Translating skills gained in research to other industries outside academia

Temporal Ecology Lab at University of British Columbia

Experiences from lab graduates

- Tim has an amazing presentation on this, check it out!

Lizzie adds …

Project management

Tim was amazing at project management. He developed and effectively lead the OSPREE database, which has trained most of the lab since then in git, R and more — and lead to three publications and three more in prep.

Photographic visualization

Tim made me value how important photography is for the lab, both for doing science and for communication.

Identify synergies

Related to the photo visualization above, Tim did an amazing job of identifying synergies. He took machining classes and suggested projects that could use his new skills.

Experiences from lab graduates

- My current role: Senior Content Specialist at Illumina Inc.
  - Illumina develops platforms, reagents, and software for genomic sequencing
  - I was originally hired as a technical application scientist, which is essentially tech support for scientists (divided by support type: Instrument, Library, and Software)
  - As an instrumentation specialist, I was supporting customers in experimental design

Coding & wet lab experience

- Illumina just last week launched a gitbook, no one else on the instrumentation team had experience with github except for me – this turned into some overtime weekends with bonuses and a great "visibility" opportunity

- I used the coding experience to learn very basic html, which then got me onto the bulletins team (writing and publishing technical documents for the Illumina website)

- I do not work in a wet lab, but my experiences were translatable in talking with customers – being able to reference Qubit, Bioanalyzer, qPCR etc. I have the background in case I want to transition to wet lab (experiences TBD)

Thoughts from more lab grads*

Ailene, TNC

Deirdre

Adam

Phoebe

Dan Flynn, Volpe

*As organized by Lizzie

Good software skills

- I found that experience coding in R was immediately translatable and was the first "beta" person for cross-training in instrument and software support, which I used as reasoning for a raise (Molly)
- One thing I often tell people is how grateful I am that you got me started with proper software carpentry practices- I've become the chief evangelized of GitHub here, for example! (Dan Flynn)
- Lizzie adds: Git is one popular form of version control (good term to to use); picking up and integrating new languages and approaches quickly is also good (software changes quickly)

Reiterate … Software skills

- Everyone in this lab has the coding skills to do many positions in environmental consulting and non-profit's. Most of these positions only require basic statistics and data cleaning (Deirdre)

- Technical: RStudio, Excel, Data collection, Statistical Data Analysis (any other platforms... Stan, wordpress, experimental design etc. for people on other projects) — Phoebe

Project management

- Project management – self regulating time (which is not my strong suit) is valuable for any industry where you want to stand out as a leader (Molly)

- The project management skills (setting and meeting intermediate goals and deadlines, problem solving, seeking out subject matter experts when needed, setting clear workflows, communicating with teammates and following up with teammates about their progress, etc) , required to get a dissertation completed can be applied to many situations, even though in academia we aren't really taught to identify and enhance that as a skillset. *I think Lizzie and her lab is better at developing and using these skills than many academic labs and it is a very translatable skill.* (Ailene)

Time management within projects

- The skills we learn in project management and completing projects in grad school is transferrable to many jobs (Deirdre)
  - Being able to complete projects on time is very important, often things need to be done ahead of time so they can be shared with other team members prior to a presentation either for approval or so they can incorporate your work into their presentations as well
  - In industry you are required to keep track of your time and report the time you spend on different tasks, so keeping good records and doing focused work is necessary
- Assessing the tradeoff between taking less time to do research/analyses versus increasing the complexity may be different in academia versus other (especially direct policy) settings. In my experience, in conservation, while of course you want the science to be accurate and reflect reality to the best of your knowledge, timelines may be tighter. Sometimes this is simply due to misunderstanding about how long science takes, but sometimes there are hard deadlines due to legislative sessions or other constraints. (Ailene)

Communication

- Communication skills are very important (Deirdre)
  - being able to communicate scientific findings simply and for a general audience is useful, whether you are doing public outreach for a non-profit or sharing findings with community partners or clients
  - The presentations you give in classes now are also useful for building skills for later: in many roles you will need to give presentations either to your team, or to clients. While audiences are smaller, the stakes are higher.
- Listening to other people's ideas and experiences, and perhaps shift your work as a result of your new understanding, is a valuable skill for and I don't know that it is always a focus of graduate school training. (Ailene)

Communication — writing

- Scientific writing is a major skill for any technical industry (Molly)
- Writing clear and concise project updates for supervisors (Adam)
- Academic writing prepares you for writing reports, grant applications for getting funding for non-profits, and writing clearly for different audiences (Deirdre)

Team work (Lizzie, mostly)

- Git (version control) and all related projects!
- Preparing reports or summaries with others
- Field work can take extreme skills related to field work
- Managing lab work towards a major goal (e.g., getting thousands of berry samples processed)
- Academia can prepare you for working with teams and managing groups of people on a project, either in supervising undergrads, or working collaboratively on publications (Deirdre)

All experience is valuable

- I was a holiday present wrapper for Pottery Barn in college, and it translated to wrapping 70+ pots for a transpiration study and they turned out gorgeous and more importantly very well sealed. (Molly)

- I would also encourage undergrads to keep track of specific numbers (estimates) such as how many samples they processed, or, if they managed a large data set/code, how many rows/dimensions. It sounds extra and annoying (which it is) but it will set your resumes apart from others. (Phoebe)

- Attention to detail, organization, writing, research methodologies, team work, communication skills (in a resume specifically, synthesizing and clearly communicating complex ideas to a broad range of people. And effectively communicating trends using graphs and visuals--can add a platform used). (Phoebe)

Value yourself and your experience

- Use words like efficiently, diligently, in an organized fashion etc. when describing experience (Phoebe)
- Imposter syndrome never goes away, but identifying it and working through that is invaluable (Molly)
- Even if you do not have all the listed skills in a job ad, apply anyway if you are excited by the position … I have gotten jobs I was unqualified for, but I was interested in learning how to do that type of work and expressed this in the interview (Deirdre)

Thanks

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