DEPARTMENT OF HEALTH AND HUMAN SERVICES
NATIONAL INSTITUTES OF HEALTH
NATIONAL CENTER FOR RESEARCH RESOURCES

NATIONAL ADVISORY RESEARCH RESOURCES COUNCIL
MINUTES OF MEETING
SEPTEMBER 19, 2002

The National Advisory Research Resources Council (NARRC) convened for its 122nd session at 8:30 a.m. on Thursday, September 19, 2002, in Conference Room D, Building 45. Dr. Judith L. Vaitukaitis, Director, National Center for Research Resources (NCRR), National Institutes of Health (NIH), presided as Chair. The meeting was open to the public until 2:10 p.m., at which time it was closed to the public for the review, discussion, and evaluation of grant applications as provided in Sections 552b(c)(4) and 552b(c)(6), Title 5, U.S. Code, and Section 10(d) of Public Law 92-463.

COUNCIL MEMBERS PRESENT

Dr. Joseph D. Andrade
Dr. Stephen W. Barthold
Dr. Randall E. Dalton
Dr. Robert J. Desnick
Dr. Machi F. Dilworth
Liaison Member, NSF
Dr. Mark H. Ellisman
Dr. James G. Fox
Dr. Roland F. Hirsch
Liaison Member, DOE
Dr. Gwen A. Jacobs
Dr. William W. King
Dr. John E. Maupin, Jr.
Dr. William R. Morton
Dr. Paul G. Ramsey
Dr. Judith L. Swain
Dr. Burton A. Weisbrod
Dr. Monte Westerfield
Dr. James H. Wyche

COUNCIL MEMBERS ABSENT

Dr. Kenneth L. Berns
Ms. Catherine D. Bertram
Dr. Eon Nigel Harris
Dr. Diana S. Natalicio

SPECIAL INVITED GUESTS FOR OPEN SESSION

Dr. Tom Finholt, Adjunct Assistant Professor, Psychology Department and Senior Associate Research Scientist, School of Information, University of Michigan
Dr. Peter Arzberger, Executive Director, National Partnership for Advanced Computational Infrastructure, University of California, San Diego
Dr. John Tyson, University Distinguished Professor of Molecular Cell Biology, Virginia Polytechnic Institute & State University

Dr. Delwood C. Collins, Associate Vice President for Research and Graduate Studies, University of Kentucky Medical Center
Mr. John Jankowski, Director, Research and Development Statistics Program, National Science Foundation
Dr. Joan S. Hunt, University Distinguished Professor, Department of Anatomy and Cell Biology, University of Kansas Medical Center
Dr. David S. Weir, Director, Delaware Biotechnology Institute

STAFF OF OTHER NIH COMPONENTS

Dr. John Bowers, CSR/NIH
Dr. Vonda Smith, CSR/NIH
Dr. Arnold Revzin, CSR/NIH
Dr. Margaret Snyder, OD/OER/OSA

OPEN SESSION

I. Call to Order: Dr. Judith Vaitukaitis, Director, NCRR

Dr. Vaitukaitis welcomed NARRC members and guests to the 122nd meeting of the NARRC. She announced that the following Council members would not be present: Ms. Catherine Bertram, Dr. Kenneth Berns, Dr. Eon Nigel Harris, and Dr. Diana Natalicio. NCRR is awaiting appointment of a new DoD ex-officio member. Three new members of the Council were introduced. They are: Dr. Mark Ellisman, Director of the National Center for Microscopy and Imaging Research at the University of California, San Diego; Dr. John Maupin, Jr., President of the Meharry Medical College in Nashville, Tennessee; and Dr. Paul Ramsey, Vice President for Medical Affairs and Dean of the School of Medicine at the University of Washington in Seattle.

II. Consideration of Minutes

The minutes of the NARRC meetings held on May 16, 2002, were approved as written.

III. Future Meeting Dates: Dr. Judith Vaitukaitis, Director, NCRR

The next NARRC meeting will be a one-day meeting to be held on Thursday, January 23, 2003.

IV. Personnel Update: Dr. Judith Vaitukaitis, Director, NCRR

DHHS Personnel

Dr. Richard H. Carmona was sworn in as the 17th Surgeon General of the U.S. Public Health Service on August 5, 2002. Dr. Carmona comes to the Department of Health and Human Services (DHHS) from the University of Arizona, where he was a Clinical

Professor of Surgery and Clinical Assistant Professor of Family and Community Medicine at the University of Arizona. He served his community in diverse ways, including his position as Chairman of the State of Arizona Southern Regional Emergency Medical System and Deputy Sheriff and Department Surgeon of the Pima County Sheriff's Department.

NIH Personnel

On September 10, 2002, Dr. Thomas Insel, was appointed as Director of the National Institute of Mental Health (NIMH). Dr. Insel first joined NIMH in 1979 as a clinical associate in the Clinical Neuropharmacology Branch, and went on to hold several administrative and leadership posts. During his 15 years at NIMH, before heading to Emory in 1994, Insel conducted research in Obsessive-Compulsive Disorder (OCD), initiating some of the first treatment trials for OCD using serotonin reuptake inhibitors. At Emory University in Atlanta, he was Professor, Department of Psychiatry, Emory University School of Medicine, and Director of the Yerkes Regional Primate Research Center. As director of Yerkes, Dr. Insel built one of the nation's leading HIV vaccine research programs. He currently serves as the founding director of the Center for Behavioral Neuroscience, which has developed an interdisciplinary consortium for research and education at eight Atlanta colleges and universities. Dr. Insel continues to study the role of oxytocin in social attachment and behavior.

Dr. Ting-Kai Li was appointed as Director of National Institute on Alcohol Abuse and Alcoholism (NIAAA**)** on September 10, 2002. Dr. Li is currently Distinguished Professor, Department of Medicine, and of Biochemistry and Molecular Biology at Indiana University School of Medicine in Indianapolis, where he also serves as Director of the Indiana Alcohol Research Center. Dr. Li replaces Dr. Raynard Kington, who has served as Acting Director of NIAAA since January 2002 following the retirement of Enoch Gordis, M.D., NIAAA Director from 1986 to 2002. Dr. Li received his medical degree from Harvard University in 1959. He joined the faculty of Indiana University School of Medicine in 1971 and served as the Associate Dean for Research from 1986-2000. Dr. Li has produced ground-breaking research in several areas, including alcohol metabolism and animal models of alcoholism.

NCRR Personnel

Ms. Kathy Kaplan, who joined NCRR in 1995 and serves as the NCRR Communications Director in the Office of Science Policy and Public Liaison, will be retiring from the Federal Civil Service in November. Ms. Kaplan is taking a position on the U.S. House of Representatives Committee on the Appropriations.

Dr. Dorothy Sogn, retired on June 14, 2002, from her position as Medical Officer for the Division of Clinical Research.

Ms. Brenda Blair joined NCRR in August as the new NCRR Committee Management Officer, replacing Ms. Cheryl Fee who assumed a position with NIH's National Institute of Biomedical Imaging and Bioengineering. Ms. Blair comes to NCRR from the U.S. Coast Guard's Office of Quality and Management Effectiveness. She has been with the Federal government for nearly 15 years, working at several agencies beginning with the NIH in 1988.

Dr. Sheryl Brining has been selected as Deputy Director of the Office of Review. Dr. Brining has been with NCRR for nearly two years as Scientific Review Administrator. During her career at NCRR, she has been extensively involved in reviewing grant applications for Centers of Biomedical Research Excellence for NCRR's Institutional Development Award Program; applications for Human Embryonic Stem Cell Research Resources Infrastructure Awards, and applications for the General Clinical Research Centers. Before joining NCRR, Dr. Brining was with NIH's Center for Complementary and Alternative Medicine.

V. Legislative and Budget Updates: Dr. Judith Vaitukaitis, Director, NCRR

Before providing the Budget Update, Dr. Vaitukaitis presented an overview of NCRR's programs and activities. She then presented the following budget information:

In July, the Senate Appropriations Committee marked up and reported out the Fiscal Year (FY) 2003 appropriations bill for the Labor, Health and Human Services, Education and related agencies. Included in the bill are increases for NCRR over the President's Budget. These increases include more than $48 million for extramural construction, more than $14 million for clinical research, and more than $35 million for the Institutional Development Awards program. The full Senate has not yet taken up the bill. The House Appropriations Committee reported out the bill as presented by the President, then withdrew the report, and are planning to mark up the appropriations bill. It is highly unlikely that the appropriation bill will be passed by both houses, proceed through the conference process, and be signed by the President by September 30, so Federal agencies will start the year on a Continuing Resolution.

VI. Information Technology Initiatives: Dr. Michael Marron, Director, Division of Biomedical Technology, NCRR

Dr. Marron discussed NCRR's role historically in information technology. He described NCRR's investments in three broad areas: Informatics Resources; Biomedical Informatics Research Network (federated databases and datamining); and virtual laboratories (collaboratories). He also discussed recent workshops that have helped to guide NCRR's large investment in biomedical technology. These included: "Data and Collaboratories in the Biomedical Community" and "Computational Cell Biology–Challenges and Opportunities for an Emerging Field," which were then described in more detail by the presenters that followed Dr. Marron's introduction.

VII. Update on NCRR Support of Collaboratory Science: Dr. Peter Arzberger, Executive Director, National Partnership for Advanced Computational Infrastructure, University of California, San Diego, and Dr. Tom Finholt, Adjunct Assistant Professor, Psychology Department and Senior Associate Research Scientist, School of Information, University of Michigan

NCRR has supported collaboratories for the last five years. During this time, biomedical research has become more data-rich, the underlying information infrastructure has changed rapidly, and biomedical research has become increasingly multidisciplinary–requiring multi-institutional collaborations. Based on these developments, a group of experts held a workshop to consider the opportunities for a data-focused collaboratory initiative. Considering future requirements and the goals of a new program, the participants in the workshop recommended that NCRR provide further funding of collaboratory initiatives focused on all aspects of data collection and analysis. This redefined approach enables NIH to maintain its leadership role while supporting cross-disciplinary and distributed science, which are critically important for translational medicine of the future.

VIII. Concept Clearance–Collaboratories in the Biomedical Community: Dr. Gregory Farber, Health Scientist Administrator, Division of Biomedical Technology, NCRR

Dr. Farber defined a collaboratory as a center without walls in which researchers can perform their experiments, analyze data, and interact with colleagues without regard to geographical location–in other words, "working together apart." Four years ago, NCRR established seven collaboratories at existing NCRR-supported biomedical technology centers. The purpose of many of those collaboratories was to provide remote access to the centers' instrumentation. This NCRR investment has been very successful. For example, a 10 to 20 fold increase in throughput for crystallographic studies has been attained at the Stanford Synchrotron by incorporating robotics for placing the crystal to be studied in the beam for high-energy x-ray analysis. Since these collaboratories were established, three important changes have occurred. First, the amount and diversity of data that biomedical researchers must deal with is far larger, driving the need to harness information technology to meet the opportunities of integrated biomedical science. Second, the tools of information technology have continued to change rapidly. Finally, large, diverse research teams rather than individual laboratories have become more common in many areas of biomedicine.

Dr. Farber requested Council's approval for concept clearance of a new program to further develop ways to facilitate collaboratories. The program will be designed to study and create the infrastructure needed to efficiently manage the vast amounts of data generated by more complex research queries that require high throughput analyses, contributing to large data sets in a collaboratory setting. Some of the technical problems to be addressed include data resources, data flows (acquisition, deposition, refinement, discovery, validation, retrieval, and archiving), and data sharing (including verification and authentication). This new program will also address sociological and policy issues

involved in collaborative environments. From consultations with sociologists and from the initial experience with collaboratories, the NCRR staff expects that human sociologic issues frequently will be more challenging to address than technological issues.

Council endorsed the concept as presented.

IX. Computational Infrastructure for Cell Biology - Report of a Workshop Held at the University of Connecticut Health Center, 10 September 2002: Dr. John Tyson, University Distinguished Professor of Molecular Cell Biology, Department of Cell Biology, Virginia Polytechnic Institute & State University

In recent years, it has become apparent that individual investigations supported by Research Project Grants (R01) along with massive data-collection efforts, although fundamental to the progress of science, are no longer sufficient for understanding and advancing cell biology. The missing piece is not data management, according to Dr. Tyson, but rather computer modeling of molecular networks–modeling that can explain a physiological function through the dynamical interplay and spatial organization of specific genes, proteins, and metabolites within the cell. The principal impediments to taking this next step in cell biology research are not primarily shortages of experimental data or computer hardware, but shortages of software and idea-ware related to computational tools that will make modeling easier and more reliable. An additional impediment is the limited number of scientists trained to use these tools with varying levels of sophistication.

The workshop report discussed by Dr. Tyson proposed that NCRR significantly contribute to breaking this impasse by soliciting proposals for a new program in computational cell biology that will create an integrated "problem-solving environment" for simulating the complex spatial and temporal organization of living cells. This effort also should include an effective educational program for training the next generation of quantitative cell biologists.

It was noted that the members of the workshop who generated the report were not prepared to offer a concept clearance related to its proposals at this point; however, they hoped to be in a position to expand upon the concept at a future meeting.

X. Human Subject Research Enhancement Awards: Dr. Anthony Hayward, Director, Division of Clinical Research, NCRR

Dr. Hayward reported that 142 infrastructure enhancement awards had been made through the S07 funding mechanism. The activities proposed by grantees included the purchase of network hardware, the writing of software for subject tracking by the Institutional Review Boards at General Clinical Research Centers, and the production of educational material.

XI. Clinical Research Loan Repayment Program: Dr. Anthony Hayward, Director, Division of Clinical Research, NCRR

Dr. Hayward summarized the funding of loan repayment contracts by NCRR's Division of Clinical Research for FY 2002. The final number of repayments made is 29, of which 7 are for the pediatric program and 22 for the clinical research program, with an average repayment of $51,700.

XII. Update on the Activities of the Scientific Technical Review Board (STRB): Dr. Delwood C. Collins, Associate Vice President for Research and Graduate Studies, University of Kentucky Medical Center

The Scientific Technical Review Board (STRB) continues its annual review of applications for the Extramural Research Facilities Construction Program (C06), as well as review of Animal Facilities Improvement (G20) applications through FY 2002.

The STRB reviewed 104 C06 applications at its January and May 2002 meetings and during a teleconference in August 2002. Seven applications were not recommended for further consideration. Ninety-seven of the 104 applications received were scored at a recommended funding level of $184,288,492. Of these, NCRR proposes to fund 55 applications for a total of $110 million in FY 2002, with approval by Council, as part of this meeting.

XIII. Status of the Facilities Survey: Dr. John Jankowski, Director, Research and Development Statistics Program, National Science Foundation

In recognition of the need for objective information in the area of academic research facilities in science and engineering, in 1985 Congress directed the National Science Foundation (NSF) to ". . . maintain a data collection and analysis capability . . . for the purpose of identifying and assessing research facilities needs of universities, by major field of science and engineering . . . University expenditures for the construction and modernization of research facilities, the sources of funds, and other appropriate data shall be collected and analyzed."

Since 1986, NSF, in cooperation with the NIH, has fielded biennial surveys to capture information on academic research facilities and on biomedical research facilities at hospitals and nonprofit institutions that receive NIH funding. An abbreviated two-question survey (on total space by field and on adequacy of space by field) was conducted for 2001.

For the past 15 months, the NSF has undertaken a major review and redesign of the facilities survey, utilizing expert panels and workshops, consultations with major data users and interviews and sit visits with more than 40 survey respondents. The redesigned survey is currently being pre-tested, with anticipated completion of the redesign process for both the traditional "bricks and mortar" sections of the survey and the new section on

computing and communications technology for research (cyberinfrastructure) by January 2003. The completed survey should go into the field in the summer of 2003.

XIV. Concept Clearance–Establishing a Swine Resource and Research Center: Dr. Franziska B. Grieder, Health Scientist Administrator, Division of Comparative Medicine, NCRR

Dr. Grieder presented a concept concerning an NCRR-supported swine resource and research center. The goal of the center will be to ensure that biomedical investigators have access to critically needed swine models for studies involving human health and disease. This new swine resource would also provide the opportunity to develop further emerging research technologies such as genotyping and phenotyping of pig models, monitoring infectious diseases, and producing new transgenic and knockout models. This resource would also facilitate investigations into specific biomedical research areas, including cardiovascular and cerebrovascular diseases, diabetes mellitus, xenotransplantation, and neurodegenerative disorders, among others. The pig model presents a number of advantages over other animal models. These include the pig's size and physiological capacity, its availability in large numbers due to its large litter size and ease of breeding, and the advances made in genetic engineering.

NCRR's Division of Comparative Medicine, after discussing co-funding interests with several other NIH institutes and the USDA, proposes to develop and release a Request for Applications for a swine resource and research center. NCRR anticipates that one such swine resource center would be funded before September 2003. The meritorious and competitive center would serve as a resource for investigators in different research areas, both regionally and nationally in terms of maintenance, distribution, and preservation of the highest quality of swine strains utilized in biomedical research. The storage and distribution would include both live animals and reproductive cells. The resource would further include a research component involving such areas as the development and production of new transgenic and knockout swine strains, infectious disease control and elimination, or cryopreservation of germplasm.

Council endorsed the concept as presented.

XV. Update on the Institutional Development Award Program: Dr. W. Fred Taylor, Health Scientist Administrator, Division of Research Infrastructure, NCRR

Dr. Taylor provided an overview of the Institutional Development Award (IDeA) Program, which enhances biomedical and behavioral research for those states which received fewer than $70 million in NIH grant awards over the most recent five consecutive years and/or had a state-wide average success rate of less than 20 percent. NCRR's Division of Research Infrastructure provides competitive support through the IDeA Program to foster research within states that traditionally have not received significant levels of competitive funding from NIH. The programmatic objectives are to enhance the biomedical and behavioral research capacity at eligible institutions by

proving funds for investigator development as well as funds to enhance the institution's infrastructure (i.e., laboratories and equipment for research). The IDeA program includes two programmatic approaches: the Centers of Biomedical Research Excellence (COBRE) and Biomedical Research Infrastructure Networks (BRIN).

The objectives of COBRE are to augment and strengthen an institution's biomedical research capacity and to develop a multidisciplinary research center with a thematic science focus. COBRE also enables an institution to develop resources needed to conduct biomedical research, with the ultimate goal of preparing investigators to successfully compete for other NIH research grants. BRIN is designed to attract established biomedical and behavioral investigators to institutions in IDeA states, while creating statewide networks to use and develop the research skills of resident investigators and students to build a competitive research base.

Dr. Taylor introduced two IDeA grantees to the Council, who then described their programs to Council.

XVI. Report on the Kansas Biomedical Research Infrastructure Network: Dr. Joan S. Hunt, University Distinguished Professor, Department of Anatomy and Cell Biology, University of Kansas Medical Center

The Kansas Biomedical Research Infrastructure Network (K-BRIN) was developed in response to a call for proposals to improve the ability of researchers in underfunded states to compete for NIH research funds. The K-BRIN is headquartered on the School of Medicine campus of the University of Kansas, which is located in Kansas City. Four graduate degree-offering institutions and five undergraduate institutions spread across the State of Kansas participate in the K-BRIN. Four cores support (1) Administrative activities, which includes a statewide TeleResearch Network, housed on the Kansas City campus, (2) a Bioinformatics center with central facilities housed on the main University of Kansas campus in Lawrence, (3) a Research Support network for faculty and students in Kansas City, and (4) a Training and Mentoring center at Kansas State University in Manhattan, KS. At the conclusion of the three years of funding, the K-BRIN anticipates that its faculty will have become significantly more competitive to apply for NIH funds and that they will have encouraged more top-level students to select biomedical research as a life profession.

XVII. Report on the Delaware Biomedical Research Infrastructure Network (BRIN): Dr. David S. Weir, Director, Delaware Biotechnology Institute

Delaware's Life Science Initiative began in the mid-1990s, to establish Delaware as a center of excellence in the life sciences. In 1999, with support from the State of Delaware, the University of Delaware and the private sector, the Delaware Biotechnology Institute (DBI) was established as the hub of a statewide infrastructure for life science research, education and economic development. DBI, located within the Delaware Technology Park adjacent to the University of Delaware, is a 72,000 square-foot research

facility designed to house 25 faculty research groups. Interdisciplinary research areas at DBI include human health, agriculture, computational biology, marine ecosystems and biomaterials.

The NCRR BRIN program announcement was timely for Delaware, as the objectives of BRIN coincided well with the thrust of Delaware's Life Science Initiative. The Delaware BRIN, led by DBI, has coalesced the statewide life sciences partnership, resulting in the adoption of biotechnology development as one of the State's strategic objectives. Accomplishments in the first year of funding include establishment of core instrument centers, a new Department of Biotechnology at Delaware State University, an upgraded bioscience curriculum at Delaware Technical and Community College, and a new program for undergraduate research at Wesley College. Future objectives include faculty recruitment, enhanced cross-institutional interactions, and enhanced research opportunities at the undergraduate institutions.

CLOSED SESSION

This portion of the NARRC meeting was closed to the public in accordance with the determination that it was concerned with 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 U.S.C. Appendix 2).

NARRC members discussed procedures and policies regarding voting and confidentiality of application materials, Committee discussions, and recommendations. Members absented themselves from the meeting during discussion of and voting on applications from their own institutions, or other applications in which there was a potential conflict of interest, real or apparent. Members were asked to sign a statement to that effect.

XVIII. Application Review

Council considered 593 applications, for the total amount of $361,945,436.

ADJOURNMENT

The Council adjourned at 3:00 p.m. on September 19, 2002.

CERTIFICATION

We hereby certify that, to the best of our knowledge, the foregoing minutes and supplements are accurate and complete.

/s/ 10/15/02

Judith L. Vaitukaitis, M.D. Date
Chair, National Advisory Research Resources Council
and Director, National Center for Research Resources, NIH

/s/ 10/11/02

Louise E. Ramm, Ph.D. Date
Executive Secretary, National Advisory Research Resources Council
and
Deputy Director, National Center for Research Resources, NIH

These minutes will be formally considered by the Council at its next meeting; corrections or notations will be incorporated into the minutes of that meeting.

Attachment:
Council Roster

NOTE: Open Session materials are available from the Executive Secretary or the Committee Management Office, NCRR.