

Preliminary BIRCWH Program Evaluation

For the Period, 2000-2018

Building Interdisciplinary
Research Careers in
Women's Health



Lisa Begg, Dr.P.H., R.N.
Xenia Tigno, Ph.D.
Chariz Johnstone, Ph.D.



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 National Institutes of Health
Office of Research on Women's Health

BIRCWH Evaluation Program Outline

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- Overview of Groups Surveyed
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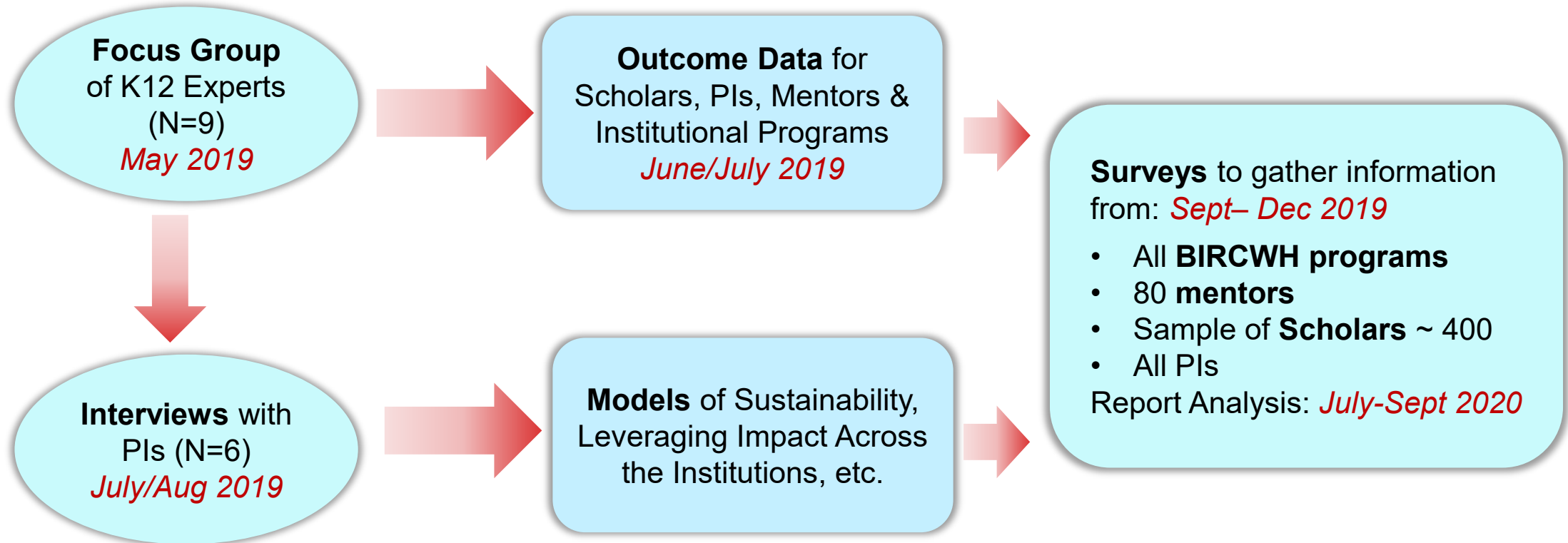


History of the BIRCWH Program

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*



* 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 URMs** 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**
 - **Survey** Responses for Scholars, PIs, and Mentors
 - Scholar **CVs**, NIH RePORTER database, NIH data files
 - List of BIRCWH scholar **publications**
 - **Interview** transcripts from six (6) BIRCWH PIs



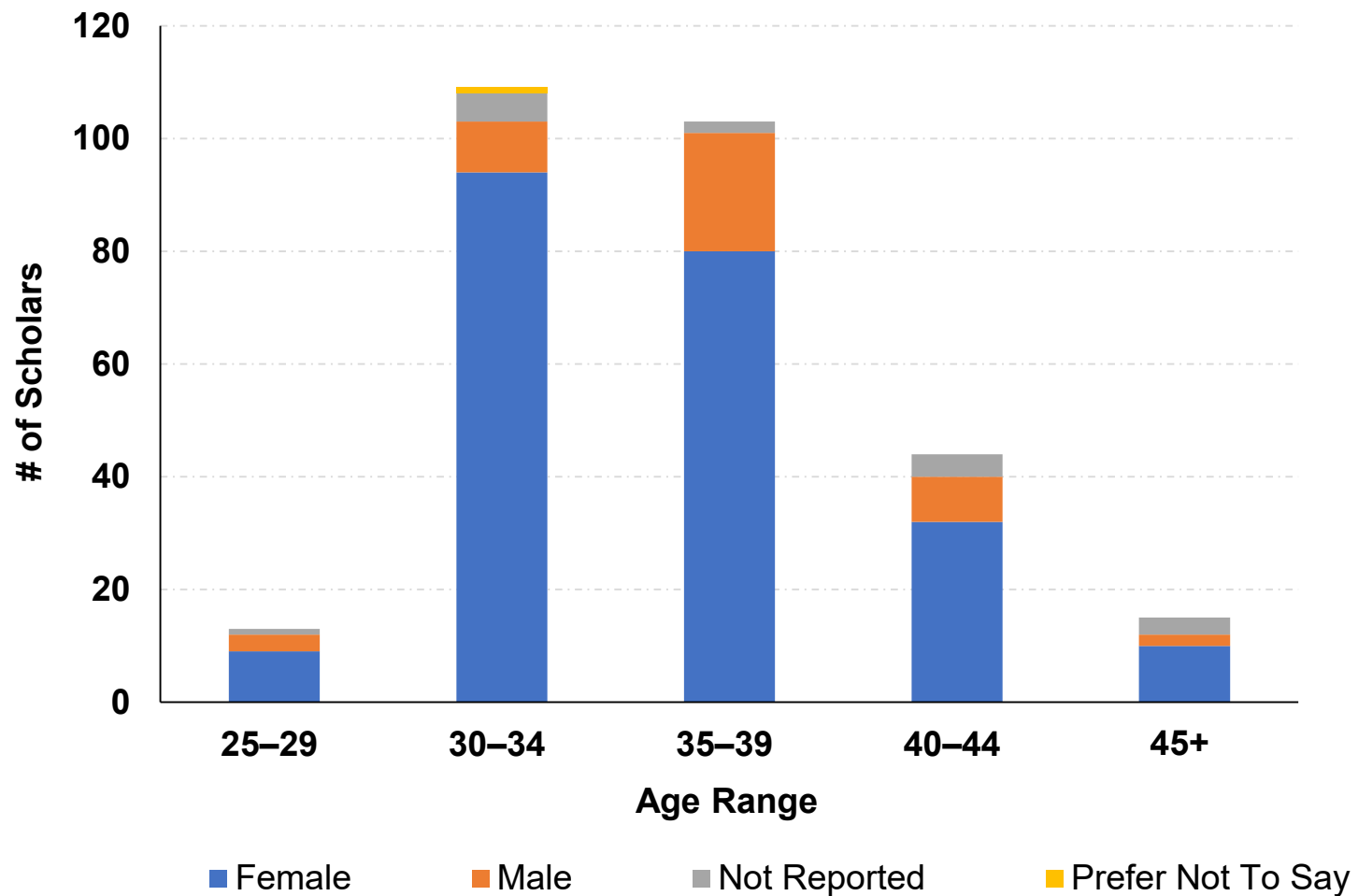
Number of Responses by Scholar Training Cohort

Training Cohort	# of Respondents
2000 – 2004	63
2005 – 2009	67
2010 – 2014	73
2015 – 2018	79
Total	262 *

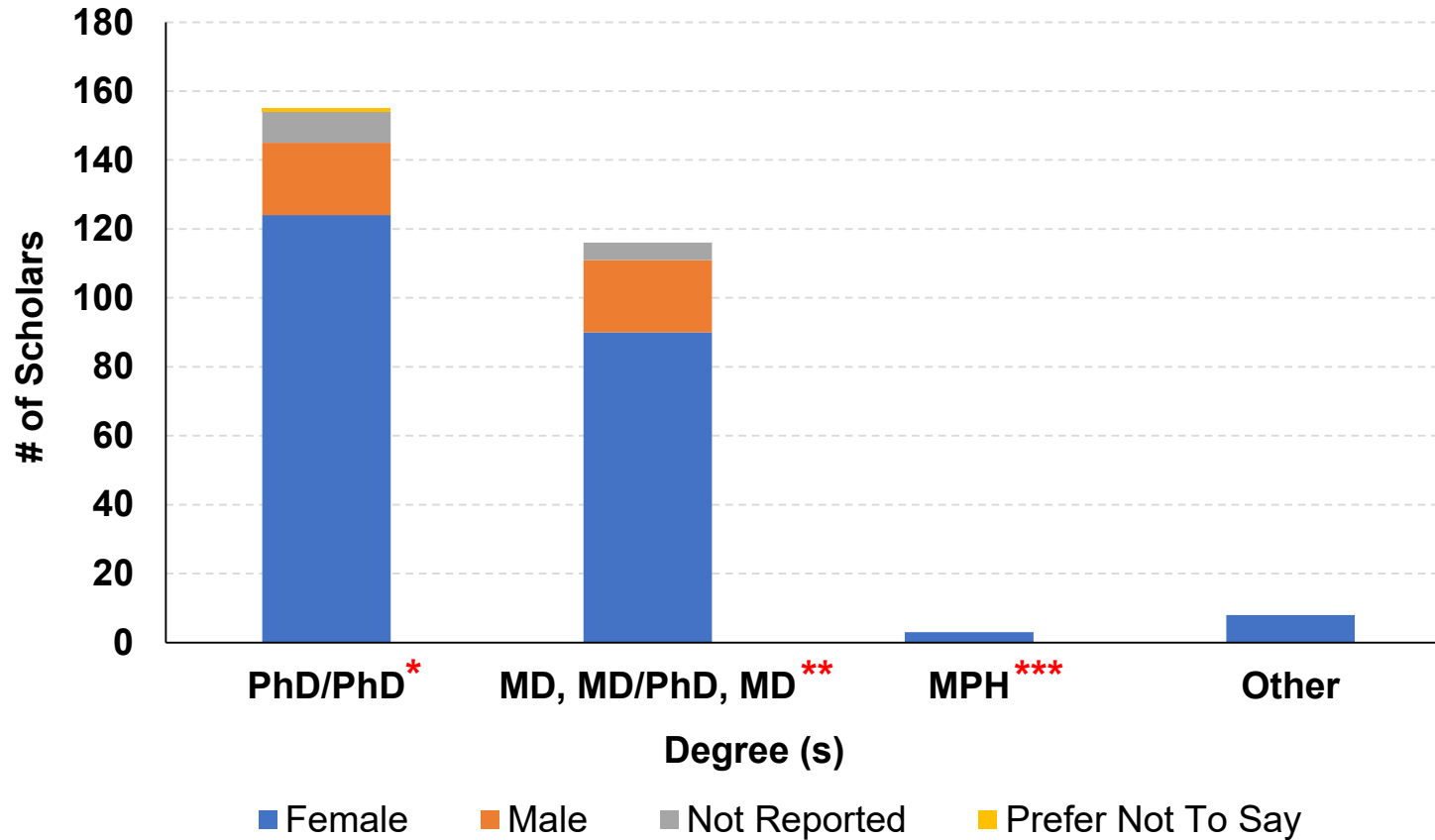
- *20 out of 282 scholars completed only partial surveys*



Scholars' Age at Entering the BIRCWH Program, by Gender



Terminal Degree(s) Credentials for BIRCWH Scholars



- * In addition to the PhD, includes degrees such 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

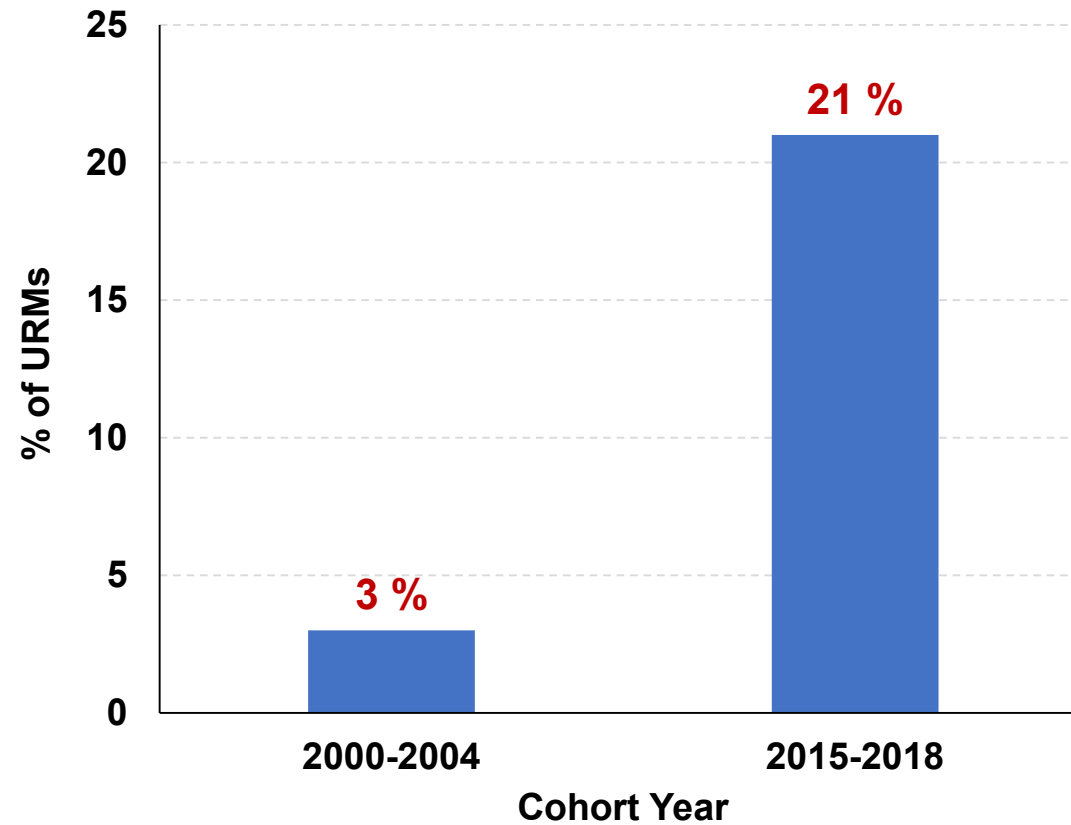
Race and Ethnicity of the BIRCWH Scholars

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



Number and Percentage of Scholars Who are Classified as URM, by Gender

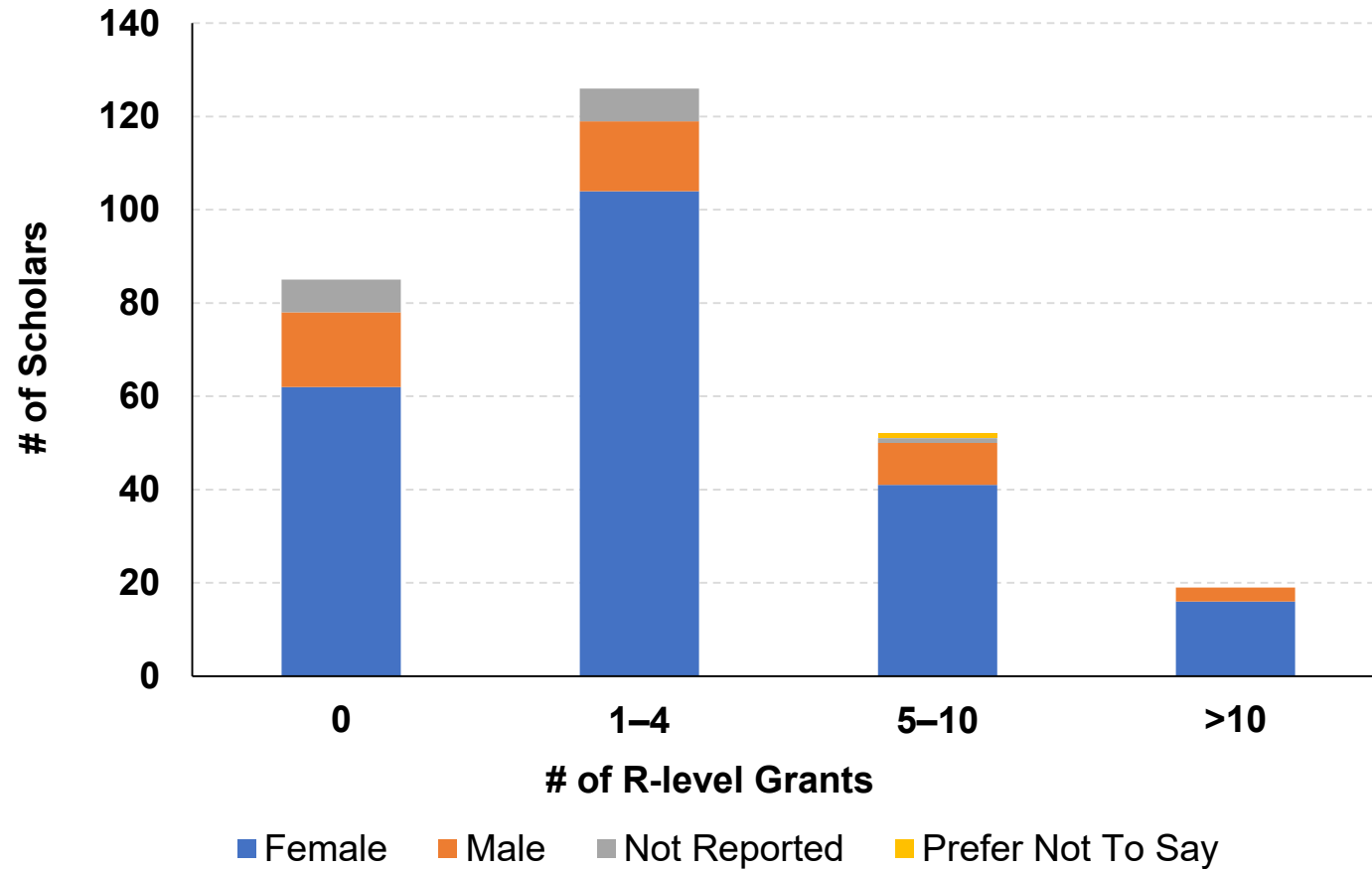
	Female	Male	Total (%)
Non-URM	188	40	228 (86.69%)
URM	33	2	35 (13.31%)
Total (%)	221 (84.03%)	42 (15.97%)	263 * (100.00%)

** 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 URM^s 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:
 - Dean
 - Associate Provost
 - Director
 - Professor
 - Associate Professor
- 23% (8 out of the 35) achieved **both tenure and a leadership position** post-BIRCWH

R-level NIH Grants Received by BIRCWH Scholars



Note: The mean number of R level grants was 3.18 (SD = 4.24). The median was 2 grants.

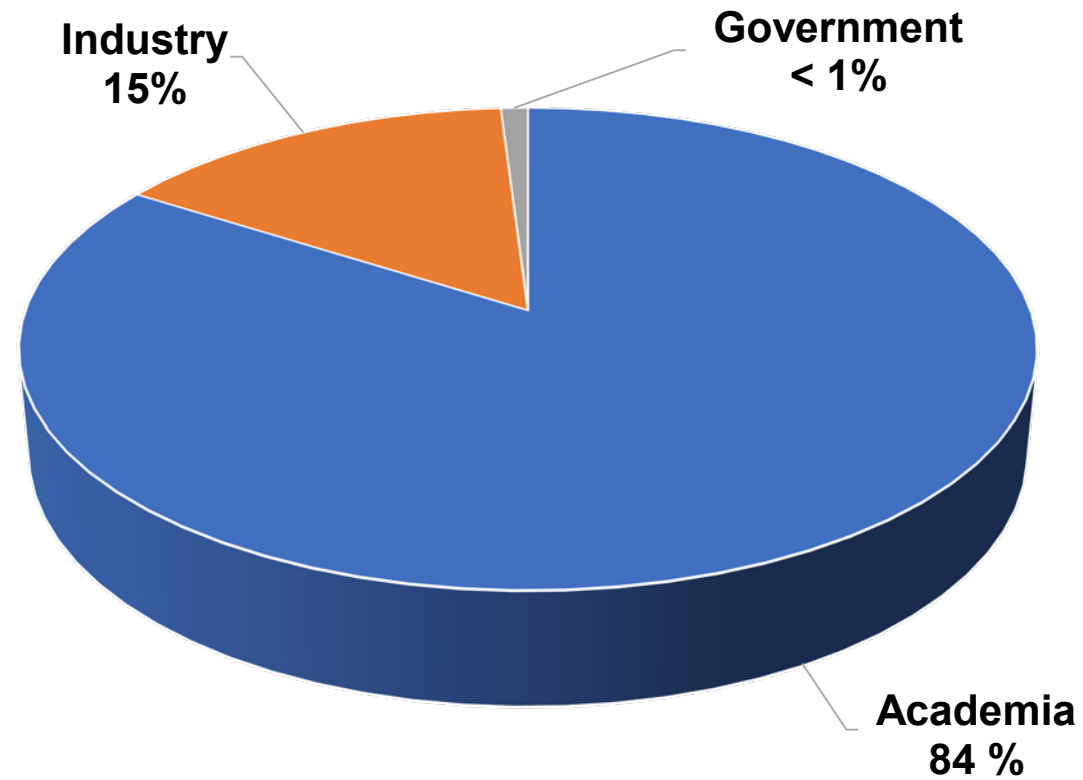
Number of Publications by BIRCWH Scholars

- 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

Journal	# of Total Publications	# of Unique Scholars
Obstetrics & Gynecology	182	26
American Journal of Obstetrics and Gynecology	164	35
PLOS One	125	54
Diabetes Care	70	17
Gynecologic Oncology	58	12
Journal of Women's Health	57	28
Arthritis Care & Research	56	9
Contraception	54	12
The American Journal of Epidemiology	53	20
Journal of the American Geriatrics Society	51	19
Obesity	50	17

Scholar Survey Data: Work Setting



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
 - From the data, the foundation grants were used to obtain pilot data prior to submitting an **R-Level grant** application
 - 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

Collaborating HBCU	BIRCWH-Associated Institution(s)
Clark Atlanta University	Magee Women's Research Institution and Foundation
Meharry Medical College	Vanderbilt University
Morehouse School of Medicine	Emory University; Magee Women's Research Institution and Foundation
Morgan State University	Johns Hopkins University
North Carolina A&T	University of North Carolina, Chapel Hill
North Carolina Central University	Duke University
Ponce Health Sciences University, Puerto Rico	Magee Women's Research Institution and Foundation
Spelman College	Emory University
Xavier University of New Orleans	Tulane University of Louisiana

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



BIRCWH Mentor Survey Data *(continued)*

- 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

BIRCWH Institution Survey Data *(continued)*

- 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 URM
- 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

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- 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