Antony Williams, the ChemConnector: A career path through a diverse series of roles and responsibilities

Antony Williams

National Center for Computational Toxicology
U.S. Environmental Protection Agency, RTP, NC

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My background…

• PhD London – High Pressure NMR
• Work History to date
  – Government lab as postdoc (NRC-Canada)
  – Academia as NMR Facility Manager (Ottawa University)
  – Fortune 500 Company as NMR Tech Leader (Kodak)
  – Small start-up company as product manager, marketing manager, Chief Science Officer (ACD/Labs)
  – Consultant – chemistry informatics industry
  – Company owner – created ChemSpider (ChemZoo Inc)
  – Royal Society of Chemistry (bought ChemSpider)
  – US-EPA – cheminformatician and “connector”
Who am I today?

- Product lead for “CompTox Chemicals Dashboard” @ US-EPA – **scientist**, “**evangelist**”, **connector**
- Responsibility for cheminformatics projects, internal & external collaborations, “product marketing”– **cheminformatician**
- Work with a team of people developing software solutions – “**product & project manager**”
- Scientific publications, books, blogger – **author**
- I am @ChemConnector – **social networker**
If I were to philosophize about it...
What have I learned in my career?

• So much time is spent working - not enjoying it is not an option for me

• **BUT** it is called “work” for a reason – if you enjoyed every moment it would be a hobby

• Continue to sharpen your toolset as time and projects allow. Collaborate, network and communicate. Do not go it alone…
What have I learned in my career?

• “Playing it safe” is a perfectly valid option – but rarely effects change and innovation

• Use your head & heart to make career choices

• Say what you are going to do and do what you say – it defines your reputation as an employee

• Careers are made – they don’t just happen. Making your work visible is very important…
“Work” versus “Passion”

• We all need to work but choose to work on things that give you a good emotional response… stimulate interest, lack of sleep, joy, obsession…

• Develop new skills, step out of the box and extend yourself. What you know now is never enough…

• Balance logical decisions with gut-level responses

• Work somewhere that supports your passion(s)
Education...B.Sc 1982-85

- I always found Chemistry interesting....but never found it easy!

- Almost **bottom** of my class for Physical Chemistry. Spectroscopy specifically made no sense but was **fascinating!** Tough struggles...

- Self-realization – “Beat the Challenge” – had to study it until I got it.
What brings you joy?

- **Figure out early** what brings you joy if you can *(not so easy!)*

- Some self-analysis and I know what drives me
  - Creating solutions to difficult problems
  - Building and playing with functional teams
  - Working with people more skilled than me
  - Communicating complexities
  - Acts of service for my community

- What drives you and brings you joy?
Post Doc 1988-90

• Multiple offers for NMR Postdocs in USA (PhD studies)

• One offer for ESR/EPR Postdoc in Canada

• Why Canada?

• Emotional decision…
  – Exploration is fun
  – Out of the box motivates
• **Business Driver**: Do more analyses faster and with higher quality. Walk-up automation for analytical support, Get data to chemists

• **Business Driver**: Improve NMR Data analysis - can software outperform people for analysis?

• **Business Driver**: Sample tracking – LIMS as the internet was born

• I entered cheminformatics for **BUSINESS REASONS**
Creativity at its best – new products, new markets, design work, marketing, good science

From NMR spectroscopist to deeply understanding chemical **nomenclature, structure** representation and **databasing**, data integration, and the **web**

My greatest **joys** – solving problems for people and innovating scientific solutions with computers

My driver – “**Help OTHER people** be more successful”
A HOBBY PROJECT just because
– Skills and Passion

• Use technology to spider the internet for chemicals

• Hobby project built in a basement – thousands of visitors a day.

• Judged harshly in the blogosphere but “beat the challenge” by engaging in it…

• Acquired by RSC – chose them as the best partner over a number of other discussions
• Bringing my cheminformatics skills to bear
  – Publishing (how to enrich publications with data)
  – Large multi million dollar European projects
  – Building a user community for ChemSpider – to over 80,000 users a day by education, sharing and engagement (i.e. connecting)
  – Delivering tools to support the community
It finally made sense...

• This book brought it into perspective for me...
It might be useful…

- [http://www.productiveflourishing.com/maven-connector-or-salesperson-whats-your-archetype](http://www.productiveflourishing.com/maven-connector-or-salesperson-whats-your-archetype)
You might be a connector if:
• You are constantly referring people to the right expert or service to solve their problem.
• You love networking and talking with people, just for the sake of doing it.
• When you’re talking to people, they say, “Wow – you know everyone!”
• The stories you tell always focus on the people, not the ideas or the sizzle.
A Personal Interest
Social Networking in Science

• I think you should ALL take part in “connecting” yourselves to the growing network

• Career-wise, NOT having a personal presence online is likely already a detriment
  – Establishing a public profile
  – Getting on the record
  – Collaborative Science
  – Demonstrating a skill set
  – Measured using alternative metrics
  – Contributing to the public peer review process
Maybe of use...

- [https://www.slideshare.net/AntonyWilliams/building-an-online-profile-social-networking-and-amplification-tools-for-scientists](https://www.slideshare.net/AntonyWilliams/building-an-online-profile-social-networking-and-amplification-tools-for-scientists)
Get into the networks SOON
Conclusions…what worked for me..

- I LOVE Chemistry – never want to synthesize again!

- Career choices should be head & heart decisions

- Decide what motivates, excites and stimulates you over what puts food on the table. (Clearly driven by the need to eat also!!!)
Conclusions...what worked for me..

• You are responsible for your reputation – build it and maintain it - and with online tools take charge of it!

• Not every decision is a good one – but not making decisions is crippling in terms of your career

• In cheminformatics there are very few limits to participation
  – Always something to learn
  – Contribute and share data, code and skills openly
  – Get into the network – Wikipedia, StackOverflow, many networks
  – Join the ACS Division of Chemical Information and participate