



Gender Diversity in Substance Use Disorder (SUD) Research and Scientific Workforce

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Women and Gender Minorities: In Science and In Health

Addressing research gaps and increasing diversity of the scientific workforce...Overview

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Advancing Research on Sex/Gender Differences and Women's Health

- NIH priority and Investments in Research on Sex/Gender Differences, Women, SUD-related MCH Outcomes and Addiction Treatment/Services
- Future Direction for Research
- Current Funding Opportunities to advance the health of women and gender minorities
- Tips on identifying research opportunities and developing a research plan

2

Increasing Diversity of the Scientific Workforce

- NIH priority and investments to increase diversity in the scientific workforce
- Tips for planning Career Trajectory
- Tips for finding training opportunities

Solutions Driven Science: Expanding and Improving Sex/Gender and Women's Health Research

Sex/Gender on biology, behavior & health

- Research addressing Women's and Gender-minority health
- Health disparities affecting women and gender minorities
- Sex and gender differences across the lifespan in normal biological and behavioral function and disease processes
 - Clinical
 - Basic
- Building women and gender minority health into all research
 - Inclusion policies
 - SABV

Women, SUD-related MCH Outcomes and Addiction Treatment/Services

- Increasing Treatment Prescribing
 - Validating reliable screening tools to identify pregnant women in need of treatment
 - Analyzing infant outcomes to inform medication selection for opioid use disorder during pregnancy
 - Evaluating behavioral interventions for opioid misuse in pregnancy
- Improving Treatment Strategies
 - Examining buprenorphine during pregnancy and how to improve dosing regimens.

Solutions Driven Science: Expanding and Improving Sex/Gender and Women's Health Research

Highlights of NIH Current Investments

1. **Women and Sex/Gender Differences in Drug and Alcohol Abuse/Dependence (PA-18-601 (R03), -602 (R21) and -603 (R01))**
2. **Medication Treatment for Opioid-dependent Expecting Mothers Study (MOMs): A Pragmatic Randomized Trial Comparing Two Buprenorphine Formulations (CTN-0080).**
 - **PI: Theresa Winhusen, Ph.D., University of Cincinnati**
3. **Implementing a Maternal health and PRegnancy Outcomes Vision for Everyone (IMPROVE) initiative (NOT-OD-20-104)**
 - **Krista F. Huybrechts, PhD, Brigham and Women's Hospital,**
Postpartum opioid related mortality in Medicaid patients
 - **Constance Guille, MD, Medical University of South Carolina.**
Reducing Racial Disparities and Maternal Mortality Associated with Untreated Peripartum Substance Use and Mental Health Disorders.
 - **Amy J Elliot, PhD, Avera McKennan**
The Cumulative Risk of Substance Exposure and Early Life Adversity on Child Health Development and Outcomes

Highlights of NIDA's Clinical & Implementation Research

- **Treatment Engagement and Adherence**
- **Technology-Based Interventions**
- **Intergenerational effects**
- **Effectiveness and Safety**
- **Education and Training**

Currently Funded Projects

- **Effective Caregiving for Neonatal Abstinence Syndrome: Development of an Instructional Mobile Technology Platform for High-Risk Pregnant Women**(E. Burduli, 1K01DA051780-01)
- **Improving Treatment Engagement and Adherence to Optimize Outcomes for Opioid-Exposed Mother-Infant Dyads** (D. Schiff, 5K23DA048169-02)
- **mHealth to help pregnant and postpartum women in recovery for opioid use disorder**(P. Cavazos-Rehg, 1R34DA050453-01)
- **The Comparative Effectiveness and Safety of Pharmacotherapies for the Treatment of Opioid Use Disorder in Pregnancy**(K. Huybrechts, 1R01DA049822-01)

Future Directions & Unanswered Questions

Designing Optimal Treatment Strategies

- How can **technology** be used to facilitate interventions for SUD?
- What is the prevalence of **multi-generational SUD**? What intervention strategies can improve outcomes?
- What are the most **cost-effective** ways to provide care for women with SUD that will lead to optimal maternal and child outcomes?
- Can **social networks** be leveraged to improve outcomes?

Tailoring Treatment

- Does **patient preference** influence effectiveness of MAT?
- Do all forms of MAT work equally well for pregnant and postpartum women?
- How do you determine what medication will work best for a given patient?

Implementation Strategies

- What **implementation strategies** are most efficient at enhancing cross-systems collaboration to improve outcomes?

Funding Opportunities for Research advancing the health of women and gender minorities

- Administrative Supplements for Research on Sex/Gender Influences (**NOT-OD-20-049**)
- Research on the Health of Women of Understudied, Underrepresented and Underreported (U3) Populations (**NOT-OD-20-048**)
- Intersection of Sex and Gender Influences on Health and Disease (**RFA-OD-19-029**)
- Community Interventions to Address the Consequences of the COVID-19 Pandemic among Health Disparity and Vulnerable Populations (R01- Clinical Trial Optional) (**PAR-20-237**)
- Identifying Innovative Mechanisms or Interventions that Target Multimorbidity and Its Consequences (R01 Clinical Trial Optional) (**PAR-20-180**)

How to find research opportunities



Identify research gaps

Read! Read! Read!

Attend seminars, conferences...

Discuss, ask questions



Determine where your interests and relevant research gaps intersect with NIDA priorities, funding opportunity announcements (FOAs), and funded projects

NIDA Strategic plan

Research priorities of divisions

FOAs

NIH RePorter



Contact the Program Official (PO)

- Prepare a **concept paper** or **specific aims page** and email your PO
 - The more well-formed your idea is, the better advice your PO can give you
 - Your PO will not have time to read your entire grant
- What should be included?
 - **Study Goals:** What do you want to do?
 - **Problem/Significance:** Why is this question important?
 - **Research Question:** What hypotheses will you test?
 - **Design/Analysis:** What study design and statistical approach do you propose?
 - **Team:** Who will be the key participants and collaborators?



Where do I begin?

- Start with realistic expectations- the grants process is **lengthy** (1-2+ years) and requires **persistence**.
- **Policies**→ Office of Extramural Research:
<http://grants.nih.gov/grants/oer.htm>
 - **Open Mike Blog:**
<https://nexus.od.nih.gov/all/category/blog/open-mike/>
- **Review**→ Center for Scientific Review:
<https://public.csr.nih.gov/>
 - **Assisted Referral tool:**
<https://art.csr.nih.gov/ART/selection.jsp>
- **Examples**→ NIH RePORTER:
<http://projectreporter.nih.gov/>
- **IC Priorities**→ www.drugabuse.gov

Common Problems in Applications

- Lack of new or original ideas
- Absence of an acceptable scientific rationale
- Lack of experience in the essential methodology
- Questionable reasoning in experimental approach
- Credulous approach
- Diffuse, superficial, or unfocused research plan
- Lack of sufficient experimental detail
- Lack of knowledge of published relevant work
- Unrealistically large amount of work proposed
- Uncertainty concerning future directions

Additional Tips:

<http://www.csr.nih.gov/applicantresources/insider>



Gender Diversity of the Scientific Workforce

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Gender Diversity in the Scientific Workforce

- ▶ Diversity across Career Stages
- ▶ Challenges
- ▶ Strategies and opportunities

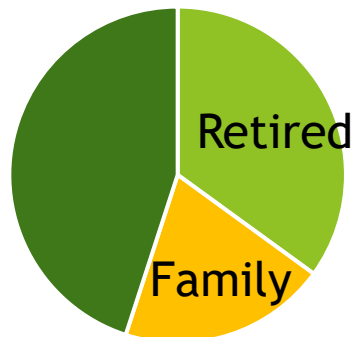
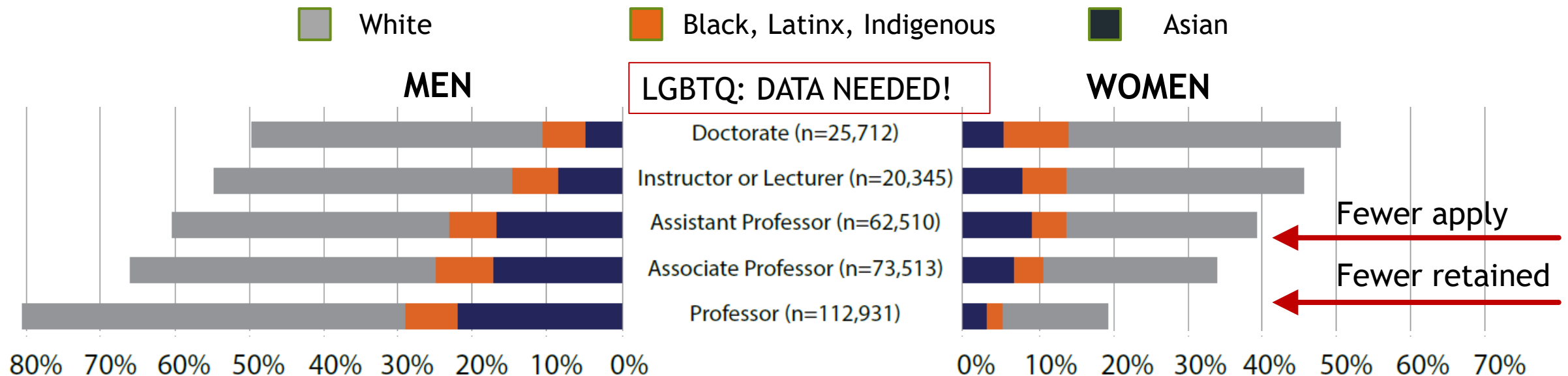
Women in Biomedical Research: Progress

Women are now comparable to men in

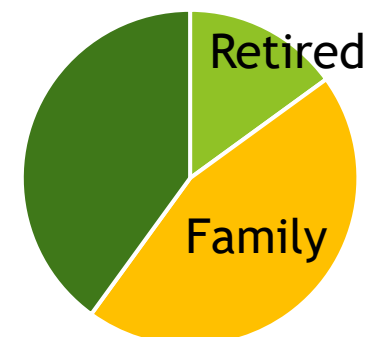
- ▶ Success rates for attaining tenure-track positions in most biomedical fields
- ▶ Success rate for first R01 (women (29%) ,men (28%))
- ▶ Retention and promotion to non-tenured positions

The problem we need to solve

Academic STEM Career Progression by Gender and Race



Reasons for not seeking full-time position

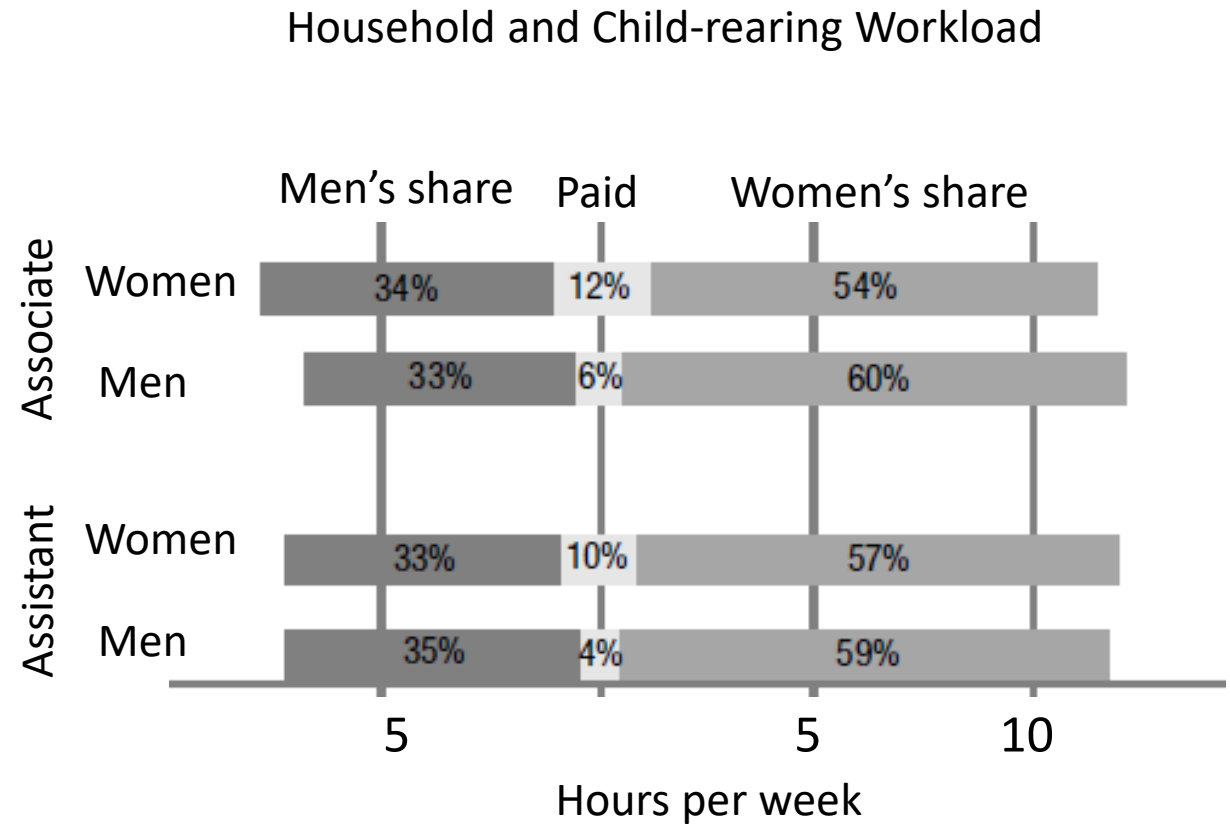
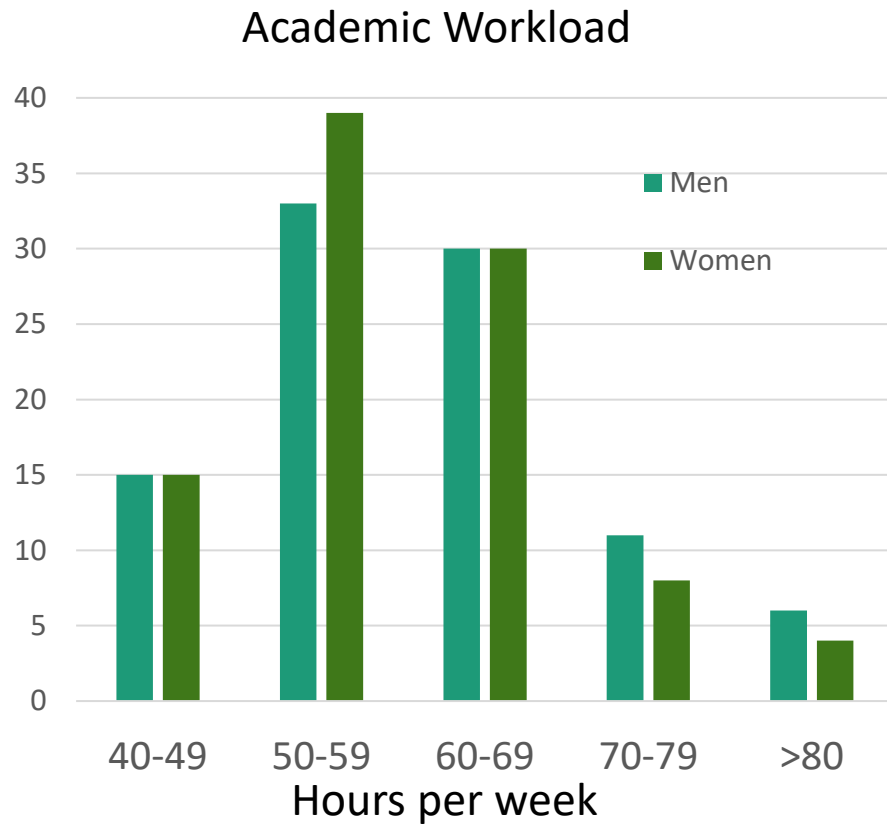


Gender differences in indices of impact

- ▶ Women have lower publication rates (0.8 that of men)
 - ▶ Acceptance rates are comparable
- ▶ NIH Funding
 - ▶ Fewer women apply for competitive renewals
 - ▶ The road through review is a little rougher for women
 - ▶ Overall award rate below that of men - but not by much
 - ▶ Awards to men tend to be funded at higher \$ amounts

Women in Biomedical Research: Challenges

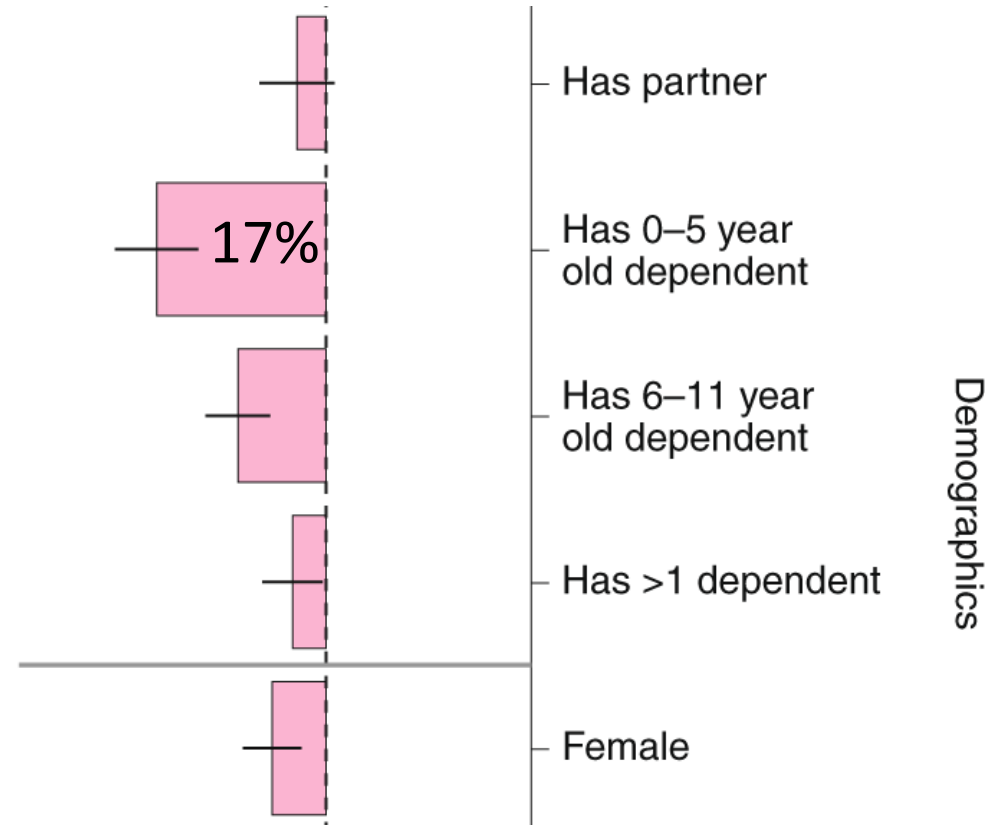
Workload



The Parent Trap? An example from the current pandemic

The factor most negatively impacting research time is having a young dependent.

Regardless of gender.



Both men and women faculty support flexible time management and progressive leave policies.

Life at Work -Making Do and Multitasking

- ▶ Comparable Opportunities
- ▶ Fewer resources (especially human)
- ▶ Suboptimal Resource Management Options
- ▶ Accommodate Different Values
 - ▶ Mentoring, thesis committees
 - ▶ Support scientific collaboration
 - ▶ Place lower value on prestige, incl highest impact journals
- ▶ Spend more energy on integration
 - ▶ Higher impact on LGBTQ scientists → Leaky STEM pipeline

Cost/Benefit: Opportunities may be equal but ...

“Equal performance” and advancement come at higher cost

Realizing the impact of all of us as ...

Research Scientists

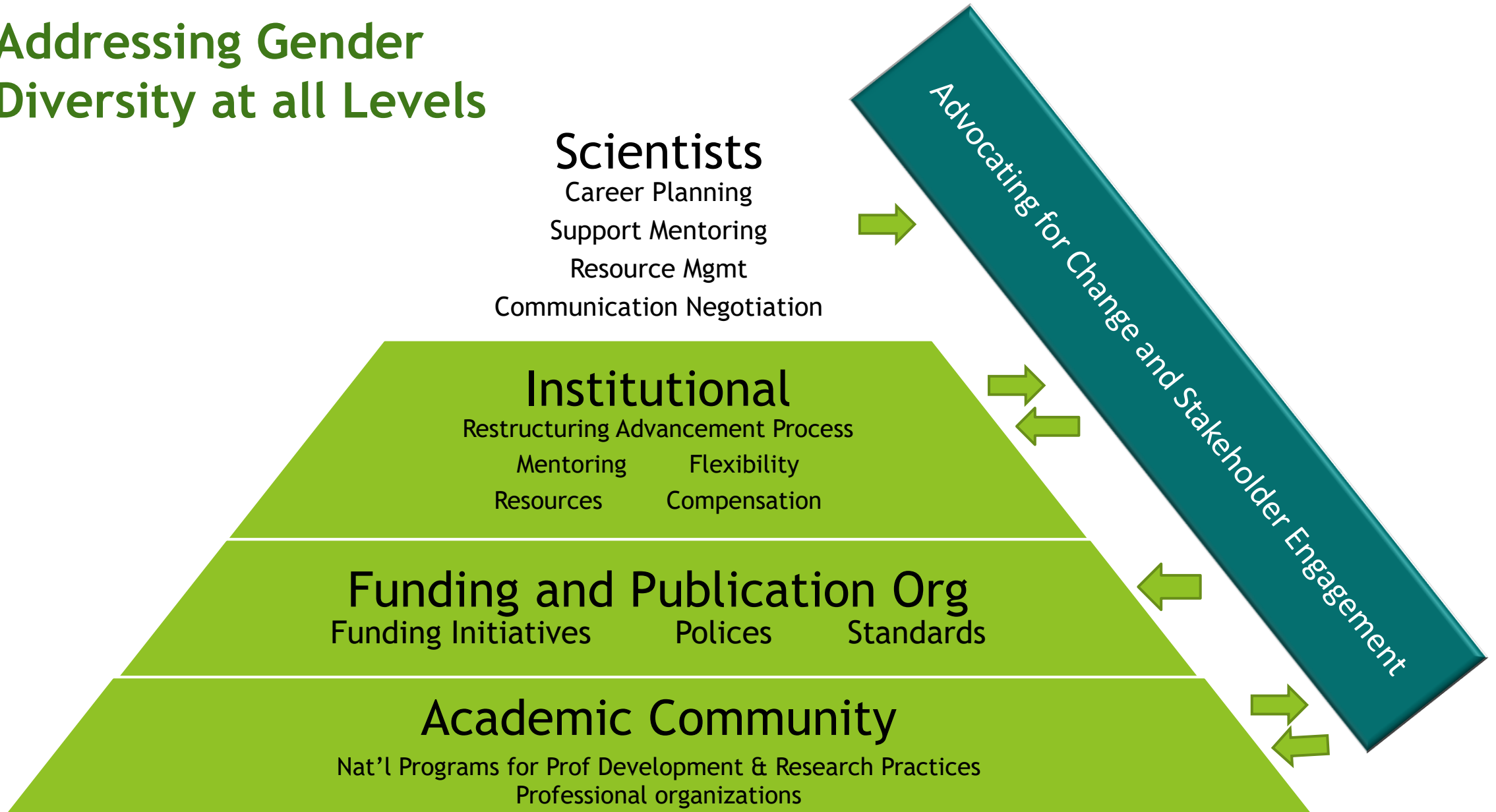
- ▶ Accessible and Flexible Resources
- ▶ Integrating multiple, diverse academic value systems and talents
 - ▶ Research productivity/innovation along different timescales
 - ▶ Different Ways to Impact
 - ▶ Mentoring/Education
 - ▶ Team Science
- ▶ Flexibility and autonomy in budgeting time, tasks, resources
- ▶ Stability, transparency, mentorship and flexibility along career path

Humans

- ▶ Supporting scientists in their roles as parents, caregivers, citizens
- ▶ Cultural competency in the workplace

Strategies and Opportunities

Addressing Gender Diversity at all Levels



Career: *Plan*

- ▶ Build a support system
 - ▶ Supportive work environments and policies
 - ▶ NIH Initiatives
 - ▶ Mentors and Peers- seek and keep
- ▶ Prepare for transitions and challenges
- ▶ Communicate and Negotiate

Make a plan that supports your research and aligns with your values and needs

NIH Institutional Programs

Office of Research on Women's Health

- ▶ Building Interdisciplinary Research Careers in Women's Health (BIRCWH) K12 program (RFA-OD-19-020)
 - ▶ Mentored career-development program
 - ▶ Connects junior faculty - BIRCWH Scholars - to senior faculty with shared research interest in women's/gender health and sex-differences research
 - ▶ Awards to 41 institutions
- ▶ Specialized Centers of Research Excellence (SCORE) on Sex Differences (U54 Clinical Trial Optional)
 - ▶ Career Enhancement Cores
 - ▶ Awards to 6 institutions
- ▶ NIH Prize for Enhancing Faculty Gender Diversity
 - ▶ To biomedical research institutions successfully addressing faculty diversity and equity issues

More to come!

Barriers to
Career
Advancement

Pathways to
Leadership

Career-Life
Flexibility

Compensation
Equity

Mentoring,
Coaching and
Sponsorship

Advocating for Change and Stakeholder Engagement

▶ Mentors

- ▶ Multiple career stages
- ▶ Inside and outside your department
- ▶ Outside scientific organizations (e.g. AAAS, NASEM)

▶ Peers

- ▶ Departmental colleagues across gender and ethnic boundaries
- ▶ Peer organizations
 - ▶ E.g. Women of Color Research Network
 - ▶ Professional societies

NIH support across career stages and transitions




Career: *Plan*

- ▶ Communicate your values as a scientist
 - ▶ Your vision of impact
- ▶ Negotiate for the resources you need to advance your research
 - ▶ Get advice from mentors
- ▶ Educate your institution on how to partner *with* you to protect their investment




Advancing Research Culture





For
information
and
resources

- [Office of Research on Women's Health](#)
 - [Office of Equity, Diversity and Inclusion](#)
 - [NIH Sexual & Gender Minority Research Office \(SGMRO\)](#)
 - [NIDA Office of Research Training, Diversity, and Disparities](#)
 - [NIDA Women & Sex/Gender Differences Research Group](#)
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Q&A/Discussion



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