SIfA EMCR Workshop 2015 – Session 1, Panel 2
by *Jane Kaczmarek & Jason Drury*

Panel 2: Tanya Hill, David Harrison, Mark Assad, Alain Picard, Sean Farrell
Moderator: Luke Barnes

Tanya: Senior Curator of Astronomy at the Museum of Victoria Planetarium.

David: Comp-sci at USyd, got a call after posting on Facebook about "market staleness".

Mark: PhD in IT, software for collaboration, improve performance though analytics.

Alain: PhD at CIT, More interested in *how* to get the answers than what the answers were (hints at developer).

Sean: He was a spy. Works for the world leader in massively parallel databases. Does really cool stuff with big data, machine learning, graph and path analysis.

Q: "You get that call - the first step outside of what you already know - how do you make that step? How do you prepare yourself?"

Sean: I met someone at a wedding and talked science. Asked about skill sets and data mining, problem solving, creative thinking. Networking and telling people you're on the market.

Mark: Got to the end of his APA [scholarship] and realised he needed a job to live. He stuck to finance because it tended to push the pointy part of what technology was doing and because it forced the competitive edge. Family reasons lead to his directional change, interested in working for a company with Sydney base.

David: Changed direction on how he was going to pursue his career. Passion led him to the field. How to start a career -- you need to find something that you want do. And you need to leverage the skill sets that you're passionate about. Having the guts to make the call to do something -- maybe make a scary leap to pursue your passion. Scary, but highly worth while. Such a wide variety of skills you can exercise and the speed at which change can happen.

Alain: Make the decision -- it's hard and paralysing. Fear of failure? Fortunate to be able to take a year to rebuild himself from who he was before he decided to become a scientist. Once you make the decision to leave science and have a sense of self, the rest is pretty easy. You are way smarter than most of the people out there. It's a psychological thing, not a lack of skills. Don't be afraid to call people about things that sound interesting. You can also just invent a job! A specialised thing that you're interested in. You don't have to measure your success by being a billionaire, but rather by being able to do what you want to be doing.

Tanya: I saw someone (female astronomer) where she thought "I could be like you." It is not a failure in any way to decide to not pursue academia. Communication, creativity skills that you learn during your PhD are highly useful.

Q: "Do you have an example of anyone who has left academia and eventually came back academia?"

Tanya: Ann Green was able to leave for a longer period when she had a young family and stayed connected through that time period. I think people need to change so that there isn't just the thought of only one path to pursue academia. We almost need to have a change so that you learn new skills.

Alain: Change isn't going to happen -- there is almost an infinite supply of people who have never left so that there is no need for the system to change.

Sean: If you leave astro and you try to come back in, you have gap in your publication record and you're going up against people who don't. If you're interested in coming back to academia you may be able to, but perhaps not into astronomy. Instead try a field that has interest in industry -- such as data science. There are paths through industry where you can still do the research that you think is interesting -- i.e. IBM funds basic research as it wants a shiny stamp to show that they're doing sexy science. They are rare, but they exist.

Mark: There are ways to keep ties with university people.

David: I know of one person! Went out of academia, went to industry then chose to pursue a new course stream.

Q: "Can you talk a bit more about the recruiting process? From what I can gather, it is quite different than astronomy?"

Mark: A lot depends on what position you are best going to slot in to. Via a grad program is the quickest route: Submit CV, get called in, three interviews in one day. 1) Coding test (friendly), white board exercise (interesting and different), where you introduce a project that you're proud of to a technical panel. Experience counts here and allows panel to assess whether an individual is aligned with the company values. 2. Quasi-quiz interview to see how you think and how you learn 3. ??

Alain: You're going to get as many answers to that question as the number of people you ask. I don't ask for a job at a company that is big enough to have an HR department. Everyone has their own voodoo way of trying to find the right people. Be confident and personable.

David: Just Google 'company hiring strageies.' The process is usually quite transparent. A lot of discussion, whiteboarding, architecture design to learn how you think. You can learn any language if you have the underlying physical understanding. What is more important is trying to gauge what level you're at.

Q: "What are some problems that some transitioners have made?"

David: It takes awhile to retrain a PhD. We tend to overcomplicate things. I'm not trying to see how smart you are, I want to see how you engage with the problem. Trying to pair a PhD's passion with a company's goals.

Q: "What is a good time-scale to jump off the academia train? I've heard that after a PhD and 2 post-docs, you are considered too specialised to be hired. Is this true?"

Alain: You are going to be fighting the perception of the part [PhD]. You are expected to know a lot more than some kid who is coming in right off of a CS program. Depending on the employer, they may have a reluctance to invest in people to retrain PhDs. You have to find that one place that truly believes that employees are their most valuable assets. Those places will be able to foster a 2-way loyalty. You will quickly grow and become a part of that place.

Tanya: A lot has to do with the story you tell. You have to be able to put a spin on your resume that will make you suit a company. What does a company do to make you want to change careers?

Q "What can a PhD student be doing now to prove that they are not a typical, locked in academic?"

Tanya: Volunteering. It creates more of an official persona to show the different job opportunities.

Mark: It's easier for a company that is working with software. If you have any software that is available for them, they can see that you have the background and they can go and see what you can do. The person that is offering the job is trying to reduce the risk. If they're hiring someone, they don't want to bring someone in that won't be able to do the job.

Q: "How important are soft-skills? How would you frame that in a resume?"

Sean: I took my massive CV and condensed it onto 2 pages. I stressed the ability to write and talk to a range of audiences. One of the biggest issues I've faced as a PhD is that companies are worried that you won't be able to talk to people in the market. I put a 'management skills' section. I took my CV and translated into something that I thought industry would like.

Alain: Soft skills are important, I find that I'm more impressed with someone if they're expressive and can convince me of their story. If someone isn't convincing, even if they're smarter, you may not hire them.

Mark: It is frustrating to be interviewing someone who you know is supposed to be very smart but, as an interviewer, it can be hard to get them to 'put it out there'. Try to ask friends/family to just ask you questions [as practice]. During an interview, it's high energy, high stress and you need to be able to get your skills across.