

# Advising Graduate Students *and* Postdoctoral Fellows on Career Options

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*Perspectives from:*

UT Health Science Center San Antonio &  
UT Southwestern Medical Center Dallas



# { About *Us* }

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Director of Graduate Career  
Development, UTSW



**Teresa Evans, PhD**  
Director of the Office of  
Career Development,  
UTHSCSA

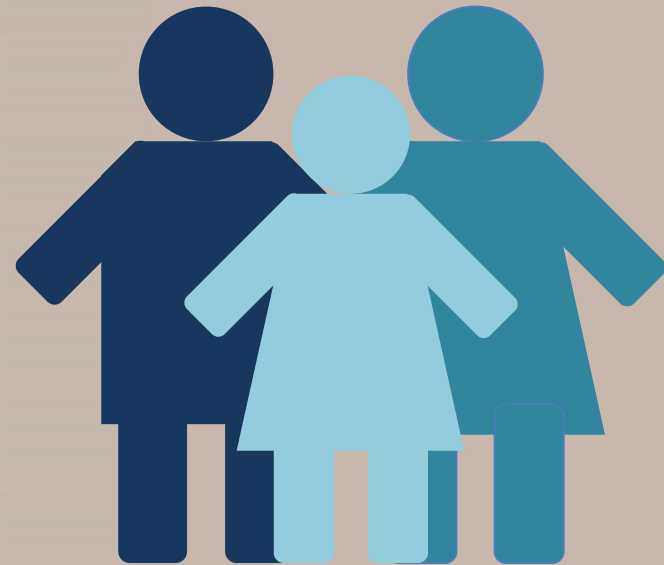
**UT Southwestern**  
Medical Center

 GRADUATE SCHOOL OF BIOMEDICAL SCIENCES  
**UT HEALTH SCIENCE CENTER®**  
OFFICE OF CAREER DEVELOPMENT

# ABOUT *our* Trainee Population

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- ◆ **Trainee** = Graduate Student + Postdoctoral Fellows
- ◆ Health Care and Bioscience
- ◆ Enter training focused on an academic career
- ◆ **Unaware** of diverse options available to them
- ◆ Trainees can become **Overwhelmed**



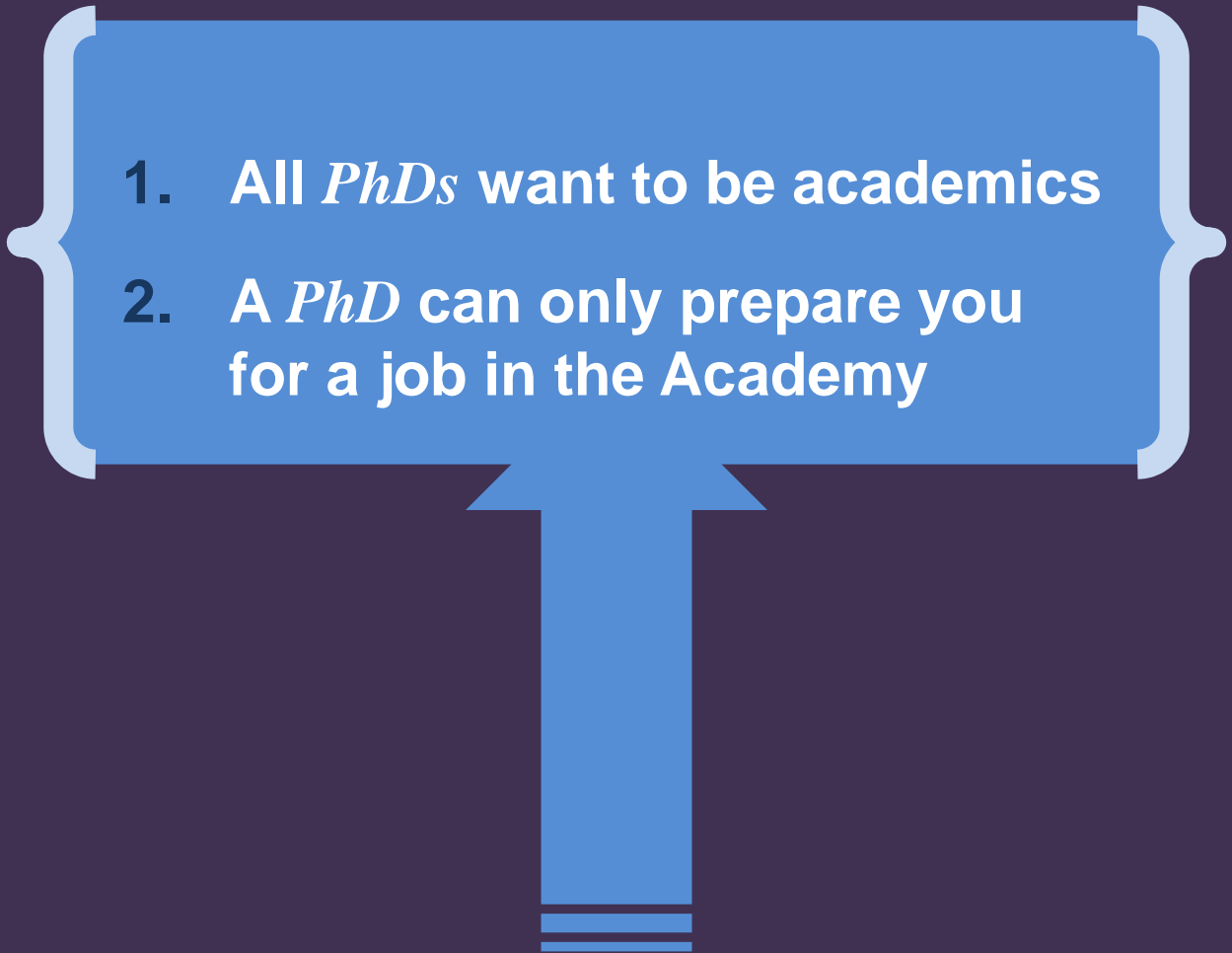
# *Challenges in providing career guidance to Trainees*

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- ◆ **Life science career options:** a tough market (both industry and academia)
- ◆ **Faculty:** Lack of understanding/negative attitudes towards beyond-the-bench options
- ◆ **Trainees:** Lack of understanding of the world of work
- ◆ Creation of career resources & programs is time-consuming and 'uncharted territory'

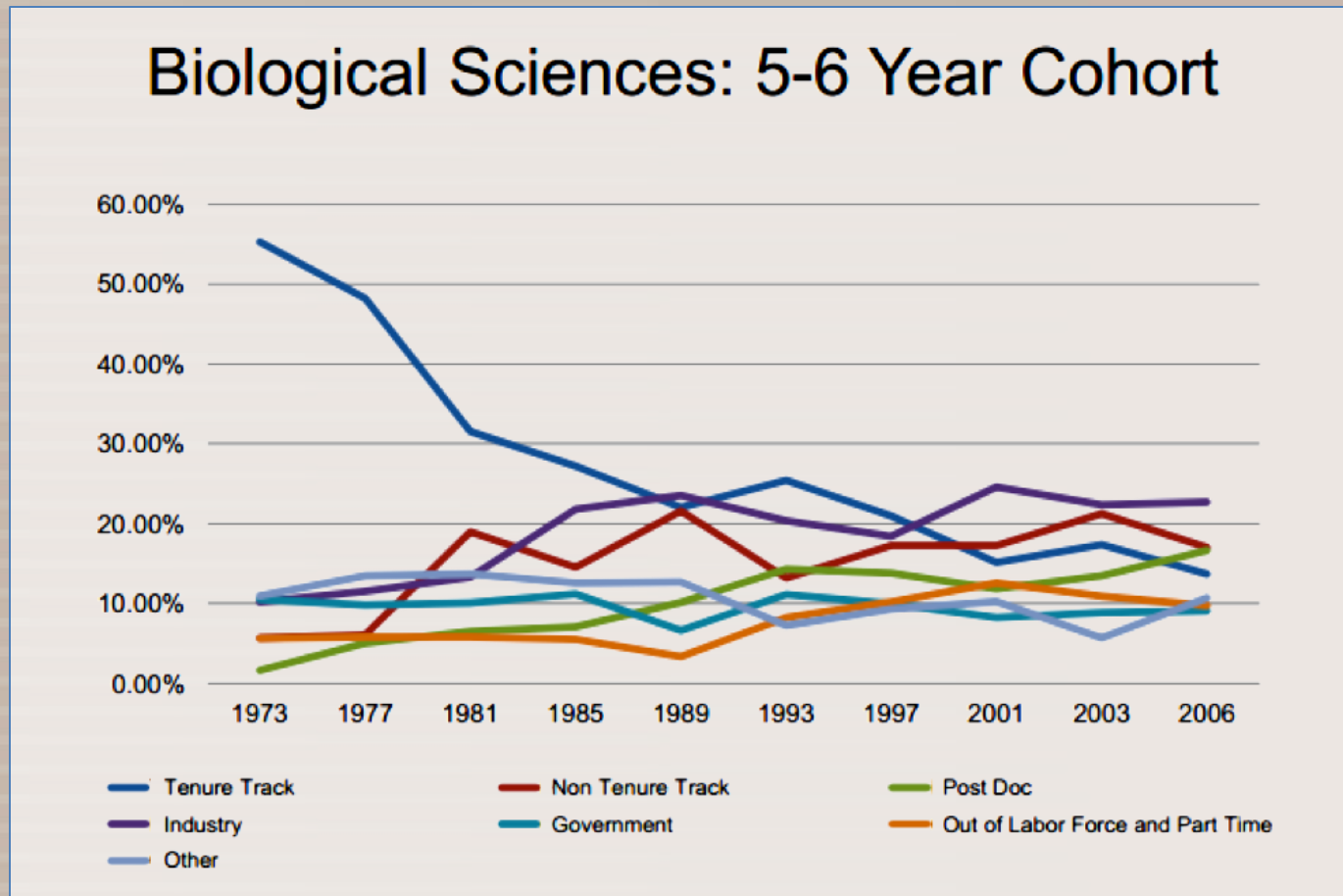
# MOST *Common* Misconceptions

- 
1. All *PhDs* want to be academics
  2. A *PhD* can only prepare you for a job in the Academy

# Two *Common* WRONG Assumptions

1. *All PhDs want to be academics*
2. A PhD can only prepare you for a job in the Academy

# Not all PhDs want to be Academics —— Maybe *THEN* but Not *NOW* ——



*Data from NSF*

## Who leaves STEM?

STEM Ph.D. Holders in Non-STEM Careers



STEM Ph.D. holders leaves STEM



Female STEM Ph.D. holders leaves STEM



Black STEM Ph.D. holders leaves STEM

Source: American Institutes for Research | [www.air.org](http://www.air.org)

# Why the *change?*

- ◆ Funding decrease
- ◆ Increased awareness
- ◆ Economic factors
  - A 'career in industry' no longer guaranteed
  - Rise in adjunct hiring



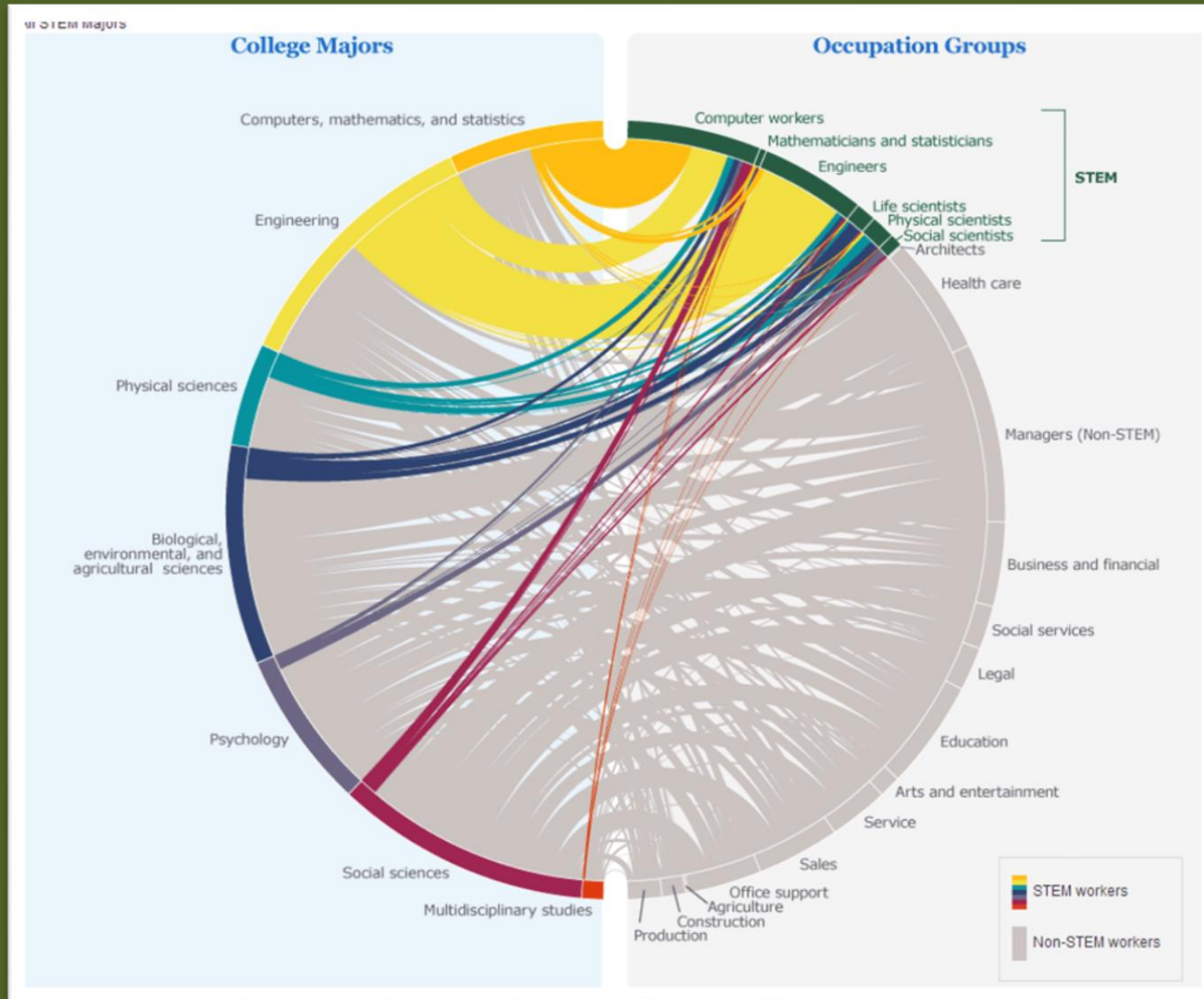
# Two *Common* WRONG Assumptions

1. All *PhDs* want to be academics
2. A *PhD* can only prepare you for a job in the Academy

# Two *Common* WRONG Assumptions

1. All PhDs want to be academics
2. *A PhD can only prepare you for a job in the Academy*

# PhD is *Prep* for Diverse *Jobs*



US Census Bureau

# *Transferable ↔ skills* —— of a *PhD* ——

## **A few examples:**

### ◆ **Writing**

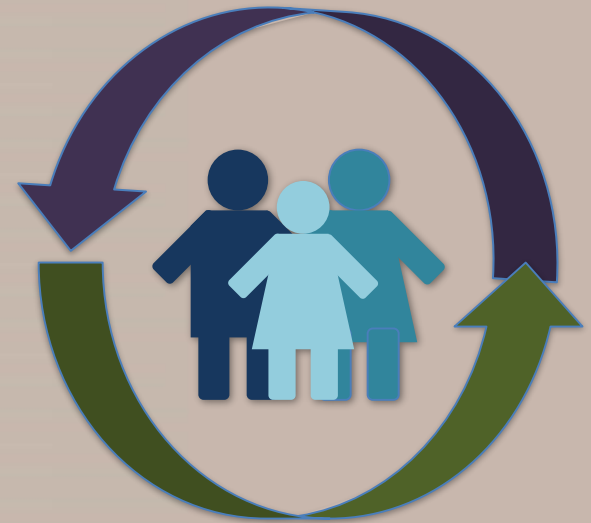
- Grants
- Manuscripts

### ◆ **Communication**

- Public speaking

### ◆ **Leadership**

- Lead experiments from start to finish



# **Top *Career Development***

## **Needs of *Trainees***

- ◆ **CV to Resume**
- ◆ **Written and Oral Communication**
  - International Trainees
- ◆ **What options are available to me?**
- ◆ **Where do I start?**
- ◆ **Career Planning!!!**
  - Many trainees do not plan until it is too late

# *3 types of* **Trainee Career Planners**

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- 1. The Optimized Observer**
- 2. The Midway Modifier**
- 3. The Conclusion Changer**



# *3 types of* **Trainee Career Planners**

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## ◆ **The Optimized Observer**

- Always observing the options, learning from the sites along the way and managing the journey accordingly

- ◆ **We encourage all of our trainees to fit into this category.**
- ◆ **Can be achieved by including programming throughout training**
- ◆ **Exposure to many careers**
- ◆ **Discussion of career plan regularly**



# *3 types of* **Trainee Career Planners**

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## ◆ **The Midway Modifier**

- Focused on one destination until mid journey event causes a modification in the plan
- ◆ **Trainees often present as overwhelmed, need support/action right away**
- ◆ **Often need exposure to many careers quickly**
- ◆ **Encourage reflection/ self-exploration (i.e. assessments)**
- ◆ **Still has time to make a change and prepare CV/Resume**

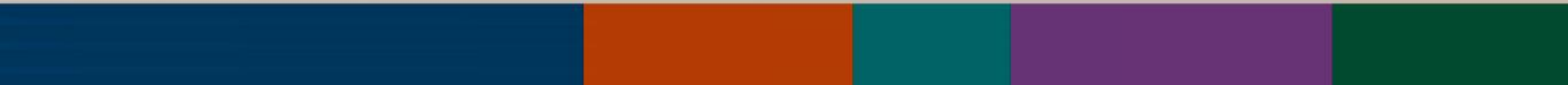




# *3 types of* **Trainee Career Planners**

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- **The Conclusion Changer**
  - Unforeseen 'whammy' near or just past the journey's end causes a need for the plan to be changed
- **Often very distraught**
- **Discussion of transferable skills**
- **Provide them with an understanding of possible next steps that can be attained in short time frame**
- **Also, discussion of future plans after that short term step**



# Career resources strategies and tools:

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- ◆ **Understanding of self in conjunction with understanding of viable career options**
- ◆ **Use standard career counseling tools with focus on PhD expertise & skills, and appropriateness for trainee intellect**
- ◆ **Resources for 'self':**
  - Skills, values, strengths, personality traits
  - Thinking about workplace environments
  - SkillScan, Values card sort, Gallup Strengths
  - My IDP

# *My IDP*

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## ◆ Individual Development Plan

- Designed by scientists for scientists
- Web based tool=FREE
- System sends email reminders
- NIH/NSF required/supported
- Humanities version in development (GCC)

<http://myidp.sciencecareers.org>



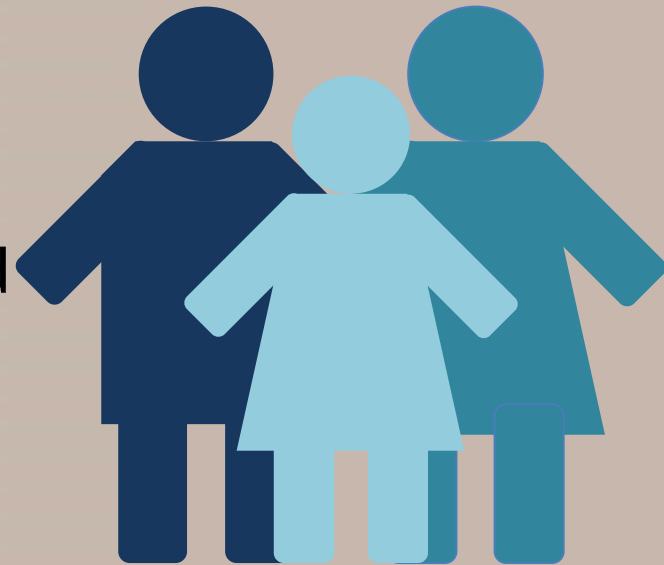
# *My IDP*

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## ◆ Individual Development Plan

### – Four step process

- Evaluate skills, values, and interests
- Self-assessment as guide for exploring and evaluating career options resulting in ID career and alternate career
- Set specific goals=focus on discussion with mentor
- Put a plan into place



<http://myidp.sciencecareers.org>

# Career resources strategies and tools:

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## ◆ Resources for 'career options':

- Research and exploration
- BioCareers, Science Careers (AAAS), Versatile PhD
- Lack of institutional alumni information so...
- Encourage forays into social media (LinkedIn for Scientists, Twitter)
- Informational interviews, site visits, project work
- Opportunity for internships may be limited

# Innovative Ideas

- ◆ **Career Advisory Council – San Antonio**
- ◆ **Collaborations - BioNorthTexas**
- ◆ **Short workplace experiences**
  - Site visits
  - Shadowing
  - Consulting/contract work
  - Internships in home institution





ACTIVITY  
TIME!!!!

# ACTIVITY!!!

- ◆ Look at sample Job Description
- ◆ Highlight/Underline all the “Skills” you would highlight in a resume



# Example Job Description

**ORANGE:** Trainee usually highlights  
**YELLOW:** Transferable Skills

## Scientist I / II MedImmune, LLC

### Description

MedImmune has a new opportunity for a scientist in the **Respiratory, Inflammation, and Autoimmunity** group within the Translational Strategy group in the Department of Translational Sciences. This position can be filled at the Scientist I or Scientist II level. The research focus for this position will be in **respiratory diseases, including asthma and COPD**, but may extend into **other inflammation and autoimmunity disease indications** as needed. The successful candidate will **work with a team of scientists** in the development of translational science strategies to define the link between drug target pathways and disease mechanisms. The candidate will take a lead role in the delivery of supporting scientific data to guide patient stratification, proof-of-principle assessments, including the evaluation of predictive and pharmacodynamic markers that can be evaluated clinically, and **provide clinical trial support for drug candidates in early development**. The successful candidate will also be integrally involved in the outsourcing of analyses, evaluation of novel translational technologies and in the **establishment of external collaborations to support project-related translational objectives**. -BSP

### Requirements

This position can be filled at the Scientist I or Scientist II level. For the Scientist I, we require a **MS with 8 - 10 years of overall experience or a Ph.D. with 0 - 3 years of overall experience**. For the Scientist II level, we require a **MS with 10 - 13 years of overall experience or a Ph.D. with 3 - 7 years of overall experience**.

In addition we require the following experience:

**Research experience in respiratory or inflammatory diseases.** \* A record of **scientific innovation, robust experimental design and interpretation of data that has resulted in project advancement and scientific publication.** \* Experience in the development and implementation of new methods, technologies, and processes. \* Previous **experience interrogating human disease samples for evidence of target pathway expression/activation.** \* Ability to multi-task to meet aggressive goals under tight timelines. \* Experience working on complex projects and the ability to work well in a cross-functional, team-oriented environment. \* Ability to integrate work seamlessly from **lab-based hands-on research, to computer based data analysis and project team participation.** \* Strong problem solving skills. \* Outstanding verbal, written, and interpersonal communication skills. \* Experience presenting results and plans at team meetings as well as at external conferences. \* Ability to work independently with minimal day-to-day supervision.

# Tailored Resume

1429 Terrace View  
Chester Springs, PA 19425  
(215) 555-1212

**James Biglow, PhD**

NYU College of Dentistry  
345 East 24th Street  
New York, NY 10010  
jbigl@nyu.edu

## Summary of Qualifications

Innovative Cellular Immunologist with a focus on respiratory, inflammation and autoimmunity mechanisms and an established record of operating a highly efficient research laboratory. Experienced in developing and optimizing cell-based assays to elucidate T-cell pathways using innovative approaches. Successfully led highly productive collaborative teams that generate high quality data and patents by instilling self-awareness and accountability in individual team members while recognizing team contributions. Foster agile approach to effectively monitor progress and adjust approaches strategically to ensure success of the plan.

## Education

McGill University, Montreal, Quebec, Ph.D., Immunology 2010  
University of Connecticut, Storrs, CT, B.S. Physiology 2003

## Relevant Technical Skills

- Pharmacodynamics
- Tissue preparation
- Tissue culture
- Animal model development
- Respiratory inflammation models
- In vitro imaging
- Computational bioinformatics
- Immunoassays

## Relevant Business and Social Skills

- Led collaborative teams
- Rigorous statistical analytics
- Project management
- Mentoring students
- Oral communications
- Written communications

## Educational and Professional Development

**Postdoctoral Fellow**, Mentor: Dr. James Keisener, 2011 - Present  
National Institutes of Health Laboratory of Immunology  
Development of pulmonary inflammation models in mice evaluated clinically, histologically, and with identification of novel protein that correlates with disease resulting in 2 peer-reviewed publications.

**Adjunct Faculty** 2011  
Ramapo Community College, NJ  
Developed and taught "Principles of Biology"

**Graduate Assistant, Mentor**, Dr. Janice Bellances 2005 - 2011  
Salk Institute, Jefferson University, Philadelphia, PA  
Development of animal models and molecular techniques, and pharmacodynamics profiling resulting in 3 peer-reviewed publications

**Medical Education Consultant, Mentor**, Dr. David Germally 2003 - 2005  
Developed project management skills resulting in successful coordination of multiple simultaneous projects

## Clinical Biostatistician Intern

Dept. of Neonatology, UMDNJ & St. Peter's Univ. Hospital, New Brunswick, NJ  
Organized and condensed large data samples and applied wide range of statistical analyses.

2001

## Business and Management Experience

### SciPhD, The Business of Science for Scientists

New York University, New York, NY

2014

- **Focus:** the core business competencies necessary for the transition from academia to industry.

### From Idea to IPO: Technology Venture Course

New York Academy of Sciences, New York, NY

2011

**Focus:** the development of intellectual property into a marketable product

### Research Commercialization Introductory Course

National Council of Entrepreneurial Tech Transfer, Washington, DC

2010

- **Focus:** the principals of entrepreneurship, including the management and investment strategies

## Mentoring Experience

As a graduate student and postdoctoral fellow, I managed and mentored 3 undergraduates, a graduate student, two dental students, and a orthodontic resident resulting in:

- A thesis award for physical sciences
- Acceptance into highly competitive MD, MD/PhD, and orthodontic residency programs
- NYU College of Dentistry Research Day Awards
- Multiple publications in peer-reviewed journals

## Selected Publications

- Deletion of Mdl leads to secondary immunosuppression with impaired shelf elevation. Bernice A\*, Biglow J\*, Bandine Walt A, Chao M, Geermal N, Cjan V, Jelong J. *BMC Developmental Biology*, 2014.
- **\*Co-first authors**
- Developmental defect of D12-/- mutant mice is caused by lack of vertical outgrowth in the posterior spur. Bandine W, Biglow J, Chao M, Bens L, Wesmith H, Hunstein RK. *Developmental Dynamics*, 2012.
- Rantes has a non-essential role in acerosomal suppression assembly in *heliomyx* oocytes. Biglow J, McKnight BS. *Journal of Cell Science* 2011.



# Summary of Qualifications

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# How to turn your *CV* into a "*Resume*":

A useful skill in these economic times

**STEP 1:** MOVE THE "REAL-WORLD WORK EXPERIENCE" SECTION FROM THE BOTTOM TO THE VERY TOP.



**STEP 2:** TRIM THE DOCUMENT TO ONE PAGE. GOOD LUCK!



# *Typical Sections on a CV*

## Most Common:

- ◆ **Name & Contact Information**
- ◆ **Education**
- ◆ **Dissertation Title or Topic**
- ◆ **Fellowships/Awards/Honors**
- ◆ **Research Experience**
- ◆ **Teaching Experience**
- ◆ **Other Professional Experience, e.g., Industry Experience, Government Experience**
- ◆ **Presentations**
- ◆ **Publications**

## Other Common Headings:

- ◆ **Skills** –subcategories such as **Computer, Languages, Lab Instrumentation**
- ◆ **Professional Associations**
- ◆ **Leadership & Activities – or University Service**
- ◆ **Committee Appointments**
- ◆ **Research Interests**
- ◆ **Areas of Expertise**
- ◆ **Prepared to Teach**
- ◆ **References**

# *Typical sections on a resume*

## **Most Common:**

- ◆ **Name & Contact Information**
- ◆ **Objective or Summary**
- ◆ **Education**
- ◆ **Relevant Coursework**
- ◆ **Relevant Experience**
- ◆ **Leadership Activities**
- ◆ **Service/Volunteering**
- ◆ **Skills (IT, Languages)**

## **Other Headings:**

- ◆ **Other Experience**
- ◆ **Selected Honors & Awards**
- ◆ **Professional Affiliations**
- ◆ **Selected Publications**

# Key transferable skills for *any* job

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- ✓ **Leading**
- ✓ **Teamwork**
- ✓ **Problem-solving**
- ✓ **Communicating**

*(Do PhDs have these?)*



## **Before & After (*Before – CV Style*)**

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Perform genetic analysis of mutations causing hormone-independent signaling of human luteinizing hormone receptor.  
Analyzed role of proteasome, the central protease of cell cycle and growth control.  
Regulated muscarine acetylcholine receptor desensitization by Phosphorylation.

*(used with permission: University of Pennsylvania Career Services)*





# Before & After (*After – Resume Style*)

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- ◆ Conducted three major research projects from design to completion in 4 ½ years; planned and implemented each phase of research, including experiment design, data collection and analysis, and written reporting of findings
- ◆ Authored or co-authored 5 published articles in refereed scientific journals
- ◆ Completed and successfully defended 250-page dissertation one month ahead of schedule

*(used with permission: University of Pennsylvania Career Services)*


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### Academic Research Sales Executive – Business Development

**23andMe**  
Mountain View, CA, United States  
Full-Time  
[Back to Jobs](#)

1 of 32 Jobs | [Previous](#) | [Next](#) | [Back to Jobs](#)

23andMe is the leading personal genetics company. We are dedicated to helping individuals understand their own genetic information through DNA analysis technologies and web-based interactive tools. Our mission is to personalize healthcare by making and supporting meaningful discoveries through genetic research. Combining web development, computer science, genetics, social media, and informatics, 23andMe is at the forefront of a new era in personal genetics.

#### Who you are

You love science (and specifically genetics) but don't want to be at the bench everyday. You have aspirations of helping other scientists leverage the 23andMe platform - the world largest re-contactable population of genotyped individuals. You have run academic lab collaborations, and know the challenges and the opportunities. You enjoy working with people and being on the front lines of helping to shape new collaborations. Like us, you are mission-driven, team-oriented, and want to contribute to something that truly impacts people's lives. Sound like you? If so, come join the 23andMe team, and make a difference.

#### What you'll do

We are looking for a unique individual who is a scientist by training in the field of genetics that also has experience selling products or services to Academic researchers, to develop and manage our academic channel program and projects working directly with collaborators on the outside together with an outstanding in-house research team. This new role will be responsible for driving new academic research partnerships and overall growth of this channel as well as the business processes needed to support those collaborations; drafting project plans, statements of work, reviewing contracts, and gathering internal resources needed from other teams. You'll work part time (30%) out in the field with partner institutions and with 23andMe's senior management, scientists and legal counsel to get all of this done!

#### We hope you'll have

- A Ph.D. or MS degree in a biomedical science (an advanced degree in genetics is a plus). MBA with significant work experience in the biomedical sciences will be considered
- 2-3 years of related a sales or business development, and or alliance management experience in an academic research setting is ideal.
- Experience managing academic projects that integrate scientific, legal, and privacy issues with an eye towards practical, efficient solutions
- Experience structuring and closing deals highly desirable
- Ability to cut to the heart of a problem, create a solution, and build consensus around that solution
- Exceptional communication skills, both written and interpersonal; public speaking experience
- Excellent organizational skills
- Good working knowledge of statistics and modern human genetics concepts
- Ability to work in a dynamic environment with individuals of diverse backgrounds

☐ Publish Bookmark

☐ You email

☒ Forward Jobvite

#### What is a Jobvite?

It's a personal job invitation. Please apply for a job or forward this Jobvite to a friend.

# Decoding *PhD* job descriptions

## -23andMe Academic Research Sales Executive

## ◆ **Academic Research Sales Executive at 23andMe:**

- ✓ Passion for science
- ✓ Enjoy people
- ✓ PhD in biomedical science
- ✓ Genetics experience
- ✓ Teamwork ability
- ✓ Communication skills
- ✓ Project management
- ✓ Collaboration or sales work

## ◆ **Resume for this application should include:**

- ✓ PhD in biomedical science
- ✓ Any mention of genetics and statistics coursework, projects
- ✓ Team experience: in the lab, leadership

## ◆ **Resume for this application should include:**

- ✓ Communication skills: public speaking, presentations, anything beyond academic publishing, managing and leading group discussions
- ✓ Project management: teaching a new lab member, organizing purchase of new equipment, student leadership experience
- ✓ Collaboration experience, grant-writing

A blue signpost with a horizontal rectangular top and a vertical rectangular stem. The top part has a light blue background and is framed by a white, stylized bracket shape on both sides. The word "Questions?" is written in a white, serif font with a slight shadow effect. The stem is solid blue and ends in three horizontal white lines at the bottom.

Questions?