



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.

**Office of Education, DIR, NHLBI**

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***From the Director of the Office of Education***

Every few months I teach a course and conduct a workshop on "Grant Writing". While the major focus is on how to organize and submit a grant proposal, the general principles of proposal writing are applicable to many different types of scientific and professional writing. Thus, grant writing is one of a number of "Transferable Skills" that you learn while you are a student and fellow. Because these skills form the building blocks of many different types of careers, the more of them you know, the stronger job candidate you will be.

Another major transferable skill is presenting a scientific talk. The new rules for fellows require that you present annually, and that your talk be listed in advance on the OE Web Site: <http://dir-intranet.nhlbi.nih.gov/oe/events.aspx>. This will give fellows a chance to receive feedback on their presentation skills. Another opportunity to learn is by attending seminar presented by tenure-track candidates. The NHLBI DIR is participating in the search for Earl Stadtman Investigators, a highly prestigious appointment. Seminars by Stadtman candidates will be announced publicly, and we expect that you will all want to be there. Even if the talk is not in your area, you can learn something just from seeing the format of their slides and how they answer questions. So take advantage of these opportunities as well.

As we move into the Holiday Season, please keep in mind that there are many who are not as fortunate as we are. Help them by contributing to the Combined Federal Campaign

<http://www.opm.gov/CFC/>

***Transferable Skills***

*By Herbert Geller, Ph.D.*

I'm, an NHLBI Fellow, came to my office "Dr. Geller, I really want a change in direction, but all I know how to do is bench work". In fact, this is one of the great misperceptions on the part of Graduate Students and Postdoctoral Fellows, not just at NIH, but everywhere. Doing and publishing scientific research requires a whole repertoire of

skills, most of which are transferable to occupations outside the laboratory.

True, knowing how to fix a Pipet-Aid might not get you very far outside of a laboratory. But so many other research skills are easily transferable. A quick search of resources on the web produces an extensive set of skills that every Fellow likely has and are used in many different careers outside of bench research. I've made up the categories

**New NHLBI Fellows**



**Cuilian Dai, Ph.D.**, is a Visiting Fellow in the Pulmonary Vascular Medicine Branch under Dr. Stewart Levine. Dr. Dai earned her Ph.D. in medicine from Chongqing University of Medical Science, Chongqing, China. She won the Excellence in Teaching award for 2007 from Zunyi

Medical College, Zunyi, China. Dr. Dai is currently working on the therapeutics of asthma.



**Neil Billington, Ph.D.**, is a Visiting Fellow in the Laboratory of Molecular Physiology under Dr. James Sellers. Dr. Billington earned his Ph.D. in Molecular and Cellular Biology from the University of Leeds, United Kingdom. His current research project will be to examine expressed

non-muscle 2 myosins.



**Robert Gahl, Ph.D.**, is an IRTA Fellow in the Laboratory of Biochemistry under Dr. Nico Tjandra. Dr. Gahl earned his Ph.D. in Biophysical Chemistry from Cornell University in New York. He was awarded the Cornell University Graduate School Travel Grant in 2008. Dr.

Gahl's research project applies a newly developed method to acquire more detailed information about the conformational ensemble of carbon-monoxide-bound hemoglobin.



**Ronen Borenstein, Ph.D.**, is a Visiting Fellow in the Translational Medicine Branch under Dr. Toren Finkel. He earned his Ph.D. from the Department of Cell Research and Immunology, Tel- Aviv University, Israel. Dr. Borenstein won third prize in the 2006 ISGT 4<sup>th</sup> Annual Meet-

ing fro Excellent Oral Presentation. He is currently working on using RNAi based knockdown approach to knockdown LSD1 in metabolic active tissues and to assess the effects.



**Kyoko Sugimoto, M.D., Ph.D.**, is a Visiting Fellow in the Hematology Branch under Dr. Richard Childs. She earned her M.D. at Yamanashi Medical University and her Ph.D. from the Department of Hematology and Oncology at Nagoya University Graduate School of Medicine. Dr. Sugimoto won the title of *Best Young Hematologist* at the Seminar for Japanese Young Hematologist in Japan. She is currently working on the T-cell responses after allogeneic hematopoietic stem cell transplantation, and wants to expand T-cells against a peptide library generated from a protein that is over expressed in most kidney cancer tumors.

below to simply illustrate the wide range of skills most practicing scientists possess to one degree or another:

1) Knowledge based skills:

- General scientific knowledge
- Ethics
- Literature evaluation
- Numeracy
- Computer/IT knowledge

2) Personal-Based Skills

- Critical thinking & reasoning
- Dealing with stress
- Problem solving
- Time management

3) Communication Skills

- Oral Presentations
- Writing publications & proposals/grant applications
- Communication to non-scientists
- Ability to present an argument

4) Management Skills

- Project planning
- Budgeting
- Project management
- Personnel recruitment/management & mentoring
- Team work/collaboration
- Conflict Management

Negotiation

Knowing this, you can then evaluate your strengths as well as your deficiencies, and set up a plan to address your weaknesses. The Office of Education is here to assist you with this. Check out the resources on our web page, and visit with us for more personal attention before you start looking for jobs!

**Want an Academic Career?**

**Apply for an NIH Career Transition Award**

Learn how at:

**"Introduction to Grant Writing"**

**Tuesday, November 17, 2009**

**1:00pm – 4:00pm**

**Building 10/2S235**

## Recent Publications by NHLBI Fellows

- Aue, G.,** Njuguna, N., Tian, X., Soto, S., Hughes, T., **Vire, B.,** Keyvanfar, K., **Gibellini, F.,** Valdez, J., Boss, C., Samsel, L., McCoy, J. P., Wilson, W. H., Pittaluga, S., & **Wiestner, A.** (2009). Lenalidomide-induced upregulation of CD80 on tumor cells correlates with T-cell activation, the rapid onset of a cytokine release syndrome and leukemic cell clearance in chronic lymphocytic leukemia. *Haematologica* 94, 1266-1273.
- Barski, A., Jothi, R., Cuddapah, S., Cui, K. R., Roh, T. Y., Schones, D. E., & Zhao, K.** (2009). Chromatin poises miRNA- and protein-coding genes for expression. *Genome Res.* 19, 1742-1751.
- Boja, E. S., Phillips, D.,** French, S. A., Harris, R. A., & Balaban, R. S. (2009). Quantitative Mitochondrial Phosphoproteomics Using iTRAQ on an LTQ-Orbitrap with High Energy Collision Dissociation. *J. Proteome Res.* 8, 4665-4675.
- Calado, R. T., Regal, J. A.,** Kajigaya, S., & Young, N. S. (2009). Erosion of telomeric single-stranded overhang in patients with aplastic anaemia carrying telomerase complex mutations. *European Journal of Clinical Investigation* 39, 1025-1032.
- Joseph, J.,** Pencina, M. J., Wang, T. J., Hayes, L., Tofler, G. H., Jacques, P., Selhub, J., Levy, D., D'Agostino, R. B., Benjamin, E. J., & Vasan, R. S. (2009). Cross-sectional relations of multiple biomarkers representing distinct biological pathways to plasma markers of collagen metabolism in the community. *J. Hyperten.* 27, 1317-1324.
- de Boer, I. H., Katz, R., Cao, J. J.,** Fried, L. F., Kestenbaum, B., Mukamal, K., Rifkin, D. E., Sarnak, M. J., Shlipak, M. G., & Siscovick, D. S. (2009). Cystatin C, Albuminuria, and Mortality Among Older Adults With Diabetes. *Diabetes Care* 32, 1833-1838.
- Hinrichs, C. S., Borman, Z. A.,** Cassard, L., Gattinoni, L., Spolski, R., Yu, Z. Y., Sanchez-Perez, L., **Muranski, P.,** Kern, S. J., Logun, C., Palmer, D. C., Ji, Y., Reger, R. N., Leonard, W. J., Danner, R. L., Rosenberg, S. A., & Restifo, N. P. (2009). Adoptively transferred effector cells derived from naive rather than central memory CD8(+) T cells mediate superior antitumor immunity. *Proc. Natl. Acad. Sci. U. S. A* 106, 17469-17474.
- Lisboa, F. A.,** Peng, Z., Combs, C. A., & Beaven, M. A. (2009). Phospholipase D Promotes Lipid Microdomain-Associated Signaling Events in Mast Cells. *J. Immunol.* 183, 5104-5112.
- O'Brien, E. P.,** Okamoto, Y., Straub, J. E., Brooks, B. R., & Thirumalai, D. (2009). Thermodynamic Perspective on the Dock-Lock Growth Mechanism of Amyloid Fibrils. *J. Phys. Chem. B* 113, 14421-14430.
- Park, J. Y.,** Wang, P. Y., **Matsumoto, T.,** Sung, H. J., Ma, W. Z., Choi, J. W., Anderson, S. A., Leary, S. C., Balaban, R. S., Kang, J. G., & Hwang, P. M. (2009). p53 Improves Aerobic Exercise Capacity and Augments Skeletal Muscle Mitochondrial DNA Content. *Circul. Res.* 105, 705-U110.

## 8th Annual NHLBI Scientific Retreat

Featuring:

- Ezekiel J. Emanuel, Ph.D., M.D., Keynote Speaker
- Gerald Shulman, Ph.D., M.D., Scientific Speaker
- Peter Walter, Ph.D., Scientific Speaker

April 14-16, 2010

The Baltimore Tremonts  
Baltimore, MD

<http://dir-intranet.nhlbi.nih.gov/oe/retreat/>

**THE SCIENCE BEAT**

By Nisha Narayan, Ph.D.

*Calado, R. T., Regal, J. A., Kajigaya, S., & Young, N. S. Erosion of telomeric single-stranded overhang in patients with aplastic anaemia carrying telomerase complex mutations. European Journal of Clinical Investigation (2009) 39, 1025-1032.*

**T**elomeres – which literally mean the ‘end elements’ – are regions of repetitive DNA consisting of double-stranded TTAGGG tandem repeats at the ends of chromosomes that protect the chromosome from degradation. Defects in their integrity have long been associated with aging, cancer and other cell proliferation associated disorders. For instance, patients with the bone marrow failure syndrome Dyskeratosis Congenita (DKC) show telomere shortening. Mutations in the telomerase gene complex - DKC1, which is the gene encoding Dyskerin, TERT, TERC and TIN2 are associated with shortage in telomere length and insufficient tel-

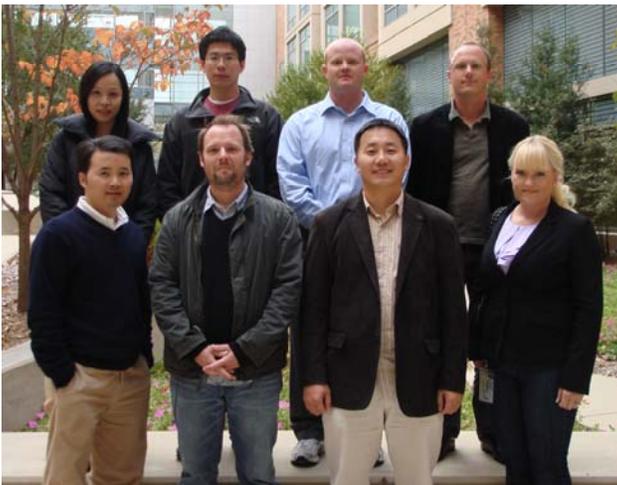
omerase activity in haematopoietic cells, cellular senescence and ensuing aberrant haematopoietic function. Telomeres also have 3’ G-rich single stranded overhangs following their double stranded tandem repeats, the erosion of which has been implicated in the triggering of cellular senescence.

The current study by Calado et al., chooses to examine whether the erosion of telomeric overhangs associate with the normal aging process, as well as mutations in the Telomerase gene complex and overall telomere shortening in the context of bone marrow failure. To do so, they screened samples from normal healthy individuals and those of Aplastic Anaemia (AA) patients carrying telomerase mutations. They found that though there is shortening in overall telomere length, the length of telomeric overhangs don’t change with age in healthy individuals. In AA patients with telomerase mutations, telomeric single-stranded overhangs were found to be shorter in length below the 5% percentile for healthy individuals. There was however, the uncertainty as to whether

the overhangs were shorter because of marrow failure or because of the mutations in the Telomerase gene complex. To address this doubt, they chose to measure the overhang lengths of five patients who had normal overall telomere lengths, no mutations in their Telomerase and responded vigorously to immunosuppression. The overhang lengths of these patients were found to be similar to healthy individuals, establishing that the erosion of the overhangs was not a consequence of the hematopoietic failure.

This is an interesting study, because it dispels once and for all the theory that overhang length erosion is in any way connected to human ageing, overall shortening of the telomere or senescence in hematopoietic cells. The attrition of the overhangs however seems to be affected in pathologies associated with mutations in the telomerase gene complex, meaning also that patients with telomerase mutations and short telomeres are more likely to eventually develop diseases associated with bone marrow failure.

## Congratulations to the 2009 FARE Award Winners!



**Top (L-R):** Jean-Cheng Kuo, Pakorn Kanchanawong, Kasey Vickers, Xavier Rousset.

**Bottom (L-R):** Aibing Wang, Ingo Thievensen, Kee Kwang Kim, Karin Fredriksson.

**Not pictured:** Jason Kovacic, Candace Pfefferkorn, Silvia Vergara-jauregui, Zhibin Wang

The Fellows Award for Research Excellence (FARE) provides recognition for outstanding scientific research performed by intramural fellows with less than five years total research experience at the NIH.

The FARE Competition attracted close to a thousand applicants. All submitted abstracts underwent anonymous peer-review and were scored by a panel of judges from the applicant’s chosen study section. This year 239 winners were selected as FARE winners. FARE Competition winners will present posters (marked by a blue ribbon) on their research during the NIH Research Festival. The FARE Subcommittee of FelCom thanks all participants and congratulates the winners of FARE.

We encourage all eligible intramural postdoctoral and clinical fellows to apply to the next FARE Competition in Spring 2010. For more information: <http://felcom.od.nih.gov/>.