

Career Development Seminar Summary – NIH Alumni: Where are they now?

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The NIH Fellows Committee (FelCom) Career Development Series of Fall 2016 started with panel discussion in which past NIH Postdocs discussed their backgrounds, current professions, and useful career skills they acquired during their time at NIH.

Starting off the panel discussion was Paul Keller, PhD, a tenure-track Staff Fellow in the FDA's Center for Biologics Evaluation and Research. Dr. Keller earned his undergraduate degree in Biological Sciences from Carnegie Mellon University in 2001 and his PhD in Genetics and Development at Cornell University in 2007. Dr. Keller proceeded as a postdoc with Dr. Alasdair Steven in the Laboratory of Structural Biology Research in the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) focusing on retroviral maturation. He served on FelCom, and stressed its importance in connecting him with people in different fields. After multiple years applying to the FDA Commissioner's fellowship, his specific skillset matched with a research project, leading to his acceptance as a Commissioner's fellow from 2012-2014. In his current role, Dr. Keller spends approximately 50% of his time reviewing regulatory submissions, which involves reading vaccine license applications, periodic evaluation of manufacturing processes, and teleconferencing. The other 50% of his time is spent pursuing on his own research interests on the mechanisms of viral entry to host cells, which involves diagnostic labs, quality control, HIV vaccines, training junior scientists, reviewing and staying updated with the literature. In terms of career advancement in his field, there is an ability to move around into different regulatory position in different FDA offices. There is also a 2-4 year tenure process for the potential to become an independent group leader or branch chief. Dr. Keller emphasizes thinking about and preparing for your next steps in the first year of your postdoc.

The second panelist, Sylvie Raver, PhD, is currently the Training & Policy Manager at the nonprofit Society for Neuroscience (SfN). Sylvie Raver pursued a PhD in neuroscience at the University of Maryland, realizing after graduate school that never had that 'big question' one needed to start their own lab in academia. During her year and a half postdoc in the Neural Circuits and Cogitation Unit at the National Institute on Aging (NIA), she prioritized her research but also took advantage of every career development opportunity available to her, something she highly encourages for postdocs. She served in FelCom as the NPA liaison, reporting back on NPA activities, networking with other NPA members, and serving as an active member of the NPA Outreach Committee. She was also editor of the NIH science policy discussion group's blog. She attended the OITE management boot camp which enabled her to translate the management skills she acquired in graduate school and postdoc into relevant job skills. These experiences made her competitive for her current position at SfN, in which Dr. Raver manages and implements SfN training initiatives and programs to support members engaged in higher education. She serves as a liaison between the society and its members, and helps translate between the scientific and non-scientific communities. Much of her time is spent in meetings and on emails, crafting and implementing ideas, and prioritizing initiative that

meet SFN's long-term goals. Career advancement in her position would be in the form of "up or out" in that you may be able to move up if someone leaves their position or you will need moving to a different company to advance.

Next in the panel was Meghan Mott, PhD, who received a PhD in Anatomical Sciences and Neurobiology from the University of Louisville School of Medicine in 2011. After her PhD, she accepted a Postdoc at the National Institute on Alcohol Abuse and Alcoholism (NIAAA), hoping a different field of research would reignite her passion to stay in research or academia. She realized during her postdoc that academia was not the path for her and, through career development seminars, she gained interest in science policy. This realization led her to pursue experience in a number of different ways. She served as a member of the NIH science policy discussion group, wrote press releases for the NIH *Catalyst*, and served as co-chair of the FelCom career development subcommittee. She also completed a year-long detail (1 day/week) in the Office of Research on Women's Health (ORWH) dealing with perspectives on policy and helping to organize working groups. Dr. Mott emphasized these experiences as influential in her selection in 2014 both as a Christine Mirzayan Science and Technology Policy Fellow and a AAAS Science and Technology Policy Fellow, the latter in which she served as Special Assistant to the NINDS Director. Upon completion of her AAAS fellowship, Dr. Mott was appointed to her current position as Chief of Staff in the Office of the Director at the National Institute of Neurological Disorders and Stroke (NINDS). In this position, Dr. Mott serves as a representative of the NINDS Director, communicating policy, managing resources, and guiding the institute's scientific and administrative functions to accomplish its mission. Activities of her job include multiple meetings a day, travelling to society meetings, communication on policy documents and social media, and drafting director's messages and press releases about recent research. In terms of career advancement in her position, there is the potential to transition to different NIH institutes or different emphasis areas such as writing, grant reviewing, legislative issues, and communications.

Our last panelist, Michael Thomas, PhD, is an associate professor at Howard University. He is a virologist by training with research interests in cancer biology and vaccine design and development. His career trajectory began when he attended Wake Forest University to earn his PhD in Cancer Biology with the hopes of advancing to a career in the biotechnology industry. During graduate school Dr. Thomas became excited about the prospect of developing his own research ideas in academia and running his own lab. This led him to a postdoctoral fellowship in the laboratory of Dr. Marjorie Robert-Guroff at the National Cancer Institute (NCI). His pursuit of academia led Dr. Thomas to compete for and obtain a K99/R00 Pathway to Independence Award from the National Institute of Allergy and Infectious Diseases (NIAID) to study virus host-cell interactions that potentially influence transgene immunogenicity. Dr. Thomas highlighted his K99-R00 award as making him competitive for faculty positions, since he was competing with assistant professors coming in with their own grants. He also gained advice from a variety of mentors: one with a recent K99 award, another with over 30 years of experience in academia, as well as other collaborators. All of these individuals connected him to many invaluable resources. As an associate professor, Dr. Thomas is in the process of establishing his new laboratory and looks forward to establishing a long-term research program, and writing

multiple papers and grants, including an R01. For postdocs that are interested in academic positions, Dr. Thomas advises that you start the process early and engage with mentorship meaningful to your path.

Overall, the panelists suggest that if you are interested in academia, the K99-R00 or other new investigator grants are influential in opening doors in that competitive environment. If you would like to pursue non-academic paths, use the time in your postdoc wisely and get involved in activities that will develop the skillsets necessary for your area of interest. Regardless of which path you choose, it is important to start planning for your next steps early in your postdoctoral career by pursuing a variety of mentors and developing your soft skills.

Key Take Home Points:

1. **Communicate with your mentor:** Postdocs interested in non-bench career paths must put in extra time and effort into the lab. Approach your mentor with a specific plan on how you will meet the demands of lab research while participating in any additional activities necessary for your career development. This will enable them to be more supportive and approving of your activities outside the lab.
2. **Start planning for next steps early:** Be proactive and research potential job areas early in their postdoc career. This enables you to be more informed about different job opportunities and get a perspective of what skills are in demand for those jobs. Starting the process early then gives you time to start developing the skills to match the job of interest so you become a more competitive candidate.
3. **Take advantage of career development opportunities:** Work beyond the lab, serve on committees and do so in an impactful manner. Use these opportunities to gain writing and leadership experience as well as network with people. Make use of NIH resources such as the OITE management bootcamp, leadership training series, interview training and FAES courses to expand your qualifications.
4. **Have a variety of mentors and build a network:** Maintain mentors both inside and outside the lab, including peers a few years ahead, mentors in fields of interest, and career development mentors. Retain a variety of mentors to support different aspects of your development, both personal and professional. Do not neglect to build your network at all stages of your career, as this is essential for career advancement.