Career in focus: Industry R&D

This issue focuses on careers in Research & Development (R&D) in Industry. For this, we bring back Dr. Jared Davis, the Associate Director of RNA Biochemistry at Alexion Pharmaceuticals in Cheshire, CT. Dr. Davis previously joined us for a Small Group Discussion that received rave reviews and boasted one of the largest waitlists the CNPSY has seen yet! Due to the high demand for Dr. Davis' insight, we've highlighted his career path here for those who were unable to attend his discussion. Below you'll find some general information on careers in R&D, followed by an interview with Dr. Davis, who studied RNA tertiary structure and folding in graduate school and received his Ph.D. from the University of Wisconsin.

FAQs

What is Industry R&D?

R&D involves performing research-based experiments to identify and develop new therapeutics and/or protocols and instruments for health care and scientific discovery. The work is similar to that of academic research, but the main difference lies in the goal. Whereas academia often seeks to identify novel facts about biology and science, R&D seeks to identify technological advances for commercial use based on these scientific discoveries.

Why consider Industry R&D?

If you love research, but aren't fond of grant writing, long periods of troubleshooting, low salaries, or the academic career track, Industry R&D could be a good career option. A career in R&D is particularly well suited for those who are proud of their research accolades but know they want to leave academia because R&D weighs your research quality very heavily, and your publication record is a large factor in the hiring process. Although personality fit may be enough to secure a job, the best candidates for R&D positions are those who have at least two high-impact papers on different topics both published in well respected journals. This is desired because R&D projects are often "high-risk/high-reward," and the projects change frequently; thus, a strong track record in a variety of areas is key. This shows that you can adapt and refocus your skills quickly to meet the needs of the ever-changing interests of the company. Ironically though, it may be difficult to publish your work in R&D positions due to proprietary issues; note this for future career prospects.

Another reason to consider a position in Industry R&D is the compensation. If you love research, but don't want to be a PI, the prospects for a salary increase are extremely minimal. However, R&D is a great, higher-paying alternative. Most Research 1 Scientists (entry-level) have starting salary offers between $80,000-120,000/year to do the job of a typical postdoc - who averages about $40,000/year in academia (Reference: Nature Jobs). Thus, if you love research but the postdoc salary isn't/wouldn't make ends meet for your family, a career in Industry R&D may be for you.

Finally, Industry R&D is a great choice for those who do not want the responsibilities of being a PI in academia, i.e. grant writing, teaching classes, mentoring students, and serving on thesis committees. R&D allows employees to either remain as career benchtop researchers or, after 3-5 years, researchers can move into managerial positions similar to a PI, but without the less desired tasks listed above. In R&D, group leaders run a lab and oversee a number of projects that other researchers are working on, but they are not responsible for securing funding, teaching, or mentoring students.

However, Industry also has its downsides. Although R&D gives die-hard researchers their dream job with better pay and benefits without the downsides of being a PI, there is limited freedom. In Industry, particularly in Pharma, you are hired to work on a specific project. There is little freedom to explore a hunch or follow up on a happenstance finding as in academia, and regardless if you've been working on a project for years, if the company decides to move in a new direction, you must drop that project and move on. This is less true in Biotech, but it is certainly something to consider.

What kinds of skills are needed to be successful in Industry R&D?

Similar to academia, you need to excel at benchtop research to succeed in R&D; thus, creativity, technical skills, and critical thinking are key. Additionally, communicating your data efficiently and quickly to various audiences (researchers, clients, investors, etc.) is also necessary. Finally, personal skills, team skills, and leadership skills are also important.

Opportunities at Yale:

1) Internships - Many departments, including BBS and MB&B, offer valuable R&D experiences in interesting fields!
2) Biomedical Career Fair - Learn about Industry options in the area and network with representatives at the reception or by serving as a host! Similarly, attend the Nature Jobs Expo in nearby Boston to learn more.
3) Develop leadership and team skills by joining the board of a campus organization: CNSPY, ANY, WISAY, etc.
4) Lastly, consider taking courses in management and science communication to hone these needed skills.

Interview with Dr. Jared Davis, Ph.D.

Associate Director of RNA Biochemistry, Alexion Pharmaceuticals, Cheshire, CT

How did you get interested in industry work?

I took my training one step at a time. I never really had a grand vision for where I wanted to end up. I chose a degree in biochemistry without knowing what I was getting myself into, and I never really planned on getting a PhD. I chose biochemistry because I liked chemistry and I liked biology, and I thought biochemistry sounded like a mix of the two. As I progressed in my undergraduate degree, I looked around at the options and figured that going to graduate school made the most sense. I went to graduate school without thinking I would do a postdoc, but my graduate research didn't translate well to industry and I needed a postdoc to continue on the path to an academic career anyways. Since both of these paths required postdoctoral research experience, I applied for positions and went on to do a postdoc at Yale University in the Molecular Biophysics and Biochemistry Department where I studied ribozyme reaction mechanisms and ribosome associated RNAses.

I didn't make a decision until the end of my postdoc. Near the end of my postdoc, I applied to both academic and industry positions, and I was lucky enough to get offers in both areas. It was a tough decision for me and ultimately came down to the current funding landscape in academia and the job offers I received. I was not confident that I would be able to get the funding I needed to be successful at the universities that offered me positions. The job offer I received in industry matched my strengths and interests and provided an excellent opportunity for career growth.

Can you share your career path with us?

During my postdoc (in the MB&B department at Yale), I went to several career events: the annual career fair, the talks about potential career paths, and even a resume/CV writing and interview course. These courses helped me see the possibilities and gave me the basic skills I needed to put together a CV and know what to expect in the interview. They did not, however, directly lead to a job. I tried to work the few industry connections I had. These connections led to one on-site interview, two informational interviews, and zero job offers. The job I did get at Alexion came through an online application (one of many that I sent out). When I applied, I tried to reach out to someone at the company through a mutual friend, but I was unsuccessful. I did not know anyone in the company, but I got the job without any connections or referrals.

I keep hearing that most jobs come through a connection, but this was not my experience. Since I have been at Alexion, less than 20% of the people I have been involved in hiring have had any connections to Alexion, so don't be discouraged if your networking doesn't pan out. If you are the right fit for the job, you will be given an opportunity to interview.

What was the most challenging part of your transition from academia to industry?

The answer to this question has changed over time as I have taken on new challenges.

If you would have asked me in the first few weeks, I would have said getting used to the culture and the nomenclature was the most challenging. For the first month I carried a notebook around and wrote down every acronym I did not understand in a meeting to be Googled as soon as I got a chance.

If you asked me after a few months at the company, when I became a boss, I would have said that being a boss was my biggest challenge. I was not trained as a manager in school or as a postdoc. I mentored other students from time to time, but I never had to give performance reviews, or decide compensation. Since becoming a boss, I have tried to attend every management training opportunity I have been given, and I am slowly becoming more comfortable in this role.

Now I would say that the biggest challenge is stepping away from the bench to take a broader view and managing several projects. This has been a tough transition. I have been trained to get into the weeds of a project and solve every problem. Now I have to rely on others to solve problems, and instead take a bigger picture view and manage several projects. This has taken patience and trust in others' capabilities.

Can you describe the interview/application process?

I applied online. I was asked to provide a cover letter, a CV or resume, and I had to fill out a questionnaire that asked about my current position, pay, and skills. I had almost given up on the application (because I had applied to so many companies) when I got a call from HR at Alexion asking if this was a good time to talk. At the time, I was working in the lab and I was in the middle of an experiment, but I stupidly said "yes" and started frantically Googling Alexion while the interview started. If you get a cold call out of the blue and are asked if it is a good time talk, say "no." Ask if they can call you back to give you a chance gather your thoughts. I muddled my way through the first HR phone screen/interview, where they asked very general questions about the company, salary, and potential start dates.

After a day or two, a follow-up phone interview was scheduled with the hiring manager. This interview was much more technical - I was asked about my research and experience, among other things. I was then invited to visit Alexion, where I interviewed with several of the scientists and managers there, and I also gave a talk on my research. I was offered a job within a week of my interview, and I started working at Alexion about a month after I received my job offer.

What did you highlight on your resume/CV?

When writing my CV for job applications, I read some advice on Science Careers that said to make sure that on either your CV or your cover letter, you had all the keywords sighted on the job listing. I had also read advice that said to create an abbreviated CV, which ends up being a hybrid CV/resume, so I made sure to do these things when applying for jobs. For each application, I tailored my CV and cover letter to make sure those key words from the job listings were in at least one of those places, if not both.

Also, when I applied to Alexion, they were looking for someone with experience with Design of Experiments software (JMP). In order to meet this requirement, I downloaded the trial version of this software and spent a couple of days learning how to use it. I played with it and used it to design an experiment in the lab and analyze the data. Then I was able to state that I was familiar with JMP software on my resume/CV and my cover letter. Funny story - once I was hired, I became a go-to person for help with this program!

What is a typical day like you for?

My workload is best looked at as a weekly block. It's a difficult question to answer because each day varies a lot, but each week, I meet with each of my reserach scientists individually and as a group where we review data, look at projects, and plan out how to use our resources to meet our project goals.

I spend a lot of my time reading and writing - either putting out my own reports or reading others' reports - and I also spend a lot of time researching on Pubmed for projects that we are working on. I try to visit the lab as often as I can, and every once in a while I even answer a phone call from my wife. :)

What skills, other than traditional benchwork, did you need to develop in order to move into your current position?

The skills that I have worked the hardest to develop since moving into industry are management and interpersonal skills because much of my job is directing a lab and overseeing groups of research scientists. When I've had opportunities to do external training, I take advantage of it, and much of that training has focused on improving my skills in those areas.

What are your most and least favorite aspects of your current position?

I enjoy mentoring new scientists and working with a team to solve problems. Every week brings a new challenge - I get to research the problem, use the problem solving skills that I gained as a postdoc and graduate student, and work with a group of highly capable scientists to solve the problem.

My least favorite aspect of my job is the mundane clerical work. I don't spend a lot of time on this but each week I have to report my time, approve expense reports, and approve purchase orders, etc. It is mundane, but luckily it does not take up much of my time.

Is there room for career development and advancement for someone in your position?

I am surrounded by people who are proof of opportunities for career advancement at Alexion. My boss is a great example of this. In a time span of ten years, she went from a Research 1 Scientist to a Senior Director, overseeing over twenty people.

Alexion has been a rewarding environment for me as well - I have been given opportunities to advance from a research scientist and take on more responsibility as the company has grown and expanded their research and development platforms.

Is there any last advice you would give to someone looking to transition from academia into a career path like yours?

Look for connections; talk to anyone you know in industry. But, don't be discouraged if your networking does not lead to a job. People are hired without any connections (like myself). And don't be afraid of the switch to industry. So far the transition has been great for me!

We extend our greatest thanks to Dr. Jared Davis for not only joining us for a Small Group Discussion back in March, but also for partcipating further as our featured scientist in this issue's Career-in-Focus section to provide additional insight here in the Career Network SPYglass for those who were unable to attend his Small Group Discussion!

Thank you for reading!!

CNSPY Leadership Team
Co-founders - Thihan Paddukavidana, Rebecca Brown
Executive Board - Tenaya Vallery, Dan Mori, Claudio Bertuccio, Jimi Miller, Prabitha Natarajan, Victoria Schulman, and Yixiao Zou
Advisors - Yan Gao, Lu Jin, and Shalini Nag
Career Network SPYglass - Editor-in-Chief Victoria Schulman, Elaine Guevara, and Contributors