Overview

- Introduction
- Employment Landscape for PhDs in Life Sciences
- Factors Driving Development of a Career in Industry
- Recommendations for Consideration
Patheon: A Leading Global Contract Development & Manufacturing Organization (CDMO)

- Revenue, 2016: $1.9B
- Products: ~700
- Clients: ~400
- Scientists and Technicians: 600+
- Of Top 100 Drugs (Developed or Manufactured): ~25%
- Of All Outsourced FDA Approvals Over Last Decade: 25%
- Locations Serving 70+ Countries: 25+
Varying Data on the Employment Landscape for PhDs

Number of U.S. doctorates in life sciences increasing
• ~12,500 in 2015; ~9,300 in 2005

Many PhDs drawn to academia
• 78% of doctorates likely to pursue a research career in academia

Postdocs expectations not matching reality
• 56% expected to secure tenure-track position, while only 21% did in 2012, down from 37% in 2010

Bioscience industry is a growing economic engine
• ~1.66 million jobs; Mass. biopharma companies expected to add 11,600 jobs by 2022
  - TEConomy/BIO, The Value of Bioscience Innovation in Growing Jobs and Improving Quality of Life, 2016; MassBio, 2017 Annual Job Trends Forecast

Graduate degree not required
• 15% of life sciences job postings in 2015 required a graduate/professional degree
  - Coalition of State Bioscience Institutes, 2016 Life Science Workforce Trends Report
Factors Influencing Development of Career in Industry

**Barriers**

- Awareness of opportunities outside academia
- Draw of academic position
- Continued hope of an academic post delays entry into industry
- Expectations of career advancement
- Lack of essential skills and experience in corporate environment

**Drivers**

- Pace of innovation is high (e.g., importance of demonstrating value in new medicines)
- Industry investment in R&D vs. NIH, academic funding
- New and growing funding sources available
- Supply of PhDs and postdocs exceeds demand for faculty positions
- Higher wage jobs and opportunity to apply scientific expertise in other areas
Career Opportunities Extend Beyond Traditional Research

Scientist (R&D)

Executive/General Mgt

Program Mgt

Data Science (e.g., Biostats)

Business Development

Regulatory Affairs
Recommendations for Consideration

- Continue to reinforce partnerships between universities and companies that provide real-world experience (internships, fellowships, job shadows)

- Engage students earlier in awareness of career opportunities outside academia and how to pursue them

- Coaching for postdoc advisors and managers on importance of development

- Explore incorporating into PhD programs training in business & skills required such as communication, influencing others, management, collaboration and enterprise perspective

- Utilize programs that provide role models and real world career advice

- Focus early on development and onboarding of employees