

**DEPARTMENT OF HEALTH AND HUMAN SERVICES  
PUBLIC HEALTH SERVICE  
NATIONAL INSTITUTES OF HEALTH  
NATIONAL ADVISORY COUNCIL FOR  
BIOMEDICAL IMAGING AND BIOENGINEERING  
TRAINING AND CAREER DEVELOPMENT SUBCOMMITTEE**

**Summary of Meeting  
September 11, 2003**

The second meeting of the Training and Career Development Subcommittee convened on September 11, 2003 at 8:15 A.M, in conference room 7, Building 31, NIH campus. Dr. C. Douglas Maynard chairperson presided. Subcommittee members present:

Dr. C. Douglas Maynard  
Dr. Linda C. Lucas  
Dr. Stephen A. Williams  
Dr. Rebecca R. Richards-Kortum

Subcommittee member absent:

Dr. Shirley A. Jackson

Other NACBIB member present:

Dr. James Zagzebski

NIBIB staff present:

Dr. Robert Nerem  
Dr. Richard Swaja  
Dr. Meredith Temple-O'Connor  
Ms. Sandra Talley  
Ms. Mollie Sourwine  
Ms. Anna Retzke  
Dr. Patricia Sokolove  
Dr. Alan McLaughlin  
Ms. Donna Pearman  
Ms. Brenda Mitchell

Other Attendees:

Dr. Elaine Young, University of Maryland, Baltimore County  
Ms. Rene Cruea, Academy of Radiology Research  
Dr. Farshid Guilak, Duke University

Dr. Maynard opened the meeting by requesting introductions. He summarized actions from the May 2003 meeting that focused on administrative issues. At that meeting, the Subcommittee also asked staff to provide information on current NIBIB training programs and the planned Intramural Division. The Intramural presentation would be postponed until the January 2004 meeting.

Staff reviewed the guidelines for the operation of the Subcommittee, noting that the Subcommittee operates under the authority of the Federal Advisory Committee Act and the Government in the Sunshine Act. All meetings are announced in the *Federal Register* and are open to the public. Dr.

Joan Harmon is the designated federal official who is the liaison for all communication between the staff and the Subcommittee.

The Subcommittee accepted the minutes of the May 2004 meeting without changes.

Staff described current NIBIB training programs and plans for future initiatives. NIBIB currently participates in several ongoing NIH training programs using mechanisms in the Fellowship (F), Career (K) and Training (T) series that provide pre and postdoctoral fellowships, a variety of support for established scientists throughout their career, and institutional training awards. The Institute also participates in the NIH Research Supplements programs for minorities and individuals with disabilities. Staff presented data on the NIBIB training portfolio, which they indicated showed very few applications or funded grants in most categories, except the T32 institutional training grants and the K25 Mentored Career Development Award. As NIBIB is a new institute, it was emphasized that these numbers should grow significantly as the Institute matures.

In other activities, NIH R15 AREA grants have been moved from the Research Divisions to the NIBIB Training Division and discussions are underway with other Institutes at the NIH to develop a tracking system for all training grants. NIBIB also has plans to sponsor an annual meeting for training grantees.

The NIH jointly sponsors with the National Science Foundation (NSF) the Bioengineering and Bioinformatics Summer Institutes (BBSI). Administered by the NSF, the program offers two summers of research training to 3<sup>rd</sup> and 4<sup>th</sup> year undergraduates and early graduate students. Nine institutions conducted their first sessions this past summer. Feedback from participants was positive with 85% of participants indicating that they will return next year. A grantee meeting is scheduled for November 21, 2003. A brief discussion ensued.

Staff has completed seven of ten planned visits to universities with NIBIB institutional training grants (T32s) to meet the program directors and students. Through these discussions, training directors conveyed a number of administrative concerns, including lack of financial support for program administrators. There are recruiting problems, particularly at the postdoctoral level. Citizenship requirements may hamper recruitment of the best candidates, as many in this category are from other countries. There was a brief discussion of this issue. Staff could not provide Council data on the percentage of foreign applicants for these programs, but committed to include this information in a forthcoming report on these visits. Staff also noted that there are few MDs in any of these programs. Interesting features of these programs include: co-mentoring; interdisciplinary training opportunities; clinical and industry rotations; and trainees from different disciplines.

Council raised questions about the stipend levels in these programs. It was noted that the NSF Interdisciplinary Graduate Education and Research Training awards provide substantially higher stipends. Staff offered that the Director, NIH sets NRSA program stipend levels.

In accordance with instructions from the President, the meeting paused at 8:46 AM for a moment of silence in remembrance of the victims of the events of September 11, 2001.

As reported by Dr. Pettigrew at previous Council meetings, there are three training initiatives under consideration at this time: training for medical residents; a career transition award; and a modified

institutional training award. For the first of these, the NIBIB proposes to initially supplement existing NIBIB grants to support training for medical residents. Candidates would submit a project proposal for peer review. Requirements for award duration and percentage effort are still under discussion.

Council asked if NIBIB could supplement grants held by other NIH Institutes, as it appears that the majority of research grants in biomedical imaging and bioengineering are housed in other Institutes. Staff indicated that this could be done, if other NIH Institute Directors agree to this collaboration, but that these discussions had not occurred yet. Staff also noted that the idea of using a supplement as a training mechanism has been considered by a number of Institutes at the NIH, especially during discussions of the NIH Roadmap activities. In response to concerns expressed by the Subcommittee about the limited number of MDs pursuing research training, staff described some special efforts by other NIH Institutes to support MDs in research.

There was discussion of a potential length for the award and percentage effort. Subcommittee members agreed that one year of training would only provide sufficient exposure to research to hopefully encourage a commitment to the field. Actual training would have to come through other mechanisms. A 75% level of effort was proposed to allow time for trainees to maintain their clinical skills.

Council asked staff about the number of MDs currently supported through NIBIB research grants. An examination of grant listings provided to Council for review showed few MDs in the applicant pool. Staff noted that it is challenging to attract MDs to research, but NIBIB hopes to develop a five to six year program that will facilitate transition of MDs from the initial exposure to a full commitment to a research career.

Subcommittee members endorsed the supplements idea because NIBIB could establish such a program quickly.

Council requested information on the amount of money proposed for these awards. Staff indicated that the award would provide a salary, travel and research money for the trainee. Council suggested that NIBIB include money for the mentor to ensure success for the program, as has been noted at numerous workshop discussions of training.

The second proposed initiative, the career transition award would duplicate a similar program sponsored by other Institutes at the NIH. Many Institutes currently use the NIH K22 mechanism to bring postdoctoral fellows to the NIH for two to three years of postdoctoral training within their Intramural divisions followed by two to three years of research support during the transition to a faculty position. Because NIBIB does not yet have an Intramural Division, grantees would work at universities during the initial phase of this program and be encouraged to move to a different university during the second phase, a structure currently offered by the National Human Genome Research Institute.

In the discussion of this initiative, staff stated that an administrative review would be required for movement from the postdoctoral phase to the faculty phase for this award. Significant changes in the scope of the research, however, would require peer review. Council agreed that research funding would enhance the ability of these grantees to obtain faculty positions. Council members discussed

whether the faculty position should be a research position or a tenure-track position and agreed that the award should allow both options. Members also emphasized the need to obtain the university's commitment to protected time for the grantee's research. Council suggested that NIBIB offer the faculty transition portion of this award as a stand-alone option. Staff indicated that such a program may come through a separate initiative. In response to Council concerns on the priority the extramural community attaches to issues addressed through these two potential initiatives, staff noted that recommendations for these programs were put forth at several past workshops.

The third initiative proposes additional funding for a conventional T32 award to support administrative needs, training for undergraduates and post-graduate students, and curriculum development through the NIH R25 educational award. Council put forth the suggestion that NIBIB consider ways to promote a mix of medical students and bioengineering students in institutional training programs.

For the future, NIBIB plans to: expand eligibility for the F31, try to increase applications for AREA grants, support curriculum development, and explore short-term and national training programs. Staff cautioned that NIBIB's ability to pursue any of these initiatives depends of the level of appropriated funds. Many of these ideas have also been discussed as part of Dr. Zerhouni's Roadmap planning process and may therefore be implemented as trans-NIH initiatives.

In response to the Subcommittee's previous request to be involved in the development of NIBIB's strategic plan for training, staff explained that the Subcommittee would have an opportunity to review the training portion of the plan to be written by the staff.

Dr. Maynard stated that NIBIB staff had significant involvement in a meeting on research training in radiology sponsored jointly by the NIBIB and three organizations of professional radiologists in August 2003. The meeting was convened to discuss infrastructure for research in radiology departments and how to improve training opportunities for clinical researchers. A draft report has been completed. Recommendations from the workshop include the following:

- Recruit more MDs and MD/PhDs into radiology research programs
- Develop a national resource for mentoring
- Encourage the Resident Review Committees and American Boards of Radiology to start asking more questions related to research
- Develop a grant program for medical residents like the one discussed above
- Emphasize multidisciplinary research and training, particularly in the clinical arenas
- Create a model curriculum for research training
- Develop masters degree programs for radiological sciences

Dr. Maynard announced that the next meeting would be January 2004 in conjunction with the next training meeting. Items on the agenda would be: (1) the proposed NIBIB Intramural Division; (2) a report on the BBSI meeting; and (3) a report from staff on the demographics of current NIBIB supported trainees. The meeting adjourned at approximately 9:45 AM.

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

/s/

---

Joan T. Harmon, Ph.D.  
Executive Secretary  
National Advisory Council for Biomedical  
Imaging and Bioengineering  
Director, Office of Extramural Policy  
Office of Science Administration  
National Institute of Biomedical Imaging and  
Bioengineering

/s/

---

Roderic I. Pettigrew, Ph.D., M.D.  
Chairperson  
National Advisory Council for Biomedical  
Imaging and Bioengineering  
Director  
National Institute of Biomedical Imaging and  
Bioengineering

The Council will consider these minutes at its next meeting. Corrections or notations will be incorporated in the minutes of that meeting.