WHAT’S NEXT?
THE STATE OF POSTGRADUATE CAREER CHOICES

It’s hard to meditate on next steps in one’s career because it signifies that one way or another we’ll have to face that uncomfortable question “What’s next?” Regardless of the subject matter, everyone is in college to get from point A to point B. In the case here in the Life Sciences building, from student to scientist. But alas, the comfort of the academic environment can cause postdoctoral trainees to linger longer than originally intended. The “short term” postdoctoral spring board can turn into a career in and of itself. With research faculty positions being extremely competitive, the career path is less a paint by number formula and more like a blind folded improvisational dance.

Some students may wait for the final moments before graduation to cautiously untie the blind fold. Weary from the stress of dissertation writing and defense, they may end up dismayed by the changing life science landscape. A flurry of LinkedIn activity often ensues, but a strong network can’t be built on three months or less.

(CONTINUED ON PAGE 2)
What about taking the blind fold off earlier in the process, slowly giving eyes a chance to adjust to the daunting reality? According to the American Society for Cell Biology, “<8% of entering PhD students will become tenure track faculty. Yet, 53% rank research professorships as their most desired career.” According to the NSF’s Survey of Earned Doctorates, more science and engineering PhDs are awarded than ever before. However, the number of tenure track positions doesn’t necessarily increase with the number of PhD graduates. Citing these statistics isn’t meant to invoke fear or finger wag at the dreamers of graduate school. It’s to spark contemplation into the many different, rich possibilities for a career post PhD and perhaps even beyond the bench. It would be irresponsible for an institution of higher learning not to discuss these so called “alternative” career paths.

So what are the alternatives? In the for-profit sector there are jobs working for start up’s, and well established Biotech companies both as scientists and in the realm of business development. There is the new and burgeoning field of science communication. Both companies and government agencies need to explain why their work matters to different audiences with different backgrounds and interests. There are careers in Science Policy, a field which undoubtedly has an impact on the structure and state of research in this country. There are careers that don’t even yet exist but nonetheless, postsecondary education may be an invaluable stepping stone.

Here in the Life Sciences Building and The RNA Institute, there are ways to start exploring potential careers right on campus… only a few steps outside the lab. For one you can attend RNA Café events and get involved in the Graduate Society for Sciences group. If you are a Postdoc, you can join the newly formed Capital Region Postdoc Association. All are involved in creating events that can help broaden exposure to a variety of career choices. All are open to new, fresh ideas and insights. So please join in the conversation. If we work together, asking “What’s next?” can be an exciting challenge.

References

http://www.ascb.org/where-will-a-biology-phd-take-you/
http://www.sciencemag.org/careers/2016/04/more-phds-fewer-job-commitments
GETTING TO KNOW NEW HIRES!

Gabrielle Fuchs
Assistant Professor of Biological Sciences
http://www.albany.edu/biology/people/faculty/fulltime/fuchs_gabriele.shtml

1. Where were you before The RNA Institute? What were you working on?

After I did my Ph.D. research in Sandra Wolin’s lab at Yale where I worked on recognition of misfolded RNAs by the 60kD Ro autoantigen, I joined Peter Sarnow’s lab at Stanford University as a postdoc. There I discovered that the metabolic enzyme glycogen synthase moonlights in translation. While collaborating with Alexey Petrov from Jody Puglisi’s lab I learned about the power of single molecule experiments in dissecting protein biosynthesis. Alexey and I agreed that a mammalian system was needed to better understand molecular mechanisms of translation in human cells, such as internal ribosome entry sites (IRES), microRNAs and others. So we started to develop signals for single-molecule FRET experiments using human ribosomes.

“So we started to develop signals for single-molecule FRET experiments using human ribosomes.”
GETTING TO KNOW GABRIELLE FUCHS (CONTINUED)...

What type of work will you do here at The RNA Institute?

I will continue the collaboration work with Alexey because we are still in the early stages in establishing signals on the ribosome and translation factors and using them to understand translation in human cells. In addition, I will further expand my work on how ribosome heterogeneity contributes to translational regulation. Specifically, posttranslational modifications of ribosomal proteins are reversible and are altered during viral infections and cellular stress. These post-translational modifications are referred to as the ribosome code, and I am interested in cracking this code.

Any advice for graduate students or undergraduates who are interested in working in your lab?

My work is very interdisciplinary, and I use a variety of techniques from biochemistry, molecular biology, cell biology, virology and biophysics. This provides great opportunities to develop research interests, but it also requires students to learn about all these fields.

What do you wish the general public knew about your research?

I compare science to a house with many rooms and doors. Every time we finish exploring one room and open a door to a new room we see many more doors that invite us to explore what’s behind them. If you were to look at this maze of rooms from above you’d see how interconnected they are. While research on ribosomes and translational regulation is deeply rooted in the history of RNA research there is so much we don’t know yet. Although the ribosome code has been postulated more than a decade ago, little progress has been made due to technical limitations. Now that we’ve overcome some of those limitations through the development of new techniques, mass spectrometry instruments with better mass accuracy and sensitivity and the application of CRISPR-Cas in mammalian cells, we can start addressing the ribosome code.

What are one or two of your proudest professional accomplishments?

I wouldn’t be where I am today if it wasn’t for all the people along the way, starting with my science teachers in middle and high school, my professors, PIs and peers. They were patient and taught me a lot. So my proudest professional accomplishments are when I see the progression of my students, from starting in the lab to becoming independent and graduating. It’s a good feeling to know that you trained the next generation of scientists. Furthermore, being the first one to isolate fluorescently-labeled human ribosomes I opened the door to a new room where new discoveries on human translation regulation await.
GETTING TO KNOW GABRIELLE FUCHS (CONTINUED)...

What are your interests/hobbies outside the lab?

I like sports like swimming and running. When running I prefer longer distances like 10K and half-marathons. In addition, I’ve always liked to bake, and my 2013 New Year’s resolution was to “bake more”, mostly focusing on cakes and cookies. So I started baking once a week for my lab and the neighboring labs on the floor. Because people started asking for recipes I started a baking blog (www.germankuchen.blogspot.com). Since I started at The RNA Institute the blog has become very quiet, but I intend to start it again in 2016.

Who is your favorite historical scientist and why?

My favorite historical scientist is Lise Meitner. She had to overcome so many obstacles to get the education she wanted, and her contributions to the discovery of nuclear fission were recognized only much later.

Stephanie Black
Life Sciences Entrepreneurship Professor

What course did you develop for the Spring 2016 semester?

This Spring I am teaching the MGT 675 Entrepreneurship New Venture Creation course. The objective of this course is to help students learn to develop business plans and commercialize their ideas.

Tell us how you can impact the students and faculty in The RNA Institute and School of Business at UAlbany with your experience spinning technologies out of various entities.

I have always enjoyed helping entrepreneurs and businesses in the commercialization of their products. I have prior experience in various industries helping to develop new products or services for others as well as for my own businesses. I see that the University at Albany has many exciting projects, and I hope to become an integral part of helping to develop our ideas and to move them into the marketplace. I also hope to teach students to develop the necessary skills to develop their own ideas and be successful with their career paths.
GETTING TO KNOW STEPHANIE BLACK (CONTINUED)...

How will the course you are offering in Spring 2016 facilitate the impact you hope to make with students at UAlbany?

I am excited about teaching others to develop their business ideas and present them to others in a business format. I will be teaching students tools of how to develop their projects or ideas into business models that will be more attractive to the business community and investors. My class will be open to individuals from other departments who are interested in developing business skills to create new ventures.

What is your personal philosophy on how to accelerate and spur life science entrepreneurship?

I would like to work with researchers on projects that they view as having strong potential to help them get funding and develop business plans for commercialization. Sometimes, it will require a joint collaboration whereby researchers acquire a better understanding of the specific needs in the marketplace and target their research to fill these gaps. In this manner, the University has the potential to see more of the research commercialized at an accelerated pace.

What advice do you have for life science students, postdocs, and faculty interested in entrepreneurship?

I would encourage anyone who is interested in entrepreneurship to meet with me and see if we can help develop a project of mutual interest. Universities are wonderful places to incubate new ideas, and they often start around conversations.

When you aren’t teaching or developing courses and business, what are you doing?

When I am not teaching or researching, I enjoy mentoring students and working with entrepreneurs in the community. I believe strongly that we should invest in others to make our community stronger. My personal philosophy is that we are all part of a village, and as such we all need to work toward making it a better place. I hope that by investing time in others, they will become more successful and help others as well.
Latest Publications


I Khan, PF Agris, Yigit MV, Royzen M. In situ activation of a doxorubicin prodrug using imaging-capable nanoparticles. Chem Commun (Camb). (2016)

X Xiao, PF Agris, Hall CK. Introducing folding stability into the score function for computational design of RNA-binding peptides boosts the probability of success. Proteins. (2016)


*Also featured as an Editor’s Choice in Science

Rui Wang, Srivathsan V. Ranganathan, Maria Basanta-Sanchez, Fusheng Shen, Alan Chen, and Jia Sheng. Synthesis and Base Pairing Studies of Geranylated 2-thiothymidine, a Natural Variant of Thymidine. Accepted for publication in Chem. Comm. (2016)

Latest Publications


Mustafa Salih Hizir, Meryem Top, Mustafa Balcioglu, Muhit Rana, Neil M. Robertson, Fu-sheng Shen, Jia Sheng and Mehmet V. Yigit. Multiplexed activity of perAuxidase: DNA-capped AuNPs act as adjustable peroxidase. Analytical Chemistry (2016)


Find new collaborators on the Institute website: https://www.rna.albany.edu/people/
Awards & Achievements

- Congratulations to Annie Baxter of the Rangan Lab for winning the Katherine Vario Scholarship!

- Congratulations Janeen Bell of the Agris Lab on receiving the 2016 Chancellor’s Award for Student Achievement!

- Congratulations to Pooja Flora for winning first prize for her graduate student talk and Katarina Tlučková for winning first prize for her Post-Doc poster at NESDB!

- Congratulations Tony Hoang and Antoinette Fraser on winning the Blackstone Venture Competition!

- Congratulations Mohamad Ali Nasrallah on receiving an honorable mention as a Barry Goldwater Scholar!

- Mohamad Ali Nasrallah will be conducting research during the summer of 2016 at Mt. Sinai in their pre-MD/PhD program, while Dhruv Patel will be at Harvard University in their REU program. Both are undergraduates in the Rangan Lab!

- Congratulations to Dhruv Patel for winning the Spellman Award!

- Congratulations to Ville Väre, Agris Lab member on his scholarship from the American-Scandinavian Foundation!

- Congratulations Rui Wang, Sheng Lab member on renewing his Simons Fellowship for two more years!

THE RNA INSTITUTE, LS 2033
University at Albany
1400 Washington Ave Albany, NY 12222
P (518) 437-4443
F (518) 437-4456
E rna@albany.edu

Thank you for reading The Loop!