

Office of Education
Division of Intramural Research

Fellows Newsletter

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From the Director of the Office of Education

It's hard to believe that it's already October and the summer is already over. October brings many opportunities for NHLBI Fellows, both professional and social. The professional opportunities are represented by two deadlines for grants and fellowships: K22/K99 career transition award applications have a deadline of October 12th, while the deadline for applying for Lenfant fellowships is October 15th. More information about the purpose and procedures for the Lenfant application are provided in this newsletter.

The end of October is Halloween, celebrated in this country with costume parties. The Fellows Advisory Committee is sponsoring it's annual Halloween Bakeoff on October 30th. This is a social event at which participants get to vote for the best baked treat. We want as many NHLBI staff as possible to come. You can participate by entering the contest or contributing a \$1 which goes to the winner of the bakeoff. We hope to see you all there!

FEATURED ARTICLE

Career Development Seminar on Careers in Science Policy

By Juliane Caviston and Chad Williamson

The Career Development subcommittee of the NHLBI Fellow Advisory Committee (FAC) recently hosted two former NHLBI fellows who now work in the field of Science Policy to discuss their positions. Joe Laakso (formerly of CBPC with

John Hammer) is Manager of Science Policy at The Endocrine Society and Anne M. Deschamps (formerly of SBC with Tish Murphy) is a Senior Science Policy Analyst in the Office of Public Affairs for FASEB.

As science policy professionals working for professional advocacy groups, both Joe and Anne represent a base of stakeholders that consists of basic researchers, clinical researchers, and practicing clinicians. Working in the field

Meet the New Fellows



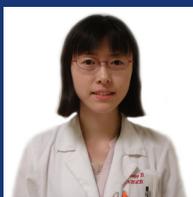
Dr. Harshraj Leuva is a new Research Fellow in the Hematology Branch under

Dr. Neal Young. Dr. Leuva earned his M.D. at SBKS Medical College. His initial project at NIH is studying phenotype genotype correlations in the Telomere disease complex.



Dr. Jeannie Yu is a new Clinical Fellow in the Cardiovascular-Pulmonary

Branch under Dr. Andrew Arai. Dr. Yu earned her M.D. at the University of Miami. Her initial project at NIH is investigating clinical applications of cardiac CT and MRI and coronary disease.



Dr. Kazusa Ishii is a new Clinical Fellow in the Hematology Branch under Dr. Charles

Bolan. Dr. Kazusa earned her M.D. at the University of Tokyo and her MPH at Harvard University. Her initial project at NIH is clinical training.

THE SCIENCE BEAT by Sarah Herman, Ph.D.

Scheinberg, P., Townsley, D., Dumitriu, B., Scheinberg, P., Weinstein, B., Daphtary, M., Rios, O., Wu, C. O., & Young, N. S. (2014). "Moderate" dose cyclophosphamide for severe aplastic anemia has significant toxicity and does not prevent relapse and clonal evolution. Blood. 2014 Sep 3. pii: blood-2014-05-573642.

Aplastic anemia is a disease in which the bone marrow does not produce enough new hematopoietic stem cells, leading to significantly reduced red blood cells, white blood cells and platelets. Without sufficient mature blood cells, patients with severe aplastic anemia (SAA) are at risk for a multitude of health problems, including heart failure, infections, bleeding complications and death. Standard treatment for SAA is immunosuppressive therapy, typically with horse anti-thymocyte globulin (h-ATG)/cyclosporine (CsA). However, when treated with h-ATG/CsA, 1 in 3 patients do not experience a hematologic response or endures an incomplete response or relapse. Additionally, 15% of patients experience a clonal outgrowth leading to the development of myelodysplastic syndrome or acute myeloid leukemia (AML). Because of this, cyclophosphamide has been proposed as a potential alternative treatment strategy; however previous studies at the NIH with high dose cyclophosphamide were found to be intolerable. Recently, a Chinese clinical study exploring the use of a lower more moderate dose of cyclophosphamide in combination with CsA demonstrated similar efficacy and tolerability when compared to r-ATG/CsA (r-ATG is rabbit anti-thymocyte and was used in place of that traditional h-ATG, which isn't approved for use in SAA in China). Based on this study and in light of the advances in antifungal drugs the authors sought to determine if a more moderate dose of cyclophosphamide could be an alternative treatment for SAA.

Twenty-two treatment-naïve patients were enrolled onto a protocol investigating the safety and efficacy of cyclophosphamide concurrently with low dose CsA. Patients were followed for a median of 2.2 years and monitored closely for response or complications including: neutropenia, infections and clonal evolution.

The authors found that administration of cyclophosphamide universally led to undetectable levels of granulocytes and periods of severe neutropenia lasting on average two months. This was associated with frequent and serious infectious events despite aggressive antimicrobial prophylaxis. Hospitalizations were numerous.

Overall 9/22 patients demonstrated a response, as defined as no longer meeting the criteria for SAA after six months, with 4/9 having a complete response and 5/9 having a partial response. The 2 year overall survival for the responding cohort was 72%. Altogether, the authors found that the toxicity with this regimen was similar to what was previously observed with high dose cyclophosphamide, despite the decreased dose and aggressive modern supportive and antimicrobial prophylaxis, resulting in prolonged neutropenias and associated severe infections.

In the end, the work presented here, by the authors, demonstrates that the use of cyclophosphamide, even at moderate doses, results in unacceptable toxicity without significant benefit.

FEATURED ARTICLE CONT.

of science policy involves being aware of any current legislative policies that would affect stakeholders. A major priority is advocating Congress for increased NIH funding. Science policy jobs are very abundant here in DC, but other places offer science policy opportunities too, such as universities and state legislatures.

The speakers emphasized that every day on the job is different, but most days involve extensive reading, emailing, scheduling meetings, and networking. Many of these interactions result in identifying and conveying stakeholders' interests to Congress in order to support influential legislation. Recent policies that have been enacted which were supported by science policy analysts are rules regarding the humane use of animals in biomedical research and ensuring equal gender presentation in clinical trials. In addition, part of many science policy positions is being present at NIH Advisory Council Meetings to listen to what individual institute's priorities are and report back to stakeholders.

In general, both speakers agreed that working for professional societies in the field of science policy gave them a much wider perspective on biomedical research than they had enjoyed as laboratory scientists who were intently focused on a very narrow range of topics. One nice thing about science policy is that it is not too important what your specific research background is. The most important thing is that you have the ability to think "big picture". Another key quality is the ability to work

collaboratively as part of a collective effort. The speakers agreed that few science policy professionals ever gain the kind of popularity and individual name recognition that some basic researchers do, because a lot of policy work is behind the scenes. A career in science policy can provide a nice work-life balance and is good choice for a scientist who wants to stay in the DC area.

To prepare for a career in science policy, one might volunteer for your own professional society. The speakers suggested that prospective job applicants should think about ways to demonstrate leadership (FelCom, NIH Editorial Committee, Science Policy Discussion Group.) Schedule informational interviews in order to network. Just the act of an informational interview itself will be a useful experience since networking is an essential part of any policy job. And practice writing. A lot. You may have to submit writing samples as a part of the job application. There are also science policy fellowships offered by several institutions such as AAAS and NAS, and by professional advocacy groups such as ASBMB. NHLBI Fellows can also take advantage of the Rotation program in Science Policy, under which Fellows can be supported for up to 6 months at the end of their fellowship to gain science policy experience at a professional Society or within NIH. Dr. Deschamps took this route to a position at FASEB. The Office of Education can help arrange such rotations.



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Meet the New Fellows



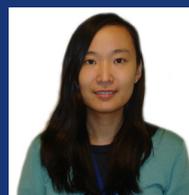
Dr. Sharrol Bachas is a new Research Fellow in the Biochemistry and Biophysics

Center under Dr. Adrian Ferre-D'Amare. Dr. Bachas earned his Ph.D. at Johns Hopkins University. His initial project at NIH is structural elucidation of the heterocyclase patD and the putative manganese ribo-switch.



Dr. Debbie Figueroa is a new IRTA Fellow in the Cardiovascular-Pulmonary Branch

under Dr. Steward Levine. Debbie earned her Ph.D. at Florida State University. Her initial project at NIH is studying the affect of the small molecule APOA-I on ameliorating cellular remodeling and inflammation in response to antigen presentation to cells from Idiopathic Pulmonary Fibrosis patients.



Dr. Yuting Huang is a new Research Fellow in the Center for Molecular Medicine under Dr.

Manfred Boehm. Yuting earned her M.D. at the Fudan University Shanghai Medical College. Her initial project at NIH is disease modeling by using iPS technology.

QUESTION & ANSWER WITH AN INVESTIGATOR

Postdoc Arupratan Das interviews Dr. Cynthia Dunbar, Senior Investigator, Molecular Hematopoiesis Section .



Dr. Cynthia Dunbar, M.D., a renowned hematologist and stem cell biologist is head of the Laboratory of

Molecular Hematopoiesis in the Hematology Branch at the National Heart, Lung, and Blood Institute (NHLBI), part of the National Institutes of Health (NIH). Dr. Dunbar received her Bachelor of Arts from Harvard University in Cambridge, Mass in 1980 and a Doctor of Medicine from Harvard Medical School in Boston in 1984. She subsequently finished her internal medicine residency at Boston City Hospital and went to University of California, San Francisco to complete her clinical hematology training. Dr. Dunbar initially arrived at NHLBI in 1987 as post-doctoral fellow in the laboratory of Arthur Nienhuis, and became a principal investigator in 1992, when she was among the first investigators at the NIH placed on a formal tenure track, at a time when the intramural program began to formalize independent funding and positions for

junior investigators. She has been head of the Molecular Hematopoiesis Lab since 2000.

Dr. Dunbar investigates the mechanism of hematopoiesis by which stem cells develop and differentiate into normal and abnormal blood cells. Using cell culture and non-human primate model systems, Dr. Dunbar seeks to understand factors that control stem cell development and to apply this knowledge to the development of stem cell for gene therapy and other clinical applications.

When did you decide to pursue a career in science?

It was not from a young age, since I was not from a medical family. My personal motivation to enter medicine and science stemmed from my personal loss when my boyfriend died from Hodgkin's lymphoma my senior year of high school. This incident exposed me to the world of hospitals and illness, and impressed on me the need to improve therapeutics for deadly diseases like cancer.

Have you ever thought of taking another career route?

My research and life at NIH have gone very well so far, thus I have never seriously thought of taking another career route or

leaving the NIH. I also love living in DC and raising my family here which helped me to continue my research career at NIH. The ability to move seamlessly between bench and clinical research is pretty unique, and a major reason I have remained at the NIH. However, I have participated in many professional activities outside the NIH, including a long stint at first Associate Editor then Editor-in-Chief of the journal BLOOD, serving as a leader in my professional societies, and recently participating in the ELAM (Executive leadership in academic medicine) national program for senior women faculty.

How do you like NIH to start your own lab?

I appreciate NIH for giving a young physician-scientist the unique ability to focus on research and related clinical work, with no pressure to perform clinical service work to generate departmental revenue. NIH is also among only few places in the world able to support a non-human primate model facility, which is very critical for my research. Becoming the mother of two daughters during an early stage of my career, while I was on tenure-track, was a challenge, but at least at the NIH I did not need to spend time writing grants to run my lab, giving more time with my family. What advice would

Cont'd on page 5

QUESTION & ANSWER WITH A POST-DOC

Postdoc Arupratan Das interviews Dr. Sricharan Murugesan, Molecular Cell Biology Section, Cell Biology and Physiology Center.



What do you enjoy most about the research environment at NIH?

I love working at the NIH and have really enjoyed my postdoc so far. Personally, I enjoy the fact that postdocs form such a high percentage of the workforce on cam-

pus. It makes for a communal, 'everyone is in the same boat' type of environment for us rather than a more solitary experience others face at university settings. I also enjoy the amount of resources present on campus. If you need any reagent, tool, or technology, it is readily available. Similarly, I find that people in general are very helpful and generous with their reagents, and with their time to help you learn new techniques. Finally, the various seminar series on campus provide exposure to some awesome science and high quality researchers

from around the world.

What advice would you give to a first year fellow entering the NHLBI training program?

Transitioning to the NIH for a postdoctoral fellowship can be a little bit daunting and confusing as one is thrust into the world of acronyms, PIV cards, POTS and transhare in addition to getting acclimated to the DC/Maryland/Virginia area itself. Just getting com-

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Q&A WITH AN INVESTIGATOR

you give to the prospective faculty job applicants to be successful in this competitive job environment?

I would work on my writing skills a lot as a post-doc getting ready to apply for faculty jobs, since writing clearly and communicating and selling your data is essential for getting grants and succeeding in your first independent job. Second, maintain a good relationship with your post-doc supervisor since he or she will be launching you in the job market and you need their help a lot during early stages of your independent career. Third, negotiate early what you can take with you as an independent program from your post-doc lab. Finally, do your homework and tailor your thoughts and research proposal to better fit to the vision and needs of the institution you are applying to.

Being at NIH what excites and disappoints you as a scientist?

The exciting things are; the stability and support of high risk/long-term projects with NIH intramural funding, the ability to work with the unique non-human primate model system, the ability to actually function as both a physician and a scientist, and a better chance to balance work and the rest of my life compared to the grant pressures of academia. How-

ever, there are struggles and worries as well; one of them is to keep the Clinical Center viable and to continue to recruit physicians to the NIH. NIH and the Clinical Center flourished during Vietnam War in 1960s and 1970s when the brightest physicians came to the NIH to do research as Public Health Service Officers as an alternative to being sent to Vietnam. Several of them went on to win the Nobel Prize, and many remain leaders on campus today. However, replacing this "greatest generation" isn't easy given medical school debt and the salary and outside earnings differential between NIH and academia or clinical practice. It is getting increasingly difficult to attract talented physician-scientists due to the tight financial situation.

What do you enjoy most other than doing science?

I enjoy performing and listening to classical music, specifically singing with the Choral Arts Society of Washington, hiking, and being with my family.

Q&A WITH A POST-DOC

comfortable with how the NIH operates is a big activation energy barrier to overcome. I would recommend introducing yourself to as many people as possible to form a good network of friends and support as you go through life as an NHLBI fellow.

What hobbies or activities do you enjoy away from the lab?

I love playing sports like basketball, soccer, football, cricket and tennis and I enjoy working out despite my creaky surgi-

cally repaired knees. I love traveling and I've now lived in or visited all the continents except for Australia and Antarctica (not sure I want to go there though). I'm also appreciative of the happy hour culture in this area since it allows me to socialize but still get home in time for a good nights sleep, which is proving to be far more essential to postdoctoral research than it did during my younger days as a graduate student!

Meet the New Fellows



Mona Mirzaeimoghri is a new Pre-Doctoral Fellow in the Biochemistry and Biophysics Center under Dr. Han Wen. Mona earned her M.S. at Tehran Polytechnic University. Her initial project at NIH is fabrication of high aspect ratio X-ray grating.



Sachiko Yamashita is a new Pre-Doctoral Fellow in the Cardiovascular-Pulmonary Branch under Dr. Joel Moss. Sachiko earned her M.S. from the Nagahama Institute of Bioscience and Technology. Her initial project at NIH is ADP-ribosyl-acceptor hydrolase 3 (ARH3) regulation of poly(ADP-ribose) degradation and cell death in response to arsenite.



Caitlin Bowen is a new Post-Baccalaureate Fellow in the Genetics and Development Biology Center under Dr. Robert Adelstein. Caitlin earned her BS in Biological Engineering at Cornell University. Her initial project at NIH is studying a point mutation in nonmuscle myosin II-B that causes multiple congenital heart defects, consistent with the disease Pentalogy of Cantrell.

RECENT PUBLICATIONS BY NHLBI FELLOWS

Alvey, N. J., Pedley, A., Rosenquist, K. J., Massaro, J. M., O'Donnell, C. J., Hoffmann, U., & Fox, C. S. (2014). Association of fat density with subclinical atherosclerosis. *J. Am. Heart Assoc.* 3, e000788.

Chen, J., Teixeira, P. F., Glaser, E., & Levine, R. L. (2014). Mechanism of oxidative inactivation of human presequence protease (hPreP) by hydrogen peroxide. *Free Radic. Biol. Med.* 10.

Chen, J. & Liu, J. (2014). Spatial-temporal model for silencing of the mitotic spindle assembly checkpoint. *Nat. Commun.* 5:4795. doi: 10.1038/ncomms5795, 4795.

Covian, R., French, S., Kusnetz, H., & Balaban, R. S. (2014). Stimulation of oxidative phosphorylation by calcium in cardiac mitochondria is not influenced by cAMP and PKA activity. *Biochim. Biophys. Acta.* 1837, 1913-1921.

Dao, L., Lucotte, B., Glancy, B., Chang, L. C., Hsu, L. Y., & Balaban, R. S. (2014). Use of independent component analysis to improve signal-

to-noise ratio in multi-probe fluorescence microscopy. *J. Microsc.* 10.

Koenig, G. & Brooks, B. R. (2014). Correcting for the free energy costs of bond or angle constraints in molecular dynamics simulations. *Biochim. Biophys. Acta.* 10.

Scheinberg, P., Townsley, D., Dumitriu, B., Scheinberg, P., Weinstein, B., Daphtary, M., Rios, O., Wu, C. O., & Young, N. S. (2014). "Moderate" dose cyclophosphamide for severe aplastic anemia has significant toxicity and does not prevent relapse and clonal evolution. *Blood.* blood-05.

Townsley, D. M., Dumitriu, B., & Young, N. S. (2014). Bone marrow failure and the telomeropathies. *Blood.* blood-05.

Vickers, K. C., Landstreet, S. R., Levin, M. G., Shoucri, B. M., Toth, C. L., Taylor, R. C., Palmisano, B. T., Tabet, F., Cui, H. L., Rye, K. A., Sethupathy, P., & Remaley, A. T. (2014). MicroRNA-223 coordinates cholesterol homeostasis. *Proc. Natl. Acad. Sci. U. S. A.* 201215767.

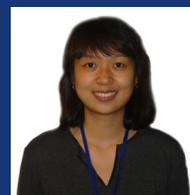
LENFANT FELLOWSHIP DEADLINE OCTOBER 15th

The Lenfant Fellowship is designed to provide training in grant writing for NHLBI Fellows. The format is the same as the NRSA Postdoctoral Fellowship Application, asking for a research plan and a career development plan. Eligibility is restricted to NHLBI Postdoctoral Fellows with less than two years of experience. Applications are judged by a panel of Extramural scientists, and awarded after review by a committee of Intramural Investigators. Awardees receive a large increase in stipend at their next renewal.

For more information on applying for the Lenfant awards visit the OE intranet site, at <https://intranet.nhlbi.nih.gov/general/the-lenfant-fellowships>.

Please reach out to the Office of Education at direduction@nhlbi.nih.gov with any questions!

Meet the New Fellows



Deanna Wong is a new Post-Baccalaureate Fellow in the Hematology Branch under Dr.

Adrian Wiestner. Deanna earned her BA in Biological Sciences at Northwestern University. Her initial project at NIH involves studying chronic lymphocytic leukemia.



David Bacsik is a new Post-Baccalaureate Fellow in the Biochemistry and Biophysics

Center under Dr. Nico Tjandra. David earned his BA in Biology at the New College of Florida. His initial project at NIH is studying the mechanisms by which *Pasteurella multocida* toxin (PMT) initiates proliferation, providing insight into ways bacterial toxins could contribute to carcinogenesis.



Kyujoo Choi is a new Post-Baccalaureate Fellow in the Hematology Branch under Dr. Cynthia

Dunbar. Kyujoo earned her BS at the University of Maryland College Park. Her initial project at NIH is neutrophil differentiation of non-human primate pluripotent stem cells.

ABOUT TOWN

Pick Your Own Adventure: Apple Orchard and Pumpkin Patch Season in DC

By: Liz Cox, Program Coordinator

If you thought the excitement of Choose Your Own Adventure ended when you got “too old” for the book series, think again. Autumn in the Washington area is the perfect time for a pick-your-own outing for apples and pumpkins.

There are an array of spots around Maryland and Virginia offering the quintessential fall classics for all ages. Homestead Farms in Poolesville, MD offers weekend public hayrides to the pumpkin patch. Once at the pumpkin patch, the apple orchard is a short walk away. Homestead Farm, run by the Allnutt family, has a wide selection of pick-your-own apples including Empire, Golden Delicious, Jonagold, Stayman, and Cameo varieties. Homestead recommends calling ahead of time for picking conditions to ensure your trip meets the hype.

On the Virginia end of the DMV area, Stribling Orchard provides the ideal setting for a day in the country with historic buildings, farm animals, and beautiful views of the Blue Ridge Mountains. In addition to an orchard and all shapes & sizes of pumpkins, Stribling also has their Harvest House with cider, honey, jams, jellies, fresh baked goods, and more all available for purchase.

These are just two examples of the plenty of options available in the area. High Hill Farm in Winchester includes straw and corn mazes, plus live music on the weekend. Butler’s Orchard in Germantown is home to an annual Pumpkin Festival not to be missed. If you want to haul home more than apples and pumpkins, Crooked Run Orchard and Larriland Farm offer additional fruits (such as pears) and vegetables (such as spinach, beets, and broccoli) for picking. More information on the various farms can be found [here](#).

Just like you are never too old for your favorite book, there is no age limit on enjoying your favorite fall activities. Pack and picnic, grab a jacket, and get away from the city noise for a day. And while you’re at it, might as well pull out the bobbing-for-apples barrel and pumpkin carving set, because it never really gets old.



Halloween Bake-Off!

Join the Office of Education for an absolutely spooky bake-off on October 30th from 3pm - 4pm in Building 10, Room 5-1608.

You may participate by bringing a baked good OR \$1. Baked goods must incorporate orange or black. All participants can vote for the winner! The winner will receive a cash prize.

Directions

Conference room 5-1608 is just outside the 5NW PCU. From the 1st floor of the North lobby of the Hatfield Center, take the northwest elevator to the 5th floor. Exit right from the elevator, take another immediate right (north), 5-1608 is straight ahead

