

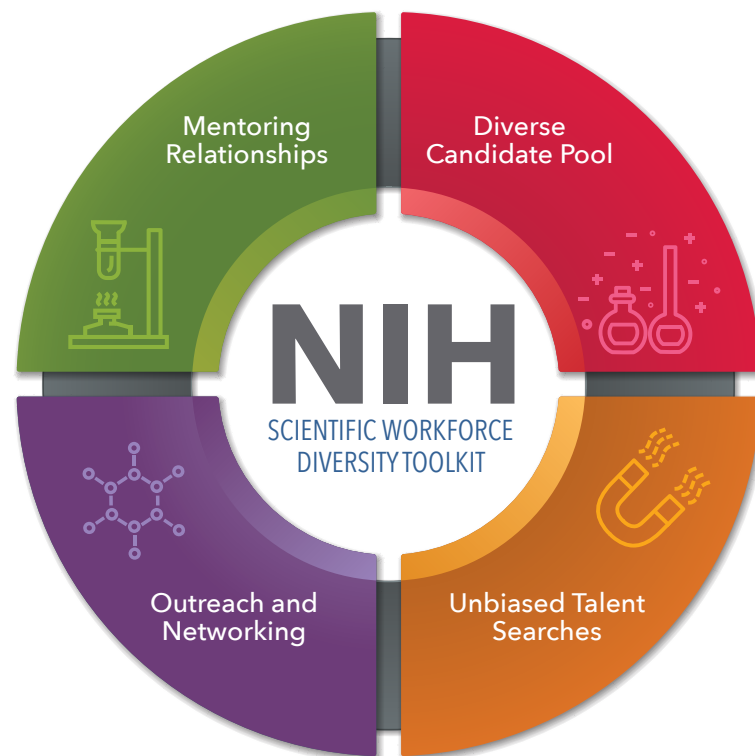


# NIH Scientific Workforce Diversity Toolkit

The U.S. scientific research enterprise – from basic laboratory research to clinical and translational research to policy – requires intellect, creativity, and diverse skill sets and viewpoints.

## Diversity

- ... enhances excellence, creativity, and innovation
- ... broadens the scope of biomedical inquiry
- ... addresses health disparities
- ... ensures fairness in our highly diverse nation





Introduction



Diversify  
the Talent Pool



Unbiased Talent  
Searches



Outreach and  
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NIH Chief Officer for Scientific Workforce Diversity

# Hannah Valentine, MD

Through my travels to NIH-funded institutions, I am often asked “How can we enhance faculty diversity?” My answer is this: Leadership sets the tone but effective tools are necessary. I hope you find this evidence-based toolkit helpful in your efforts to expand faculty diversity at your institution.

**Questions?** Contact us at [SWDToolkit@od.nih.gov](mailto:SWDToolkit@od.nih.gov)





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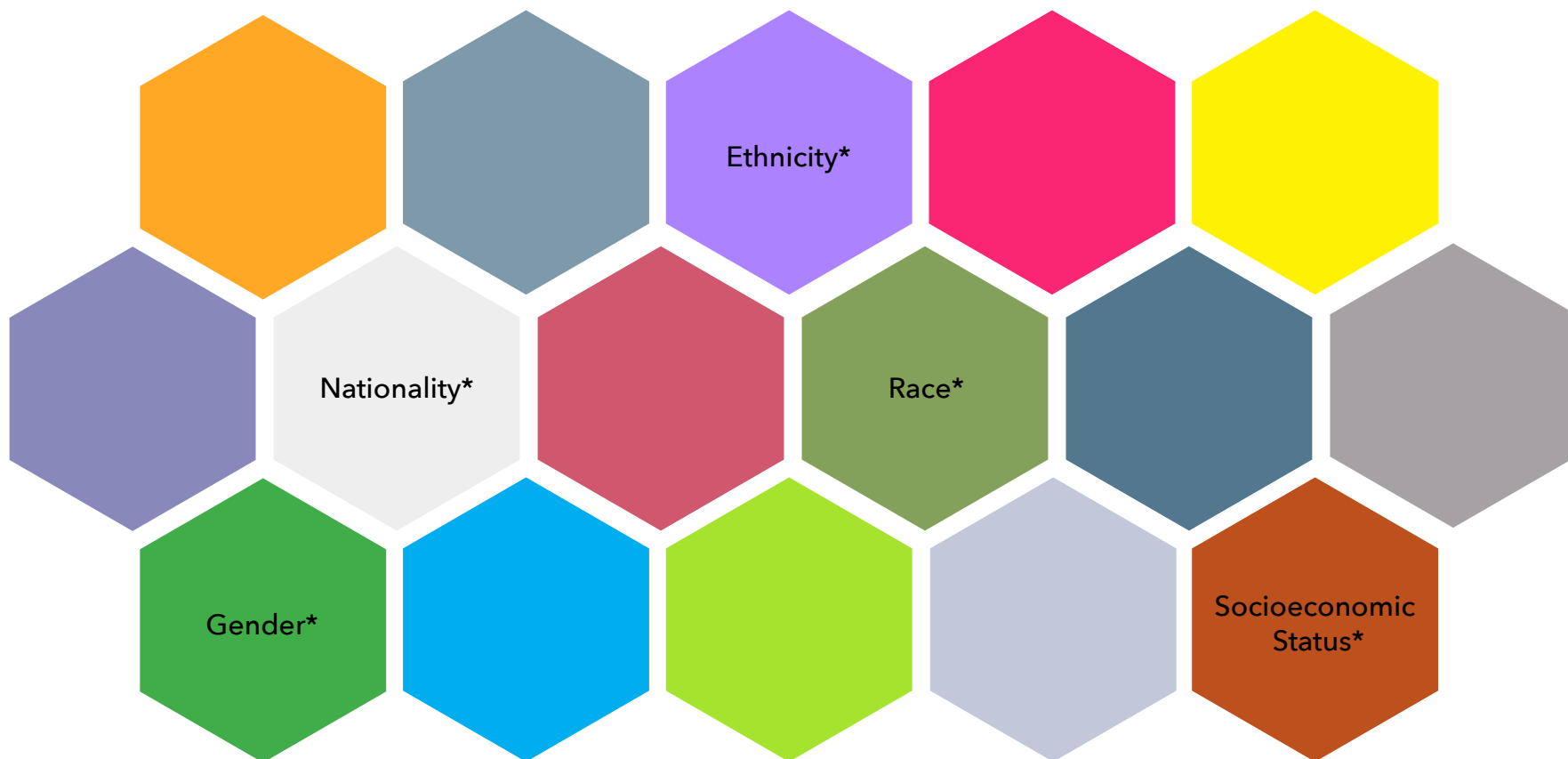
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# Many Types of Diversity



\* Underrepresented Populations in U.S. Biomedical, Clinical, Behavioral and Social Science Research



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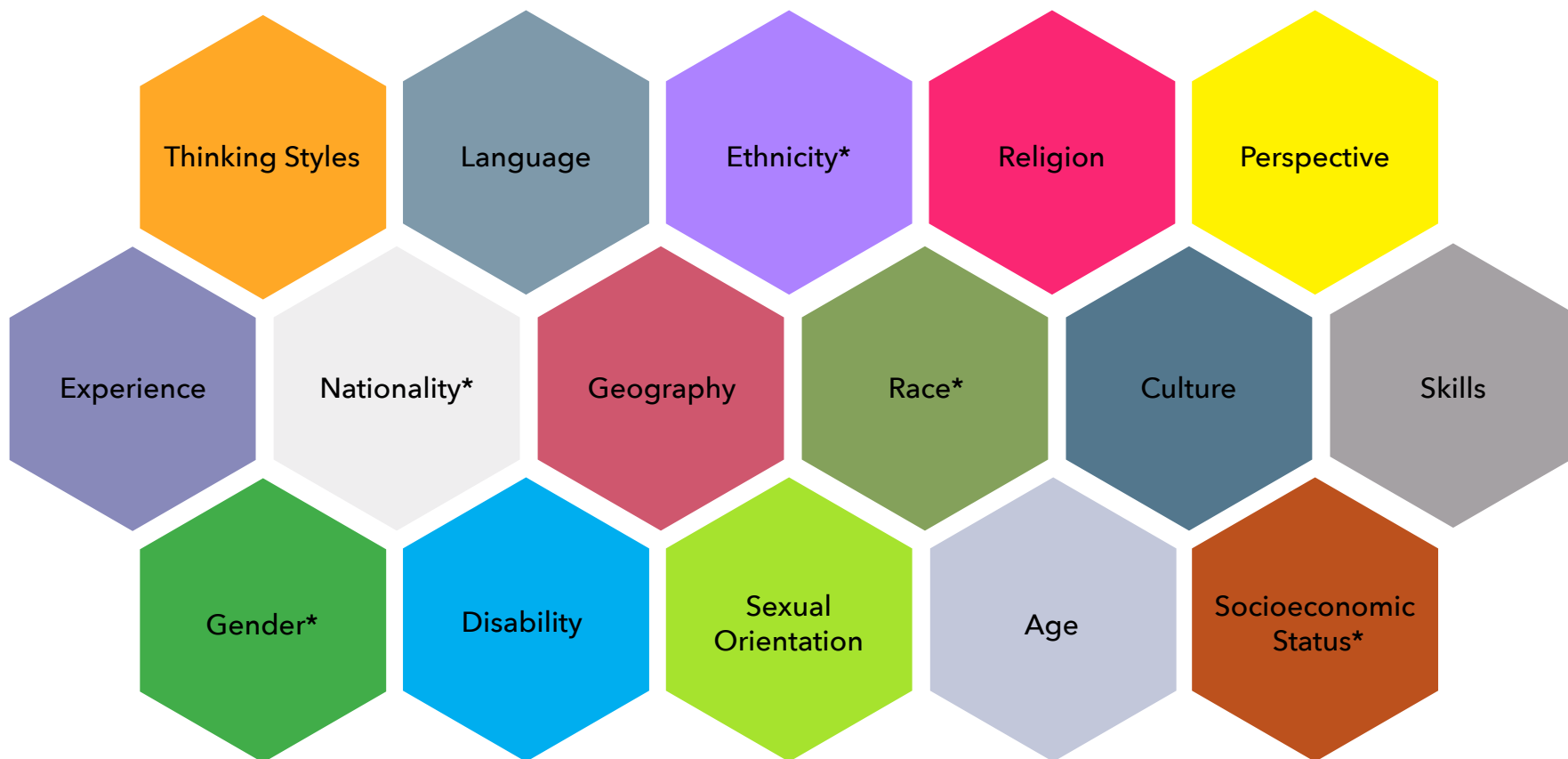
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# Many Types of Diversity



\* Underrepresented Populations in U.S. Biomedical, Clinical, Behavioral and Social Science Research



# Suggestions for Promoting Diversity at Your Institution



Diversify  
the Talent Pool

**Systematically review** hiring and promotion procedures and policies

**Be transparent:** collect and publicize aggregate diversity metrics

**Commit resources** and **provide diversity tools** to Divisions and Departments

**Evaluate impact** and adjust strategy if needed



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# How to Promote Diversity at Your Institution

**Diversity survives or dies through climate and culture.**

**Here is what you can do:**

**Review** and **ensure** equality in salary and resources

**Ensure** width, breadth, and fairness in talent searches

**Sponsor** all faculty through promotion for awards and inclusion in professional networks

**Endorse** and **promote** work-life balance resources for all faculty

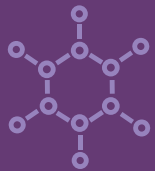
Conduct **anonymous climate surveys** and make changes if necessary



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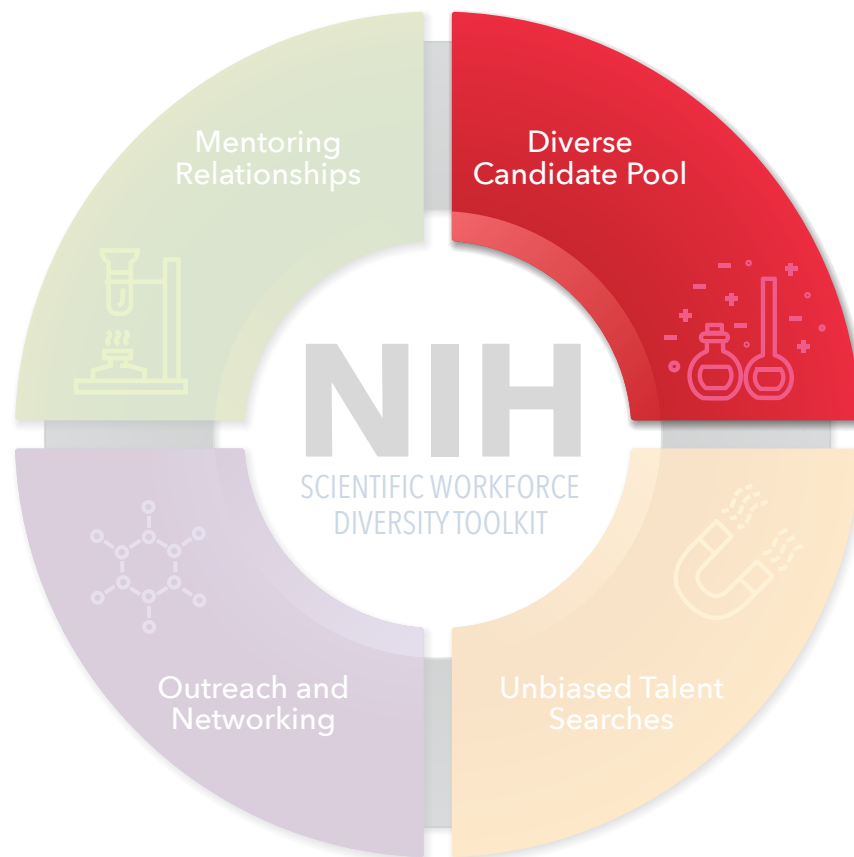
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# Diversify the Talent Pool

Learn about how our [recruitment tool](#) can help you identify a wider range of candidates





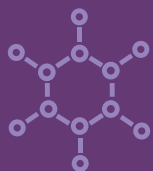
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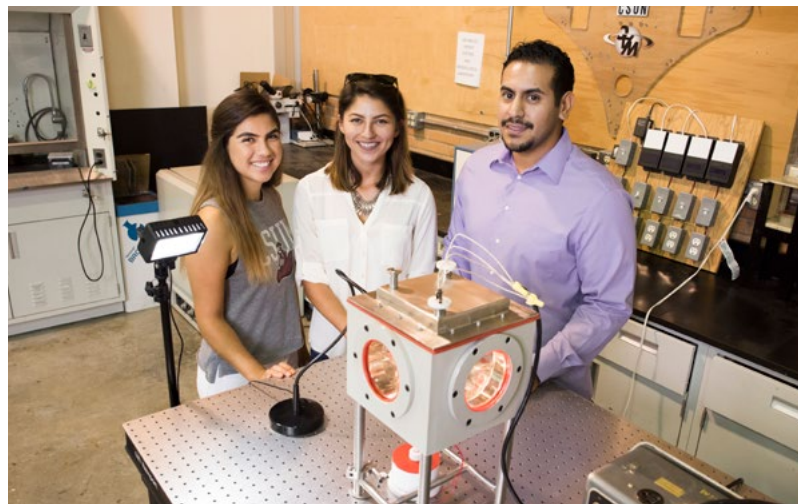


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# Creating a Diverse Talent Pool

We developed a process and created a [recruitment tool](#) to find highly qualified scientists from diverse backgrounds as potential candidates for NIH scientific positions. Institutions can use this method to diversify their own faculty.



NIH Diversity Program Consortium





National Institutes of Health

Office of the Director

Scientific Workforce Diversity

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# Creating a Diverse Talent Pool

Find candidates



ABRCMS  
2017



Asian & Pacific Islander  
Caucus for Public Health

EXECUTIVE LEADERSHIP IN ACADEMIC MEDICINE®  
JOB POSTINGS & RESOURCE LISTS



SACNAS

Advancing Chicanos/Hispanics  
& Native Americans in Science



National  
Medical  
Association

NHMA  
National Hispanic Medical Association



Library  
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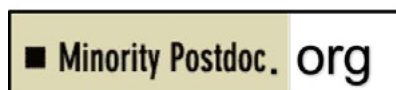
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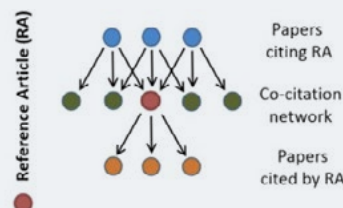
Find candidates



EXECUTIVE LEADERSHIP IN ACADEMIC MEDICINE®  
JOB POSTINGS & RESOURCE LISTS



Vet potential recruitment  
candidates (quantify, qualify)



Relative Citation Ratio (RCR): A New Metric  
That Uses Citation Rates to Measure  
Influence at the Article Level

B. Ian Hutchins<sup>1</sup>, Xin Yuan<sup>1</sup>, James M. Anderson<sup>2</sup>, George M. Santangelo<sup>1\*</sup>

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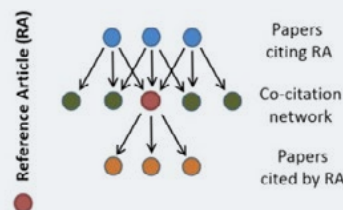
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# Creating a Diverse Talent Pool

Find candidates



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B. Ian Hutchins<sup>1</sup>, Xin Yuan<sup>1</sup>, James M. Anderson<sup>2</sup>, George M. Santangelo<sup>1\*</sup>

Build secure repository of  
vetted potential candidates



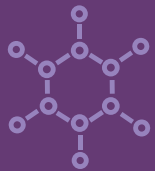


# Creating a Diverse Talent Pool: Step-by-Step

Institutional library informationists can assemble a pool of potential recruitment candidates in a systematic and unbiased way. Primary data sources include Web of Science, InCites, Scopus, and SciVal. A fairly wide net should be cast to ensure diversity by gender, probable race/ethnicity, and scientific discipline. This can be done through review of full name, coupled with additional searching via social-media tools. Recruitment candidates should be vetted objectively, using the same criteria, after assembling an initial diverse list.

Candidates should be vetted objectively, using the same criteria, after assembling an initial diverse list.

Check out our detailed [Online Tutorial](#) and [Recruitment Myths](#)





# Sample Diverse Candidate "Package"

**BIBLIOGRAPHY**

**NIH BIO SKETCH**

Last Name  
First Name

PUBLICATIONS  
CITATIONS  
CITATIONS PER

Gender  
Race/Ethnicity

  
(No actual photo  
to avoid potential  
implicit bias)

Name, M.D., Ph.D.  
Current Position  
Institution

Information  
Scientific  
Leadership  
Service  
Mentorship  
More...



POST-DOCTORAL AND ASSISTANT PROFESSORS

# Expanding Diversity of NIH Candidate Pools: **Junior** Career Stage

- ~ 667 total, top 1/3rd culled
- Authorship in top journals
- 10+ publications: 357
- 100+ citations: 407
- 200+ citations: 311

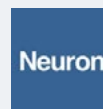


Endocrinology



THE NEW ENGLAND  
JOURNAL of MEDICINE

nature  
immunology





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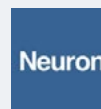
Endocrinology



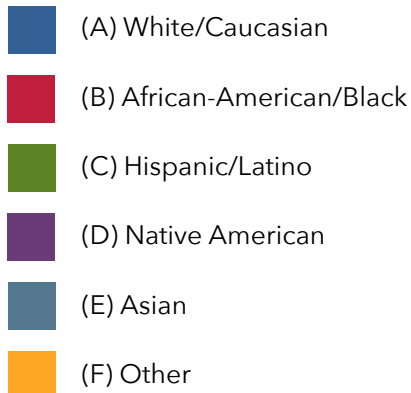
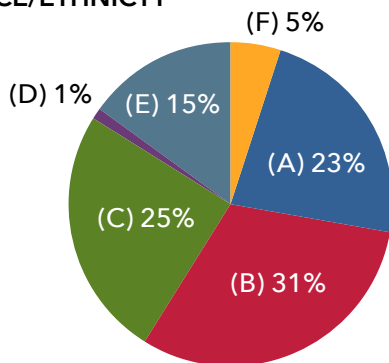
The NEW ENGLAND  
JOURNAL of MEDICINE



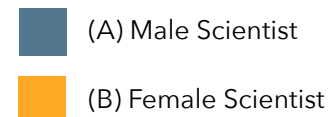
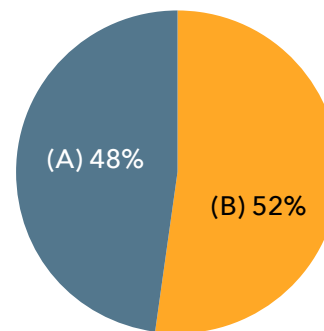
nature  
immunology



RACE/ETHNICITY



GENDER





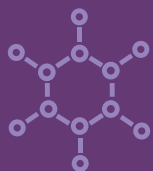
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ASSOCIATE PROFESSORS AND FULL PROFESSORS

# Expanding Diversity of NIH Candidate Pools: **Senior** Career Stage

- ~ 544 total, top 1/2 culled
- Authorship in top journals
- 100+ publications: 222
- 500+ citations: 462
- 2000+ citations: 319



PLOS ONE

JAMA Neurology

American Journal of  
**PUBLIC HEALTH**

American  
Physiological  
Society

Science

PNAS

EMERGING  
INFECTIOUS DISEASES

AMERICAN JOURNAL of PHYSIOLOGY  
**Cell Physiology**





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PLOS ONE

JAMA Neurology

American Journal of  
**PUBLIC HEALTH**

American  
Physiological  
Society

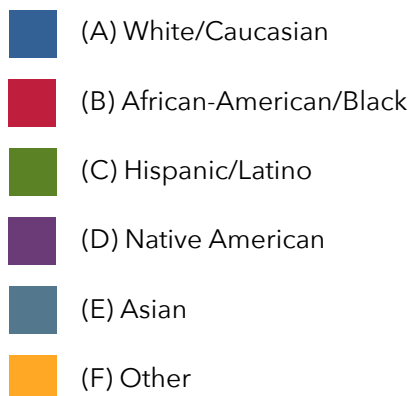
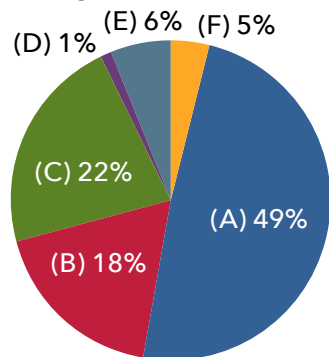
Science

PNAS

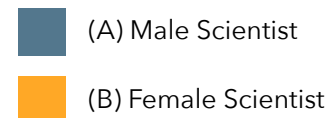
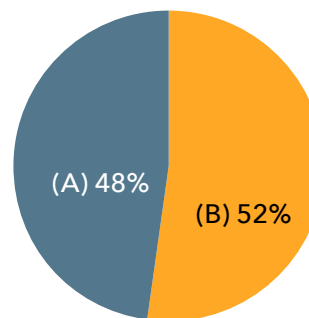
EMERGING  
INFECTIOUS DISEASES

AMERICAN JOURNAL of PHYSIOLOGY  
**Cell Physiology**

RACE/ETHNICITY



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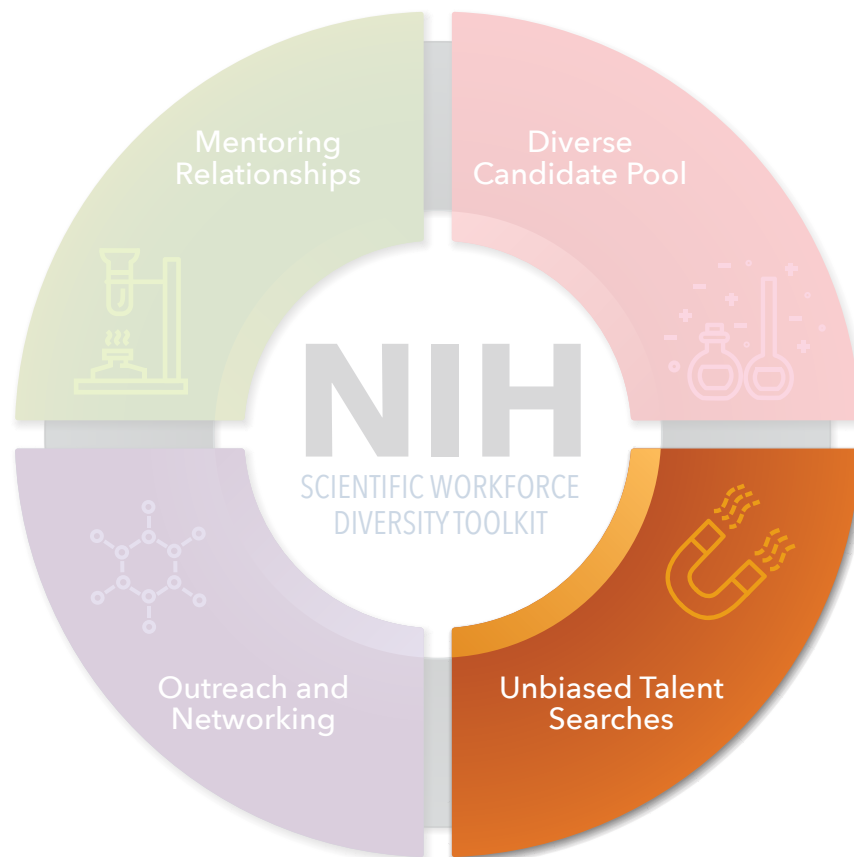


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# Conduct an Unbiased Talent Search

Learn about implicit bias and find tips  
on how to reduce it





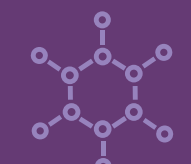
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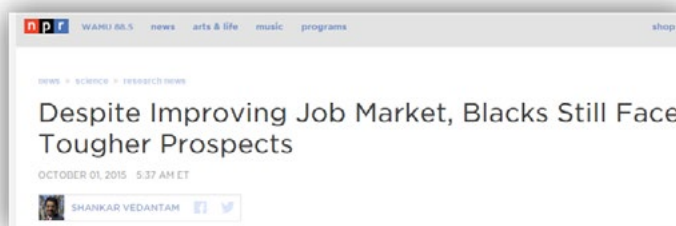
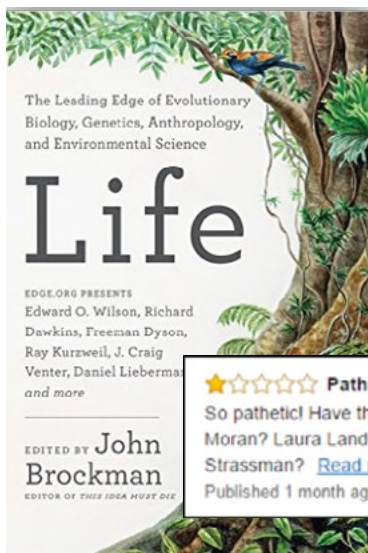
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# Bias is Pervasive in Science and Beyond



"Black name applicants in our study received about 14 percent lower call-back rates than otherwise identical white applicants."

☆☆☆☆☆ **Pathetic!**

So pathetic! Have these people not heard of Hopi Hoekstra? Nicole King? Nancy Moran? Laura Landweber? Rosemary Grant? Mercedes Pascual? Joan Strassman? [Read more](#)  
Published 1 month ago by Danny Wells



Welcome to the world of sport. It's a world where men are "strong, big, real, great or fastest"

## Recommendation letters for men:

Longer; more references to CV, publications, patients, colleagues

## Recommendation letters for women:

Shorter; more "doubt raisers" (hedges, faint praise, and irrelevancies); More references to personal life: *"It's amazing how much she's accomplished."*

" ... she became the third new mum to retain Olympic gold" ...  
"asked how she cares for her skin and how training affects her hair."

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# Bias in Academic Science

A nationwide sample of biology, chemistry, and physics professors (n=127) evaluated application materials of an undergraduate science student (female or male) for a lab manager position.<sup>22</sup>



Male Student

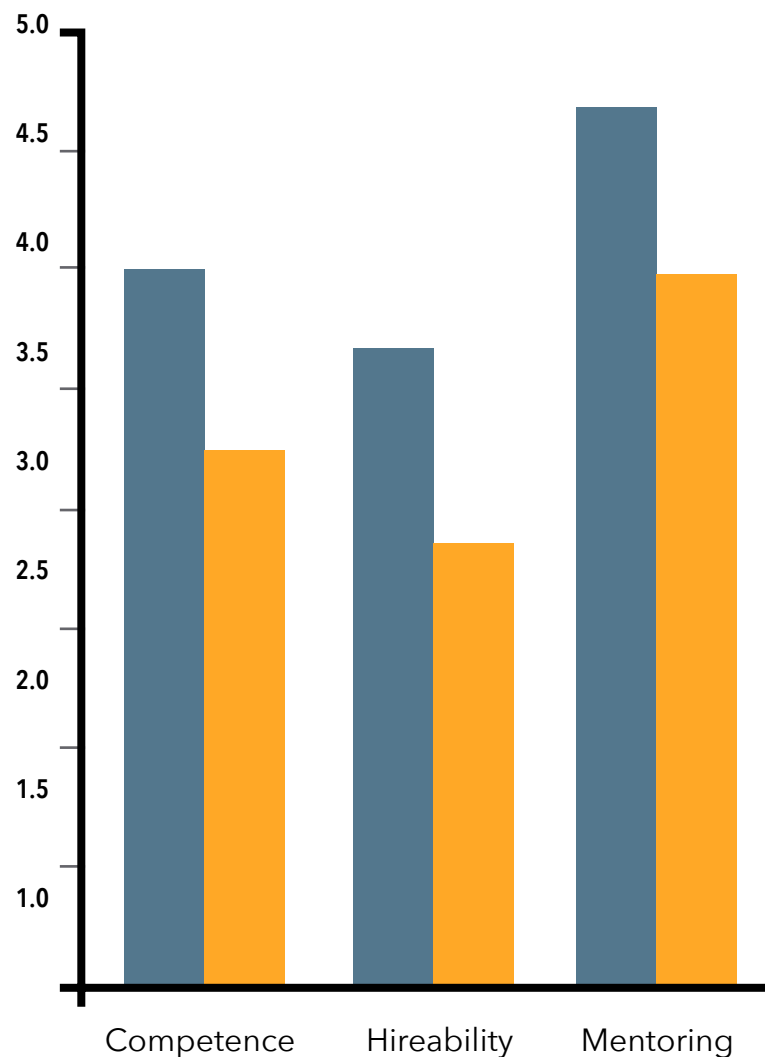


Female Student

**BOTH** male and female faculty rated the female student as:

- Less competent
- Less hireable
- Offered her lower salary (\$3.7K)
- Offered less mentoring

Even though the female was rated **more likeable!**





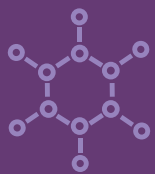
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# Bias Can Affect Career Advancement

Recommendation letters for medical-school positions reveal different tendencies (whether letter-writer is female or male) [23](#)

## Recommendation letters for MEN:

Longer;  
More references to CV  
Publications  
Patients  
Colleagues

## Recommendation letters for WOMEN:

Shorter;  
More "doubt raisers"  
(hedges, faint praise, and  
irrelevancies);  
More references to personal life

*"It's amazing how much  
she's accomplished."*





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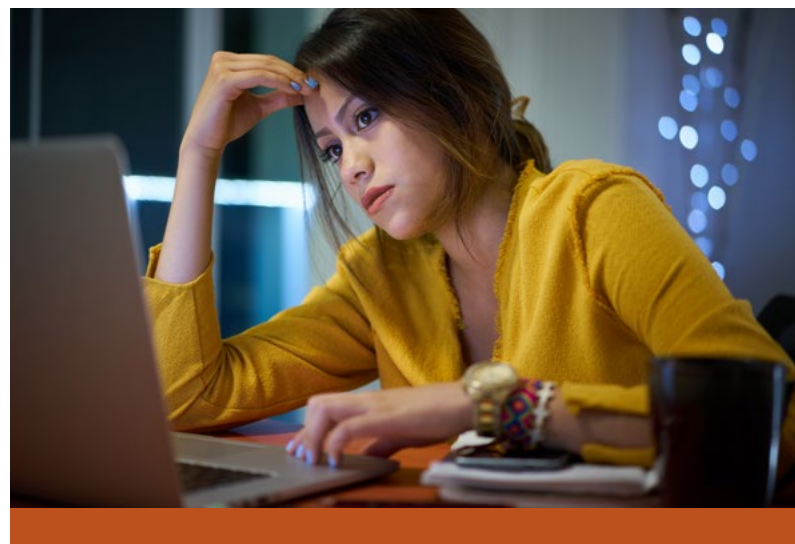
Citation Library

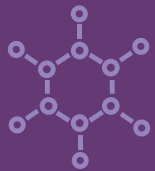
# Understanding Implicit Bias

Implicit bias occurs **automatically** and **unintentionally**. It affects judgements, decisions, and behaviors. Implicit bias can pose a barrier to recruiting and retaining a diverse scientific workforce.

*But...* implicit bias can be mitigated with awareness and effective bias-reduction strategies.<sup>[13](#), [18](#)</sup>

[Learn more.](#)





# Types of Implicit Bias

**Similar-to-me bias** means preferring people who are like us.

A **false correlation** is seeing a relationship between things when the relationship actually doesn't exist.

**Confirmation bias** means looking for or interpreting information to confirm our own preconceptions.

All of these types of bias are common in **biomedicine**.



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# How to Reduce Implicit Bias

We have developed an evidence-based educational tool to reduce implicit bias. It is a face-to-face workshop led by behavioral scientists – not an online tutorial. The session first presents empirical evidence and interactive demos to show how implicit bias affects all of us as we make judgements and decisions. The session then provides evidence-based strategies to reduce the impact of bias in hiring and performance evaluations. [14](#), [15](#), [19](#), [20](#), [27](#)

[Unconscious Bias in Medicine Online CME Course](#) (Stanford)

NIH SWD implicit bias [presentation](#)

[Breaking the Bias Habit®](#) (WISELI)

Contact us for more information:  
[SWDToolkit@od.nih.gov](mailto:SWDToolkit@od.nih.gov)





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SUMMARY POINTS:

# Conducting Unbiased Talent Searches

Develop **clear criteria** and **standards** for the position before anyone is recruited or contacted

Create a clear **evaluation system** in advance and avoid global scoring

Conduct **anonymous voting**, if the size of the pool is large enough

Ensure that search committees are **diverse**



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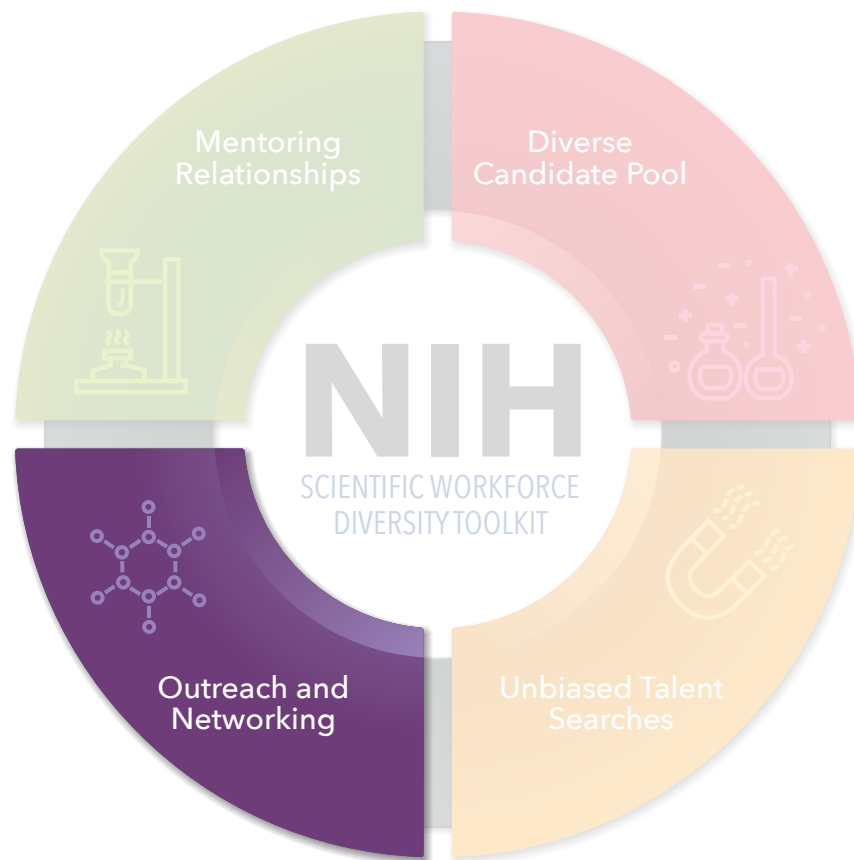


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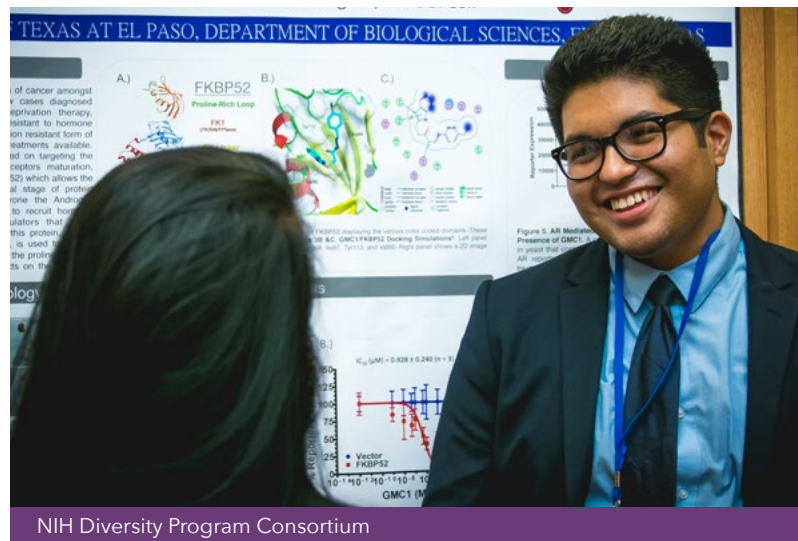
# Outreach and Networking

Learn about our Future Research  
Leaders Conference



# Value of Person-Centered Outreach

Institutions cannot assume that reputation alone will attract diverse talent. Every institution has a unique culture, and concern about cultural fit (both scientific and other) may dissuade applicants. Our Future Research Leaders model promotes bidirectional awareness for applicants and institutions. One-on-one meetings offer opportunities to build inclusion, trust, and belonging - and help establish networking relationships essential for career advancement. Workshops provide tips on navigating NIH funding and other career development skills.



[Watch video to learn more](#)



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# NIH Future Research Leaders Conference

The FRLC is a career-development opportunity embedded within the annual [NIH Research Festival](#). During this event, talented early-career biomedical and behavioral scientists from diverse backgrounds showcase their research to the NIH scientific community and gain insights from NIH leadership and investigators about research independence and an NIH scientific career. The event is most appropriate for postdocs and early-career investigators.

Want to plan an event like this?

Check out our [FRLC FAQ](#)



NIH Future Research Leaders Conference



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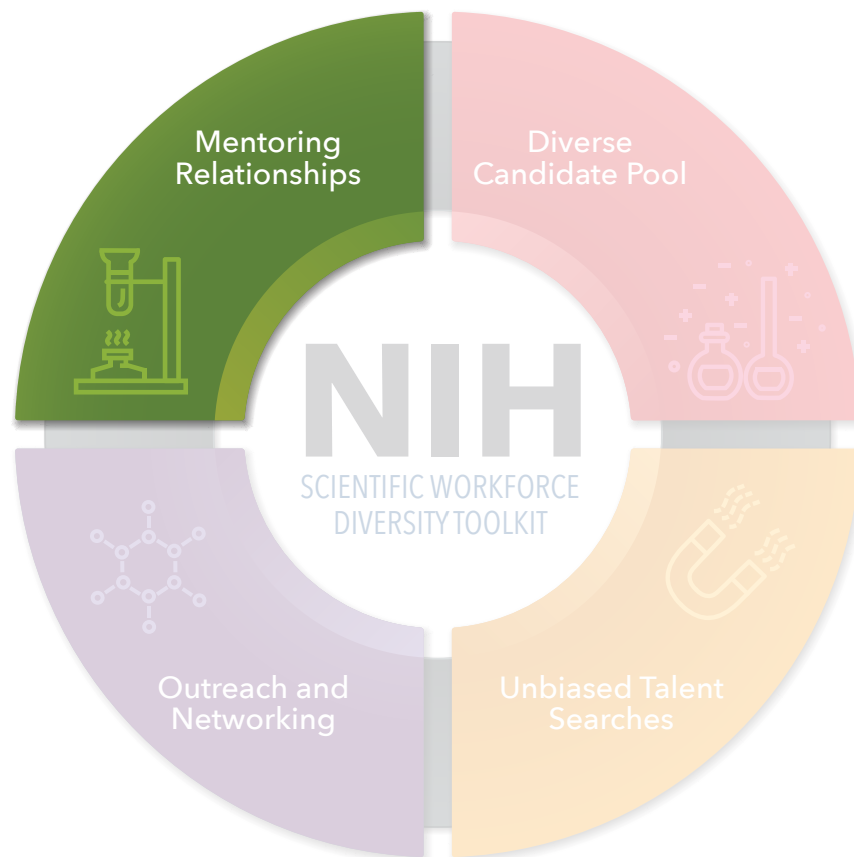


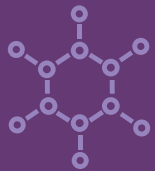
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# Mentoring Relationships

Institutional endorsement of  
mentoring relationships promotes  
inclusion and belonging





# Did You Know?

Mentorship requests from scientists from underrepresented groups, including women, are **more likely to be ignored** than those from white men.<sup>[44](#)</sup>

Male biologists are **less likely to hire and train** women in their labs.<sup>[45](#)</sup>

Scientists from underrepresented groups **typically receive less mentoring** than their well-represented peers.<sup>[46](#), [47](#)</sup>

Lack of or failed mentorship can promote career **attrition or limit career advancement**.<sup>[47](#)</sup>



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# Benefits of Good Mentorship

Good mentoring relationships can promote institutional diversity and inclusion.<sup>48</sup> Positive effects for individuals include enhanced science identity,<sup>52</sup> sense of belonging, and self-efficacy - which lead to increased persistence,<sup>42</sup> research productivity,<sup>50</sup> and career satisfaction.<sup>37</sup> In turn, these benefits can enhance your institution's ability to attract scientists from underrepresented groups.



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# Optimizing Mentoring Relationships

Effective mentoring is relational, not hierarchical. Advisors convey disciplinary knowledge and information about career development. Role models inspire through example. And sponsors connect mentees to “power” through award nominations and membership in professional networks. The end goal of an effective mentoring relationship is a strong working<sup>38</sup> alliance built from trust and communication.<sup>43</sup>



NIH Diversity Program Consortium





# What Does Good Mentoring Look Like?

Effective mentoring relationships address both career advancement and psychosocial issues. This can involve individual peers, group cohorts, and mentoring “mosaics” - communities that bring together individuals of different ranks, ages, genders, races, and ethnicities with a range of skills and experiences.

Mentoring mosaics are equally effective for women, men, and scientists from underrepresented groups.





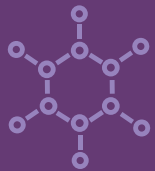
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# Sponsorship Matters for Diverse Scientists

Good mentorship is important for productivity and career satisfaction, but sponsorship drives career advancement. Unlike mentors who advise and guide mentees, sponsors advocate intentionally. Sponsors use their positions of authority to help others get ahead. This is especially relevant for scientists from underrepresented groups, since research links connectedness with promotion in academia.





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CIMER: Providing resources for organizations and institutions to improve research mentoring relationships

Click image to visit site.



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## Join us in transforming the biomedical workforce

As a partner you can collaborate with NRMN to foster evidence-based mentorship, networking, and professional development opportunities for researchers from all career stages.

### ➤ Become an NRMN Partner ➤



Virtual Mentoring & Networking Apps



Coaching Groups for  
Grant Proposal Writing



Research Mentorship  
Training Programs



Career Development  
Webinars



Mentoring Academy



Mentor Certifications



**DIVERSITY  
PROGRAM  
CONSORTIUM**  
Supporting the National Research Agenda

NRMN is funded by the NIH and is a part of the NIH Diversity Program Consortium. The Consortium is a national collaborative that develops, implements, and determines the effectiveness of innovative approaches to strengthen institutional capacity to sustain mentor-mentee relationships.





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