Preliminary BIRCWH Program Evaluation

For the Period, 2000-2018

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BIRCWH Evaluation Program Outline

- BIRCWH Program History
- Components of the Evaluation Project
- Program Outcomes
- Overview of Groups Surveyed
- Evaluation Results
  - Scholars
  - Principal Investigators (PIs)
  - Mentors
  - Institutions
- Preliminary Conclusions
History of the BIRCWH Program

The Building Interdisciplinary Research Careers in Women’s Health (BIRCWH) program is:

• A **mentored career development institutional grant** program (K12) that connects junior faculty (i.e., BIRCWH Scholars) with senior faculty who have a shared interest in advancing research on the health of women and to consider sex and gender influences

• Program was **established in 2000**, & partners with the NIH Institutes and Centers

• **Interdisciplinary mentoring teams** are an essential component, and usually include mentors from diverse disciplines, such as medicine, dentistry, nursing, public health, social sciences, bioengineering, biotechnology, anthropology, genetics, and other disciplines relevant to research on the health of women
Components of the BIRCWH Evaluation*

- **Focus Group** of K12 Experts (N=9)
  - May 2019

- **Outcome Data** for Scholars, PIs, Mentors & Institutional Programs
  - June/July 2019

- **Interviews** with PIs (N=6)
  - July/Aug 2019

- **Models** of Sustainability, Leveraging Impact Across the Institutions, etc.

- **Surveys** to gather information from: Sept–Dec 2019
  - All BIRCWH programs
  - 80 mentors
  - Sample of Scholars ~ 400
  - All PIs
  - Report Analysis: July-Sept 2020

*Figure credits to Dr. Samia Noursi, ORWH*
Overview of Groups Surveyed

The BIRCWH program has awarded **88 grants** to **44 institutions** supporting **687 junior faculty** (called scholars) from 2000-2018, including:

- All living PIs, N= 88, with a **64% response rate** representing 78% of all programs
- A sample of **391 out of 687 scholars** representing all BIRCWH institutions; **72% response rate**
- Of the 80 mentors recommended by the PIs, **79% response rate**
- Before the surveys were created, a **focus group of K12 experts** was convened to discuss potential evaluation metrics that could be used to measure success of the BIRCWH program’s overarching goals
Key Questions addressed in the BIRCWH Evaluation

The evaluation addressed the following **broad research questions** related to the program:

- What are the career trajectories of the **BIRCWH Scholars** after their period of training?
- What are the career trajectories of the **Principal Investigators (PIs)** and the **Mentors** involved in the program?
- To what extent have **Under-Represented Minorities (URMs)** been recruited as BIRCWH Scholars?
- What is the **career advancement of the URM**s trained within the program?
- How have **institutions** of the awarded BIRCWH Scholars leveraged BIRCWH programs?
Major Elements of the BIRCWH Evaluation

• Period covered in the survey, **FY 2000 to FY 2018** for all BIRCWH grant awards, PIs, Scholars and a select sampling of the Mentors

• **Data sources**
  o **Survey** Responses for Scholars, PIs, and Mentors
  o Scholar **CVs**, NIH RePORTER database, NIH data files
  o List of BIRCWH scholar **publications**
  o **Interview** transcripts from six (6) BIRCWH PIs
Number of Responses by Scholar Training Cohort

<table>
<thead>
<tr>
<th>Training Cohort</th>
<th># of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000 – 2004</td>
<td>63</td>
</tr>
<tr>
<td>2005 – 2009</td>
<td>67</td>
</tr>
<tr>
<td>2010 – 2014</td>
<td>73</td>
</tr>
<tr>
<td>2015 – 2018</td>
<td>79</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>**262 *</td>
</tr>
</tbody>
</table>

- 20 out of 282 scholars completed only partial surveys
Scholars’ Age at Entering the BIRCWH Program, by Gender

<table>
<thead>
<tr>
<th>Age Range</th>
<th># of Scholars</th>
</tr>
</thead>
<tbody>
<tr>
<td>25–29</td>
<td>Female: 0, Male: 0, Not Reported: 0, Prefer Not To Say: 0</td>
</tr>
<tr>
<td>30–34</td>
<td>Female: 0, Male: 100, Not Reported: 1, Prefer Not To Say: 0</td>
</tr>
<tr>
<td>35–39</td>
<td>Female: 0, Male: 80, Not Reported: 1, Prefer Not To Say: 0</td>
</tr>
<tr>
<td>40–44</td>
<td>Female: 0, Male: 20, Not Reported: 1, Prefer Not To Say: 0</td>
</tr>
<tr>
<td>45+</td>
<td>Female: 0, Male: 0, Not Reported: 0, Prefer Not To Say: 0</td>
</tr>
</tbody>
</table>
Terminal Degree(s) Credentials for BIRCWH Scholars

![Chart showing the distribution of terminal degrees among BIRCWH Scholars.

- **PhD/PhD**: 150 scholars
  - Female: 100
  - Male: 50
  - Not Reported: 10
  - Prefer Not To Say: 10
- **MD, MD/PhD, MD**: 100 scholars
  - Female: 60
  - Male: 40
  - Not Reported: 0
  - Prefer Not To Say: 0
- **MPH**: 10 scholars
  - Female: 6
  - Male: 4
  - Not Reported: 0
  - Prefer Not To Say: 0
- **Other**: 20 scholars
  - Female: 12
  - Male: 8
  - Not Reported: 0
  - Prefer Not To Say: 0

* In addition to the PhD, includes degrees such as MPH, DVM, PharmD, MSW, DDS, and DC
** In addition to MD degree, includes MPH, MS, DPH, MSPH, ScM, and MSc
*** In addition to MPH degree, includes MS and MSci degrees

Other includes DPH, DO, DPT Sc, PharmD, PsyD degrees
Race and Ethnicity of the BIRCWH Scholars

Under-represented minorities (URMs) are defined by NIH to include people who are included in the Black or African American populations; or American Indian, Alaska Native, Native Hawaiian, or Pacific Islander racial or ethnic groups; or Hispanic or Latino.

• For period 2000-2018, 13% of BIRCWH scholars who provided data to the race question can be considered under-represented minorities (URMs)

Note: Race/ethnicity information was missing for 19 scholars. Among those 19 were the 16 scholars who either did not report their gender or selected “Prefer Not to Say.”
Percentage of URMs by Cohort Year

- 2000-2004: 3%
- 2015-2018: 21%
### Number and Percentage of Scholars Who are Classified as URM, by Gender

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th>Male</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-URM</td>
<td>188</td>
<td>40</td>
<td>228 (86.69%)</td>
</tr>
<tr>
<td>URM</td>
<td>33</td>
<td>2</td>
<td>35 (13.31%)</td>
</tr>
<tr>
<td><strong>Total (%)</strong></td>
<td><strong>221 (84.03%)</strong></td>
<td><strong>42 (15.97%)</strong></td>
<td><strong>263 * (100.00%)</strong></td>
</tr>
</tbody>
</table>

* Race/ethnicity information was missing for 19 scholars. Among those 19 were the 16 scholars who either did not report their gender or selected “Prefer Not to Say.”
Career Trajectory for URMs under BIRCWH

• 34% (12 out of 35) scholars that are URMs achieved tenure post-BIRCWH
• 54% (19 out of 35) achieved leadership positions post-BIRCWH
• Examples of leadership positions include:
  o Dean
  o Associate Provost
  o Director
  o Professor
  o Associate Professor
• 23% (8 out of the 35) achieved both tenure and a leadership position post-BIRCWH
Note: The mean number of R level grants was 3.18 (SD = 4.24). The median was 2 grants.
Number of Publications by BIRCWH Scholars

- Preliminary publication data were provided for 66.7% of the scholars.
- BIRCWH scholars for whom there were data were well published:
  - A median of 33 publications per scholar.
  - A mean of 45 publications per scholar.
  - The standard deviation was large (42.67), indicating a skewed distribution, with some scholars who had far more publications than a typical BIRCWH scholar.
  - The number of publications ranged from a minimum of 1 to a maximum of 278.
Top 11 Journals with the Highest Number of Scholar Publications

<table>
<thead>
<tr>
<th>Journal</th>
<th># of Total Publications</th>
<th># of Unique Scholars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obstetrics &amp; Gynecology</td>
<td>182</td>
<td>26</td>
</tr>
<tr>
<td>American Journal of Obstetrics and Gynecology</td>
<td>164</td>
<td>35</td>
</tr>
<tr>
<td>PLOS One</td>
<td>125</td>
<td>54</td>
</tr>
<tr>
<td>Diabetes Care</td>
<td>70</td>
<td>17</td>
</tr>
<tr>
<td>Gynecologic Oncology</td>
<td>58</td>
<td>12</td>
</tr>
<tr>
<td>Journal of Women’s Health</td>
<td>57</td>
<td>28</td>
</tr>
<tr>
<td>Arthritis Care &amp; Research</td>
<td>56</td>
<td>9</td>
</tr>
<tr>
<td>Contraception</td>
<td>54</td>
<td>12</td>
</tr>
<tr>
<td>The American Journal of Epidemiology</td>
<td>53</td>
<td>20</td>
</tr>
<tr>
<td>Journal of the American Geriatrics Society</td>
<td>51</td>
<td>19</td>
</tr>
<tr>
<td>Obesity</td>
<td>50</td>
<td>17</td>
</tr>
</tbody>
</table>
Scholar Survey Data: Work Setting

Academia: 84%
Industry: 15%
Government: < 1%
Grants Awarded to Scholars Post-BIRCWH

• Just under one-third (30%) had been awarded a K-series grant, post-BIRCWH

• Approximately 77% of the scholars, both women and men, received one or more foundation, institution, or other type of grants post-BIRCWH
  o From the data, the foundation grants were used to obtain pilot data prior to submitting an R-Level grant application
  o From the data, all of the more recent BIRCWH programs provided seed money or small institutional grants to support the scholars

• 12% of the scholars had received an F-series grant prior to becoming a BIRCWH scholar
PI Survey Data

- **92 PIs** were identified for the period FY2000-FY2018
  - 4 PIs were confirmed to be deceased
- **Response rate = 64%**
- All PIs who participated in the survey reported that their scholars had a primary mentor
- Of the PIs who reported their scholars had a primary mentor
  - About **98%** indicated their scholars also had a secondary mentor
  - **86%** indicated their scholars had a career mentor
  - **86%** indicated their scholars had a scientific content mentor
PI Survey Data (continued)

- **96% of the PIs** reported their institution had other K12, KL2, and P30 programs and that these programs interacted with their BIRCWH program
- The PIs indicated **synergies** with schools of medicine, nursing, public health, pharmacy, dentistry, and veterinary medicine
- PIs indicated that their institutions have benefited through **increased interdisciplinary research**, mentorship opportunities, and a greater focus on women’s health and sex differences research
- **31% of the PIs** indicated their BIRCWH program collaborates with one or more historically black colleges and universities (HBCUs)
List of HBCUs Affiliated with the BIRCWH Programs

<table>
<thead>
<tr>
<th>Collaborating HBCU</th>
<th>BIRCWH-Associated Institution(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clark Atlanta University</td>
<td>Magee Women’s Research Institution and Foundation</td>
</tr>
<tr>
<td>Meharry Medical College</td>
<td>Vanderbilt University</td>
</tr>
<tr>
<td>Morehouse School of Medicine</td>
<td>Emory University; Magee Women’s Research Institution and Foundation</td>
</tr>
<tr>
<td>Morgan State University</td>
<td>Johns Hopkins University</td>
</tr>
<tr>
<td>North Carolina A&amp;T</td>
<td>University of North Carolina, Chapel Hill</td>
</tr>
<tr>
<td>North Carolina Central University</td>
<td>Duke University</td>
</tr>
<tr>
<td>Ponce Health Sciences University, Puerto Rico</td>
<td>Magee Women’s Research Institution and Foundation</td>
</tr>
<tr>
<td>Spelman College</td>
<td>Emory University</td>
</tr>
<tr>
<td>Xavier University of New Orleans</td>
<td>Tulane University of Louisiana</td>
</tr>
</tbody>
</table>
BIRCWH Mentor Survey Data

- Approximately 68% of responding mentors indicated that their institution’s BIRCWH program did not require mentor training.
- Even with a lack of extensive training for most mentors, the mentors self-reported that they generally felt equipped for the task.
- More than 80% of the mentors thought the mentor/mentee roles were formally established, but only about 47% of the scholars responded similarly.
Most mentors—90% of those responding to the survey—indicated that they encouraged or facilitated networking activities for their scholars.

Most BIRCWH mentors indicated that they experienced professional benefits as a result of their involvement in the program.

Approximately 75% indicated that their participation as a BIRCWH mentor expanded their own research portfolios.

Almost 70% indicated that their participation as a BIRCWH mentor has led them to conduct more interdisciplinary research.
BIRCWH Institution Survey Data

- Almost all PIs (96%) indicated that the BIRCWH program resulted in an increased focus on women’s health
- 94% of PI survey responders indicated that participation in the BIRCWH program had resulted in more interdisciplinary research
- Most PIs (89%) indicated that the BIRCWH program had resulted in more mentoring or training—examples will be provided
- Almost 70% of responders indicated that the BIRCWH program resulted in a different style of mentoring at their institution
• Approximately **86%** indicated that the BIRCWH program resulted in an increased focus on **sex differences research**.

• Almost **60%** of PIs stated that the BIRCWH program resulted in the creation of **new centers or programs** focused on women’s health or sex differences.

• **52%** of PI survey respondents indicated that the BIRCWH program resulted **new courses** or new content offerings focused on women’s health or sex differences research at their institution.

• About **40%** of PIs responded that participation in BIRCWH resulted in **new scientific committees** at their institutions to address women’s health and sex difference research.
Preliminary Conclusions

• BIRCWH scholars have shown high levels of success as recipients of various funding sources for health research projects, and most have published in multiple medical or health-related journals.

• The data suggest that the BIRCWH program has been instrumental in providing mutually beneficial mentor–mentee relationships.

• Individually, mentors and mentees each benefited from the program.

• PIs indicated that their institutions have benefited through increased interdisciplinary research, increased mentorship opportunities, and a greater focus on women’s health and sex differences research.
Preliminary Recommendations for Further Analysis

- Work with the National Library of Medicine to study the impact of the publications and journals used by the Scholars
- Analyze career advancement for all Scholars, especially URMs
- Analyze careers in industry in more depth
- Analyze ways to increase participation of HBCUs, Hispanic-serving institutions, and/or other minority-serving institutions
- Analyze data further on 71% of the BIRCWH scholars who self-reported that they have pursued women’s health–related research following participation in the BIRCWH program
  - approximately 75% of female respondents and of 53% of male respondents, self-reported data
In Appreciation, and Acknowledgements

- ORWH appreciates the strong support of the BIRCWH PIs, Scholars and Mentors in completing this evaluation.
- ORWH appreciates the strong support of many of the NIH institutes and centers, including NCI, NIA, NIAAA, NIAID, NIAMS, NICHD, NIDA, NIDCR, NIEHS, and NIMH.
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- ORWH confirms that it has adhered to all the NIH privacy requirements.