keturah Williams
Dr. Charles Wright
Mr. Michael Wright
Ms. Maria Zacharias

NIH Contractors Present:

Mr. Jonathan Bennett
Mr. David Higgins
Ms. Kathryn MacKavanagh
Mr. Daniel Marmorstein
Mr. Alexander Papadopoulos
Ms. Kathy Sedgwick
Mr. Gary Thomas
Mr. Edward Woodhouse

NOTE: Due to the open videocast format of this meeting necessitated by the COVID-19 pandemic, additional NIH staff and members of the public were able to observe the open session of the live meeting (126 views). The video has been archived and is available for public viewing.

CALL TO ORDER, COUNCIL PROCEDURES, AND RELATED MATTERS – Dr. Kathleen Anderson, Executive Secretary, NAEC and Director, Division of Extramural Activities (DEA)

Dr. Anderson called the 157th NAEC meeting to order and welcomed council members, NIH and NEI staff, and members of the vision advocacy and stakeholder communities. She thanked council members for providing their expert advice to NEI. Dr. Anderson reviewed the procedures and etiquette for this virtual meeting. She noted that the open session of the meeting was being videocast and will be available on the NIH videocast archive website.

Dr. Anderson reviewed the conflict of interest and confidentiality rules provided in the Electronic Council Book and indicated that additional instructions would be provided at the beginning of the closed session in the afternoon.

Dates for future council meetings are listed in the Electronic Council Book and on the NEI website. The next council meeting is scheduled for June 11, 2021 and will be held virtually.

Minutes of the October 2020 NAEC meeting were provided in the Electronic Council Book prior to the meeting. A motion to accept these minutes was made, seconded, and approved unanimously by council members. The approved minutes will be posted on the NEI website.

DIRECTOR'S REPORT – Dr. Michael Chiang, Chair, NAEC and Director, NEI

Dr. Chiang noted that he started in November and that it has been an interesting time to transition given the pandemic with challenges to both the intramural and extramural communities. He acknowledged the accomplishments of former NEI Director, Dr. Paul Sieving, and former Acting Director, Dr. Santa Tumminia, and thanked them both for their service to NEI. He described his first few months as the new NEI Director as a season of transition. He spoke of his experiences transitioning from the Oregon Health and Science University to NIH and learning the priorities of new leadership at the Department of Health and Human Services under the Biden Administration. At the same time, the COVID-19 pandemic has had a significant impact

on intramural and extramural programs and revealed persistent disparities in vision and eye health throughout the country.

Recent Changes at NEI—NEI has established two new offices: The Office of Vision Health and Population Sciences led by Dr. Mary Frances Cotch and the Office of Data Science and Health Informatics led by Ms. Kerry Goetz. In addition, two new staff recently joined NEI. Ms. Claudia Costabile will be leading media strategy in the Office of Science Communications, Public Liaison and Education. She came from industry and previously worked at Johns Hopkins University. Dr. Tony Gover came from the Department of Defense and will be managing the Corneal Injury and Repair program as well as a cross-cutting portfolio involving bioengineering and technology.

Awards—Dr. Chiang congratulated recipients of the Sanford and Susan Greenberg 20/20 Prize to End Blindness awards. The Outstanding Achievement Award was presented to Drs. Gustavo Aguirre, William Hauswirth, Albert Maguire, Jean Bennett, R.D. Ravindran Ravilla, and Gullapalli N. Rao. The Visionary Award was presented to Drs. David Huang, James G. Fujimoto, Simon W.M. John, Zhigang He, Botond Roska, and Masayo Takahashi, and Mr. Eric Swanson.

NIH Announcements—Dr. Leslie Ungerleider, longtime Chief of the Laboratory of Brain and Cognition at the National Institute of Mental Health (NIMH) passed away unexpectedly in December. An extraordinary mentor and distinguished experimental psychologist and neuroscientist, she and Dr. Mortimer Mishkin are credited with discovering the "what and where" pathways in visual processing which was a seminal finding for vision research.

Future Directions—Dr. Chiang outlined his ideas about future directions for NEI and the NAEC that would involve addressing challenges of translating scientific discovery into real-world care for patients; inspiring and supporting collaborative work between scientists and clinicians across multiple disciplines; building connections with industry; and attracting the best and brightest scientists to engage in vision research.

Building interest in vision science work could be achieved by promoting the eye and visual system as a target organ for methodologies; providing access to data for analyses; and communicating how research on the visual system is inspiring from a scientific perspective and makes a difference in the lives of people. A "0 to 60" introductory course could be developed to address knowledge gaps for those entering the field of vision science similar to what has been developed for machine learning.

Dr. Chiang also stressed the importance of mentorship in career development and addressing key issues involving diversity, equity, and inclusion. He asked council members for suggestions on how NEI can further promote the career development of young scientists.

Council Discussion—Council members pointed out the need to reassess how NEI pursues its mission and interacts with the outside world. Suggestions included considering how other NIH Institutes and Centers (ICs) achieve success using different grant mechanisms (e.g., mechanisms that support interdisciplinary collaborations between basic scientists and clinicians); developing

a course similar to the Marine Biology Laboratory course, "Fundamental Issues in Vision Research," that ended in 2010; and establishing a data repository and incentives to make data widely available to researchers. They also suggested creating a mechanism that combines mentorship and interdisciplinary collaboration, including incentives for the mentor at the institutional level.

How can council meetings be most productive? Dr. Chiang suggested that each council meeting should focus on a specific theme or problem. One to two council members could facilitate a shared problem-solving approach, including inviting guest speakers. Action items resulting from discussion and presentations would be followed up at or between meetings. Potential topics suggested included: hot scientific topics; new ways of doing science; facilitating interdisciplinary collaborations; data sharing; diversity, equity, and inclusion; health disparities; and stimulating academic-industry collaborations. He encouraged council members to share examples of their experiences that have resulted in effective collaborations.

Council Response—Council members suggested involving them in setting the agenda for these meetings and empowering an executive or steering committee on which each council member would serve during their term to provide input on the agenda. To engage council to a higher degree, two members should be asked to serve as discussants for concept clearances. It was suggested that one meeting per year be a two-day meeting to delve deeper into specific topics.

Budget—Dr. Chiang noted that NEI's success rates for R21s and R01s have typically been between 21-28% over the past several years and higher than NIH overall success rates. The budget for fiscal year 2021 for NEI is $835 million or a 1.4% increase over fiscal year 2020. The prior year the budget had gone up 3.5% and as a result, NEI funded more grants, which increased the out-year commitments. NEI plans to manage this smaller budget increase by making small cuts to non-competing grant budgets. In addition, there will likely be a decrease in the success rate for NEI competing applications.

Communicating the Significance of Vision Research—Dr. Chiang asked council to share slides that show the impact and importance of vision and eye research. He hopes to create a repository of slides that academicians and other influencers can use to make a case for the value of vision research.

NEI COVID-19 Related Research—NEI provided supplemental funding for COVID-19-related research to nine existing extramural grants. Several NIH intramural research projects focused on the effects of COVID-19 on the eye and on methodological issues.

NEI's small budget increase did not include additional funds to cover COVID-19 related interruptions and losses. The Institute will evaluate requests for extensions, carryovers, and additional funds on a case-by-case basis. Early career investigators will be prioritized for supplements. Dr. Chiang noted that grantees in need of additional funds should first discuss whether there are institutional and departmental resources available and explore re-budgeting options with their Program Officers. NIH peer reviewers have been instructed not to consider any potential COVID-19-related interruptions when reviewing and scoring applications. It is

assumed that the research can be carried out as described in the application. Preliminary data will continue to be accepted up to 30 days prior to the review of applications for the Fall 2021 submission deadlines.

NEI Audacious Goals Initiative (AGI)—Dr. Steven Becker, Office of Regenerative Medicine, provided an update on the AGI regenerative medicine initiative, which aims to restore vision through the regeneration and reconnection of retinal neurons that are lost in many blinding diseases. A November AGI road-mapping meeting informed NEI staff and AGI Steering Committee efforts to formulate a strategy and identify priorities going forward. The AGI's first virtual symposium (February 2021) featured talks from five functional imaging projects which were launched in 2015. The project videos are available on the AGI webpage. A symposium at the Association for Research in Vision and Ophthalmology (ARVO) annual meeting is planned for May 5, 2021, that will feature six regenerative factor projects from the discovery consortium. Lastly, Dr. Becker noted that applications for the reissued translation-enabling models funding opportunity announcement will be reviewed this spring for funding consideration later this year.

The Age-related Macular Degeneration (AMD) Integrative Biology Initiative, a program that capitalizes on the NEI Age-Related Eye Disease Study 2 (AREDS2) investment, in partnership with the New York Stem Cell Foundation Research Institute, has generated induced pluripotent stem cell (IPSC) lines from AMD patients with known risk alleles. To date, 60 lines are available and the last 13 lines should be validated and available in several weeks. Data is available through the NIH Biomedical Research Informatics System (BRICS). It is hoped that researchers will use the lines and the BRICS data portal to uncover new insights into the mechanisms that cause AMD. A webinar will be held in late March to discuss this resource with the vision research community.

Phase II winners of the NEI 3-D Retina Organoid Challenge (3-D ROC) were announced last month: Dr. Wei Liu (Albert Einstein College of Medicine) and his collaborators were awarded for their progress in using retinal organoids to model disease. Dr. Natalia Vergara's team (University of Colorado-Anschutz Medical Campus) demonstrated a platform that used retinal organoids to screen therapeutic drugs. The phase III submission deadline has been extended to June 1, 2022. A webinar to describe the details and rules of Phase III was held Tuesday, February 16.

Anterior Segment Initiative—Dr. Chiang announced that a new anterior segment initiative is under development. A Notice of Intent to Publish a Funding Opportunity Announcement for Ocular Surface Innervation was published in November 2020. The initiative will focus on corneal sensation, ocular pain, circuitry, and dry eye.

Diversity, Equity, and Inclusion—Dr. Chiang described NIH and NEI activities designed to address racial equity. The NIH UNITE initiative was established to identify and address structural racism within NIH and in the outside scientific community. Each of the five components has a committee and NEI has two representatives on these committees.

Internally, NEI has established a Diversity, Equity, and Inclusion Council led by Brian Trent. The council will do an internal and external analysis to examine racial inequities in vision research and eye care to better understand health disparities and what NEI can do to address these disparities. NEI is also building collaborations within NIH and with professional eye societies and DC-area organizations to develop strategies for addressing health disparities and inequities.

Finally, Dr. Chiang reviewed the NEI Strategic Planning efforts that will be discussed later in the meeting.

One council member expressed their appreciation for efforts to focus on the anterior segment of the eye. Dr. Chiang noted that the Strategic Plan will focus on seven cross-cutting areas of emphasis and will not be focused on specific anatomical regions of the eye and visual system.

COUNCIL OF COUNCILS DEBRIEF – Dr. Russ Van Gelder, Member, NEI Advisory Council and NIH Council of Councils

Dr. Van Gelder summarized the January NIH Council of Councils (COC) meeting. NIH Principal Deputy Director Dr. Lawrence Tabak provided an overview of funding and reported that the NIH budget exceeded $42 billion last year, on par with the high watermark reached in 2003 in real dollars. This was bolstered by $1.25 billion for coronavirus-related research. The Brain Research through Advancing Innovative Neurotechnologies® (BRAIN) Initiative budget is $560 million and NEI investigators hopefully will continue to participate in that effort. The Regenerative Medicine Initiative has ended and there are no additional funds for it this year. Finally, the NIH All of Us Initiative budget is $500 million this year.

Dr. Gelder reported that the COC cleared four concepts for support from the NIH Common Fund. Dr. Van Gelder outlined goals of the three concepts most pertinent to the NEI mission. The Illuminating the Druggable Genome Project is a bioinformatics project designed to identify and provide information on understudied proteins within commonly drug-targeted protein families. The potential utility for NEI could include small-molecule photoswitches or photocycle inhibitors for treatment of diseases such as congenital amaurosis and Stargardt disease. The budget is $1.4M per year and all awards to date have been made to NCI investigators. The second concept clearance was for Stimulating Peripheral Activity to Relieve Conditions (SPARC), an initiative to improve research on the use of neural modulation as a therapy. The program has narrowed its focus to peripheral nerve stimulation and mapping the neuroanatomy of the vagus nerve for treatment of heart, gastrointestinal, and motility disorders. An approved open-source neuromodulation platform could be useful for retinal stimulation and neurostimulation of trigeminal disease and pain. There will be an X-prize component to this initiative to try to create translational solutions for specific disorders. The budget will be $21 million over three years. The third concept cleared was for an NIH firearms injury prevention research program that has a congressional earmark of $12.5 million for this year. The goal is to understand the root causes and evidence-based methods for firearm injury prevention. The projects must be ideologically and politically unbiased. The final concept clearance was for an

R25 grant to support short courses in behavioral science methodology. This solicits data science courses for behavioral scientists. Dr. Van Gelder speculated that some of the methodologies would be very applicable to NEI researchers and that NEI may want to use this program as a model for short courses on data science methodologies.

Dr. Van Gelder will continue to represent and advocate for NEI on the NIH Council of Councils.

BRAIN MULTI-COUNCIL WORKING GROUP (MCWG) Meeting – Dr. Carol Mason, NEI Council Representative

Dr. Mason reported on the BRAIN MCWG meeting held in January 2021. She encouraged council meeting participants to read the BRAIN report, The BRAIN Initiative® 2.0: From Cells to Circuits, Toward Cures, for more details about the program. Dr. John Ngai was appointed as the permanent BRAIN Director in 2020.

A request for applications (RFA) was issued last year entitled BRAIN Initiative Cell Census Network (BICCN) Scalable Technologies and Tools for Brain Cell Census that will build brain cell atlases and scalable technologies for looking at cell type diversity and connectomics in humans and other species.

Dr. Mason described recent BRAIN efforts to increase diversity and inclusion of trainees, including the Diversity Specialized Predoctoral to Postdoctoral Advancement in Neuroscience (D-SPAN) F99/K00 awards that support predoctoral to postdoctoral transition of diverse graduate students; a BRAIN K99 for underrepresented minorities and women that includes an additional year for eligibility; and the First Independent Research Support and Transition (FIRST) awards for cluster hiring of underrepresented groups. NEI participates in D-SPAN, the BRAIN K99s, the FIRST program, and other trans-NIH initiatives to promote diversity in research. In addition, the BRAIN initiative is trying to increase geographic, institutional, and interdisciplinary diversity and to attract more physicists, engineers, and chemists into the BRAIN portfolio.

Two BRAIN Initiative concept clearances were presented, the first of which was discussed in more detail later in this meeting. This concept is to establish short courses for neuroscientists to provide training in computation analysis of 'omics, imaging, electrophysiology, or other multimodal data generated by BRAIN projects. This is intended for early career investigators and individuals from diverse backgrounds. NEI will lead this initiative. The second concept, "Armamentarium Research Resources at Minority Serving Institutions & Institutional Development Award" would support infrastructure development for reagent production for use by a broad community of neuroscience researchers and particularly those at under-resourced institutions.

Finally, in response to a call for greater collaboration and partnerships between research-active schools and minority-serving institutions, a "match-making symposium" to stimulate such partnerships will be held during the annual BRAIN Initiative Principal Investigator's meeting in June 2021.

NEI STRATEGIC PLANNING UPDATE – Dr. Shefa Gordon, Director, Office of Program Planning and Analysis

Dr. Chiang summarized the strategic planning process and noted that council members participated on the panels that developed the seven areas of interest and subsequently, draft chapters for the strategic plan. Current drafts were provided to council members in advance of the meeting for their comments. He reviewed the timeline for completing the plan and related documents. The goal is to have a final draft for council approval at the June NAEC meeting. He will also ask council for their advice on the implementation of near-term goals within the strategic plan. Dr. Chiang also noted that there are several versions of the NEI mission statement and that it had not been updated since it was created in 1968. Accordingly, NEI plans to revise its mission in parallel with the strategic planning process. Revision of the mission statement will involve a survey of NEI staff members, a workshop for NEI leadership, and the creation of a council workgroup. He asked that council members who are interested in participating in the workgroup email Dr. Anderson.

Dr. Gordon reviewed the timeline for developing the new strategic plan and noted that Dr. Chiang had sent working drafts of the chapters to council members for discussion at this meeting. NEI will incorporate council feedback and send updated drafts prior to the June council meeting. Dr. Gordon reviewed the research needs, gaps, and opportunities within each of the seven areas of emphasis: From Genes to Disease Mechanism, Biology and Neuroscience of Vision, Immune System and Eye Health, Regenerative Medicine, Data Science, Individual Quality of Life, and Public Health and Disparities Research. He also highlighted cross-cutting themes that emerged across all the areas of emphasis. A new section has been developed that addresses the NEI Plan for COVID-19 related issues that covers three main areas: 1) effects on the overall research enterprise, 2) intersection of SARS-CoV-2 and vision, and 3) impact on people with visual impairments. Dr. Gordon then described plans for implementation including public-facing and internal NEI efforts that address the priorities highlighted in the plan.

Discussion

Dr. Chiang asked council to offer major comments and suggestions on the different chapters, including whether there is anything missing; to express any concerns about the proposed timeline; to consider ways to message the plan to the community; and to make recommendations for implementation, including efforts that could be started immediately.

Council members commented on strategies to motivate people with highly valued technical expertise (computer science, machine learning, data science) to conduct vision research when they could earn much more working in industry. There is increasing need to have developers working with vision researchers to make software more accessible and to be thinking about this in a cross-cutting manner. Dr. Chiang agreed that it is difficult to compete with industry but that it is possible to create messages to motivate people to work on important topics that can help people. He asked for input on how to create materials conveying this type of message.

Council members recommended conducting a portfolio analysis for each of the seven key topic areas of the plan to determine how well each of them is represented and identify priorities for areas that are underrepresented. A suggestion was made to explicitly identify research areas that are lower priority for NEI, especially in light of budgetary limitations. As an example, one member stated that there is limited evidence of severe effects of COVID-19 on the eye and visual system and perhaps that should be less of a priority. Another member noted that the Neuroscience of Vision chapter focused heavily on the retina and paid less attention to visual cortical areas, which are included in the NEI neuroscience portfolio and mission.

One member commented on the imbalance between gene hunting strategies which yield lots of variants and a greater need for efforts to optimize gene delivery for specific ocular tissues. The issue of data sharing was raised including the need to have a system to integrate data from different laboratories to create larger datasets that could be mined.

There was a suggestion to issue a statement to the community about the strategic priorities that are currently being implemented, for example, the two new offices on vision health and population science and data science. This could serve to entice the public and encourage them to remain engaged to see how NEI continues to address the priorities outlined in the plan.

Dr. Chiang noted that council members will continue to have access to the draft plan and provide comments over the next few months. He suggested that they plan to meet at the Association for Research in Vision and Ophthalmology annual meeting in May to discuss further, including identifying which areas to prioritize. He also agreed that it would be beneficial to identify efforts that could be initiated immediately.

In terms of messaging for the public, council members commented on the need to communicate about topics with which the public can connect, (for example, cataracts, dry eye, and vision correction) and take into account both the prevalence and severity of vision and eye diseases.

Everyone commended Dr. Gordon and his staff for all their efforts to coordinate the development of the strategic plan and facilitate the incorporation of feedback from multiple sources.

CONCEPT CLEARANCES

SHORT COURSES FOR SKILLS DEVELOPMENT IN NEUROSCIENCE – Dr. Neeraj Agarwal, Division of Extramural Science Programs

The proposed concept is an NIH BRAIN initiative that will be led by NEI and was developed in collaboration with the BRAIN Team TIE (Training, Inclusion, Equity). Prior BRAIN funding initiatives solicited short courses in computational neuroscience and led to the funding of three training programs. This initiative would extend those efforts and support short courses with a primary focus on developing a sophisticated cadre of investigators with the requisite knowledge and skills in neuroscience and computational science most relevant to the BRAIN Initiative. The courses would include both didactic and hands-on experiences and are intended for graduate students, medical students, postdoctoral scholars, medical residents, and/or early career faculty. Individuals from diverse backgrounds will especially be encouraged to participate.

Council members encouraged consideration of applications for virtual courses and inclusion of international applicants.

A motion to approve the proposed FOA was made, seconded, and unanimously approved.

REISSUE OF NEI VISION RESEARCH EPIDEMIOLOGY PAR-18-864 (UG1 Clinical Trial Not Allowed) – Dr. Jimmy Le, Collaborative Clinical Research Program, Division of Extramural Science Programs

The NEI Vision Research Epidemiology UG1 funding opportunity announcement (FOA) supports cooperative agreements for complex, multicenter, epidemiologic, and observational studies. The current FOA is expiring this year. The NEI Collaborative Clinical Research Program has reviewed the existing FOA for continued relevance and plans to make minor updates to reflect changes in personnel, contact information, and preferred NIH language.

A motion to approve the reissuance of this FOA was made, seconded, and approved unanimously.

REVIEW OF NAEC OPERATING PROCEDURES – Dr. Kathleen Anderson, Executive Secretary, NAEC

Dr. Anderson reminded council that they are required to review the NAEC Council Operating Procedures each year at the February council. These procedures outline council's role in the second level review of NEI applications. The updated operating procedures were made available in the Electronic Council Book and include additional NIH boilerplate language and one substantive change. Currently, any Phase 3 clinical trial that NEI is considering for funding is brought to council for discussion. NEI is now proposing to bring any clinical trial that involves more than minimal risk to the participants, regardless of phase, to council for discussion if it is being considered for funding.

A motion to accept these revised procedures was made, seconded, and unanimously approved.

Retiring Members' Remarks – Drs. Alfonso, Mason, and Van Gelder

Dr. Anderson invited outgoing members to share their experiences while serving on the NEI council.

Dr. Alfonso commented that it was a privilege to participate on the NEI council and acknowledged the passion of NEI staff and what they do for vision health and the public. He also noted that he looks forward to seeing what the Institute will accomplish under the leadership of Dr. Chiang.

Dr. Mason expressed her pleasure in serving on the council and participating in the strategic planning and mission update efforts. During her time on the council, she has met many impressive staff and colleagues, learned from them, and made long-lasting connections with them. She has enjoyed serving as the NEI representative on the BRAIN Multi-Council Work

Group and especially its training efforts. She commended Dr. Chiang's plans to increase involvement of council in a meaningful way.

Dr. Van Gelder remarked on the honor and privilege of serving on this council. He noted that NEI is the greatest institute in vision research and has done so much to further knowledge and eliminate blindness. He mentioned that he has missed the in-person interactions at council. He acknowledged the talent and dedication of NEI staff and has enjoyed getting to know them and has been so impressed by everyone at NEI. He urged NEI to continue calling on him and other retiring council members. He is encouraged by plans to increase council engagement, including in setting the agenda, and recommended optimizing the onboarding process for incoming council members. He is delighted to be able to continue to represent NEI on the NIH Council of Councils.

PUBLIC COMMENT – Dr. Kathleen Anderson

Dr. Anderson noted that a public comment was submitted for council review and had been included in the Electronic Council Book. People for the Ethical Treatment of Animals expressed concerns about NEI-funded research that uses an animal model. The full comment will be appended to the meeting minutes.

OPEN SESSION ADJOURNMENT

Dr. Anderson thanked speakers, attendees, and council members and adjourned the open session of the council meeting at 1:20 PM.

CLOSED SESSION

This portion of the meeting was closed to the public in accordance with the determination that this session concerned matters exempt from mandatory disclosure under Sections 552b(c)(4) and 552b(c)(6), Title 5, U.S. Code, and Section 10(d) of the Federal Advisory Committee Act, as amended (5, USC Appendix 2). Members absented themselves from the meeting during discussion of and voting on applications from their institutions or other applications in which there was a potential conflict of interest, real or apparent. Members were asked to sign a statement to this effect.

Council Members Present at the Closed Session:

Dr. Michael Chiang, Chair
Dr. Kathleen Anderson, Executive Secretary
Dr. Eduardo Alfonso
Dr. Jose-Manuel Alonso
Dr. Teresa Borras
Dr. James Coughlan
Dr. Katia Del Rio-Tsonis
Dr. Thomas Gardner
Dr. Mary Elizabeth Hartnett
Dr. Renu Kowluru
Dr. Carol Mason
Dr. Mary Ann Stepp
Dr. Benjamin Teller
Dr. Russell Van Gelder

NIH Staff Members Present at the Closed Session:

Dr. Neeraj Agarwal
Dr. Houmam Araj
Dr. Thomas Beres
Dr. Steven Becker
Dr. Sangeeta Bhargava
Dr. Mary Frances Cotch
Mr. Donald Everett
Dr. Martha Flanders
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Dr. Brian Hoshaw
Dr. Jeanette Hosseini (Contractor)
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Dr. Ellen Liberman
Dr. Barbara Mallon
Dr. George McKie
Dr. Lisa Neuhold
Mr. Trevor Petersen
Dr. Maryann Redford
Dr. Annie Schaffner (Contractor)
Dr. Jennifer Schiltz
Dr. Grace Shen
Ms. Mohor Biplab Senguypta (Contractor)
Ms. Karen Smith
Dr. Hongman Song
Dr. Michael Steinmetz
Dr. Afia Sultana
Dr. Santa Tumminia
Dr. Cheri Wiggs
Ms. Keturah Williams
Dr. Charles Wright

CERTIFICATION

These minutes were submitted for the approval of the council. All corrections or notations were incorporated. We hereby certify that, to the best of our knowledge, the foregoing minutes and attachment(s) are accurate and complete.

Kathleen C. Anderson -S
Digitally signed by Kathleen C. Anderson -S
Date: 2021.06.22 09:16:02 -04'00'

Kathleen C. Anderson, PhD **Date**
Executive Secretary, National Advisory Eye Council
National Eye Institute

Digitally signed by Michael F. Chiang (NIH/NEI) [E]
Date: 2021.06.29 11:34:47 -04'00'

Michael Chiang, MD **Date**
Chair, National Advisory Eye Council
Director, National Eye Institute

ATTACHMENT A: NATIONAL ADVISORY EYE COUNCIL
(Terms end 11/30 of designated year)

Chair
Michael Chiang, MD
Director
National Eye Institute
Bethesda, MD

Executive Secretary
Kathleen Anderson, PhD
Director, Division of Extramural Activities
National Eye Institute
Bethesda, MD

Members

Eduardo C. Alfonso, MD (2020)
Kathleen and Stanley J. Glaser Chair in Ophthalmology
Director, Bascom Palmer Eye Institute
University of Miami Miller School of Medicine
Miami, FL

Jose-Manuel Alonso, MD, PhD (2021)
Professor in Biological and Vision Sciences
State University of New York, College of Optometry
New York, NY

Teresa Borrás, PhD (2023)
Professor and Director of Research
Department of Ophthalmology
University of North Carolina School of Medicine
Chapel Hill, NC

James Coughlan, PhD (2023)
Senior Scientist
Smith-Kettlewell Eye Research Institute
San Francisco, CA

Katia Del Rio-Tsonis, PhD (2022)
Professor
Department of Biology
Miami University
Oxford, OH

Thomas W. Gardner, MD (2023)
Professor
Department of Ophthalmology and Visual Science
University of Michigan, School of Medicine and Kellogg Eye Center
Ann Arbor, MI

Mary Elizabeth Hartnett, MD, FACS, FARVO (2022)
Professor
Department of Ophthalmology and Visual Sciences
John A. Moran Eye Center
Salt Lake City, UT

Renu A. Kowluru, PhD (2023)
Professor
Department of Ophthalmology, Visual and Anatomical Sciences
Wayne State University
Detroit, MI

Carol Ann Mason, PhD (2020)
Professor
Department of Pathology and Cell Biology, Neuroscience, and Ophthalmology
Columbia University, Zuckerman Institute
New York, NY

Mary Ann Stepp, PhD (2021)
Professor of Anatomy and Regenerative Biology
The George Washington University
School of Medicine and Health Sciences
Washington, DC

Benjamin Teller, OD (2022)
Principal and Owner
Eye Rx
Chevy Chase, MD

Russell Van Gelder, MD, PhD (2020)
Professor and Chairman
Department of Ophthalmology
Director, UW Medicine Eye Institute
University of Washington
Seattle, WA

Ex Officio

Norris Cochran
Acting Secretary
U.S. Department of Health and Human Services
Washington, DC

Francis S. Collins, PhD, MD
Director
National Institutes of Health
Bethesda, MD

ATTACHMENT B: PUBLIC COMMENT

Comment for the National Advisory Eye Council meeting
February 12, 2021 | Bethesda, MD
People for the Ethical Treatment of Animals
Submitted by Dr. Katherine Roe

We are asking to the National Advisory Eye Council (NAEC) to advise the National Eye Institute (NEI) to reconsider the continued funding of Project Number R01EY027718, titled "Multisensory Competition and Spatial Selection: Neural Circuit and Computational Mechanisms." These extremely invasive and harmful experiments subject captive barn owls to multiple surgeries, lengthy extreme restraint, neural tissue damage, and eventually, death. These experiments are supposed to elucidate the neural correlates of human selective attention.

However, the unique sensory systems of owls, the confounds of the impoverished and unnatural sensory environment of the laboratory, the well-documented effects of captivity on birds' physiological and psychological health, and the artificial and ecologically invalid assays used to study attention in these animals all severely limit the scientific merit and applicability of this project. There are a variety of neuroimaging techniques—including high-functional neuroimaging (fMRI), diffusion tensor imaging (DTI), transcranial magnetic stimulation (TMS), electroencephalography (EEG), and magnetoencephalography (MEG)—available for researchers to study in vivo the intact human brain and the neural bases of attentional processing in humans, making these experiments on owls unnecessary.

Given the extreme harms caused by these experiments, their inapplicability to humans, and the available non-animal research methods, these experiments do not and cannot contribute anything substantive to NEI's mission "to conduct and support vision research and education programs that protect and prolong vision." Yet the NEI has spent $1,584,634 taxpayer dollars on this project since 2017. We respectfully ask the Council to recommend that the NEI re-invest these funds into more relevant, human-based models and/or prevention-based research.