Biomedical Careers

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February 17, 2018

Three Tiers of careers

Tier 1: Employment Sector

Tier 2: Career Type

Tier 3: Job Function

TIER 1: EMPLOYMENT SECTOR

Academia
Government
For-Profit
Nonprofit
Other

TIER 2: CAREER TYPE

Primarily Research
Primarily Teaching
Science-related
Not-related to science
Further training or education

TIER 3: JOB FUNCTION

Administration
Business Development, Consulting, and Strategic Alliances
Clinical Research Management
Clinical Services
Data Science, Analytics, and Software Engineering
Entrepreneurship
Faculty: non tenure track
Faculty: tenured/tenure track
Faculty: track unclear or not applicable
Full-time Teaching Staff/Instructor
Group Leader (research)
Healthcare Provider
Intellectual Property and Law
Part-time Teaching Staff/Adjunct
Postdoctoral Research
Regulatory Affairs
Research Staff or Technical Director
Sales and Marketing
Science Education and Outreach
Science Policy and Government Affairs
Science Writing and Communication
Technical Support and Product Development
Completing further education or training
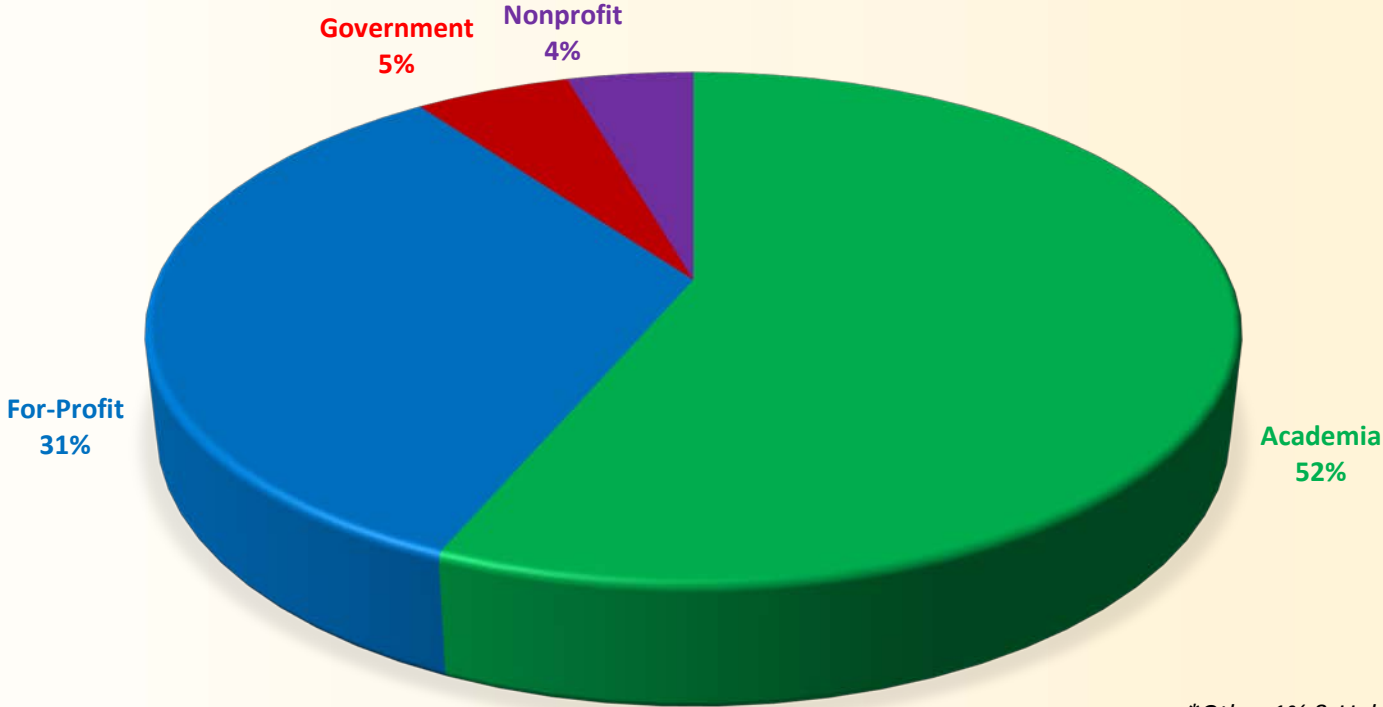Other
Deceased/retired

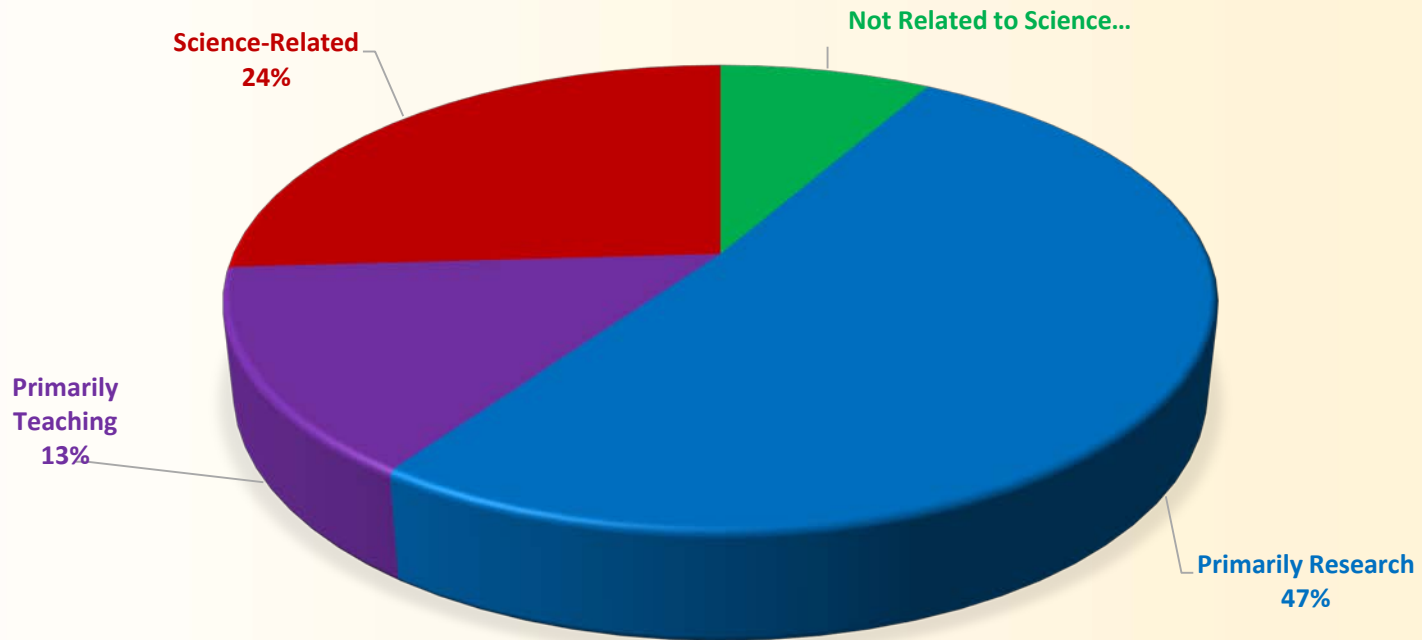# Wayne State University

15 Year Biomedical alumni data

Biomedical PhD Career Outcomes – Tier 1 Employment Sector (Total N=950)
N=870*

Government 5%

Nonprofit 4%
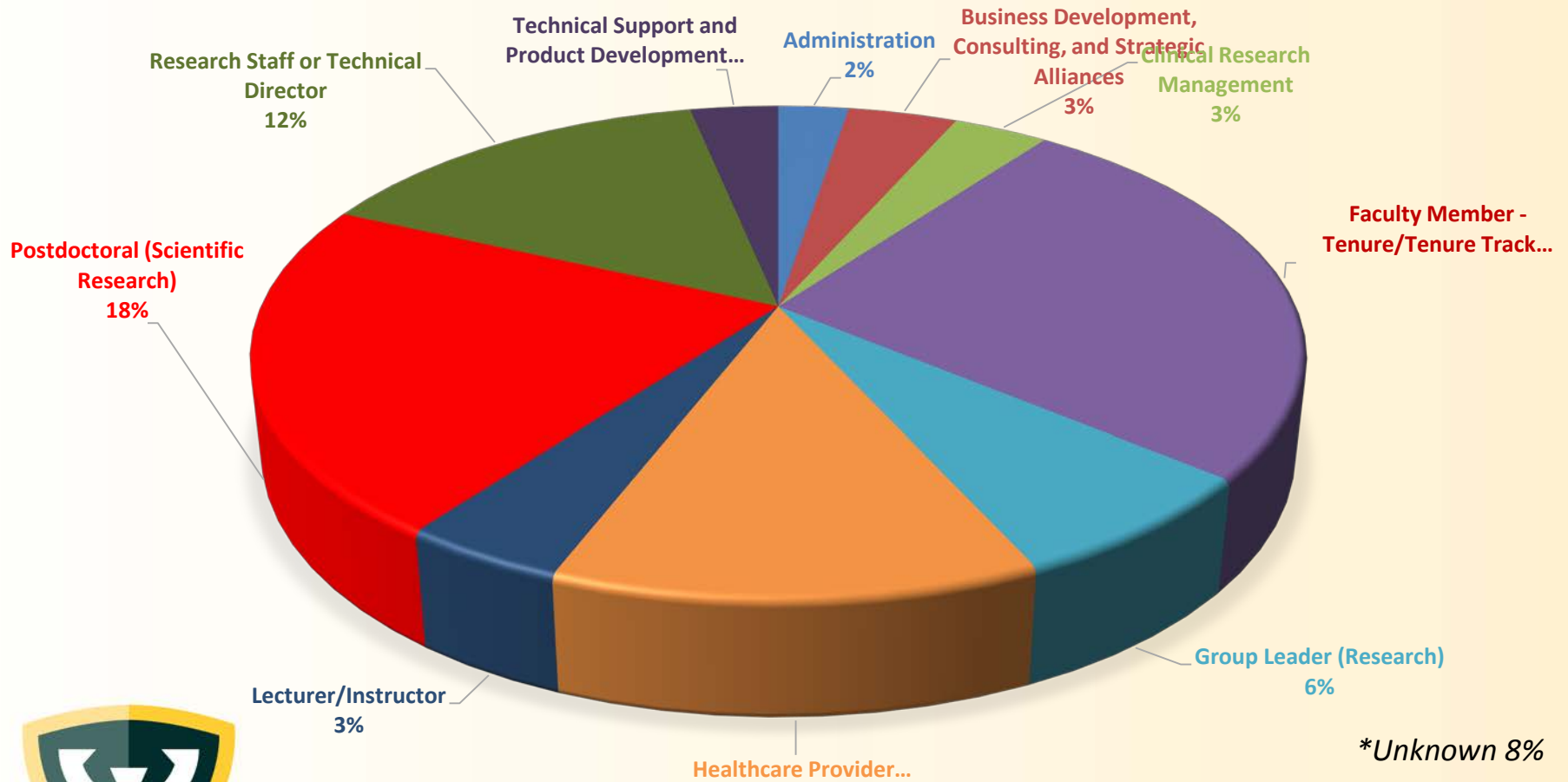
For-Profit 31%

Academia 52%

Other 1% & Unknown 8%

Biomedical PhD Career Outcomes – Tier 2 Career Type (Total N=950)
N=870*

Not Related to Science…

Science-Related
24%

Primarily Research
47%

Primarily Teaching
13%

Unknown 8%

Biomedical PhD Career Outcomes – Tier 3 Job Functions (Total N=950)
N=870*

Technical Support and Product Development…

Administration 2%

Business Development, Consulting, and Strategic Alliances 3%

Clinical Research Management 3%

Research Staff or Technical Director 12%

Postdoctoral (Scientific Research) 18%

Faculty Member - Tenure/Tenure Track…

Lecturer/Instructor 3%

Healthcare Provider…

Group Leader (Research) 6%

Unknown 8%

Biomedical PhD Career Outcomes Composite of Three Tiers (Total N=950)
N=870*
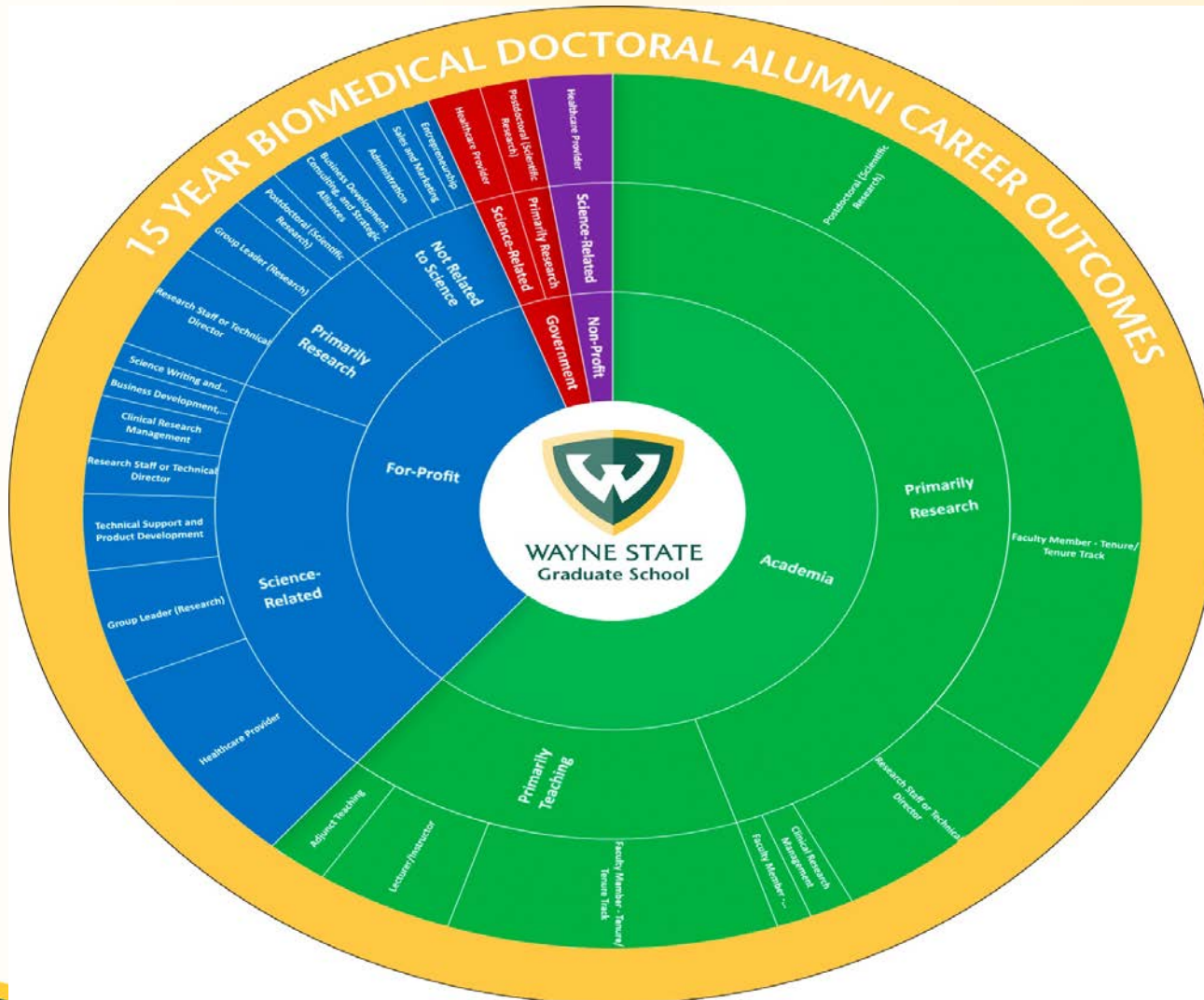
Unknown 8%

Estimated Starting Salaries for PhD Career Options

Career Track	Position	Entry Point	Estimated Starting Salary Range
Academic	Tenure-track assistant professor	Typically after completing 1 (or more) postdoctoral appointment	$70-80K
Academic	Technology Transfer	After completing PhD	$55-65K
For Profit	Management Consultant	After completing PhD	$60-100K without MBA
For Profit	Equity Research Associate	After completing PhD	$70-100K
For Profit	Law Firm Technical Specialist/Scientific Advisor	After completing PhD	$85-95K
For Profit	Research and Development	After completing PhD	$75-95K
For Profit	Medical Science Liaison	After completing PhD	$100-150K
Government or Non-Profit	Public Policy Advisor	After completing PhD	$50-90K
Government or Non-Profit	Grant Administration	After completing PhD	$60-70K
For Profit	Science, medical or technical writer	After completing PhD	$70-100K

*Information compiled from www.phdcareerguide.com

15-year window does not tell the complete story of how alum careers change over time

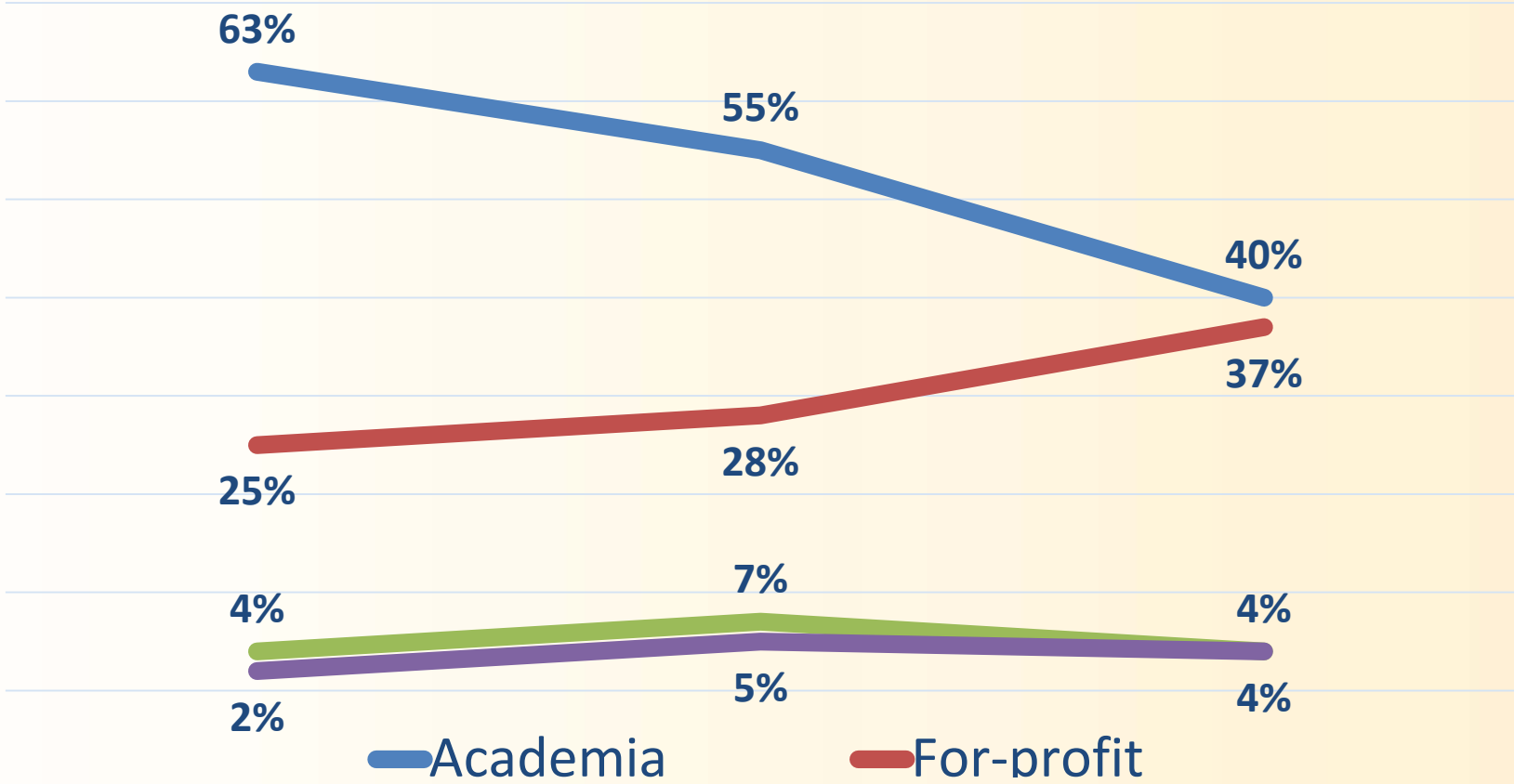*So we segmented each tier into three blocks of 5-years each*

Block 1: **0-5** years following PhD graduation

Block 2: **6-10** years following PhD graduation

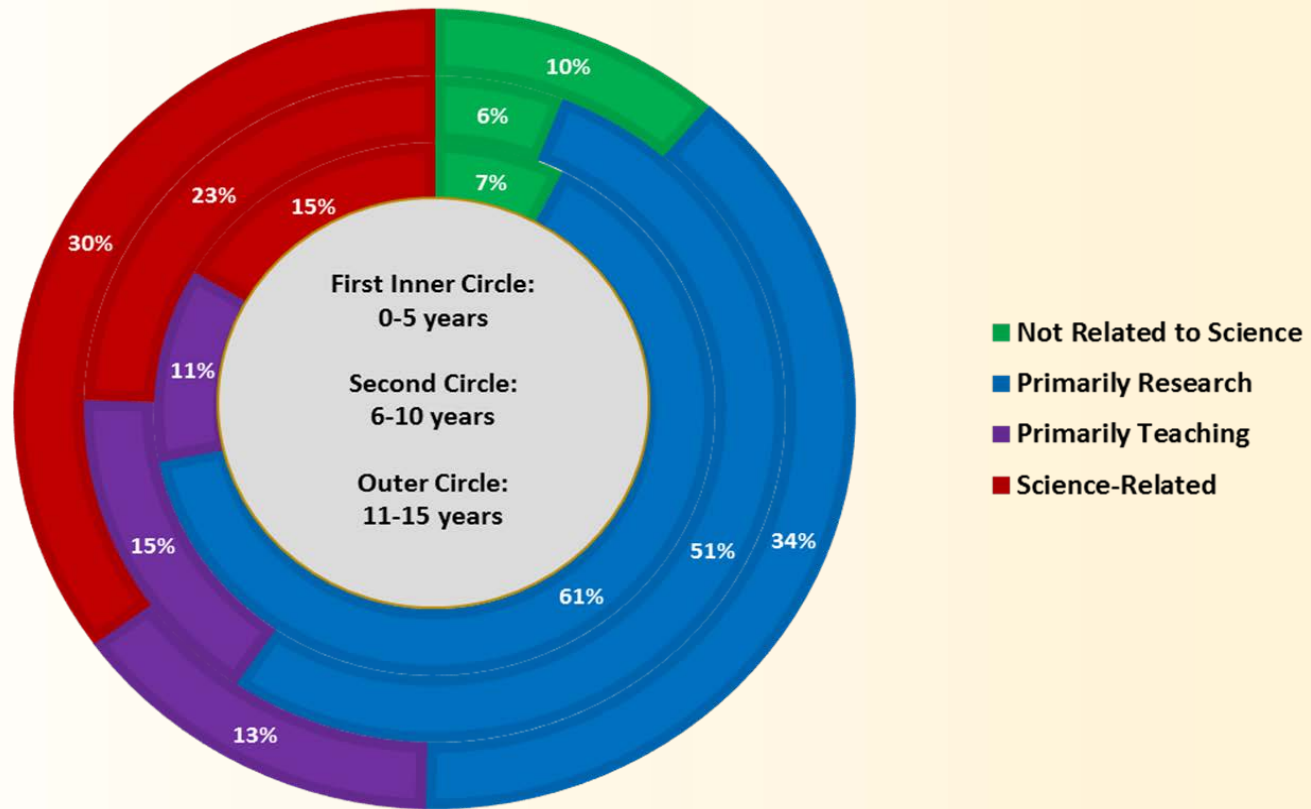Block 3: **11-15** years following PhD graduation

Biomedical PhD Career Outcomes – Shift in Tier 1 Employment Sector over 15 years

Academia — 63%, 55%, 40%

For-profit — 25%, 28%, 37%

Green line — 4%, 7%, 4%

Purple line — 2%, 5%, 4%

Biomedical PhD Career Outcomes – Shift in Tier 2 Career Type over 15 years

First Inner Circle: 0-5 years

Second Circle: 6-10 years

Outer Circle: 11-15 years

Legend:
- Not Related to Science
- Primarily Research
- Primarily Teaching
- Science-Related

10%, 6%, 7%, 23%, 15%, 30%, 11%, 15%, 51%, 34%, 61%, 13%

Biomedical PhD Career Outcomes – Shift in Tier 3 Job Function over 15 years
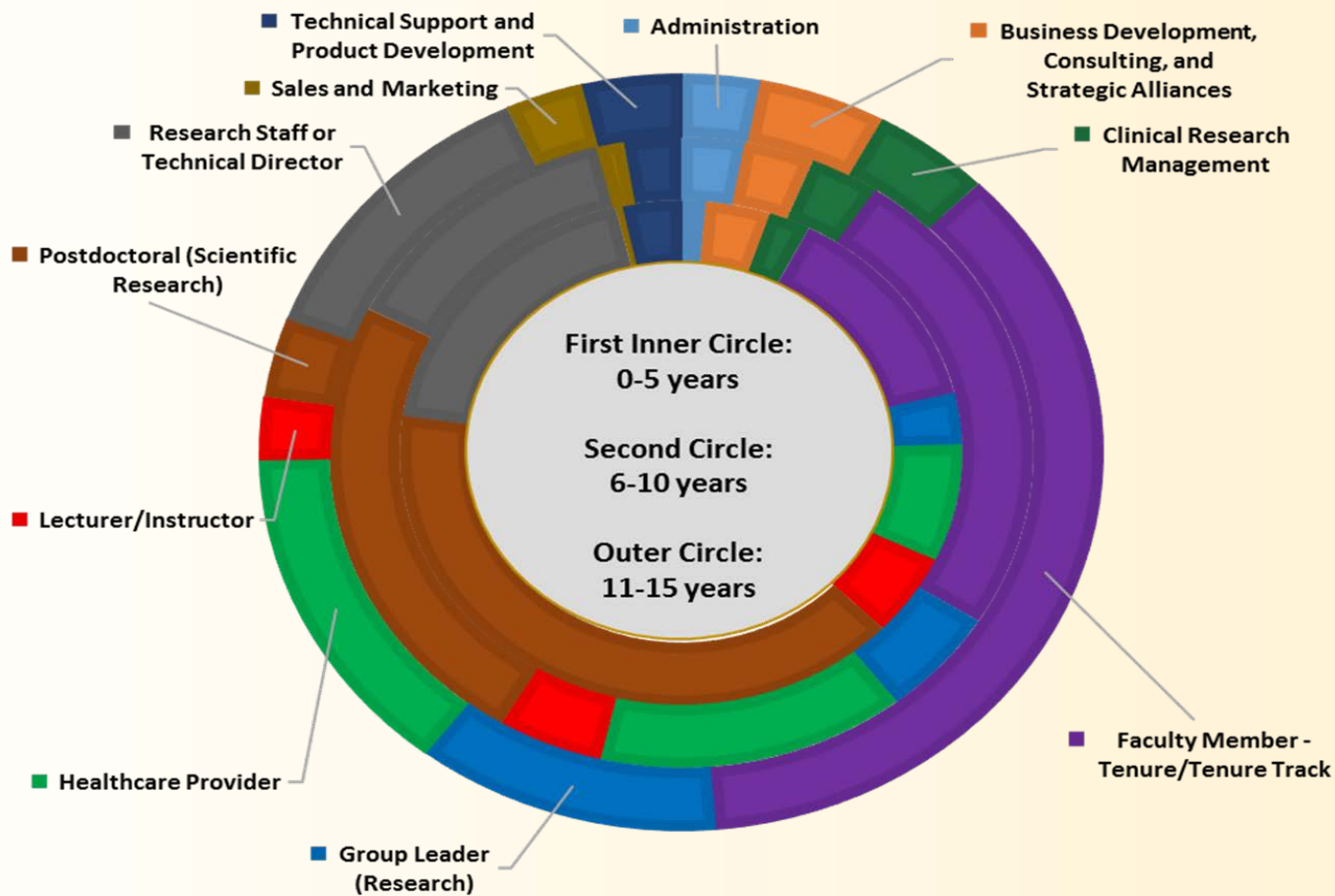
Our alumni are pursuing careers in

➢ Academic Research-1 institutions

➢ Academic Primarily Teaching institutions

➢ For Profit (industry, Biotech, Big Pharma)

➢ Government/Regulatory Affairs

And they are changing career trajectories and sectors that require "transferrable skills" and competencies

So, how should we prepare our students for careers that are not just in academia?

BEST Career Exploration Program

Preparation for Careers at WSU

- NIH BEST grant

- Graduate and Postdoctoral Professional Development Seminars

- Competency-based Micro-credentialing

17 Institutions awarded NIH BEST Grants

BEST: **Broadening Experiences in Scientific Training.**

CU Denver|Anschutz Medical Campus

University of Chicago

Wayne State University

MSU

Cornell

Rochester

UMMS

Boston University

UC Davis

UCSF

NYU
Rutgers

UC Irvine

Virginia Tech

UNC

Emory University and
Georgia Institute of Technology

Vanderbilt
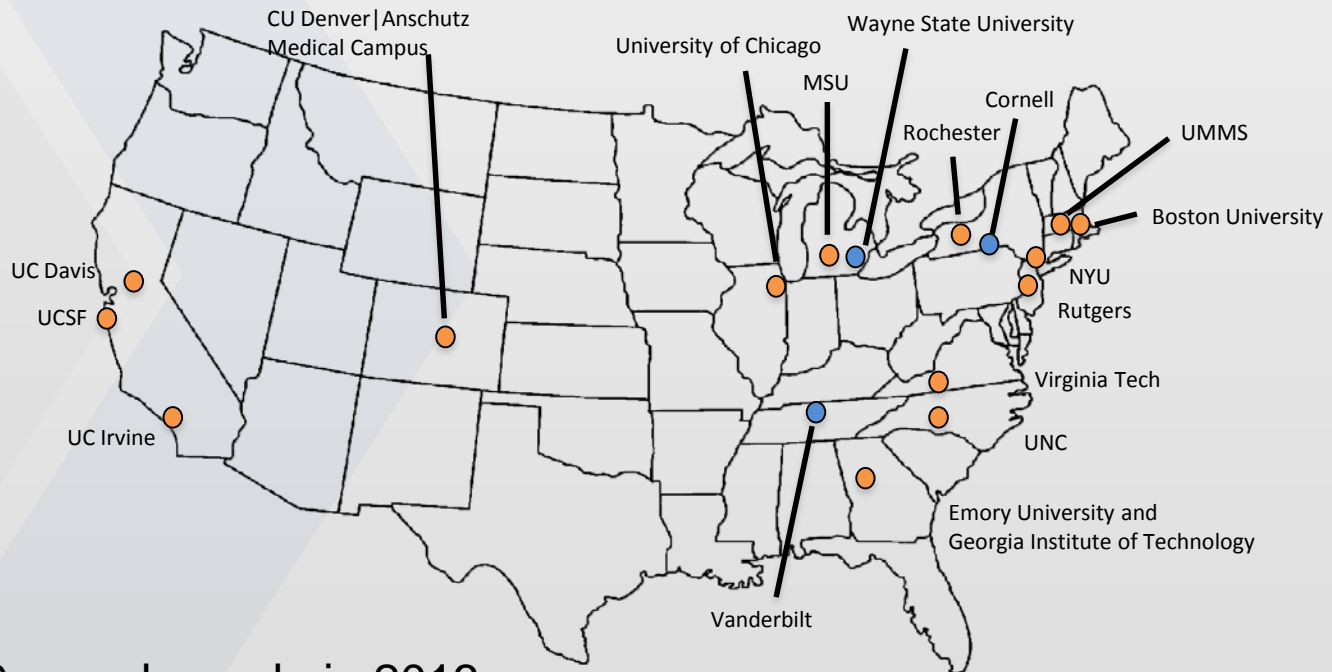
10 awards made in 2013
7 more in 2014

National Institutes of Health
Office of Strategic Coordination - The Common Fund

WSU Structured Approach to Career Development

Phase III — Experiential Learning (internships) 4 – 8 weeks

Phase II — Didactic Training (interactive workshops) 8 hrs

Phase I — Exploration (panel discussions) 1-2 hours

NIH **BEST** *wayne state university*
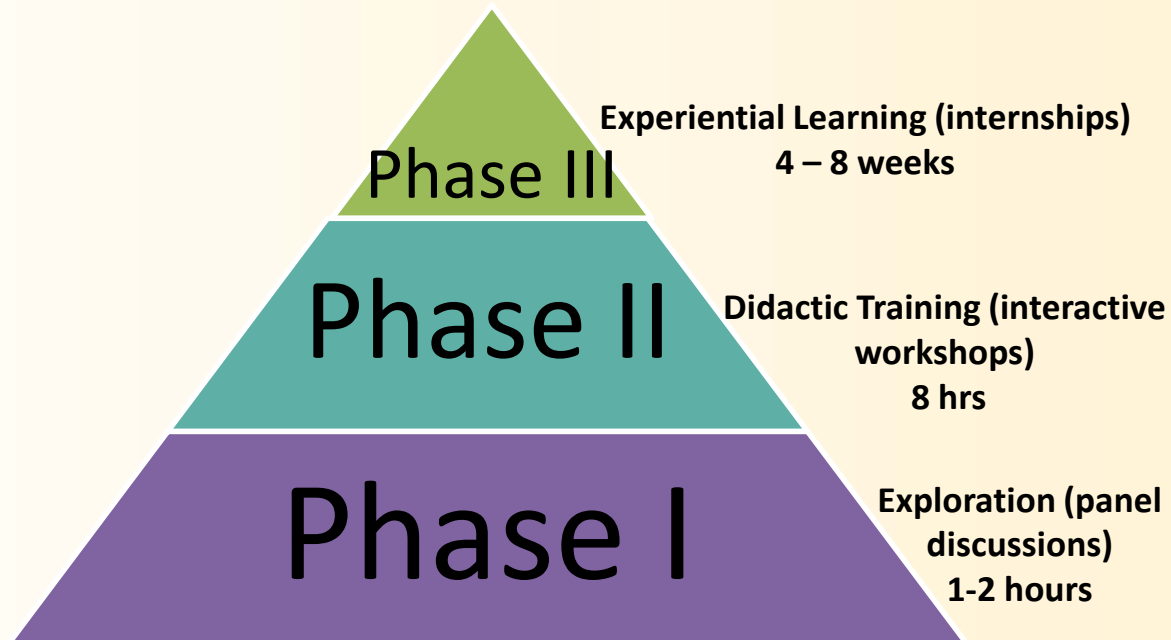
Our students are changing career trajectories and sectors

Therefore, they require competency-based training in "transferrable skills" that transcend career sectors

Graduate and Postdoctoral Professional Development Series

Competencies that align with the WSU mission and meet national needs

- ➢ Career Development
- ➢ Communication (Written, Verbal, Visual)
- ➢ Ethics (Responsible Conduct of Research)
- ➢ Teamwork and Collaboration
- ➢ Leadership and Professionalism

How do students demonstrate mastery of these skills to potential employers?

WSU's Micro-Credentialing Program

A micro-credential, also called a digital badge, is a tool for showcasing the skills and experience that may not be readily apparent by reading an academic transcript, resume or CV

Graduate & Postdoctoral Professional Development Series

- Career Exploration
- Abstract Writing
- Poster Preparation
- 3-Minute Thesis
- Visual Communication
- CV and Resume Preparation
- Job Search Using LinkedIn
- Networking for Graduate Students
- Cover Letter
- Elevator Pitch
- Interviewing Skills
- Negotiating for Jobs
- Multiple Role Management
- Responsible Conduct of Research

Qualitative – Sector Institutional Satisfaction (Biomedical)

For-profit
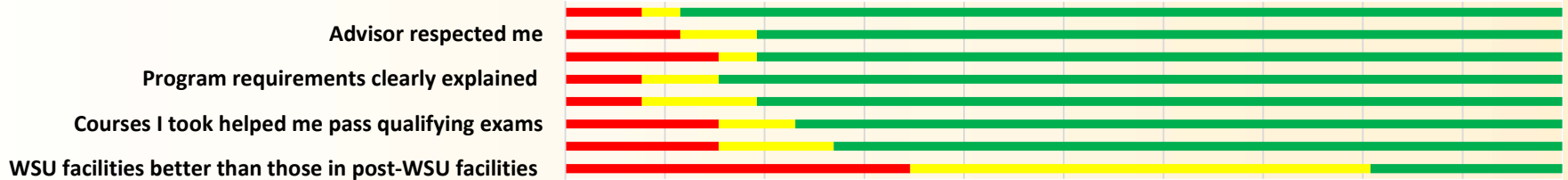
- **1-2 Disagree or Strongly Disagree**
- **3 Neither Agree nor Disagree**
- **4-5 Agree or Strongly Agree**

Academia

Qualitative – Sector Career Preparation (Biomedical)
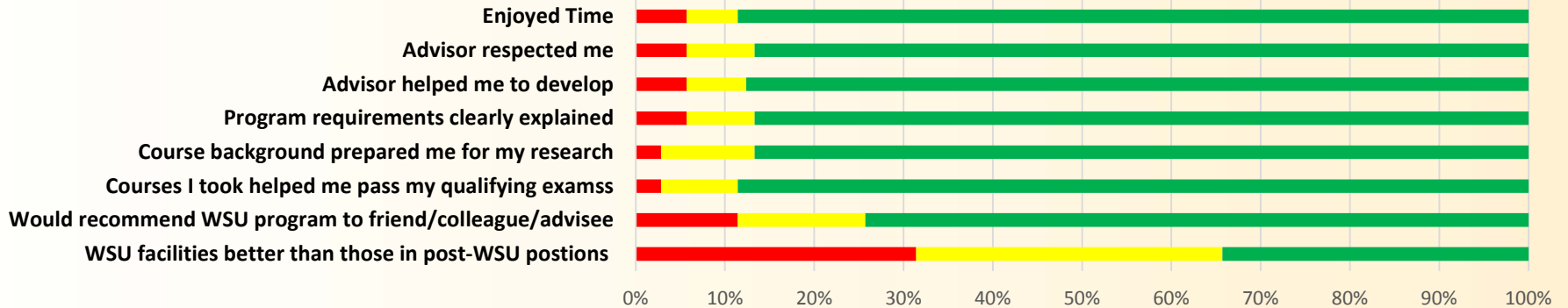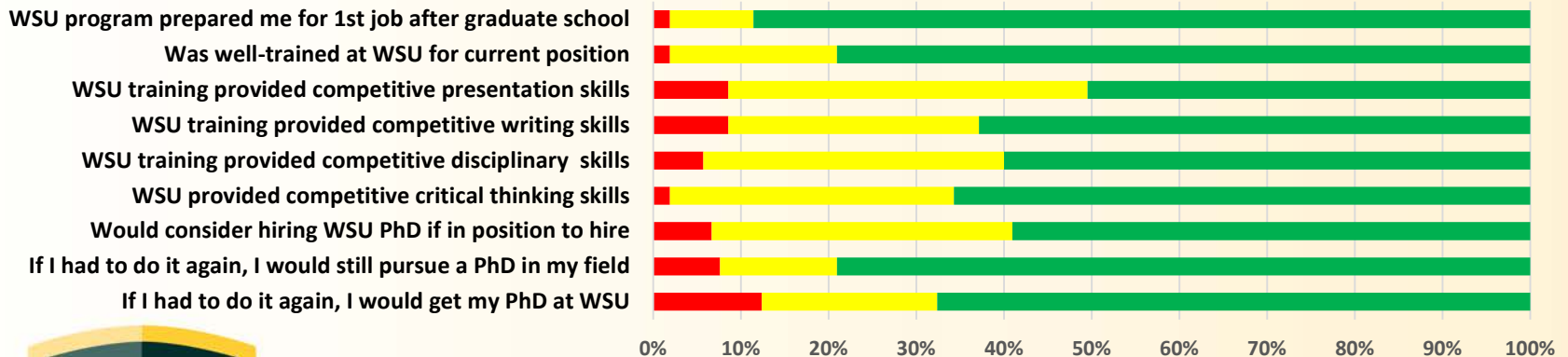
For-profit

WSU program prepared me for 1st job after graduate…	
Was well-trained at WSU for current position	
WSU training provided competitive presenatation skills	
WSU training provided competitive writing skills	
WSU training provided competitive disciplinary skills	
WSU training provdied competitive critical thinking…	
Would consider hiring WSU PhD if in position to hire	
If I had to do it again, I would still pursue a PhD in my…	
If I had to do it again, I would get my PhD at WSU	

■ **1-2 Disagree or Strongly Disagree**   ■ **3 Neither Agree nor Disagree**   ■ **4-5 Agree or Strongly Agree**

Academia

WSU program prepared me for 1st job after graduate school	
Was well-trained at WSU for current position	
WSU training provided competitive presentation skills	
WSU training provided competitive writing skills	
WSU training provided competitive disciplinary skills	
WSU provided competitive critical thinking skills	
Would consider hiring WSU PhD if in position to hire	
If I had to do it again, I would still pursue a PhD in my field	
If I had to do it again, I would get my PhD at WSU	

0%   10%   20%   30%   40%   50%   60%   70%   80%   90%   100%

Questions