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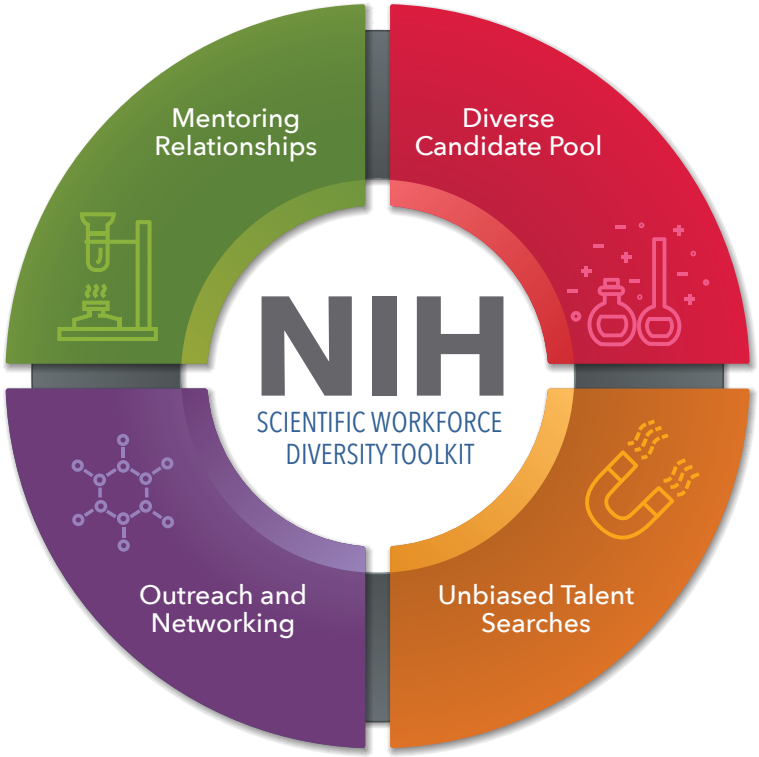
NIH Scientific Workforce Diversity Toolkit

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



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NIH Chief Officer for Scientific Workforce Diversity

Hannah Valantine, 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

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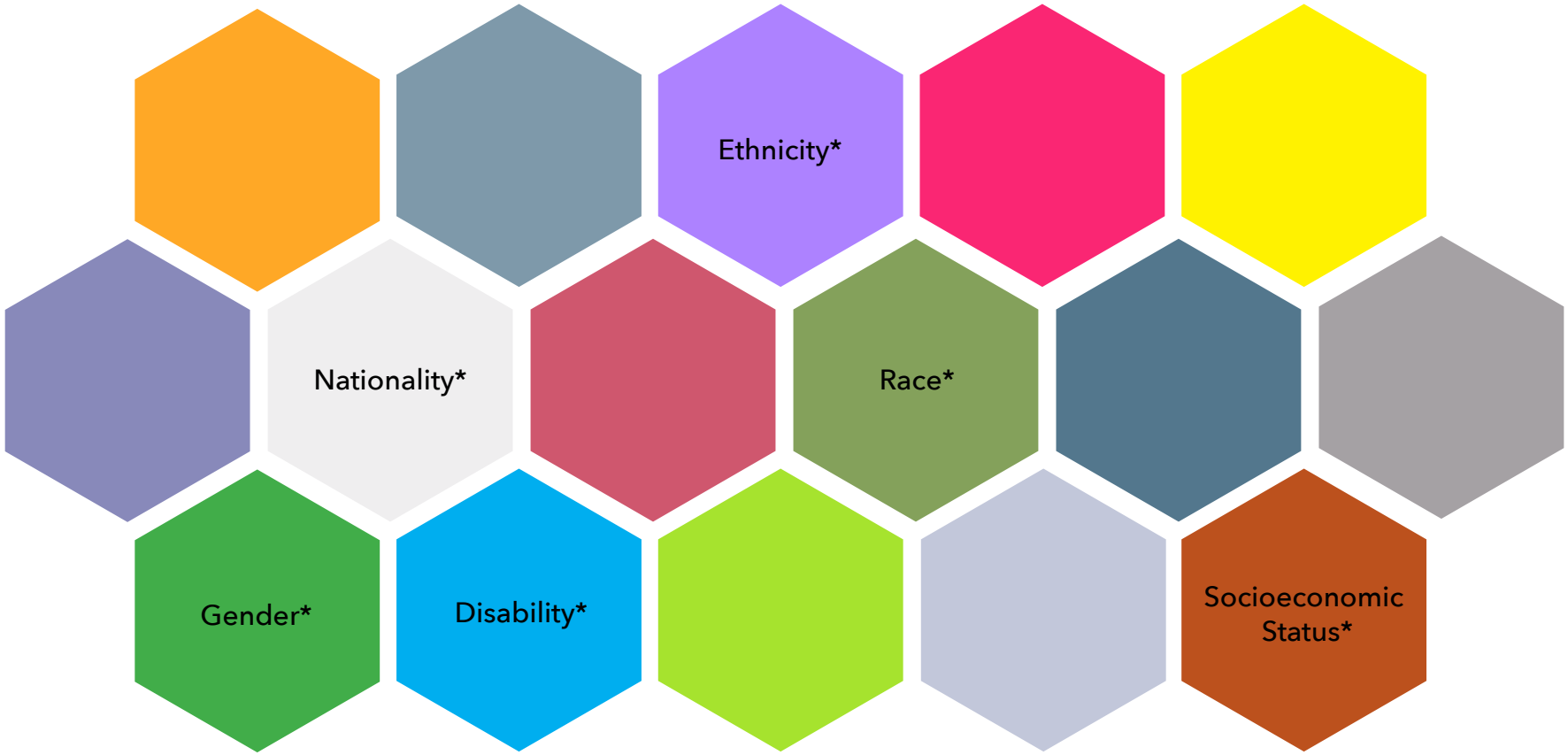
Many Types of Diversity



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

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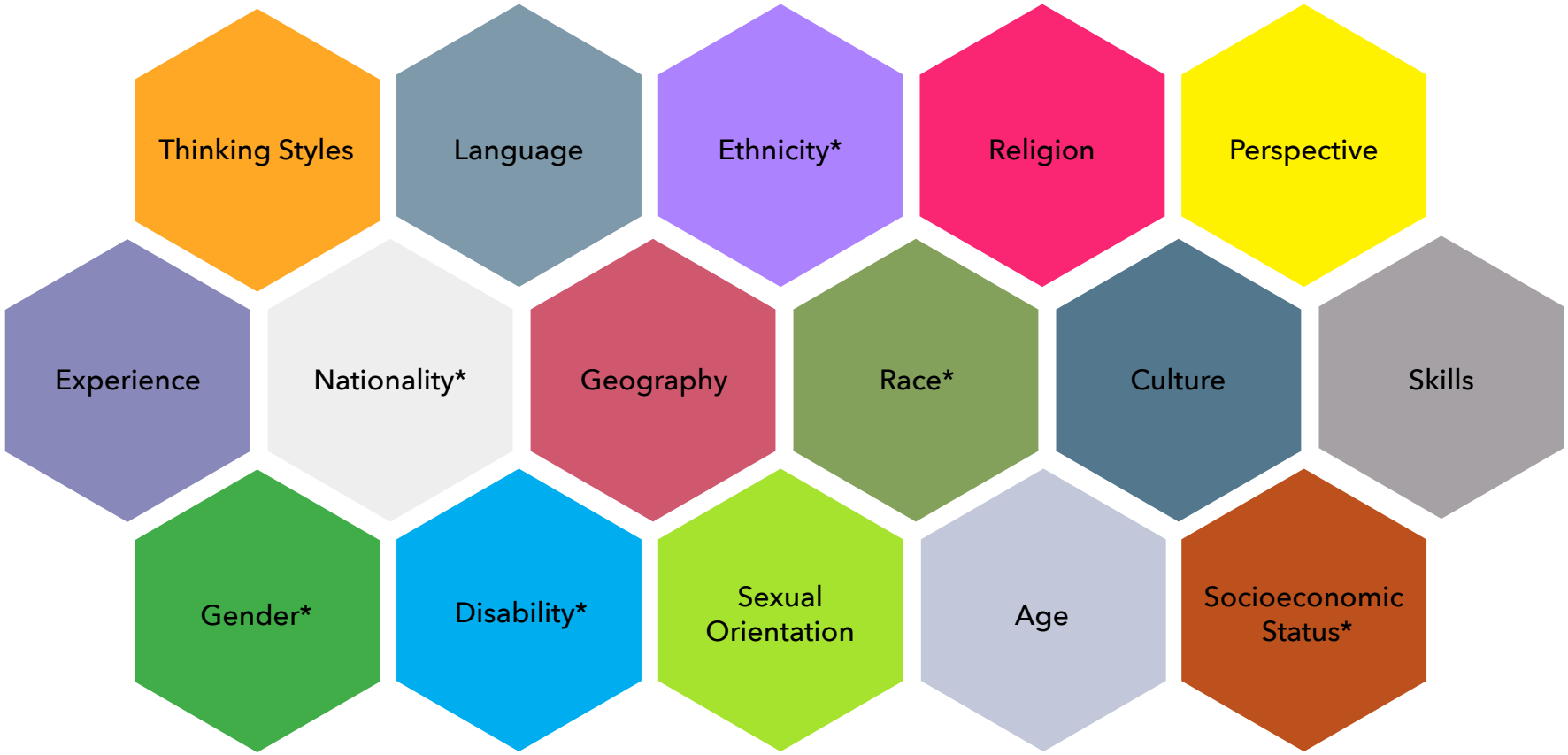
Many Types of Diversity



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

Suggestions for Promoting Diversity at Your Institution

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

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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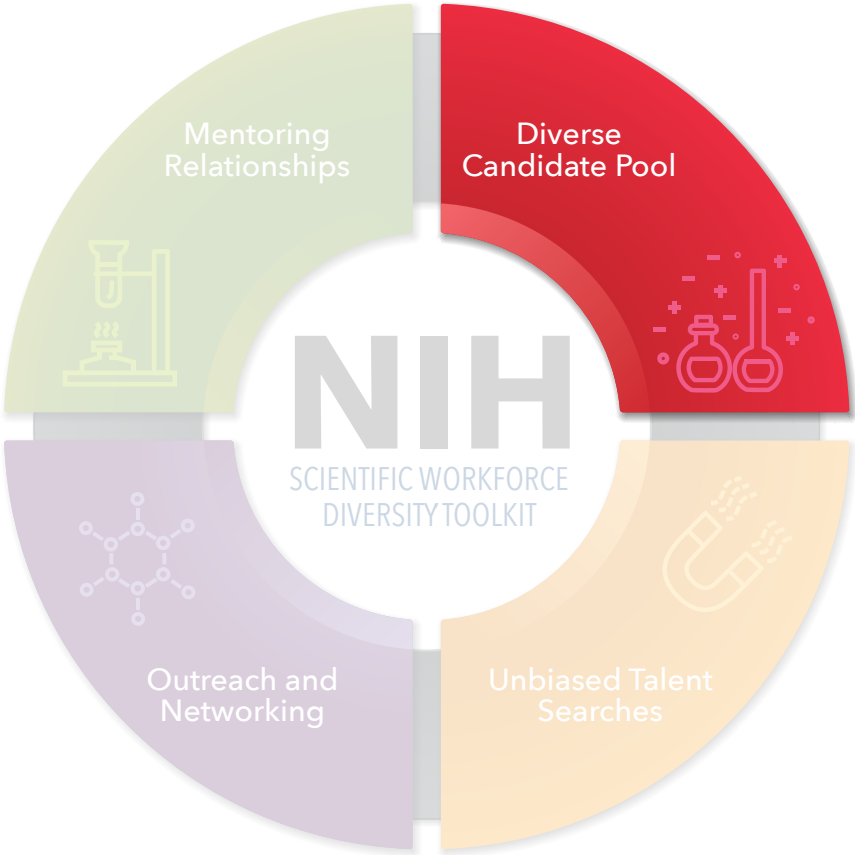
Diversify the Talent Pool

Learn about how our recruitment tool can help you identify a wider range of candidates



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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

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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

Minority Postdoc.org

National Medical Association

NHMA National Hispanic Medical Association

Library Informationist

Creating a Diverse Talent Pool

Find candidates

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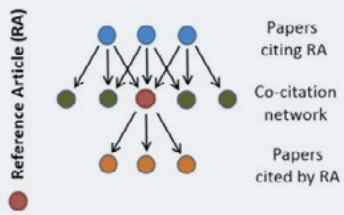
NHMA National Hispanic Medical Association

Library Informationist

Vet potential recruitment candidates (quantify, qualify)

LinkedIn

PubMed



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

B. Ian Hutchins[1], Xin Yuan[1], James M. Anderson[2], George M. Santangelo[1]*

Creating a Diverse Talent Pool

Find candidates

ABRCMS 2017

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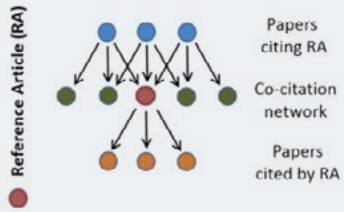

Relative Citation Ratio (RCR): A New Metric That Uses Citation Rates to Measure Influence at the Article Level

B. Ian Hutchins[1], Xin Yuan[1], James M. Anderson[2], George M. Santangelo[1]*

Build secure repository of vetted potential candidates

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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"

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

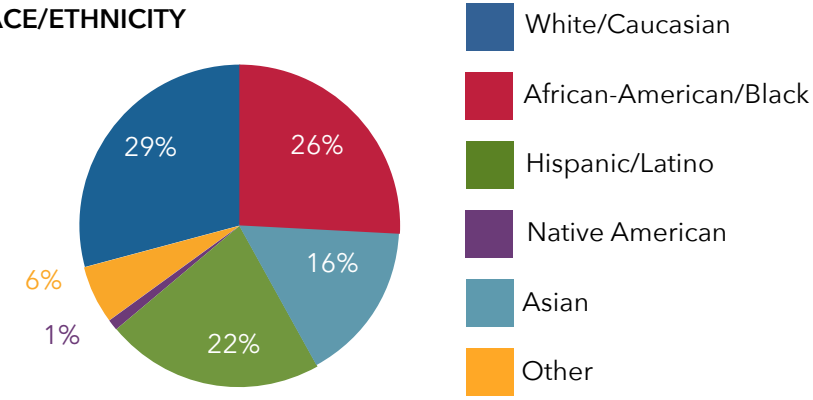
POST-DOCTORAL AND ASSISTANT PROFESSORS

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

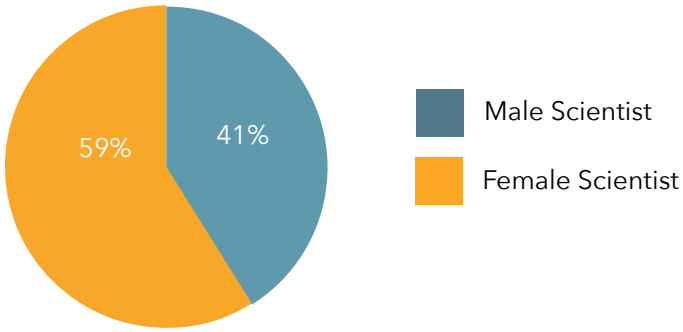
- ~ 842 total, top 1/3rd culled
- 4-10 years post-doctorate
- Authorship in top journals
- 10+ publications: 516
- 100+ citations: 667
- 200+ citations: 534

PLOS ONE
Endocrinology
The New England Journal of Medicine
JNeurosci The Journal of Neuroscience
nature immunology
BMC Pediatrics
Neuron
JAMA The Journal of the American Medical Association

RACE/ETHNICITY



GENDER



ASSOCIATE PROFESSORS AND FULL PROFESSORS

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

- ~ 1027 total, top 1/2 culled
- Authorship in top journals
- 100+ publications: 400
- 500+ citations: 885
- 2000+ citations: 641

PLOS ONE
JAMA Neurology
American Journal of PUBLIC HEALTH
aps American Physiological Society
Science
PNAS
EMERGING INFECTIOUS DISEASES
AMERICAN JOURNAL of PHYSIOLOGY Cell Physiology

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
aps American Physiological Society
Science
PNAS
EMERGING INFECTIOUS DISEASES
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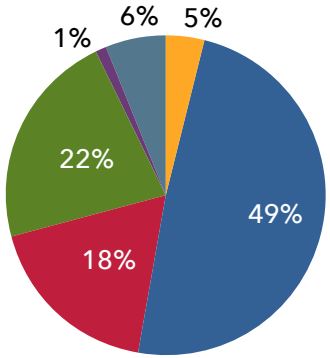
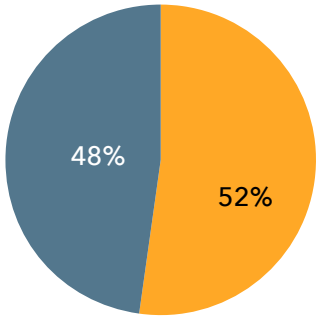
RACE/ETHNICITY



White/Caucasian
African-American/Black
Hispanic/Latino
Native American
Asian
Other

GENDER



Male Scientist
Female Scientist

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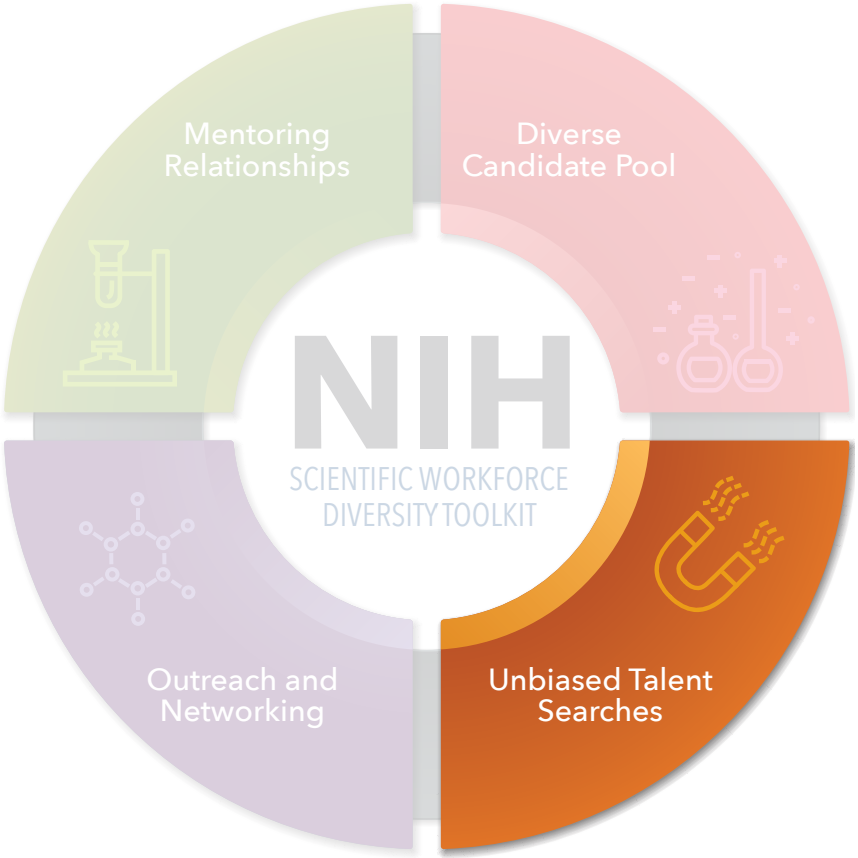
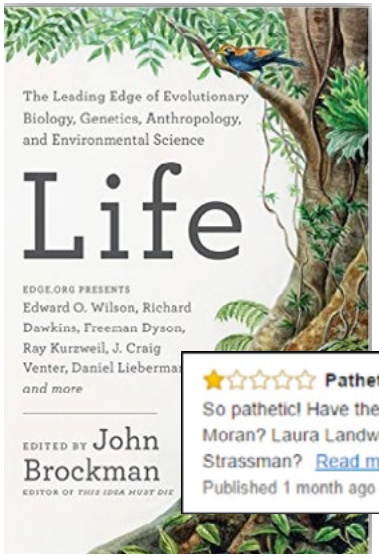
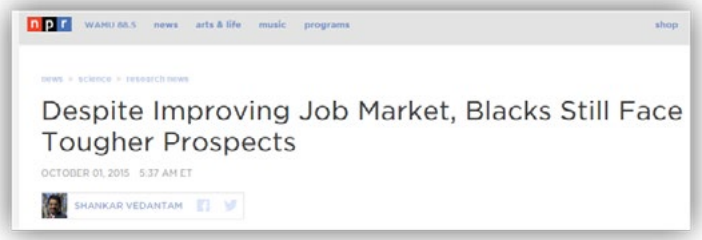
Conduct an Unbiased Talent Search

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

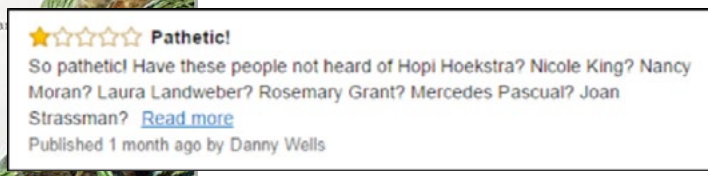


Bias is Pervasive in Science and Beyond





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



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."***

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

" … 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

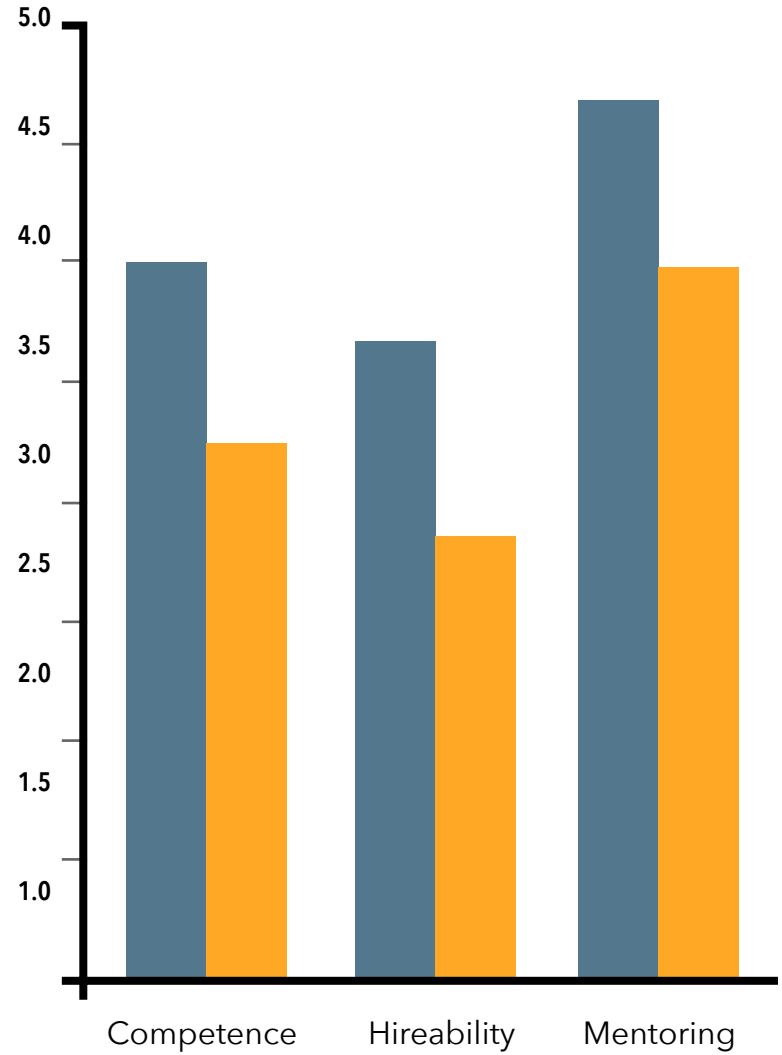
A nationwide sample of biology, chemistry, and physics professors (n=127) evaluated application materials of an undergraduate science student (female or male) for a lab manager position.[22]

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

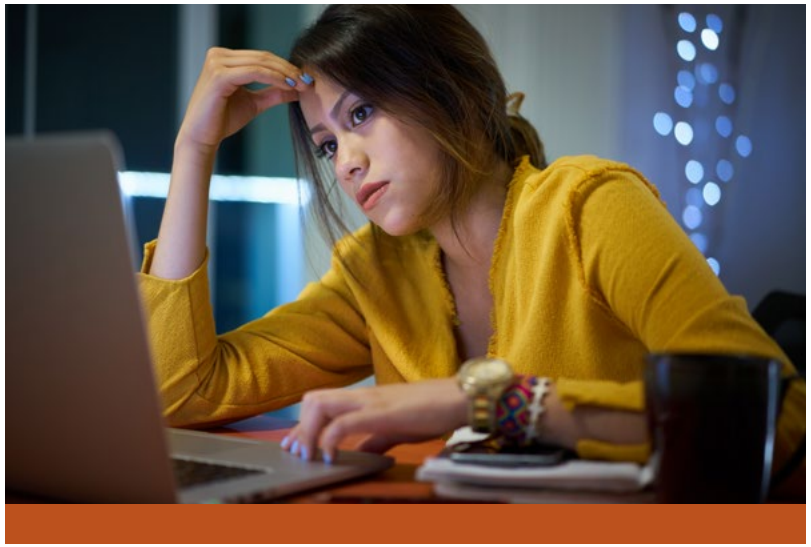
"It's amazing how much she's accomplished."

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.[13, 18]

Learn more.



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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**.

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

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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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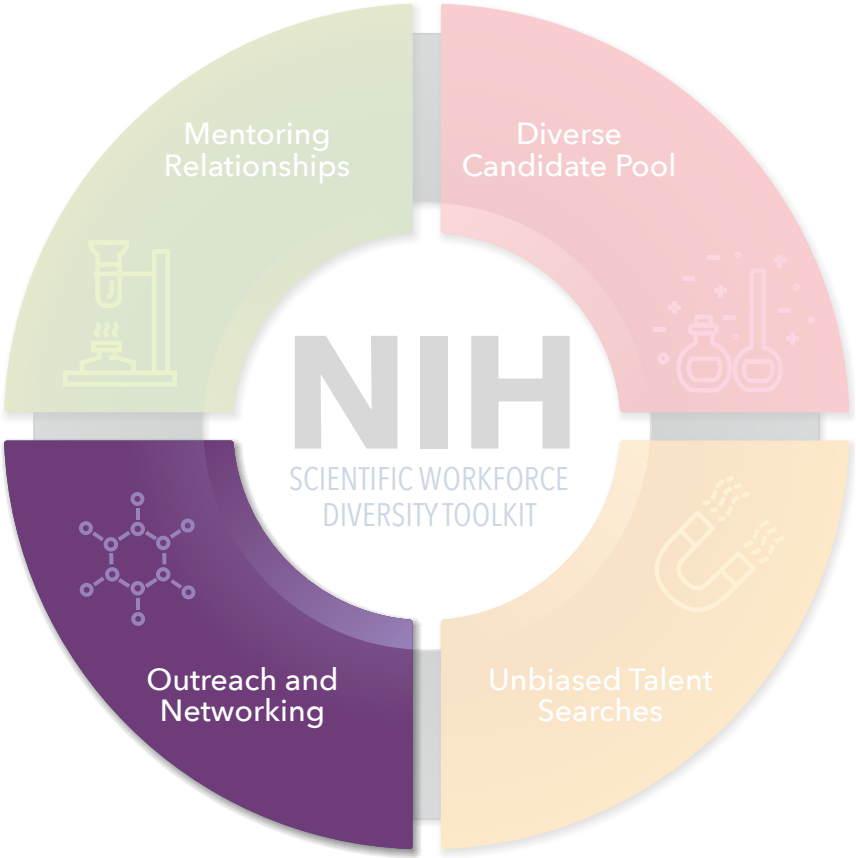
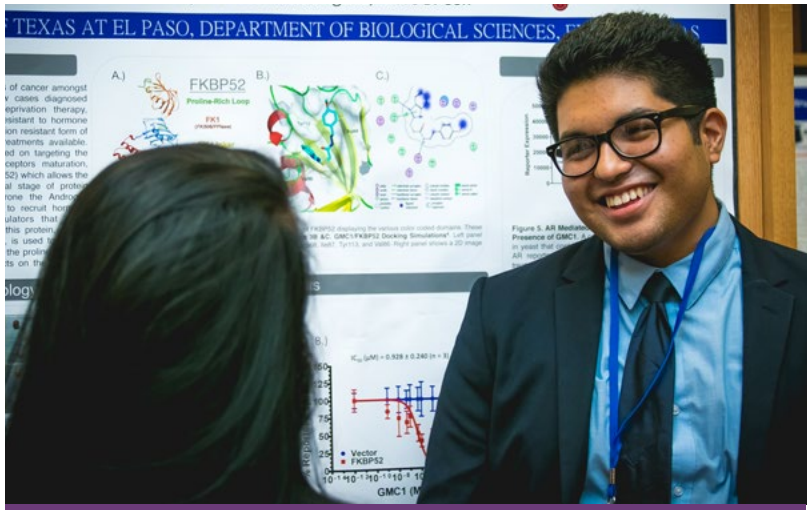
Outreach and Networking

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.



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Watch video to learn more

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.

NIH Future Research Leaders Conference

Want to plan an event like this?
Check out our FRLC FAQ

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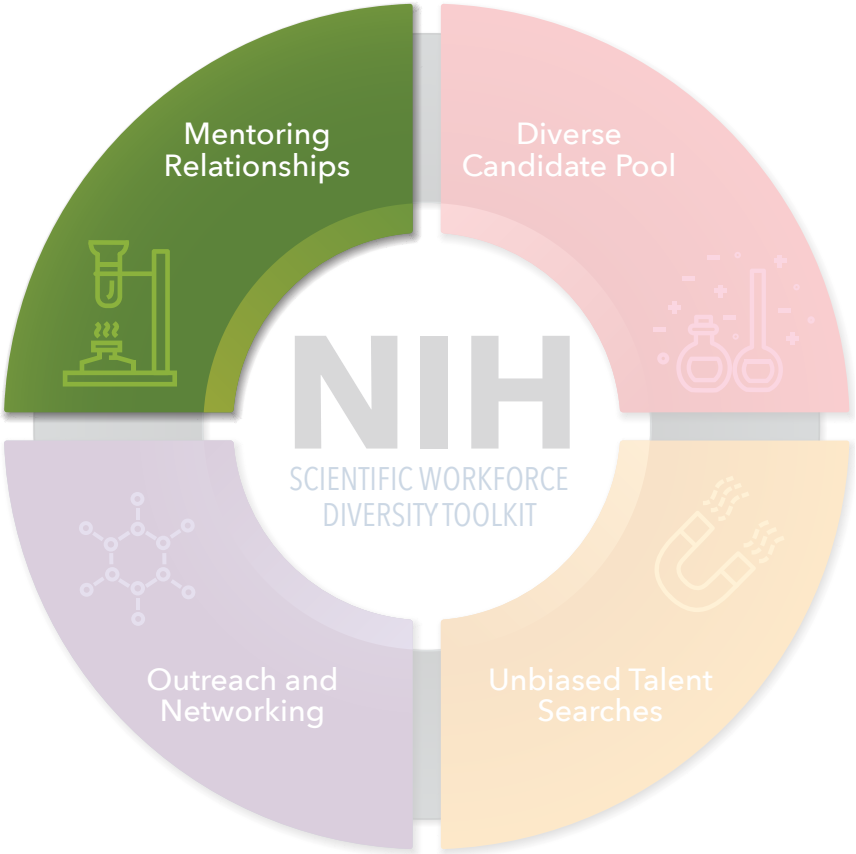
Mentoring Relationships

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.[44]

Male biologists are **less likely to hire and train** women in their labs.[45]

Scientists from underrepresented groups **typically receive less mentoring** than their well-represented peers.[46, 47]

Lack of or failed mentorship can promote career **attrition or limit career advancement**.[47]

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Benefits of Good Mentorship

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

NIH Diversity Program Consortium

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[38] alliance built from trust and communication.[43]

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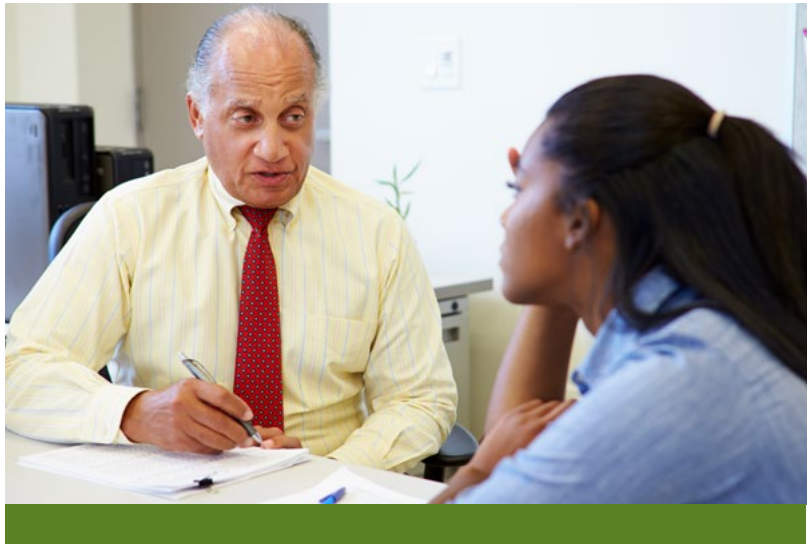
What Does Good Mentoring Look Like?

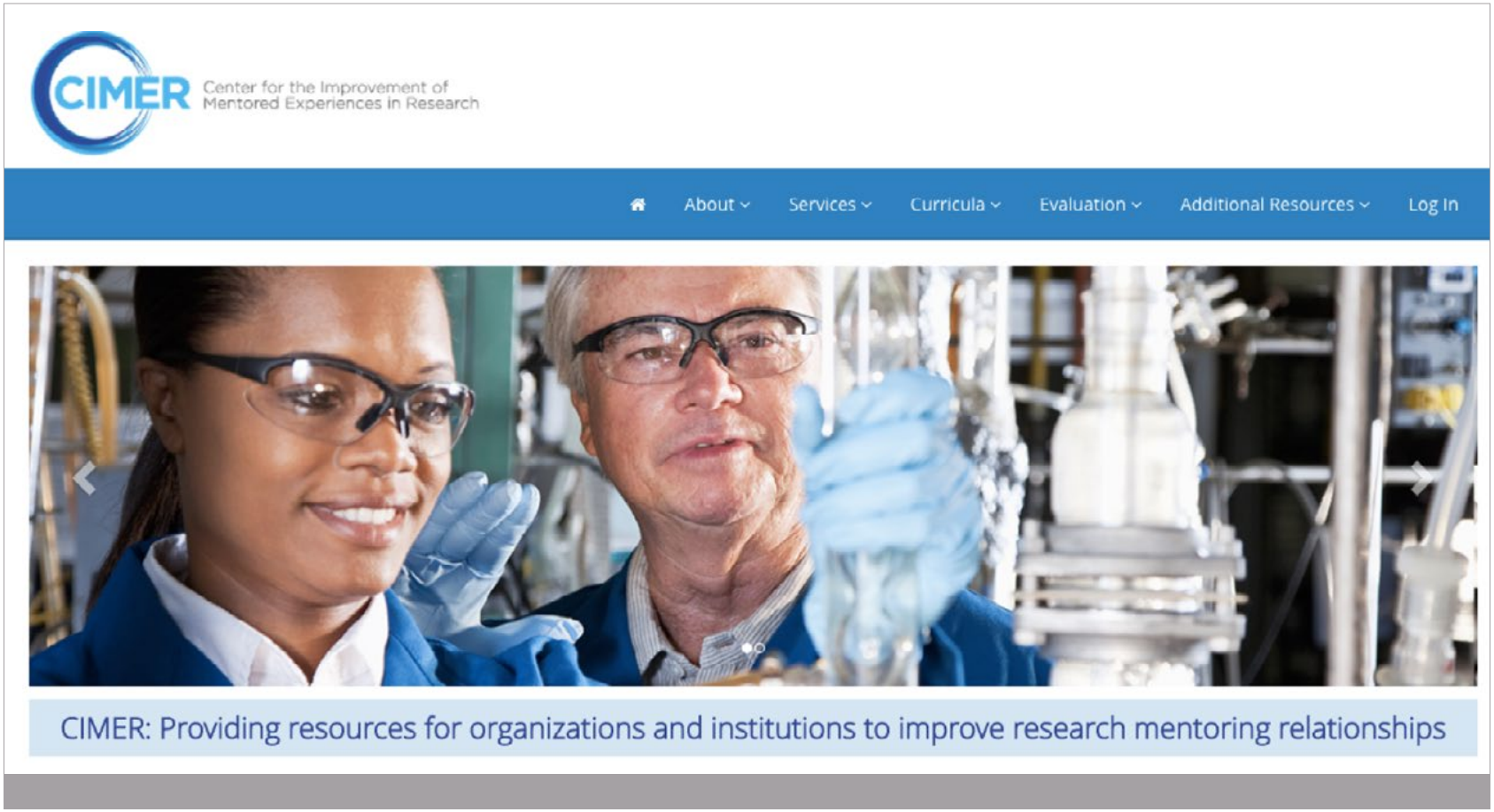
Effective mentoring relationships address both career advancement and psychosocial issues. This can involve individual peers, group cohorts, and mentoring "mosaics" - communities that bring together individuals of different ranks, ages, genders, races, and ethnicities with a range of skills and experiences.

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

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.





Click image to visit site.

Partner Information Kit

National Resi
2125 Commor

NRMN
Mentoring to Diversify the Biomedical Workforce

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

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.

2

Click image to visit site.

CITATION LIBRARY:

Diversifying Talent

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Mentoring Relationships

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