The New England Academic Workforce Pipeline

INCREASING DIVERSITY WITHIN DOCTORAL DEGREE PROGRAMS AND PREPARING UNDERREPRESENTED SCHOLARS FOR SUCCESSFUL ACADEMIC CAREERS

BY: STEPHANIE M. MURPHY

FALL 2021 BOARD MEETING | SEPTEMBER 24, 2021
Lack of diversity in the postsecondary faculty workforce largely stems from early stages of the faculty development pipeline. Doctoral degree program participants and completers in New England are substantially less diverse than the undergraduate college-enrolled population.

And among those who earn a doctoral degree there are few racial differences in rates of initial teaching employment or retention.

Efforts to improve professoriate workforce diversity should likely focus on diversifying the initial pool of doctoral degree program participants and improving their completion rates.

# Statistical Profile of Doctorate Recipients in the U.S.: 2019

<table>
<thead>
<tr>
<th>Group</th>
<th>% of Pop.</th>
<th>Median Age at Doctorate</th>
<th>Bachelor's Start</th>
<th>Grad School Start</th>
<th>Doctoral Program Start</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WHITE</strong></td>
<td>43.5%</td>
<td>31.6</td>
<td>9.3</td>
<td>8.3</td>
<td>5.3</td>
</tr>
<tr>
<td><strong>BLACK</strong></td>
<td>4.5%</td>
<td>36.1</td>
<td>12.0</td>
<td>9.8</td>
<td>5.9</td>
</tr>
<tr>
<td><strong>HISPANIC</strong></td>
<td>5.1%</td>
<td>32.3</td>
<td>9.0</td>
<td>7.5</td>
<td>5.9</td>
</tr>
<tr>
<td><strong>ASIAN/PACIFIC ISLANDER</strong></td>
<td>6.1%</td>
<td>31.1</td>
<td>8.5</td>
<td>7.2</td>
<td>5.8</td>
</tr>
</tbody>
</table>

Graduate Program Admissions Rates

Need greater transparency, more data

General lack of publicly available, easily accessible data on doctoral degree program applications and admissions

- Only 6 R1 and R2 doctoral universities publish general graduate admissions data
- Only 2 publish admissions data for doctoral degree programs
- Only 1 — MIT — provides data disaggregated by race/ethnicity and age
MIT's Data Dashboard

Includes longitudinal data by gender, race/ethnicity, international status:

- Disaggregated by degree type (master's, doctoral)
- Disaggregated by School Department
- Applications, admissions, enrollment
- Doctoral time to degree
- Attrition
- Doctoral alumni outcomes

Source: https://ir.mit.edu/graduate-education-statistics
Graduate Program Enrollment (Master's and PhD)

PERCENTAGE DISTRIBUTION OF STUDENTS IN GRADUATE DEGREE PROGRAMS AT NEW ENGLAND’S DOCTORAL UNIVERSITIES, BY RACE/ETHNICITY: FALL 2020

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHITE</td>
<td>45.7%</td>
</tr>
<tr>
<td>BLACK</td>
<td>4.6%</td>
</tr>
<tr>
<td>HISPANIC/LATINO</td>
<td>6.6%</td>
</tr>
<tr>
<td>ASIAN/PACIFIC ISLANDER</td>
<td>8.9%</td>
</tr>
</tbody>
</table>

Doctoral Degree Production

DOCTORATE RECIPIENTS FROM U.S. COLLEGES AND UNIVERSITIES: 1958–2018

% Change Since

- 1958: +528%
- 1998: +31%
- 2008: +13%

Doctoral Degree Recipients, New England: AY 19-20

Completions: Number of Students Who Received a Doctorate Degree in New England, by Race/Ethnicity: AY 2019-20

Completions: Number of students who received a doctorate degree in New England, by race/ethnicity: AY 2019-20

<table>
<thead>
<tr>
<th>Institution</th>
<th>State</th>
<th>Grand total</th>
<th>White</th>
<th>Black</th>
<th>Hispanic</th>
<th>Asian</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Connecticut</td>
<td>CT</td>
<td>747</td>
<td>395</td>
<td>40</td>
<td>37</td>
<td>76</td>
</tr>
<tr>
<td>Yale University</td>
<td>CT</td>
<td>749</td>
<td>339</td>
<td>42</td>
<td>60</td>
<td>105</td>
</tr>
<tr>
<td>University of Maine</td>
<td>ME</td>
<td>62</td>
<td>39</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>University of New England</td>
<td>ME</td>
<td>435</td>
<td>302</td>
<td>21</td>
<td>8</td>
<td>43</td>
</tr>
<tr>
<td>Boston College</td>
<td>MA</td>
<td>387</td>
<td>236</td>
<td>11</td>
<td>22</td>
<td>40</td>
</tr>
<tr>
<td>Boston University</td>
<td>MA</td>
<td>1166</td>
<td>544</td>
<td>31</td>
<td>93</td>
<td>125</td>
</tr>
<tr>
<td>Brandeis University</td>
<td>MA</td>
<td>77</td>
<td>37</td>
<td>2</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Clark University</td>
<td>MA</td>
<td>37</td>
<td>18</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Harvard University</td>
<td>MA</td>
<td>1463</td>
<td>660</td>
<td>75</td>
<td>118</td>
<td>193</td>
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<tr>
<td>Massachusetts Institute of Technology</td>
<td>MA</td>
<td>584</td>
<td>187</td>
<td>1</td>
<td>21</td>
<td>62</td>
</tr>
<tr>
<td>Northeastern University</td>
<td>MA</td>
<td>615</td>
<td>272</td>
<td>27</td>
<td>36</td>
<td>116</td>
</tr>
<tr>
<td>Tufts University</td>
<td>MA</td>
<td>684</td>
<td>355</td>
<td>36</td>
<td>50</td>
<td>135</td>
</tr>
<tr>
<td>University of Massachusetts-Amherst</td>
<td>MA</td>
<td>364</td>
<td>127</td>
<td>10</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>University of Massachusetts-Boston</td>
<td>MA</td>
<td>88</td>
<td>44</td>
<td>6</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>University of Massachusetts-Dartmouth College</td>
<td>MA</td>
<td>96</td>
<td>59</td>
<td>7</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>University of Massachusetts-Lowell</td>
<td>MA</td>
<td>172</td>
<td>98</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Worcester Polytechnic Institute</td>
<td>MA</td>
<td>54</td>
<td>22</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Dartmouth College</td>
<td>NH</td>
<td>196</td>
<td>93</td>
<td>8</td>
<td>12</td>
<td>28</td>
</tr>
<tr>
<td>University of New Hampshire/Main Campus</td>
<td>NH</td>
<td>82</td>
<td>54</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Brown University</td>
<td>RI</td>
<td>354</td>
<td>155</td>
<td>12</td>
<td>25</td>
<td>49</td>
</tr>
<tr>
<td>University of Rhode Island</td>
<td>RI</td>
<td>243</td>
<td>182</td>
<td>8</td>
<td>9</td>
<td>23</td>
</tr>
<tr>
<td>University of Vermont</td>
<td>VT</td>
<td>232</td>
<td>165</td>
<td>4</td>
<td>19</td>
<td>23</td>
</tr>
</tbody>
</table>

Total: 8,887, 4,383, 345, 550, 1,049

Source: IPEDS data for Title-IV participating, degree-granting doctoral universities with "very high" or "high" research activity, as established by the Carnegie Classification rubric. Doctoral degrees counted include Ph.D., Ed.D., D.M.A., D.B.A., D.Sc., D.A., or D.N., as designated by the awarding institution.
Doctoral Degree Production by Field of Study

- LIBERAL ARTS & SCIENCES AND HUMANITIES
- SCIENCE, TECHNOLOGY, ENGINEERING, AND MATH (STEM)
Doctoral Degrees Conferred, U.S.: AY 19-20

ALL DOCTORAL DEGREES

- White: 73.3%
- Black: 8.3%
- Hispanic: 9%
- Asian: 9.3%

LIBERAL ARTS & SCIENCES, HUMANITIES

- White: 60.6%
- Black: 3.9%
- Hispanic: 12.1%
- Asian: 6.1%

STEM FIELDS

- White: 75.3%
- Black: 3.9%
- Hispanic: 8%
- Asian: 12.9%

Source: NEBHE analysis of data from IPEDS for Title-IV participating, degree-granting doctoral universities with "very high" or "high" research activity, as established by the Carnegie Classification rubric. Doctoral degrees counted include Ph.D., Ed.D., D.M.A., D.B.A., D.Sc., D.A., or D.M, as designated by the awarding institution.
Doctoral Degrees Conferred, New England: AY 19-20

ALL DOCTORAL DEGREES
- White: 75.4%
- Asian: 12.6%
- Hispanic: 7.4%
- Black: 4.7%

LIBERAL ARTS & SCIENCES, HUMANITIES
- White: 73.8%
- Asian: 16%
- Hispanic: 7.8%
- Black: 2.4%
- Insufficient data reported

STEM FIELDS
- White: 73.8%
- Asian: 16%
- Hispanic: 7.8%
- Black: 2.4%
- 49.4% of doctorate degrees conferred

Source: NEBHE analysis of data from IPEDS for Title-IV participating, degree-granting doctoral universities with "very high" or "high" research activity, as established by the Carnegie Classification rubric. Doctoral degrees counted include Ph.D., Ed.D., D.M.A., D.B.A., D.Sc., D.A., or D.M, as designated by the awarding institution.
Need greater focus on diversity and equity in early stages of the faculty development pipeline.

Need greater transparency on doctoral program applications and admissions.

Underrepresented minorities tend to pursue degrees in the liberal arts, rather than STEM.

Nearly half of all new doctorates in New England are scholars in the STEM fields.

White scholars represent the vast majority of STEM doctorates in New England — 73.8%.

Hispanic scholars represent only 7.8% of STEM doctorates. Black scholars account for only 2.4%.