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

NATIONAL ADVISORY RESEARCH RESOURCES COUNCIL
MINUTES OF MEETING
MAY 18, 2006

The National Advisory Research Resources Council (NARRC) convened for its 133rd session at 8:00 a.m. on Thursday, May 18, 2006, in Conference Room 10, Building 31. Dr. Barbara M. Alving, Acting Director, National Center for Research Resources (NCRR), National Institutes of Health (NIH), presided as Chair. The meeting was open to the public until 1:45 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. Robert J. Beall
Dr. Wah Chiu
Dr. Kenneth G. Cornetta
Dr. Randall E. Dalton
Dr. Machi F. Dilworth
Liaison Member, NSF
Dr. Mark H. Ellisman
Dr. Catherine C. Fenselau
Dr. James G. Fox
Dr. Joan S. Hunt
Dr. Cynthia E. Keppel
Dr. Barbara B. Knowles
Dr. Bettie Sue Masters
Dr. John E. Maupin, Jr.
Dr. Thomas G. McGuire
Col. (Dr.) Debra M. Niemeyer
Dr. Paul G. Ramsey
Dr. Arthur W. Toga
Ms. Sheila C. Zimmet

COUNCIL MEMBERS ABSENT

Dr. Kelly D. Garcia
Dr. Roland F. Hirsch
Liaison Member, DOE
Dr. Stuart M. Zola

SPECIAL INVITED GUESTS FOR OPEN SESSION

Dr. Keith O. Hodgson, Director, Stanford Synchrotron Radiation Laboratory and Professor of Chemistry, Stanford University
Dr. Peter C. M. van Zijl, Professor of Radiology, Biophysics, and Oncology, Johns Hopkins University, and Director, F. M. Kirby Research Center, Kennedy Krieger Institute
Dr. Philip C. Andrews, Professor of Biological Chemistry, University of Michigan Medical School
Dr. Bruce J. Tromberg, Professor of Biomedical Engineering, University of California, Irvine

STAFF OF OTHER NIH COMPONENTS

Dr. Carlos E. Caban, OER
Dr. Khalid Masood, CSR
Dr. Marc L. Rigas, CSR
Dr. Ross D. Shonat, CSR
Dr. Margaret D. Snyder, OER/OD/NIH
Dr. Barbara J. Thomas, CSR

OTHERS PRESENT

Dr. Donna J. Dean, Lewis-Burke Associates, LLC
Mr. Stephen J. Heinig, Senior Staff Associate, Division of Biomedical and Health Sciences Research, Association of American Medical Colleges, Washington, D.C.

OPEN SESSION

I. Call to Order: Dr. Barbara M. Alving, Acting Director, NCRR

Dr. Alving welcomed Council members and guests to the 133rd meeting of the National Advisory Research Resources Council. She announced that the following Council members would not be present due to scheduling conflicts: Dr. Kelly D. Garcia, Dr. Roland F. Hirsch, and Dr. Stuart M. Zola. Also, Col. (Dr.) Peter Demitry has resigned as ex-officio member of the Council. He has been replaced by Col. (Dr.) Debra Niemeyer.

II. Consideration of Minutes: Dr. Barbara M. Alving, Acting Director, NCRR

The minutes of the Council meeting held on January 19, 2006, were approved as written.

III. Future Meeting Dates: Dr. Barbara M. Alving, Acting Director, NCRR

The next Council meeting will be held on Thursday, September 21, 2006.

IV. Personnel Update: Dr. Barbara M. Alving, Acting Director, NCRR

NIH Personnel

- In March 2006, Dr. Zerhouni announced that Dr. Roger I. Glass would be the new director of the Fogarty International Center and Associate Director of NIH for International Programs. Dr. Glass, who is currently the chief of the Viral Gastroenteritis Section at the Centers for Disease Control and Prevention in Atlanta, is scheduled to join NIH this month.

NCRR Personnel

Division of Clinical Research Resources

- In December 2005, Dr. G. Iris Obrams joined NCRR as a Medical Officer. From 2001 through 2005, Dr. Obrams served as the Medical Officer for Population Health in the Office of Health Services of the U.S. Coast Guard, Department of Homeland Security. Dr. Obrams also has 15 years of NIH experience, which includes having served as the National Cancer Institute's Associate Director for the Extramural Epidemiology and Genetics Research Program in the Division of Cancer Control and Population Sciences.

- Also in December 2005, Dr. Rosemarie Filart joined NCRR as a Medical Officer. Dr. Filart came from the Johns Hopkins School of Medicine where she was an Assistant Professor and the Director for Spinal Cord Medicine Services, inpatient and outpatient care. She also led the Johns Hopkins Bayview Interdisciplinary Prosthetics and Orthotics Outpatient Clinic.

- Dr. Dan Rosenblum joined NCRR as a Medical Officer in January 2006. Previously, Dr. Rosenblum was employed in the Oncology Branch of the Office of Cellular, Tissue, and Gene Therapies in the Center for Biologics Evaluation and Research at the Food and Drug Administration (FDA). He served as a Medical Officer and was responsible for reviewing and managing investigational new drug applications in the field of medical oncology. Prior to working at the FDA, Dr. Rosenblum practiced hematology and oncology in Kensington, Maryland and was active in the American Society of Hematology. He was previously Chair of the Division of Hematology/Oncology at Jewish Hospital in St. Louis, Missouri where he conducted laboratory research on human leukocytes.

- On April 16, 2006, Dr. Jody G. Sachs joined NCRR as a Health Scientist Administrator. Dr. Sachs was previously employed by the National Heart, Lung, and Blood Institute (NHLBI) where she served as the NIH Roadmap Scientific Project Officer for the Inventory and Evaluation of Clinical Research Networks Program and the Network Feasibility of Integrating Clinical Research Networks Programs. She also supervised the development of the National Electronic Clinical Trials and Research (NECTAR) Network. The goal of NECTAR, which will now be led by Dr. Sachs at NCRR, is to provide the informatics infrastructure that will serve as the backbone for interconnected and inter-operable research networks.

Division of Research Infrastructure

- Dr. Yanping Liu joined the Division of Research Infrastructure as a Health Scientist Administrator in November 2005. Dr. Liu's primary assignment is in the Institutional Development Award (IDeA) Program where she develops strategies to achieve the objectives of the IDeA Networks of Biomedical Research Excellence and the Centers of Biomedical Research Excellence (COBRE). She holds both the M.D. and Ph.D. degrees and was previously

employed as an Associate Professor at the Medical College of Wisconsin where she performed diabetes and coronary heart disease research.

Division of Comparative Medicine

- Dr. Harold L. Watson moved to NCRR's Division of Comparative Medicine as a Health Scientist Administrator in June 2005. Dr. Watson spent the previous year as a Scientific Review Administrator in the NCRR Office of Review. During his research career, he moved from the field of bacterial pathogenesis in academia to immune-based and inflammatory-mediated disease in the pharmaceutical industry.

- Ms. Desiree von Kollmar joined NCRR's Division of Comparative Medicine as a Program Analyst in November of last year. Ms. Von Kollmar previously held the position of Laboratory Manager at the National Institute of Mental Health where she supervised the day-to-day operations of a laboratory, performed comparison studies of diseased and normal biologicals looking for protein variations, and developed protocols for new protein-detection systems.

Division of Biomedical Technology

- Mr. David Timpane joined the Division of Biomedical Technology as a Program Analyst in April of this year. Mr. Timpane was previously employed at the Public Education Network, which is a national nonprofit organization dedicated to ensuring quality public education for the nation's children.

Office of Review

- Dr. Mamta Gautam-Basak joined NCRR as a Scientific Review Administrator in September 2005. Dr. Gautam-Basak administers the review of applications for COBRE, NIH Roadmap, and the National Primate Research Centers (NPRCs) Special Emphasis Panels. She previously worked at the FDA where she served most recently as Chemistry Team Leader in the Division of Metabolic and Endocrine Drug Products, Center for Drug Evaluation Research.

- Dr. Bonnie Dunn joined NCRR as a Scientific Review Administrator in November 2005. Dr. Dunn organizes and conducts the SEPA review along with a wide range of other Special Emphasis Panels. She was previously employed with the National Institute of Biomedical Imaging and Bioengineering as a Scientific Review Administrator. Prior to joining NIH, Dr. Dunn was with the FDA for 10 years.

- In October 2005, Dr. Steven Birken also joined the Office of Review as a Scientific Review Administrator. Dr. Birken administers the review of grant applications for several Special Emphasis Panels, the Biotechnology R21/R33 program, and the in-house reviews of conference grant applications. Before joining NCRR, he served at Columbia University College of Physicians and Surgeons where he worked for 30 years as a glycoprotein hormone chemist.

Office of Grants Management

- Ms. Carol Alderson joined the Office of Grants Management in November 2005 as the Deputy Grants Management Officer. Prior to joining NCRR, Ms. Alderson worked for the Office of the Director, Office of Extramural Research as an Assistant Grants Policy Officer. Also, she worked at the National Institute of Allergy and Infectious Diseases for five years, where she managed a portfolio of AIDS research grants, including the AIDS Clinical Trials Units.

Office of the Director

- In February 2006, Ms. Theresa Smith was named NCRR's new Budget Officer. Ms. Smith was previously employed at the Agency for Healthcare Research and Quality, also as a Budget Officer, where she was responsible for budget execution and financial management.

- Ms. Bonnie Richards is NCRR's new Senior Administrative Officer, effective in January 2006. Previously employed at the National Cancer Institute (NCI), Ms. Richards served as NCI's Deputy Administrative Resource Center Manager. She was responsible for overseeing and managing administrative duties for the Office of the Director and Extramural Divisions.

Office of Science Policy and Public Liaison

- Ms. Cindy Caughman joined NCRR as a Health Policy Analyst in October 2005. Ms. Caughman is working on a wide range of legislative, policy, and planning activities. Her previous position was with the National Heart, Lung, and Blood Institute where she served as the Public Liaison Officer, working with public organizations and research advocacy groups.

- Dr. Kameha Kidd joined NCRR in May as a Program Analyst. Dr. Kidd is responsible for planning, initiating, and conducting a wide variety of analytical studies. She formerly was a postdoctoral fellow in the Laboratory of Molecular Genetics at the National Institute of Child Health and Human Development where she worked on the identification of genetic factors responsible for determining arterial versus venous identity in the zebrafish embryo using microarray technology.

V. NCRR Budget Retreat—Maximizing Synergies and Efficiencies for NCRR-funded Programs: Dr. Barbara M. Alving, Acting Director, NCRR

Representatives from all NCRR divisions and offices participated in a budget retreat held on April 14, 2006. During the retreat, each division provided a brief overview of its programs, with specific attention paid to the roles and responsibilities of budgeting. Retreat participants then explored strategies to maximize synergies and efficiencies for NCRR-funded programs. Three strategies were discussed: Managing a Portfolio and Increasing Efficiencies; Forging Strategic Partnerships; and Fostering

Translational Research and Other Trans-NCRR Collaborations. At the end of the discussion, participants identified overarching action items.

On April 27, a majority of the NCRR staff participated in a post-retreat meeting. The meeting provided an opportunity to refine, finalize, and prioritize the action items that emerged from the retreat. As progress is made in this area, NCRR will call on Council members for input and guidance.

VI. Legislative and Budget Updates: Dr. Barbara M. Alving, Acting Director, NCRR

On April 6, 2006, Dr. Elias A. Zerhouni, Director, NIH, testifed on the FY 2007 budget request before the House Appropriations Subcommittee on Labor, HHS, and Education. Dr. Zerhouni, who was the principal witness, was accompanied by Drs. John E. Niederhuber, Acting Director, NCI; Elizabeth G. Nabel, Director, NHLBI; Anthony S. Fauci, Director, NIAID; Francis S. Collins, Director, NHGRI; and Griffin P. Rodgers, Acting Director, NIDDK. NCRR is now in the process of answering congressional questions that were submitted subsequent to the hearing.

The NIH Senate Appropriations hearing is scheuled for May 19, 2006. Dr. Zerhouni will testify, and the subcommittee has invited Drs. Niederhuber, Nabel, Fauci, and Collins to accompany Dr. Zerhouni.

The President's budget request for FY 2007 was released on February 6, 2006. The FY 2007 program level for the NIH is $28.4 billion, the same as the FY 2006 level. For NCRR, the President's budget request is $1.1 billion including support for AIDS research, a decrease of $0.9 million below the FY 2006 appropriation. No funds for extramural construction are included in the FY 2007 request. Included in the FY 2007 request is NCRR's support for the trans-NIH Roadmap initiatives estimated at $13.3 million or 1.2 percent of NCRR's FY 2007 budget request. It also includes funds for the initiative led by NCRR on behalf of the NIH Roadmap—the Clinical and Translational Science Awards (CTSAs), as well as NCRR support for two new NIH programs—the Genes, Environment, and Health Initiative; and the Pathway to Independence Program.

VII. Updates on NCRR Workshops: Dr. Harold L. Watson and Dr. John (Jack) D. Harding, Division of Comparative Medicine; Dr. Michael H. Sayre, Division of Research Infrastructure; and Dr. Peter T. Highnam, Senior Advisor to the Director, NCRR

Dr. Alving introduced four brief presentations on recently held NCRR workshops. These workshops stemmed from the NCRR FY 2007 Budget Retreat, held in August 2005.

Navigating the Translational Researcher Through a Complex of Animal and Biological Resources

Dr. Watson reported that 50 participants attended the workshop held March 6-7, 2006. The workshop explored creating a comprehensive resource portal for researchers to find and effectively utilize all NIH-supported animal model and related biological resources. This portal, or Animal Information Center, would enhance access and retrieval of information from existing model databases and accommodate the addition of new ones. Participants discussed potential users for this new resource, challenges in developing it, and the use of existing tools and technologies in the development of the portal. Next steps include cataloguing existing animal model databases and selecting a disease category—or specific disease—to develop a scalable prototype model. Council members Drs. Mark Ellisman, Barbara Knowles, Arthur Toga, Stuart M. Zola, and Robert J. Beall (or a representative to be named later from the Cystic Fibrosis Foundation) volunteered to be part of the effort to help move forward the agenda.

View the Workshop Summary. A Final Workshop Report that summarizes the discussions and recommendations is under development and will be posted on the NCRR Workshops Web site.

Genetic Tools for Optimizing the Use of Rhesus Macaques for Translational Research

Dr. Harding noted that the purpose of this workshop was to define the next generation of genetic tools needed to optimize the use of rhesus macaques in translational research. The Division of Comparative Medicine considers this to be a timely topic, because the rhesus is the most widely used nonhuman primate for translational studies directly related to human health. In addition, a set of first-generation genetic tools has been developed for the rhesus, and its genome has been determined. Currently, there is a need to define the next generation of genetic tools. A total of 80 participants attended the workshop, held April 19-20, 2006. Participants discussed currently available genetic tools and their specific application areas. Workshop panels developed short lists of major tools used today and those needed for the near future. Overall recommendations included the development of the following: phenotypic data for each rhesus at the National Primate Research Centers (NPRCs) and a related database available to all researchers; a single nucleotide polymorphisms (SNP) map of the rhesus; a repository containing blood samples and cell lines derived from each rhesus at the NPRCs; and reagents and sequences for other macaques.

View the Workshop Summary. A Final Workshop Report that summarizes the discussions and recommendations is under development and will be posted on the NCRR Workshops Web site.

Supporting Connectivity for Biomedical Research

Dr. Sayre reported on the workshop held April 24, 2006, that brought together experts and researchers from the biomedical and computer networking communities and federal science agencies. The purpose was to identify and discuss key challenges to improving network connectivity and utilization across a broad spectrum of users, including those with access to cutting-edge networks and those who have little or no connectivity. The charge to the group was to examine best practices for implementing collaborative research networks and to identify key needs and priorities for cyberinfrastructure development during the next three to five years. The workshop encouraged efforts to strengthen existing partnerships and build new partnerships among funding agencies, academic organizations, and the private sector to better coordinate, expand, and optimize investments in network infrastructure. In particular, the workshop sought to leverage natural intersections between biomedical research and health care in order to broaden community participation in health research and facilitate development of clinical and translational research networks.

View the Workshop Summary. A Final Workshop Report that summarizes the discussions and recommendations is under development and will be posted on the NCRR Workshops Web site.

Ensuring the Inclusion of Clinical Research in the National Health Information Network

Dr. Highnam noted that the workshop, held May 9, 2006, was jointly sponsored by NCRR, the Agency for Healthcare Research and Quality, and the nonprofit organization FasterCures. The workshop's purpose was to create a plan to incorporate clinical and translational research as part of the emerging Nationwide Health Information Network (NHIN). Workshop participants included experts representing academic research, health care providers, consumers, federal and private payers, pharmaceutical and industry representatives, consultancies, and multiple government agencies. Keynote presentations were followed by a panel session that provided the diverse group of attendees with the opportunity to establish a common ground and to discuss research and local prototypes of health information exchange. During breakout sessions, participants developed a list of key steps that need to be taken to include research in the NHIN activities. Meeting participants identified two sets of cases—related to patient accrual and phase-four post-market surveillance—that would provide concrete examples of requirements and issues. In addition, many participants expressed the desire for an organizational voice for the clinical research informatics community and the need for a more formal model, such as the Connecting for Health^{SM} approach to be applied to research.

View the Workshop Summary. A Final Workshop Report that summarizes the discussions and recommendations is under development and will be posted on the NCRR Workshops Web site.

VIII. Genome-Wide Association Studies: Dr. Anthony R. Hayward, Division for Clinical Research Resources, NCRR

Dr. Hayward informed the Council of the May 15, 2006 release of a notice (NOT-OD-06-071) that will impact applicants of NIH genome-wide association studies (GWAS). The NIH is interested in advancing GWAS to identify common genetic factors that influence health and disease, because the information derived from such studies will be essential for developing new approaches to reduce disease burden and promote health. GWAS are currently defined as any study of genetic variation across the entire genome that is designed to identify genetic associations with phenotypic traits or disease status. The purpose of this Notice is to inform investigators of the NIH plans to: 1) update data sharing policies for research applications involving GWAS data; 2) initiate a public consultation process to inform policy development activities over the next few months; and 3) announce the agency's intent to track GWAS applications and awards at a central level.

To ensure maximum benefit to the public health, the NIH is considering policy and programmatic steps to promote broad and consistent sharing of GWAS data for all NIH-supported GWAS genotype-phenotype datasets, such as strong encouragement for early release of phenotype and genotype data, and the development of a central database to serve as a common GWAS repository (consistent with human subject protection issues). Recognizing the range of issues to be considered, the NIH plans to undertake an extensive public consultation effort through interactions with scientific and public stakeholders. The specific plans for these activities will be announced broadly in the near future. Among the potential topics to be considered are: the creation of a central genotype-phenotype database that could serve as a common data repository for all NIH-supported GWAS; requirements for submission of data to such a common repository; appropriate policies for access to GWAS data; standards for participant protection in this rapidly evolving area of science; publication polices that recognize the interests of the researchers who collect samples and associated data; and intellectual property considerations for inventions arising from the use of GWAS data. Dr. Hayward is the NCRR point of contact. Anyone interested in submitting comments should contact him directly.

Dr. Hayward also announced that NCRR will be reissuing the RFA for the Clinical and Translational Science Awards. The submission date for the applications will be January 17, 2007. Additional Information about the upcoming RFA was issued in the *NIH Guide* (NOT-RM-06-016) on May 10, 2006.

IX. Biomedical Technology Resource Centers—Overview: Dr. Michael T. Marron, Director, Division of Biomedical Technology, NCRR

Dr. Marron explained that the Division of Biomedical Technology supports more than 50 specialized Biomedical Technology Resource Centers (BTRCs) across the country, primarily at major academic institutions and health centers. These BTRCs support the discovery, development, and dissemination of powerful, leading-edge technologies that have broad application to the study of biology and medicine. They serve as a hub for both multidisciplinary and interdisciplinary research, which

ultimately introduces new tools and technologies to the biomedical research community. BTRCs mainly are built around core technology development but also are involved in training, dissemination, service, and collaborations.

The division supports five technology areas: information technology; optical/spectroscopic technology; imaging technology; technology for structural biology; and technology for systems biology. Over the years, the BTRCs have been responsible for the development of several leading technologies such as MRI, peptide sequencing by mass spectrometry, multi-photon microscopy, and use of synchrotron X-rays for structural biology.

The median length for a BTRC award is 10 years. The awards have been leveraged effectively, with BTRC users receiving more than $700 million in funding from other NIH Institutes or Centers.

Dr. Marron then introduced the Principal Investigators from four NCRR-supported BTRCs who presented the details of their work at the following centers: the Synchrotron Radiation Structural Biology Resource, headed by Dr. Keith Hodgson; the Resource for Quantitative Functional MRI, headed by Dr. Peter van Zijl; the National Resource for Proteomics and Pathways, headed by Dr. Philip Andrews; and the Laser Microbeam and Medical Program, headed by Dr. Bruce Tromberg.

X. **Technology Development for Structural Biology: Dr. Keith O. Hodgson, Director, Stanford Synchrotron Radiation Laboratory and Professor of Chemistry, Stanford University**

Dr. Hodgson spoke about the use of synchrotron X-rays in biomedicine. The Synchrotron Radiation Structural Biology Resource at the Stanford Synchrotron Radiation Laboratory (SSRL) provides scientists with access to synchrotron radiation, a name given to X-rays or light produced by electrons circulating in a storage ring at nearly the speed of light. Extremely bright X-rays are used to investigate various forms of matter in exquisite detail, down to atomic and molecular levels. At Stanford, synchrotron X-rays are used to investigate the structural biology of complex molecular machines, membrane systems, and macromolecular assemblies.

By using synchrotrons, researchers can create a three-dimensional “picture,” showing every atom of a protein or macromolecule. Studying molecular form at the atomic scale is important, because the structural details can determine its function or malfunction. For example, examination of membrane proteins is helping scientists to understand multi-drug resistance in the treatment of infection. Most multi-drug resistance is attributed to pumps in the cell membranes that recognize and expel much-needed antibiotics.

The SSRL Resource Center also has been used to study the structures of RNA polymerase and ribosomes—cellular “machines” that direct the manufacture of proteins. In addition, synchrotron-based crystallography has provided critical information about the molecular architecture and function of cell membrane channels, transporters, and electron transfer complexes.

XI. The Developing Brain—Imaging Technology and Its Clinical Translation: Dr. Peter C. M. van Zijl, Professor of Radiology, Biophysics, and Oncology, Johns Hopkins University, and Director, F. M. Kirby Research Center, Kennedy Krieger Institute

Dr. van Zijl noted that the Resource for Quantitative Functional Magnetic Resonance Imaging combines facilities at the Kennedy Krieger Institute and the Center for Imaging Science at Johns Hopkins University. As one of eight NCRR-supported national resources for magnetic resonance, the resource center is dedicated to developing novel brain imaging techniques for application in the study of children, the elderly, and subjects with neurological and psychiatric disorders. Dr. van Zijl explained that brain function, physiology, and structures are constantly changing as the brain develops. Investigators face the challenge of determining which changes are normal and which are due to disease.

The magnetic resonance imaging (MRI) and magnetic resonance spectroscopy (MRS) technology developed in the center is being used to study motor learning in autistic children, motor function in children with attention deficit/hyperactivity disorder, and brain function in individuals at risk for developing Huntington's disease. Scientists also are studying mental retardation, trauma, impaired brain development, autism, working memory, psychosis, cancer, stroke, and the link between abnormal brain chemistry patterns and disease. In addition, the resource center disseminates software programs, databases, and reports; it also provides training in pulse sequence optimization, data analysis, and data interpretation.

The resource center's new projects focus on reducing the need for patient compliance in difficult populations, assessing tissue changes via multi-modality MRI/MRS, and examining alterations in brain function, physiology, and/or pathology during brain development.

XII. National Resource for Proteomics and Pathways: Dr. Philip C. Andrews, Professor of Biological Chemistry, University of Michigan Medical School, Ann Arbor

Dr. Andrews explained that the National Resource for Proteomics and Pathways (NRPP) is one of several NCRR-funded proteomics, glycomics, and mass spectrometry centers in the United States. The NRPP was established to develop computational and bioinformatics tools for proteomics, provide the datasets required to build predictive organismal models, and develop technologies needed to produce proteomics data. Proteomics is rapidly growing in all areas of biological research. Advances in proteomics have led to precisely measuring the levels of expressed proteins and their modified forms. This information can lead to new insights on cell-signaling pathways, cellular differentiation, and other processes that affect the progression of disease.

One of the principal resources of the NRPP is ProteomeCommons.org, a free and public repository of digital content relating to proteomics, and a foundation for building a collaborative research community around such content. The Web site is a

one-stop shop for most proteomics open source tools. Currently, approximately 100 tools are available on the site. The site holds data sets to develop and test new algorithms, as well as code-development tools. In addition, a peer-to-peer data sharing system has been built to allow sharing of proteomic data.

XIII. Translating Optical Technologies from Benchtop to Bedside: Dr. Bruce J. Tromberg, Professor of Biomedical Engineering, University of California, Irvine

Dr. Tromberg explained that the Laser Microbeam and Medical Program (LAMMP), located within the Beckman Laser Institute and Medical Clinic, is dedicated exclusively to the use of lasers and optics in biology and medicine. LAMMP core research emphasizes the development of optical instrumentation and biophysical models of the interactions between light and tissue. One of its primary goals is to translate basic science into clinical medicine. LAMMP-supported activities within the Beckman Laser Institute have resulted in the development of several technologies with broad academic and commercial impact. Training of undergraduate, graduate, and post-graduate students in biomedical optics occurs each year, with LAMMP-trained scientists now working as faculty in biomedical optics programs at approximately 18 academic centers around the world. Technology development has resulted in over 15 patents, 4 startup companies, more than 15 licenses, and over $20 million in licensing royalties.

LAMMP provides both laser microbeam and microscopy technologies for optical manipulation and functional imaging of living cells, as well as laser medical translational technologies for monitoring, treating, and imaging preclinical animal models and human subjects. Among the laser microbeam technologies pioneered by LAMMP are laser “tweezers” and “scissors” and non-linear optical microscopy. Laser tweezers utilize a focused laser beam that generates sufficient force to grasp a cell without damage, while laser scissors are used to cut, microdissect, or ablate cells. LAMMP medical technologies have been developed for spectroscopy and imaging of thick tissues such as breast, brain, and muscle—as well as superficial tissues such as skin, oral cavities, airways, and the gastrointestinal tract. Broad applications of these technologies include cancer detection, cardiovascular disease, neuroscience, and metabolic syndrome, with special emphasis on early disease detection, monitoring, therapy, high-risk subjects, and multi-modality imaging.

XIV. NIH Roadmap for Interdisciplinary Research Consortia: Dr. Gregory K. Farber, Health Scientist Administrator, NCRR

Dr. Gregory Farber presented an update on the status of the Interdisciplinary Roadmap Consortium Program, which awards grants to fund Exploratory Centers for Interdisciplinary Research. The purpose of these exploratory centers is to unite researchers from multiple disciplines to begin working on a difficult biomedical problem. The program is managed by NCRR and involves all NIH Institutes and Centers.

In the first phase of this trans-NIH initiative (FY 2004 through FY 2006), 21

Exploratory Centers for Interdisciplinary Research were awarded in various scientific areas, using the P20 mechanism. The second phase of this program (FY 2007 through FY 2011) will focus on supporting a series of linked awards for interdisciplinary research. Each group of these linked awards will be considered a consortium with an allowable budget of roughly $3 million in direct costs per year. Applications to this program will not be restricted to the initial P20 awardees.

A new two-stage application process, including a pre-application and a full proposal stage, has been adopted for the awards. In the pre-application phase, research teams can submit a 25-page overview of their research plans. NCRR is currently conducting a peer review of these pre-applications, which were due on April 18, 2006. Results of the pre-application evaluations will be available to applicants by September 15, 2006. The trans-NIH Project Team and Interdisciplinary Working Group will use the results of the review to issue invitations to a select number of consortia to submit a full proposal, due on December 19, 2006. Consortia awards will be made in September 2007. The Council will be provided with an additional report during the next meeting's closed session.

CLOSED SESSION

This portion of the Council 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).

Council 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.

XV. Application Review

The Council considered 276 applications and recommended 276 for a total first-year amount of $215,373,040 (direct costs).

ADJOURNMENT

The Council adjourned at 3:30 p.m. on May 18, 2006.

CERTIFICATION

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

Barbara Alving — 7/25/06

Dr. Barbara M. Alving
Chair, National Advisory Research Resources Council
and
Acting Director, National Center for Research Resources, NIH

Date

Louise Ramm — 7/21/06

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

Date

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.