PROJECT MANAGEMENT AS A CAREER PATH FOR PHDS: PERSPECTIVE FROM BIOTECH AND NONPROFIT SECTORS

Sanya Fanous Whitaker

Scientific Program Manager

Foundation for the National Institutes of Health

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OUTLINE

- What is Project Management

- My Career Path: transition to non-bench jobs in project management
  - Private Sector
  - Non-profit

- General Advice if you are looking to leave the bench

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WHAT IS PROJECT MANAGEMENT: DEFINITIONS

- **Project**: temporary, designed to produce a unique product, service or result with a defined beginning and end (e.g., clinical study)

- **Deliverable**: tangible, measurable, specific product or service resulting from project activities

- **Project team**: made up of members from different groups or functions assigned to activities of the same project

- **Functional group**: possesses specific skills or knowledge that they bring to the project team (e.g., clinical)

- **Project Manager oversees a project team made up of functional group representatives that work on a project to produce one or more deliverables**

WHAT IS PROJECT MANAGEMENT

- Projects with a lot of moving parts usually need a project manager to coordinate them

- Project Manager not a subject matter expert, but has sufficient knowledge to understand big picture

- Project Manager Role – lead and support project team
  - Drive project forward according to a plan
  - Ensure that projects stay within **budget** and meet their objectives **on time** with high quality deliverables
  - Span from covering administrative/supportive activities to leading the strategic direction

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- What is Project Management

- **My Career Path: transition to non-bench jobs in project management**
  - Grad School/Post-doc
  - Private Sector
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MY CAREER PATH: BEFORE GRAD SCHOOL

- **Undergraduate degree in psychology with biology concentration: Boston College**
  - One year in Steven Heinrichs behavioral neuroscience lab: stressors and cocaine-seeking behavior

- **Research Technician at McLean Hospital (Harvard Medical School)**
  - One year in primate behavioral pharmacology lab of Jack Bergman and Carol Paronis: examining receptor activation of various compounds by behavioral output
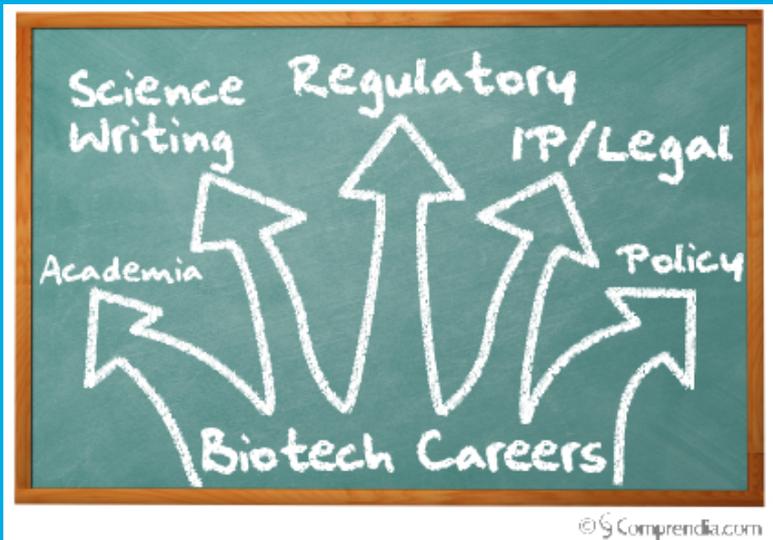
MY CAREER PATH: GRADUATE SCHOOL AND POST-DOC

- **PhD in Pharmacology from Tufts University, lab of Ron Hammer**
  - The Role of BDNF in Subordination Stress-induced Persistent Psychomotor Sensitization
  - 6 years total (3 in Arizona)

- **Post doc at NIDA, lab of Bruce Hope (3 years)**
  - FACS to study gene alterations in neurons activated during heroin craving
  - Role of heroin-cue-activated OFC neuronal ensembles in incubation of heroin craving (Dauno2)

MY CAREER PATH: FIRST NON-ACADEMIC JOB SEARCH

- **Lots of reading on "alternative" career paths**
  - *Career Opportunities in Biotechnology and Drug Development* by Toby Freedman

- **2012, job market not ideal – applied to 40+ jobs (10 – 12 tailored applications with cover letters)**

- **Supportive advisor is very helpful**
  - Internship at NIH Office of Tech Transfer (OTT) one day a week for 3 months during post-doc

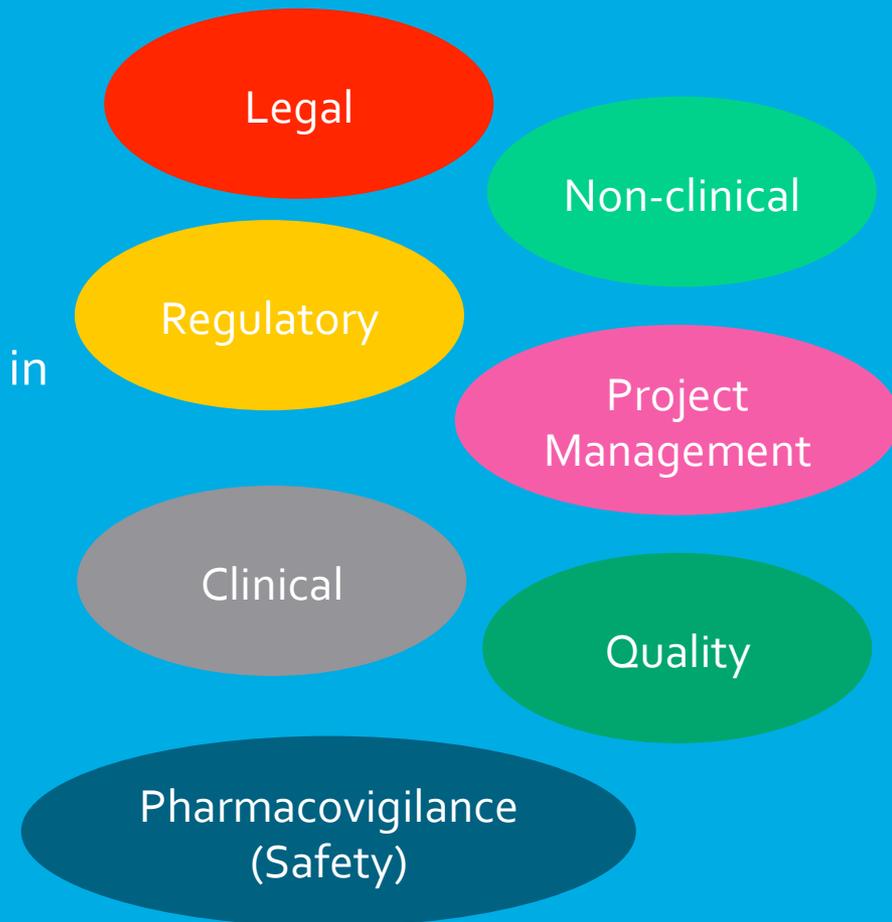- **Learned how to write a non-academic resume!**

FIRST NON-BENCH JOB

- **Emergent BioSolutions: medium sized biotech company in MD**
  - Biodefense Vaccines division working on late-stage clinical development of anthrax vaccine
  - Project Analyst position in Project Management function

- **Job posting requirements:**
  - Firm technical background in biological sciences and ability to understand complex projects at a high level

  - Exceptional oral and written communication skills and proficiency Excel, **MS Project** and PowerPoint

  - **Previous project management experience is beneficial**

  - **Experience in working with government grants/contracts and EVM is highly desired**

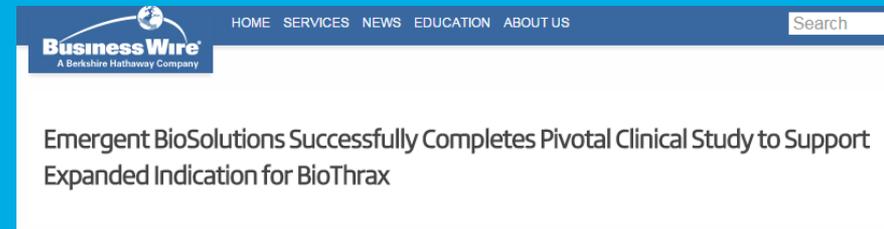# TRANSITION TO BIOTECHNOLOGY

- **Steep learning curve**

  - Drug/biologic development world and clinical trials

  - Regulatory pathways: FDA involvement in clinical trials and drug approvals

  - Managing budgets

  - Managing and leading meetings

  - Working on a cross-functional project team

Legal

Non-clinical

Regulatory

Project Management

Clinical

Quality

Pharmacovigilance (Safety)

WORKING IN THE PRIVATE SECTOR: PROJECT ANALYST ROLE

- Reported to Project Manager and worked on:
  - 3 Clinical studies (phase II-IV)
  - Submit a biologics license application for FDA approval

- Worked with government agencies and CROs complete project objectives

- Coordinated and led project team meetings:
  - Integrating discussions and clarify what the next steps are to reach the goal

- **Learned how to:**
  - **Create and manage project timelines**
  - **Manage contracts and do competitive proposal evaluations**
  - **Manage project financials (budgets, forecasts)**

- **Significant exposure to working with FDA**

http://globalbiodefense.com/2014/11/10/emergent-post-exposure-indication-anthrax-vaccine/
http://www.businesswire.com/news/home/20140416005624/en/Emergent-BioSolutions-Successfully-Completes-Pivotal-Clinical-Study#.VXt1hvlViko

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Emergent BioSolutions Successfully Completes Pivotal Clinical Study to Support Expanded Indication for BioThrax

Emergent Files Post-Exposure Indication for Anthrax Vaccine

NOVEMBER 10, 2014

Emergent BioSolutions Inc. today announced that it has submitted a supplemental Biologics License Application (sBLA) to the U.S. Food and Drug Administration (FDA) seeking to expand the label of BioThrax (Anthrax Vaccine Adsorbed) to include a post-exposure prophylaxis (PEP) indication.

BioThrax, the only FDA-licensed vaccine to prevent anthrax disease, is currently licensed for a pre-exposure prophylaxis indication only.

WORKING IN THE PRIVATE SECTOR: COMPARISON TO THE BENCH

Similarities to laboratory environment	Differences from laboratory environment
• Multitasking • Teamwork • Managing shared resources • Communication with many people on complex matters • Depending on role, data analysis • Good organizational skills needed • Project-oriented	• Exposure to broader expertise • Focused on specific goals • More meetings, often by phone • Interpersonal interactions with more people • Faster pace • Deadlines set by senior management • Reporting and reporting structure

WORKING IN THE NONPROFIT SECTOR: TRANSITION

- Scientific Project Manager in Department of Research Partnerships at FNIH – Metabolic Disorders
  - Very similar skillset to private sector project manager

Experience/Education	Skills
• Degree in biomedical science or a related discipline • Contracts • Project budgets and milestones • Preparing written reports and meeting summaries • **Relationship management across diverse scientific and administrative partners**	• Familiarity with medical research environment, and with data management and aggregation. • Analytical skills • Organizational skills • Working under tight deadlines • Multitasking across therapeutic areas • Quick learning • Attention to detail • **Interpersonal** and writing skills • **Tact and initiative when working with others** • **Diplomacy and focus** • **Can make difficult decisions independently to meet deadlines** • **Communication of complex business and scientific issues succinctly and effectively**

WORKING IN THE NONPROFIT SECTOR

- **A nonprofit organization uses its revenues to further achieve its purpose or mission**

- **What does the Foundation for the NIH (FNIH) do?**
  - Builds partnerships between NIH, industry, academia, and other non-profits to meet relevant health research challenges.

  - Manages projects within partnerships for different purposes:
    - Leverage aggregation of clinical data from studies to answer research questions that require huge data sets and have broad relevance to industry
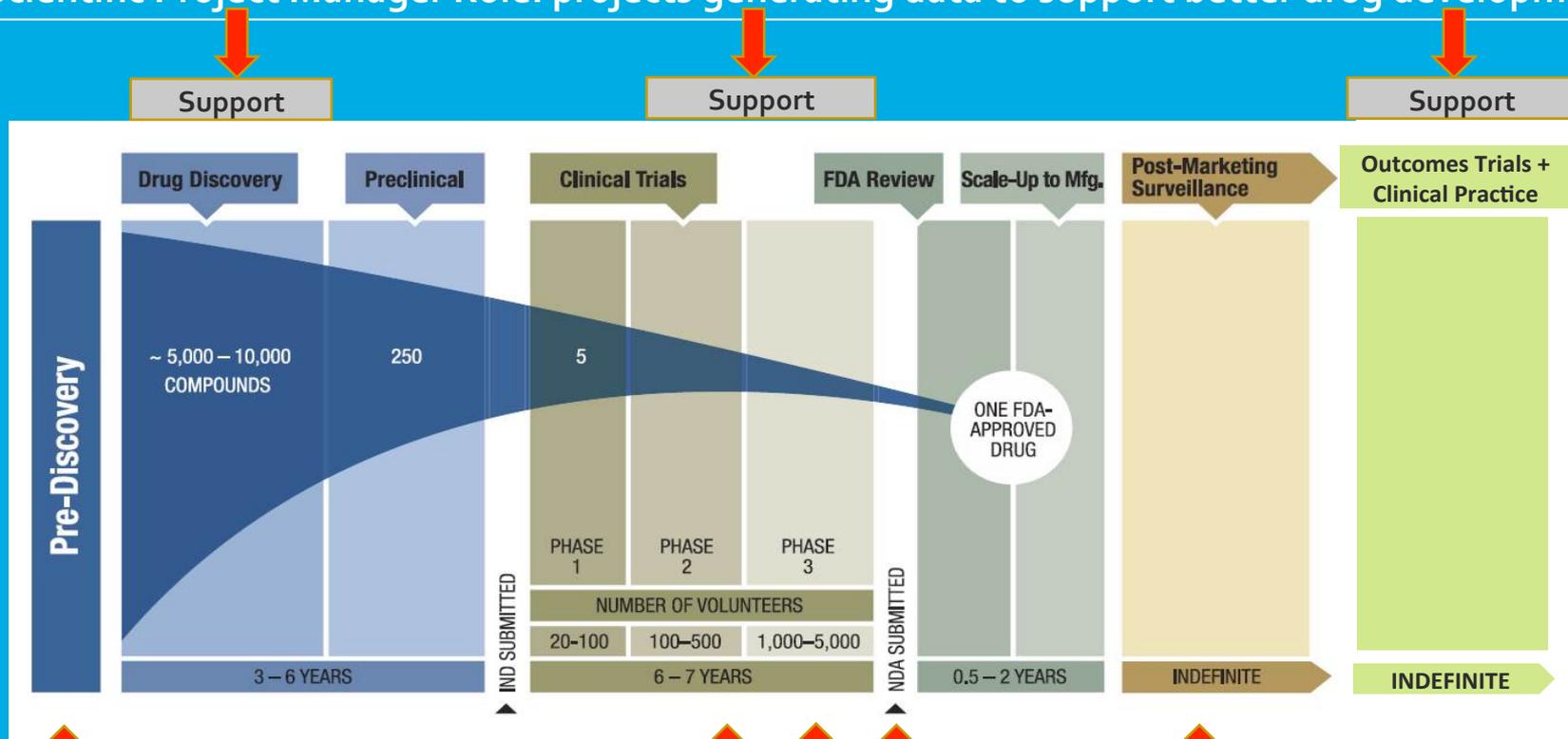
WORKING IN THE PRIVATE VS NON-PROFIT SECTORS

Typical day from my experience in project management at Emergent vs FNIH:

Similarities	Differences
• Lots of meetings via phone or in person	• FNIH projects allow more scientific engagement
• Working on multiple projects with people from diverse backgrounds	• FNIH has less focus on strict timelines
• Could be preparing a budget, meeting agenda/minutes, working on timelines, negotiating contracts	• FNIH has less structure overall
• Constant problem-solving as issues come up	• Organize a lot of offsite meetings and do some event planning at FNIH
• Relationships with others critical, need to practice emotional intelligence	• Emergent had more professional development opportunities
• Can be unpredictable (e.g., unexpected personnel turnover)	• Emergent was faster pace but less intense workload

WHERE MY EXPERIENCE FITS IN TO THE BIG PICTURE

FNIH Scientific Project Manager Role: projects generating data to support better drug development

Support

Support

Support

Basic science labs in academia/gov't

Emergent Project Analyst role

WHO MIGHT LIKE A CAREER IN PROJECT MANAGEMENT

- **If you like:**
  - Coordinating people, leading a team
  - Exposure to many functions and people with diverse backgrounds
  - Problem solving and strategy
  - Communication in all forms
  - Building relationships with many people
  - Planning

- **If you do not mind:**
  - Working on budgets and dealing with invoices
  - Working on contracts
  - Preparing progress reports and meeting notes

- **Project Management is a good jumping off point to a lot of careers because you learn skills that are highly sought after**

https://www.govloop.com/community/blog/project-management-missing-link-acquisition-reform/

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TRANSFERABLE SKILLS

- Strong technical background that allows understanding complex (biological) projects at a high level

- Exceptional oral and written communication skills

- Planning

- Skills in Excel, Word, and PowerPoint

- Multitasking

- Managing shared resources

- Managing others

- Attention to detail

SHORT RESUMES AND SKILLS OUTSIDE THE LAB

- **Experience outside of the lab**
  - Internship at NIH TTO / exposure to business type environment
  - Working on a team
  - Communicate effectively with lay audience about technical topics
  - Organize scientific meetings or symposia

- **Keep a shorter resume (2-3 pages max)**
  - Highlight accomplishments (e.g., published X number of papers/abstracts)

CONTINUE SKILL DEVELOPMENT ONCE YOU MOVE ON

- **Take advantage of any and all training opportunities**
  - New software (e.g., MS Project)
  - Professional development coursework (e.g., management)

- **If it makes sense and the company is willing to support you, pursue professional credentials**
  - Examples from my career path
    - Project Management Professional (PMP)
    - Graduate Certificate in Regulatory Compliance (regulatory affairs courses)

THANK YOU

- FNIH: Maria Vassileva, PhD

- Emergent BioSolutions: Katya Vert-Wong, MS, MEM

- NIH/NIDA:
  - Bruce Hope, PhD,
  - Yavin Shaham, PhD
  - Jenn Bossert, PhD

- Tufts University and University of Arizona:
  - Ron Hammer, PhD
  - Ella Nikulina, PhD

- William Whitaker

sanya.fanous@gmail.com