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Office of Education, Division of Intramural Research
National Heart, Lung, and Blood Institute

FELLOWS NEWSLETTER

The Fellows Newsletter is published monthly by the Office of Education, Division of Intramural Research, National Heart, Lung and Blood Institute and distributed to NHLBI DIR members to promote the interest of DIR Fellows.

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From the Director of the Office of Education

The NIH has announced a new grant program "**Pathway to Independence**" that is of special interest to NHLBI Fellows who want to obtain an academic position. It pays for up to two years at NIH and three years of startup money. The first deadline for this grant is April 7th, followed by future deadlines three times a year. Dr. Geller will be conducting a grant writing clinic for those that intend to apply soon. See the article below for more information.

Registration is now open for the **4th Annual Fellows Retreat**, on April 27-28th , once again at the Harbourtowne Conference Center. All fellows are invited to attend and present their work at the poster session during the retreat. Our Keynote speaker will be Dr. J. Craig Venter, former NIH Scientist who developed expressed sequence tags (ESTs). Our Scientific Speaker is Dr. Stuart Orkin, a Howard Hughes Medical Institute investigator at Children's Hospital and Dana Farber Cancer Institute where his research concerns how commitment to specific lineages is programmed and cell-specific patterns of gene expression are established in hematopoietic stem cells. Registration is free! More information and registration and abstract submission instructions are on the OE Web site.

Our next **Career Development Seminar** is on Tuesday, February 14th at Noon, in Room 7S235, where Jeffrey Mervis, well-known Science Editor, Science Magazine will speak on "Careers in Science Journalism".

The first **NHLBI Fellows Science/Social Hour** was held on January 19th, and consisted of talks followed by a social hour in Bethesda. The next one is on Thursday, February 16th at 5:00 PM in room 7S235, where two fellows from LKEM will present their results. Participate in these seminars to learn what other fellows are doing and to meet your colleagues,

Pathway to Independence

Dr. Herbert M. Geller
Director, Office of Education

The NIH has just announced a new grant mechanism "Pathway to Independence Award" which replaces and expands the K22 Career Transition Grant for NIH Fellows who want an academic career. There are several major differences between the K22 and this new program that make it attractive for NHLBI Fellows. These are:

- Open to all Postdoctoral Fellows with less than 5 years of postdoctoral training;
- Not restricted to the NIH Intramural Program;
- Not restricted to American Citizens or Permanent Residents.

As for the K22, the award will provide up to five years of support consisting of two phases. The initial phase will provide up to 2 years in the intramural program. This phase will be followed by up to 3 years of independent support contingent on securing an independent research position in the United States.

The first deadline for submission is April 7th; further deadlines follow the standard NIH receipt dates of June 1, October 1 and February 1.

Here are some frequently asked questions:

1) What are the most important factors in deciding whether I should apply?

The most important part is that you have identified an important problem that will form the basis for your research when you leave NIH and that you can define your Specific Aims (experiments that you will do). The next is that you have a publication record in high-quality journals during your entire career, including your postdoctoral years. Reviewers will evaluate your potential for success based on your past achievements and commitment to a research career.

2) When should I apply for this grant?

Ideally, you should apply during your third or the beginning of your fourth year at NIH. However, if you have been here longer, you should apply as soon as possible. This is because most applications fail on the first try, and will have to be resubmitted.

3) What if I am in my fifth year of my IRTA/VF?

DIR is planning to extend the time for any fellow that receives one of these awards.

4) What are the chances for success?

This is hard to predict, but NHLBI will fund 18 awards in FY2007 (beginning Oct. 1). Because of the timing, it is likely that at most 6 will be funded from the first round of applications.

The Office of Education will coordinate a Grants Writing Clinic beginning on February 8th for all fellows that intend to submit a grant for either the April 7 or June 1 Deadline.

The National Post-Doc Meeting, January 13-14, 2006

Dr. Rebecca Lipsitz, LBC

Editors Note: Dr. Lipsitz Represented NHLBI at this recent meeting. If you are interested in representing NHLBI in the future, such as at the National Postdoctoral Assoication meeting in Bethesda in April, please let us know.

If you've spoken with your post-doc colleagues outside the NIH you know that the post-doc training experience varies greatly between institutions. Until recently, most institutions had relatively few policies in place regarding the expectations of the training involved in post-doctoral training. Although some may argue that the flexible nature of post-doc training is the key to intellectual growth, institutions are starting to understand the importance of formalizing certain aspects of post-doc training. The

past few years have seen the emergence of post-doc offices. At NHLBI, the Office of Education was established in 2001. In order to make sure that this trend continues, administrators, faculty, and post-docs convened recently at a meeting sponsored by Sigma Xi and the National Postdoc Association. We shared strategies for effectively utilizing post-doc offices and other campus resources that can benefit post-docs. What I learned really opened my eyes to the range and variety of how post-docs are regarded and dealt with across the country.

The purpose behind the meeting was to enable participants to return home with a list of appropriate and actionable goals for their institution. As was alluded to during the introductory remarks, it is easy to describe what's not working or ways in which post-docs are dissatisfied, but coming up with useful solutions that can be carried forward is more challenging. Although there were some great talks during the meeting, including one about a management course for scientists where we were shown a hilarious video of acting students portraying scientists dealing with PI favoritism, the emphasis was on discussion forums where all participants were encouraged to interact, brainstorm and learn from each other.

It became apparent that if administrators who run post-doc offices share any one characteristic, it would have to be an abundance of ingenuity. Attendees frequently described the difficulty of setting up and maintaining a post-doc office. In most cases, it took the financial commitment of a top administrator in order to secure funds and office space for a post-doc office. Deans and provosts have been more willing to fund these offices as they increasingly understand the need to encourage the intellectual and cultural contributions that post-docs provide to campus life. In many cases though the funding is meager and barely adequate to cover the range of programs sought by post-docs. One speaker who runs a campus post-doc office demonstrated her savvy methods for accomplishing her objectives through a combination of "praise, embarrassment, and only as a last resort, money". The range of programs that post-doc offices sponsor is quite broad and includes welcome orientations/packets, social and networking opportunities, professional development, negotiating skills, programs to help foreign post-docs assimilate, and career counseling specifically for Ph.D. level scientists. Yet this is just the tip of the iceberg in a long list of services that post-doc offices could ideally hope to offer. These types of programs demonstrate the role that institutions play in making the post-doc training more enriching but some attendees made the very important point that post-docs are already established professionals who must bear the brunt of the responsibility for their professional success.

The meeting concluded with a presentation summary of the different brainstorm sessions. Here is a short summary:

1) Conflict resolution.

Although the types of conflicts that post-docs find themselves runs the gamut, participants were most concerned about conflict as it related to authorship. Specifically, how does one establish who is an author on the paper and who should be first author. Several institutions have written policies. The consensus was that it is not sufficient to have made a financial contribution, i.e., bring in the grant money. Authorship applies to those who make a substantial intellectual contribution as well as carry out the work to yields the results.

2) Plans and evaluations

Consider the following. In order for a residency program to maintain its accreditation, both the residents and the faculty must be evaluated on an annual basis. More and more institutions are starting to implement a similar system, but unlike residency programs, it is often difficult to enforce that post-docs and their mentors fill out an evaluation and discuss it. Those who already use evaluations said that they not only have a huge impact on the post-docs productivity, but that they help to empower the post-doc to take more responsibility for their success in the lab. They also serve to alter the mentor relationship to more of a peer-to-peer relationship.

3) General employment practices.

The primary suggestion from this session was that institutions have a detailed definition of the post-doc position including descriptions of different classes of post-docs, salaries, benefits, hours, and such. This will help post-docs understand what's expected from them, in particular, foreign post-docs who may be subject to abuse as a result of being used to different workloads in their native countries.

4) Attracting and maintaining a diverse post-doc population.

Commitment from the university was considered of tantamount importance in maintaining a diverse post-doc population. Since post-docs come from the pool of existing graduate students, it is impossible to have a diverse post-doc population if it is lacking amongst graduate students. This is an issue that must be dealt with by encouraging a more diverse groups of students to major in the sciences, something that post-docs can

have a role in by mentoring college students, participating in job fairs, and explaining to students what it's like to be a scientist. In other words, post-docs ought to continue their role in the future of the research community.

Many of these areas are ones that NHLBI has addressed to some extent. However, towards the end of the conference, almost as an afterthought, the role of social networks was touched on. While it may be a relatively minor issue at other institutions, it is one of the areas of greatest concern to NHLBI post-docs. Fellows at NHLBI frequently lament the lack of interaction, both social and professional, with other post-docs. This is an area that many of us on the NHLBI Fellows Committee would like to improve. The fact that NHLBI fellows do not work in the same building is a major impediment towards cultivating a sense of community. Yet, even those of us who work in the same building do not talk to each other on a regular basis. As a graduate student, the informal conversations I had with people who worked in the same hall as me had a huge impact on my graduate education. Those conversations topic included everything from 'hey do you have that reagent, can you show me how to use your fancy instrument' to conversations about job prospects and departmental gossip. Not every conversation was related to lab work, but they had the effect of helping the graduate students bond. Post-docs underestimate the importance of forming workplace networks; they are critical both for day-to-day work satisfaction as well as in establishing and maintaining a professional career. As my graduate student advisor used to say, 'make sure you always treat your fellow classmates with respect; they'll be your colleagues for life'. Institutional cultures are notoriously slow to accept change but this an area where we should focus our efforts. Social networking in the workplace is not about idle chatter; it's about cultivating a sense of inclusiveness and creating an information network. As co-workers we are each other's best resources for learning new techniques, learning about new areas research, papers of interest, workshops of interest and many other intangibles that will help build the foundation for a rewarding scientific career.

New NHLBI Fellows

Dr. Jung S. Byun has recently joined the Laboratory of Molecular Immunology as a Visiting Fellow under the supervision of Dr. Keji Zhao. Dr. Byun received her Ph.D. in Chemistry and Biochemistry from University of Maryland, College Park, Maryland in 2005. She will be working on control of gene expression.

Dr. Seung-Kiel Park joined the Laboratory of Molecular Immunology as a Visiting Fellow under the supervision of Dr. Michael Beaven. Dr. Park completed his Ph.D. in Bioscience and Biotechnology from Korea Advanced Institute of Science and Technology, South Korea in 1993. Hisproject concerns the role of cytokines in mast cell activation.

Dr. Yrina Rochman has recently joined the Laboratory of Molecular Immunology as a Visiting Fellow under the supervision of Dr. Warren Leonard. Dr. Rochman received her Ph.D. from Medical School of Hebrew University, Jerusalem in 2005. Her project concerns the role of cytokines in the immune system.

Dr. Gang Wei joined the Laboratory of Molecular Immunology as a Visiting Fellow under the supervision of Dr. Keji Zhao. Dr. Wei received his Ph.D. in Biochemistry and Molecular Biology from College of Life Sciences, Peking University, China in 2005. He is working on the role of chromatin in controlling gene expression.

Career Development Seminar

Tuesday, February 14th
Noon, 10/7S235

Jeffrey Mervis
Science Magazine

"Careers in Science Journalism"

Recent Publications by NHLBI Fellows

Arbab A. S., Yocum G. T., Rad A. M., **Khakoo A. Y.,** Fellowes V., Read E. J. and Frank J. A. (2005) Labeling of cells with ferumoxides-protamine sulfate complexes does not inhibit function or differentiation capacity of hematopoietic or mesenchymal stem cells. *NMR in Biomedicine* **18,** 553-559.

Barrett J. and **Rezvani K.** (2006) Neutrophil granule proteins as targets of leukemia-specific immune responses. *Curr. Opin. Hematology* **13,** 15-20.

Crawford J. H., Isbell T. S., **Huang Z., Shiva S.,** Chacko B. K., Schechter A. N., rley-Usmar V. M., Kerby J. D., Lang J. D., Kraus D., Ho C., Gladwin M. T. and **Patel R. P.** (2006) Hypoxia, red blood cells, and nitrite regulate NO-dependent hypoxic vasodilation. *Blood* **107,** 566-574.

Ferguson C., Larochelle A. and Dunbar C. E. (2005) Hematopoietic stem cell gene therapy: dead or alive? *Trends in Biotechnology* **23,** 589-597.

Jones H. D., Moss J. and Vaughan M. (2005) BIG1 and BIG2, brefeldin A-inhibited guanine nucleotide-exchange factors for ADP-ribosylation factors, in *Meth. Enzymol.* ***404,*** 174-184.

Jovanovic O. A., **Brown F. D.** and Donaldson J. G. (2006) An effector domain mutant of Arf6 implicates phospholipase D in endosomal membrane recycling. *Mol. Biol. Cell* **17,** 327-335.

Lu J., Zhi N., Wong S. and Brown K. E. (2006) Activation of synoviocytes by the secreted phospholipase A(2) motif in the VP1-unique region of parvovirus B19 minor capsid protein. *J. Infect. Dis.* **193,** 582-590.

Morris R. G., Hoorn E. J. and Knepper M. A. (2005) Hypokalemia in thiazide-sensitive Na-Cl cotransporter knockout mice. *Hypertension* **46,** 860.

Oka S., **Kato J.** and Moss J. (2006) Identification and characterization of a mammalian 39-kDa poly(ADP-ribose) glycohydrolase. *J. Biol. Chem.* **281,** 705-713.

Qiao H. H., Andrade M. V., **Lisboa F. A.,** Morgan K. and Beaven M. A. (2006) Fc epsilon R1 and toll-like receptors mediate synergistic signals to markedly augment production of inflammatory cytokines in murine mast cells. *Blood* **107,** 610-618.

Shen Y., Leatherbury L., **Rosenthal J., Yu Q., Pappas M. A.,** Wessels A., Lucas J., Siegfried B., **Chatterjee B.,** Svenson K. and Lo C. W. (2005) Cardiovascular phenotyping of fetal mice by noninvasive high-frequency ultrasound facilitates recovery of ENU-induced mutations causing congenital cardiac and extracardiac defects. *Physiological Genomics* **24,** 23-36.

Stinstra J. G., **Hopenfeld B.** and MacLeod R. S. (2005) On the passive cardiac conductivity. *Ann. Biomed. Eng.* **33,** 1743-1751.

Vichi A., Moss J. and Vaughan M. (2005) ADP-ribosylation factor domain protein 1 (ARD1), a multifunctional protein with ubiquitin E3 ligase, GAP, and ARF domains, in *Meth. Enzymol.* ***404,*** 195-206.

Wall S. M., Knepper M. A., Hassell K. A., Fischer M. P., **Shodeinde A.,** Shin W., Pham T. D., Meyer J. W., Lorenz J. N., Beierwaltes W. H., Dietz J. R., Shull G. E. and Kim Y. H. (2006) Hypotension in NKCC1 null mice: role of the kidneys. *Am. J. Physiol. Renal Physiol.* **290,** F409-F416.