BRAIN Initiative
Demographics
FY14-FY22

Devon C. Crawford, Ph.D.
Crystal L. Lantz, Ph.D.
To support the best science, the NIH BRAIN Initiative encourages inclusivity in research. Examples of types of diversity include but are not limited to:

**Transdisciplinary research**
- Collaborations among neuroscientists and researchers from fields such as computational biology, physics, engineering, mathematics, computer and data sciences, and bioethics

**Individuals from diverse backgrounds**
- Such as underrepresented racial and ethnic groups, those with disabilities, those from disadvantaged backgrounds, and women

**Career stage**
- Researchers at different career stages

**Geographic distribution**
- Individual applications and partnerships that enhance geographic and regional heterogeneity

**Institution “type”**
- Engagement from different types of institutions and organizations (e.g., research-intensive, undergraduate focused, minority-serving, community-based)
Benefits of a diverse scientific workforce

- fostering scientific innovation
- enhancing global competitiveness
- contributing to robust learning environments
- improving the quality of the research
- advancing the likelihood that underserved populations participate in, and benefit from research, and enhancing public trust

Workforce development

- **D-SPAN F99/K00 Award**: NIH Blueprint/BRAIN Diversity Specialized Predoctoral to Postdoctoral Advancement in Neuroscience
- **BRAIN K99/R00 Award**: NIH BRAIN Initiative Advanced Postdoctoral Career Transition Award to Promote Diversity
- **BRAIN Diversity Supplements**: NIH BRAIN Initiative Research Supplements to Promote Diversity

Capacity building & dissemination

- **RFA-MH-21-180 (U24)**: Reagent Resources for Brain Cell Type-Specific Access and Manipulation to Broaden Distribution of Enabling Technologies for Neuroscience
  - Supports the establishment of facilities at minority-serving institutions (MSIs) and Institutional Development Award (IDEA)-eligible institutions for scaled production and distribution of neurotechnology resources.

Inclusive research environments

- **Plan for Enhancing Diverse Perspectives (PEDP)**
  - New requirement in most BRAIN FOAs that applicants must include a summary of strategies to advance the scientific and technical merit of the proposed project through expanded inclusivity.

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https://neuroscienceblueprint.nih.gov/about/diversity-and-scientific-excellence
https://braininitiative.nih.gov/about/plan-enhancing-diverse-perspectives-pedp
**Novel approach for BRAIN grant applications**

**Require** applicants to most BRAIN Initiative NFOs to submit a *Plan for Enhancing Diverse Perspectives* (PEDP) as part of the application.

- In the **research strategy**, applicants should integrate strategies to advance the scientific and technical merit of the proposed project through the inclusion of diverse perspectives and submit a **1-page summary** of these plans in the form of a PEDP.

- The plan will be part of the **scored application** and will be considered when funding decisions are made.

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The BRAIN Initiative®

Transdisciplinary Expertise

Research Expertise of Registrants Who Are BRAIN-Funded Scientists

Percentage of Responders Indicating As Primary or Secondary Field (%)

- Engineering: 31.7%
- Physiology or Systems Biology: 26.5%
- Psychology or Behavioral Sciences: 22.1%
- Biochemistry or Molecular and Cellular Biology: 16.9%
- Neuroimaging/Radiology: 16.3%
- Bioinformatics, Statistics, or Applied Mathematics: 11.2%
- Genetics/Genomics: 10.6%
- Computational Biology: 10.4%
- Computer Science: 10.0%
- Physics: 9.4%
- Clinical Sciences: 6.9%
- Ethics, Philosophy, or Law: 4.6%
- Chemistry: 3.5%

N = 520 Respondents to 2022 BRAIN Initiative Investigators Meeting Registration
### Research Expertise of Registrants Who Are Trainees

<table>
<thead>
<tr>
<th>Field</th>
<th>Percentage of Responders Indicating As Primary or Secondary Field (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering</td>
<td>28.1%</td>
</tr>
<tr>
<td>Physiology or Systems Biology</td>
<td>17.9%</td>
</tr>
<tr>
<td>Psychology or Behavioral Sciences</td>
<td>25.9%</td>
</tr>
<tr>
<td>Biochemistry or Molecular and Cellular Biology</td>
<td>22.7%</td>
</tr>
<tr>
<td>Neuroimaging/Radiology</td>
<td>18.0%</td>
</tr>
<tr>
<td>Bioinformatics, Statistics, or Applied Mathematics</td>
<td>9.7%</td>
</tr>
<tr>
<td>Genetics/Genomics</td>
<td>10.0%</td>
</tr>
<tr>
<td>Computational Biology</td>
<td>10.2%</td>
</tr>
<tr>
<td>Computer Science</td>
<td>11.2%</td>
</tr>
<tr>
<td>Physics</td>
<td>6.4%</td>
</tr>
<tr>
<td>Clinical Sciences</td>
<td>8.0%</td>
</tr>
<tr>
<td>Ethics, Philosophy, or Law</td>
<td>5.4%</td>
</tr>
<tr>
<td>Chemistry</td>
<td>3.0%</td>
</tr>
</tbody>
</table>

N = 722 Respondents to 2022 BRAIN Initiative Investigators
Meeting Registration
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**Institution “type”**
- Engagement from different types of institutions and organizations (e.g., research-intensive, undergraduate focused, minority-serving, community-based)
Gender of BRAIN Initiative Investigators

**Women - Contact PIs**
- 2014: 15%
- 2015: 15%
- 2016: 15%
- 2017: 15%
- 2018: 20%
- 2019: 20%
- 2020: 20%
- 2021: 15%
- 2022: 15%

**Women - All PIs/MPIs**
- 2014: 15%
- 2015: 15%
- 2016: 15%
- 2017: 15%
- 2018: 20%
- 2019: 20%
- 2020: 20%
- 2021: 15%
- 2022: 15%

**Funding Rates - All PIs/MPIs**
- NIH: 45%
- RPGs: 30%

Unknown = 5-8% Overall
Gender of BRAIN Initiative Investigators

**Women - All PIs/MPIs**

- Applicants
- Awardees

**Women - 2022**

- PEDP -
- PEDP +
Gender of BRAIN Initiative Trainees

Women - Trainees

- 2017-2018 (Pre-K99)
- 2019
- 2020
- 2021
- 2022

Funding Rates - Trainees

- 2017-2018 (Pre-K99)
- 2019
- 2020
- 2021
- 2022

Unknown = 5-12% Overall
Race/Ethnicity of BRAIN Initiative Investigators

Unknown = 13-17% Overall

URMs - Contact PIs

URMs - All PIs/MPIs

Funding Rates - All PIs/MPIs

URMs in Investigator Pool (%)

Applicants: 0% to 10%
Awardees: 0% to 10%

Funding Rate (%)

URM, Asian, White
Race/Ethnicity of BRAIN Initiative Investigators

URMs - All PIs/MPIs

URMs - 2022

Percent URM (%)
Race/Ethnicity of BRAIN Initiative Trainees

URMs - Trainees

<table>
<thead>
<tr>
<th>Year</th>
<th>Applicants</th>
<th>Awardees</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017-18 (Pre-K99)</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>2019</td>
<td>15%</td>
<td>20%</td>
</tr>
<tr>
<td>2020</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td>2021</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Funding Rates - Trainees

<table>
<thead>
<tr>
<th>Year</th>
<th>URMs</th>
<th>Asians</th>
<th>Whites</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017-18 (Pre-K99)</td>
<td>5%</td>
<td>10%</td>
<td>15%</td>
</tr>
<tr>
<td>2020</td>
<td>15%</td>
<td>20%</td>
<td>25%</td>
</tr>
<tr>
<td>2021</td>
<td>20%</td>
<td>25%</td>
<td>30%</td>
</tr>
<tr>
<td>2022</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Unknown = 7-16% Overall
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**Individuals**
- Such as underrepresented racial and ethnic groups, those with disabilities, those from disadvantaged backgrounds, and women.

**Career stage**
- Researchers at different career stages.

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**Institution “type”**
- Engagement from different types of institutions and organizations (e.g., research-intensive, undergraduate focused, minority-serving, community-based).

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**Team Science**
- Diversity among persons represented on multi-investigator project teams.
46% of BRAIN Awards Have Multiple PIs
Most Multi-PI Teams are Male and Non-URM

- 52.0% Only Men
- 34.7% Mixed
- 11.8% Unknown
- 1.5% Only Women

- 58.7% Only Non-URM
- 29.2% Mixed
- 12.0% Unknown
- 0.2% Only URM
More Mixed Multi-PI Teams with PEDPs

### Gender – MPI Composition

<table>
<thead>
<tr>
<th>MPI Composition</th>
<th>PEDP -</th>
<th>PEDP +</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female Only</td>
<td>53%</td>
<td>5%</td>
</tr>
<tr>
<td>Male Only</td>
<td>28%</td>
<td>57%</td>
</tr>
<tr>
<td>Mixed</td>
<td>17%</td>
<td>5%</td>
</tr>
<tr>
<td>Unknown</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

### Race/Ethnicity – MPI Composition

<table>
<thead>
<tr>
<th>MPI Composition</th>
<th>PEDP -</th>
<th>PEDP +</th>
</tr>
</thead>
<tbody>
<tr>
<td>URM Only</td>
<td>63%</td>
<td>28%</td>
</tr>
<tr>
<td>Non URM Only</td>
<td>62%</td>
<td>24%</td>
</tr>
<tr>
<td>Mixed</td>
<td>8%</td>
<td>8%</td>
</tr>
<tr>
<td>Unknown</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Legend**
- **Mixed**
- **Female Only**
- **Male Only**
- **URM Only**
- **Non URM Only**
- **Unknown**
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Career Stage of BRAIN Initiative Investigators

Years Since Terminal Degree

Number of Investigators

Early

Mid

Late
Career Stage of BRAIN Initiative Investigators

Funding Rates

Early Career
- 0-14 years since terminal degree

Mid Career
- 15-29 years since terminal degree

Late Career
- 30+ years since terminal degree
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Awarded BRAIN Initiative U.S. Performance Sites
U.S. BRAIN Initiative Institutional Funding Rates by State
U.S. BRAIN Initiative Award Rates by State

Applications by State

Award Rates by State

Awards by State
BRAIN Initiative Institutions in U.S. IDeA States

**IDeA States**
- States and territories that have historically received low levels of support from NIH
BRAIN Initiative Applications from U.S. IDeA States

Applications - Award Rates

<table>
<thead>
<tr>
<th>Year</th>
<th>Award Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>0.0%</td>
</tr>
<tr>
<td>2015</td>
<td>1.0%</td>
</tr>
<tr>
<td>2016</td>
<td>2.0%</td>
</tr>
<tr>
<td>2017</td>
<td>3.0%</td>
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<tr>
<td>2018</td>
<td>4.0%</td>
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<tr>
<td>2019</td>
<td>5.0%</td>
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<tr>
<td>2020</td>
<td>6.0%</td>
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<tr>
<td>2021</td>
<td>7.0%</td>
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<tr>
<td>2022</td>
<td>8.0%</td>
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IDeA State Grants in Application Pool (%)

<table>
<thead>
<tr>
<th>Year</th>
<th>Applicants</th>
<th>Awardees</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>0.0%</td>
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<tr>
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<td>2021</td>
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NIH Support of BRAIN Applicant Institutions

Institutions - Funding Rates

**Research-Active**
- < $7.5M/y NIH RPG funding

**Research-Intensive**
- $7.5-20M/y NIH RPG funding

**Highly Research-Intensive**
- > $20M/y NIH RPG funding
NIH Support of BRAIN Applicant Institutions

**Applications - Award Rates**

- **Research-Active**
  - <$7.5M/y NIH RPG funding

- **Research-Intensive**
  - $7.5-20M/y NIH RPG funding

- **Highly Research-Intensive**
  - > $20M/y NIH RPG funding
Minority Designation of BRAIN Initiative Institutions

**NIH-Designated Minority-Serving Institutions**

- Predominantly Black Institutions
- Historically Black Colleges & Universities
- Tribal Colleges & Universities
- Hispanic Serving Institutions
- Asian American and Pacific Islander Serving Institutions
- American Indian and Alaska Native Serving Institutions
BRAIN Initiative Applications from Minority-Serving Institutions

Applications - Award Rates

<table>
<thead>
<tr>
<th>Year</th>
<th>Minority-Serving</th>
<th>Not Minority-Serving</th>
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</thead>
<tbody>
<tr>
<td>2014</td>
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<td>2015</td>
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<td>2022</td>
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</tbody>
</table>

MSIs in Application Pool (%)

- Applicants
- Awardees

Human Research Participants: Number of BRAIN Awards by Year

<table>
<thead>
<tr>
<th>Year Awarded</th>
<th>Number of Awards</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>5</td>
</tr>
<tr>
<td>2015</td>
<td>4</td>
</tr>
<tr>
<td>2016</td>
<td>45</td>
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<tr>
<td>2017</td>
<td>30</td>
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<tr>
<td>2018</td>
<td>35</td>
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<td>2019</td>
<td>30</td>
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<tr>
<td>2020</td>
<td>25</td>
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<tr>
<td>2021</td>
<td>35</td>
</tr>
<tr>
<td>2022</td>
<td>30</td>
</tr>
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</table>
The BRAIN Initiative

BRAIN Initiative Human Research Participant:
Enrollment by year

**Race**
- 2017: 173
- 2018: 859
- 2019: 1,416
- 2020: 4,544
- 2021: 1,769
- 2022: 9,132

**Ethnicity**
- Unknown / Not Reported: 50%
- Hispanic or Latino: 30%
- Not Hispanic or Latino: 20%

**Sex or Gender**
- Male: 80%
- Female: 20%

* 40 of 175 projects have not begun recruiting and/or have not reported recruiting