



Careers and Opportunities in Pharmaceutical Discovery Toxicology

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OUTLINE

- Personal experience and career path
- Discovery Toxicology
- Discovery Toxicology in Large vs Small Pharma
- How do skills and responsibilities change with time

- Is a Career in Discovery Toxicology the Right thing for YOU?
- How to prepare yourself for a successful career in Discovery Toxicology

PERSONAL EXPERIENCE AND CAREER PATH (1 OF 2)



BS Pharmacy,
University of
Santiago de
Compostela, Spain



MS in Toxicology,
Utah State
University



PhD in Toxicology,
University of
Washington,
Seattle

Postdoc in Cancer
Research, FHCRC



Lessons Learned in Academia

1. **Drive your PhD**
2. An academic postdoc is not a waste of time if you want to go into Industry, but **keep it short and switch fields**
3. Use the “endless” time to develop **communication and leadership skills**

PERSONAL EXPERIENCE AND CAREER PATH (2 OF 2)

CEREP Inc

Job #1: Scientist/Sr
Scientist at CEREP
(4 years)

Genentech

Job #2: Scientist/Sr
Scientist/Assoc Director at
GENENTECH (9 years,
wow!)

Job #3: Director at DENALI (current-6 months)

Some Lessons Learned in Industry

1. Don't be too picky about your first job, it is usually hard to get (more on this!)
2. Follow your passion
3. Keep an open mind about opportunities (most interesting career paths are not linear)

DISCOVERY TOXICOLOGY



- Toxicology in the early drug discovery space (non-GLP)
- Very dynamic environment, with lots of novelty
- Relies on lead optimization and investigational approaches
- Terrific fun!
- Junior discovery toxicology roles are well suited for fresh PhD or postdoc graduates
 - PhD in fields other than toxicology are welcomed (at least by me!)

- Large pharma companies have dedicated discovery toxicology positions
- Investigative toxicologist is closely related

DISCOVERY TOXICOLOGY IN LARGE VS SMALL PHARMA



- Dedicated discovery toxicology departments
- Internal investigative capabilities
- Large portfolios, very active lead optimization

- One or a few toxicologists do discovery and development toxicology
- More limited investigative work, relying on outsourcing
- Smaller portfolios, deeper work on fewer targets/leads

WHAT SKILLS DID YOU LEARN IN ACADEMIA THAT CAN BE APPLICABLE TO DISCOVERY TOXICOLOGY

- **Scientific strength:** a good discovery toxicologist must be a strong scientist



- **Team work:** discovery toxicologists are integrated in drug discovery teams



- **Curiosity:** discovery toxicologists deal with new and unexpected findings all the time

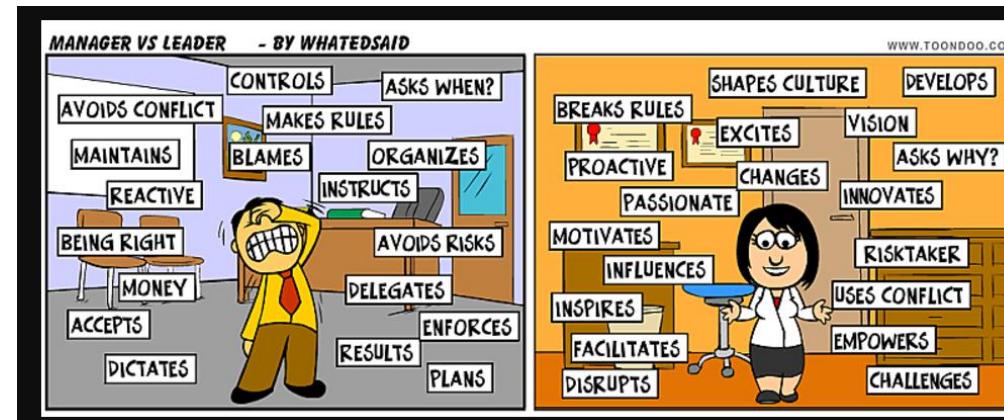


- **Communication:** discovery toxicologists constantly communicate, specially in teams; learn how to communicate your science (simple, succinct, impactful)



HOW DID THOSE SKILLS AND RESPONSIBILITIES CHANGE OVER TIME WITH VARYING LEVELS OF EXPERIENCE E.G.

- **Individual contributor** (scientific strength, curiosity, team work, communication)
- **Junior Group leader:** (all of the above plus: strategic ability, managerial skills, organizational savvy)
- **Senior Group leader:** (all of the above plus: create space for your people to grow, empower and motivate people, mentor other leaders)



WHAT TO DO TO FIND OUT IF A CAREER AS A DISCOVERY TOXICOLOGIST IS THE THING FOR YOU?



- Connect with discovery toxicologists to find out more
 - Attend SOT or regional chapter meetings
 - Leverage the DDTSS organization for contacts
 - **IMPORTANT:** Most toxicologists are happy to give you a few minutes of their time to help you in your career, take advantage of this!
- Consider internships in discovery or investigative toxicology

THINGS YOU CAN DO TO PREPARE YOURSELF FOR A SUCCESSFUL CAREER AS A DISCOVERY TOXICOLOGIST



- Practice agility in decision-making in your research
 - Extracting knowledge from data
- Publish your work
- Leverage your postdoc to learn a new discipline
- Take courses in communication and public speaking
- Network with toxicologists
- Take on leadership opportunities in your institution or within Toxicology societies (SOT, ACT, etc)