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# STAYING POWER

## WOMEN IN SCIENCE ON WHAT IT TAKES TO SUCCEED

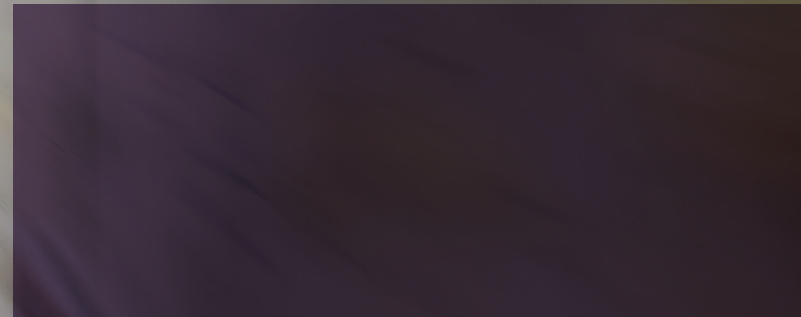
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# 15

YEARS OF  
**ADVANCING**  
**WOMEN IN**  
SCIENCE



# L'ORÉAL USA

## FOR WOMEN IN SCIENCE FELLOWSHIP

The FWIS Fellowship program awards five women postdoctoral scientists annually with grants of \$60,000 each for their contributions in Science, Technology, Engineering and Math (STEM) fields and commitment to serving as role models for younger generations. The program attracts talented applicants from diverse STEM fields, representing some of the nation's leading academic institutions and laboratories. L'Oréal USA partners with the American Association for the Advancement of Science (AAAS) to manage the program's application and peer-review process.

From neuroscience to mechanical engineering, L'Oréal USA has awarded 75 women nearly \$4 million in grants for their groundbreaking work since 2003.

### 2019 FWIS STUDY

To mark 15 years of the L'Oréal FWIS Fellowship, L'Oréal USA and the Heising-Simons Foundation commissioned a study of the fellows for their perspectives on what's needed for women to succeed in science. The study was developed and conducted by RTI International and included both an online survey and in-depth personal interviews. This document summarizes a portion of the study's findings. Complete study results are available: [bit.ly/FWIS-Alumni-Study](https://bit.ly/FWIS-Alumni-Study)



# STAYING POWER

INSIGHTS INTO FWIS FELLOWS' SUCCESS IN SCIENCE

100%

OF FWIS FELLOWS  
ARE STILL WORKING IN  
SCIENCE-RELATED FIELDS

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INTEND TO CONTINUE  
WORKING IN A  
SCIENCE-RELATED FIELD  
IN THE LONG TERM

## MAKING AN IMPACT IN SCIENCE

Though the representation of women in science, technology, engineering and mathematics (STEM) fields has increased over the years, there remains significant drop-off at every stage, particularly during the years between postdoctoral and tenure-track positions. The FWIS fellows represent a unique group of women who have demonstrated uncommon staying power in science.

### CAREER ACCOMPLISHMENTS



**1541**

Students mentored or trained  
(Postdocs, grad students, techs, etc.)



**230**

Papers published in  
conference proceedings



**1191**

Articles published in  
peer-reviewed journals



**181**

Federal grants received  
(Principal Investigator (PI) or  
co-Principal Investigator (co-PI))



**1043**

Papers authored/co-authored  
for conference presentation



**53**

Books and book  
chapters published

# MOTIVATION FOR GOOD

## A STRONG DESIRE TO MAKE A POSITIVE IMPACT



I AM NOT QUITE THERE YET, BUT I AM ON A PATH TO SHAPING HOW THE WORLD PRACTICALLY MOVES TOWARDS 100% RENEWABLE ENERGY SYSTEMS.

**DR. SHEILA TANDON MANZ**  
Technical Director, GE Energy Consulting  
2004 FWIS Fellow



involved in **training** or **mentoring** the **next generation** of scientists in their fields



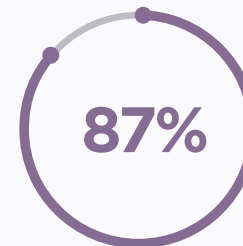
cited the potential for **major discoveries** & **innovation** as a motivator for continuing to work in science



engaged in **community outreach activities** related to **women** or **underrepresented minority groups** in science



cited their desire to serve as a **role model** & **create opportunities** for **other women and girls** in science as a motivator for continuing to work in science



cited the potential for **solving major societal problems** & **improving conditions** as a motivator for continuing to work in science

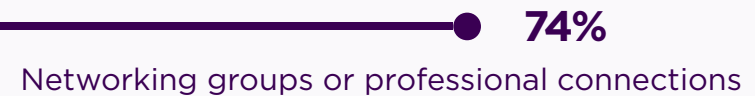
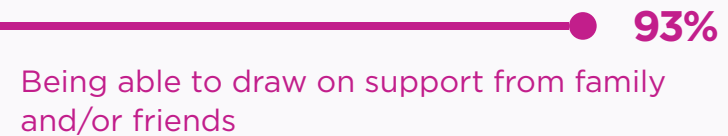


# WHAT MATTERED MOST



## THE FACILITATORS THAT MADE THE MOST DIFFERENCE TO THE FELLOWS' ABILITY TO STAY AND THRIVE IN SCIENCE

### TOP 5 MOST IMPORTANT FACILITATORS



# CLIMATE FOR WOMEN IN SCIENCE

**FELLOWS' OVERALL PERSPECTIVES ON THE STATE OF THE FIELD FOR WOMEN**





“

THERE'S THIS RISING TIDE OF CHANGE WHERE NOT ONLY ARE WOMEN MORE REPRESENTED ...THERE'S ALSO REALLY GROWING AWARENESS THAT WE HAVE UNIQUE CONCERNS AND PERSPECTIVES.

**DR. SARA ATON**

Assistant Professor, University of Michigan

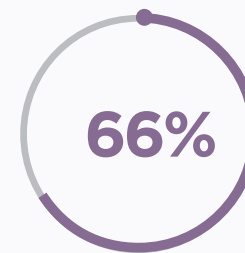
**2008 FWIS Fellow**



of respondents agree that in the past decade, **women's opportunities for career advancement** in science have improved



of respondents agree that in the past decade, the **gender composition** in science has improved for women



of respondents agree that in the past decade, **women's representation in leadership positions** in scientific fields has improved

## IMPROVEMENTS NEEDED

“

THE BIGGEST CHANGE STILL NEEDED IS TO MOVE BEYOND THE GENDER BIAS THAT DOESN'T ALLOW WOMEN TO BE TAKEN SERIOUSLY AS SCIENTISTS.

**DR. SABRINA STIERWALT**

Assistant Professor, Occidental College  
2014 FWIS Fellow



## MAJOR ISSUES FOR WOMEN ARE STILL PRESENT



of respondents agreed that **gender discrimination** remains a career obstacle for women in science



of respondents said that **gender bias** serves as an obstacle to women's career trajectories in the postdoctoral stage



of respondents said that **sexual harassment** serves as an obstacle to women's career trajectories in the postdoctoral stage



of respondents agreed that women entering their specific field of study are given **equal opportunities to men** to pursue their careers



“

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I THINK THERE'S AN INCREDIBLE AMOUNT OF PROGRESS AND PROGRAMS FOR WOMEN IN SCIENCE THAT MAKE A BIG DIFFERENCE. NOW WE'RE BUILDING NETWORKS OF RESEARCHERS AND WOMEN SCIENTISTS...

**LIVIA EBERLIN**  
Assistant Professor,  
University of Texas at Austin  
2014 FWIS Fellow

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# THE WAY FORWARD

**INFORMED PERSPECTIVES ON KEY OBSTACLES AND EFFECTIVE  
FACILITATORS FOR THE NEXT GENERATION OF WOMEN IN SCIENCE**



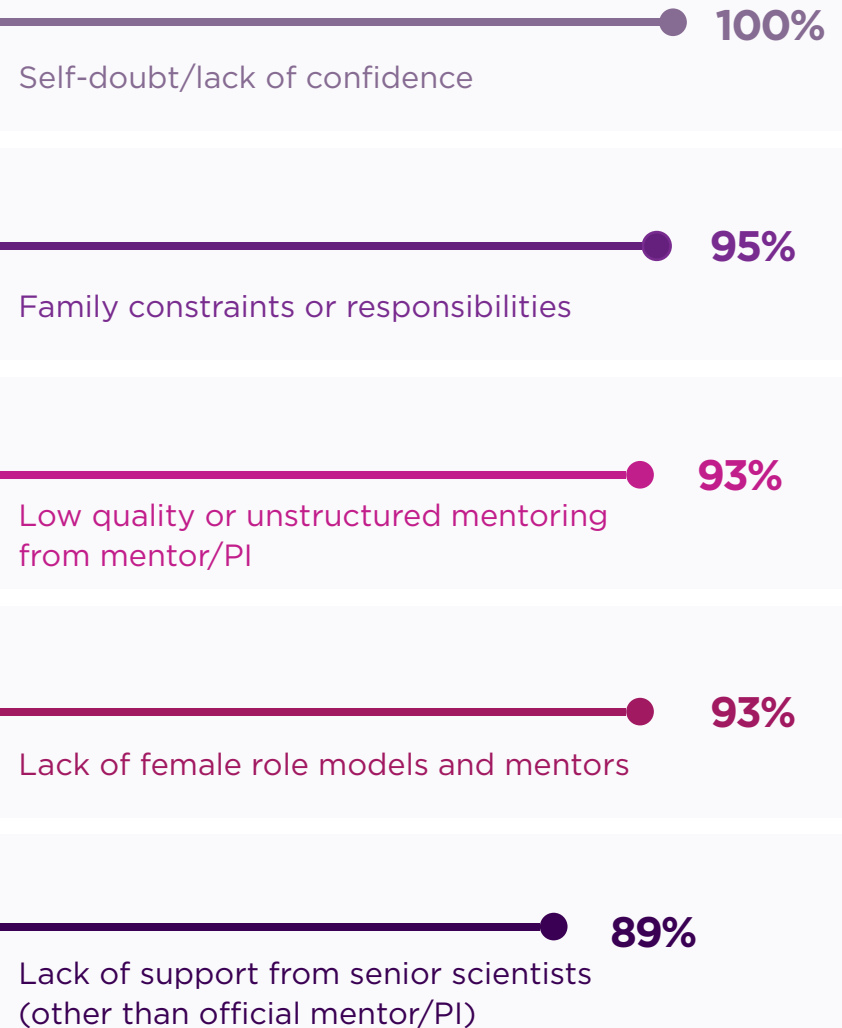
## O B S T A C L E S

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POSTDOCTORAL TRAINING IS ABOUT LEARNING TO THINK INDEPENDENTLY AND PURSUING YOUR OWN IDEAS. BUT THAT'S OFTEN VERY HARD TO DO BECAUSE SOMETIMES YOUR IDEAS ARE NOT ALIGNED WITH THE LAB HEAD'S RESEARCH VISION. THE ONLY WAY THAT YOU CAN REALLY GO FOR THOSE OUT OF THE BOX IDEAS IS TO FIND THE RESOURCES.

**DR. SHRUTI NAIK**  
Assistant Professor, NYU  
2016 FWIS Fellow

### TOP 5 MOST SIGNIFICANT POSTDOC OBSTACLES



## WHAT WORKS

“

IN MANY CASES, WOMEN ARE EXPECTED TO MAKE DECISIONS BASED ON WHETHER THEY WANT TO HAVE A FAMILY. THIS IS RARELY TRUE FOR MEN. IF WOMEN WANT TO HAVE FAMILIES, THEY SHOULD HAVE THE SAME SUPPORT THEIR MALE COLLEAGUES HAVE.

**DR. ARPITA BOSE**  
Assistant Professor,  
Washington University in St. Louis  
**2013 FWIS Fellow**

### TOP 5 MOST EFFECTIVE POSTDOC INTERVENTIONS





A woman with dark hair, wearing a blue lab coat and clear safety glasses, is focused on her work in a laboratory. She is wearing purple gloves and is holding a piece of equipment. The background is slightly blurred, showing laboratory equipment and shelves.

**100%**

**OF FELLOWS CITED  
INDEPENDENT GRANT  
FUNDING AS THE MOST  
EFFECTIVE POSTDOC  
INTERVENTION**



## INDEPENDENT FUNDING

*Universal agreement on an increasingly critical factor*

**100%** cited independent grant funding as effective for career advancement in the postdoctoral stage



AS THE NUMBER OF CANDIDATES INCREASES AND AS GRANTS BECOME MORE DIFFICULT TO SECURE...INCREASING THE NUMBER OF FUNDING OPPORTUNITIES, PARTICULARLY FOR FEMALE POSTDOCS, WILL DRASTICALLY HELP ADVANCE CAREERS.

**DR. BRECCA GAFFNEY**

Postdoctoral Fellow,  
Washington University School of Medicine in St. Louis  
2018 FWIS Fellow



## CONFIDENCE

*Clear consensus—  
but what is the root cause?*

**100%** said self-doubt/lack of confidence serves as an obstacle in the postdoctoral stage

**72%** said self-doubt/lack of confidence served as an obstacle to their personal career trajectory



CONVERSATIONS ON GENDER IMBALANCE OFTEN FEEL LIKE VICTIM BLAMING. EVERYONE, MEN AND WOMEN, HAS IMPOSTER SYNDROME. THAT'S OFTEN MAGNIFIED BY MENTORS WHO ARE THOUGHTLESS, NOT SUPPORTIVE, AND FAIL TO EMPOWER. THE ROOT CAUSE OF SELF-DOUBT IS AN UNSUPPORTIVE INSTITUTION OR ENVIRONMENT.

**DR. SHRUTI NAIK**

Assistant Professor,  
New York University  
2016 FWIS Fellow



## MENTORING

*A system in need of strengthening*

**93%** cited low quality/unstructured mentoring from the mentor/PI as an obstacle to women's career trajectories in the postdoctoral stage

**93%** cited lack of female role models as an obstacle to women's career trajectories at the postdoctoral stage



... THE VAST MAJORITY OF WHAT WE DO IS OUT OF SYNC WITH WHAT WE'VE BEEN TRAINED TO DO. THE BEST SCIENTISTS ARE NOT NECESSARILY THE BEST MANAGERS. THERE SHOULD BE MORE EMPHASIS ON TRAINING TO MANAGE.

**DR. PARDIS SABETI**

Professor,  
Harvard University and the Broad Institute  
2004 FWIS Fellow



## FAMILY SUPPORT

*The realities of being—and being seen as—a working mother*

**98%** said family-friendly policies and supports are effective for career advancement in the postdoctoral stage

**95%** said family constraints/responsibilities are an obstacle to career trajectories in the postdoctoral stage



BECAUSE THE POSTDOCTORAL PERIOD OFTEN LINES UP WITH A TIME IN LIFE WHEN MANY WOMEN CHOOSE TO HAVE CHILDREN, IT IS CRUCIAL THAT POSTDOCS HAVE ACCESS TO PAID PARENTAL LEAVE, ADEQUATE BENEFITS, AND SALARIES SUFFICIENT TO PAY FOR QUALITY CHILDCARE.

**DR. STACY COPP**

Assistant Professor,  
University of California, Irvine  
2018 FWIS Fellow



# POLICY IMPLICATIONS

WHAT IT MEANS FOR EFFECTIVE PROGRAM DESIGN AND INVESTMENT



# BUILDING STAYING POWER

## WHAT IT TAKES TO INCREASE STAYING POWER FOR WOMEN IN SCIENCE

Effective design and meaningful investment in intervention programs are critical to increasing the staying power of women in science. The survey responses and interview comments from the FWIS fellows provide clear signals and suggest concrete actions for better, more effective interventions for women scientists at the postdoctoral career stage.



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NOW, BY FOCUSING ON RETENTION OF WOMEN IN SCIENCE,  
WE HAVE THE OPPORTUNITY TO SHIFT THE TIDE IN  
OUR FAVOR AND REALLY ACHIEVE EQUALITY.

**DR. SHRUTI NAIK**

Assistant Professor, New York University

**2016 FWIS Fellow**

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## BUILDING STAYING POWER



### INDEPENDENT FUNDING

The most frequently cited effective intervention — **100% of respondents said independent funding was effective for advancing women in science.**



### CONFIDENCE AND RECOGNITION

Create a career path and working environment that provide an equitable basis for advancement and professional development. Foster opportunities that enable positive recognition and exposure. **Self-doubt/lack of confidence was the most frequently cited obstacle — 100% of respondents said it was an obstacle for women in science.**



### FAMILY-FRIENDLY POLICIES

A clear and strong perspective on the essential role of interventions such as dual career placement programs, parental leave, childcare support and flexible working arrangements. **98% of respondents cited family-friendly policies as an effective intervention.**



## WHAT IT TAKES TO INCREASE STAYING POWER FOR WOMEN IN SCIENCE



### **STRUCTURED, EFFECTIVE NETWORKING**

Support systems and networking opportunities consistently cited as ineffective or unavailable. **91% of respondents cited structured networking programs/opportunities as an effective intervention.**



### **FEMALE ROLE MODELS**

Increase both the number of females serving as mentors, as well as the visibility of successful women scientists overall to provide real-world examples of what's possible for women in science. **93% of respondents cited lack of female role models as an obstacle for women in science.**



### **LEADERSHIP AND MANAGERIAL SKILLS**

Systematically develop the knowledge and skills to lead and manage organizations/labs, people and careers. **93% of respondents cited low quality or unstructured mentoring from their mentor or PI as an obstacle for women in science.**

# THE IMPACT OF FWIS ON STAYING POWER

**98% of respondents said the FWIS Fellowship program was extremely or somewhat important in advancing their careers in science.** Fellows cited specific benefits of the FWIS Fellowship Program that directly impact some of the key drivers of staying power.

## INDEPENDENT FUNDING

100%

FWIS grant enabled research to be conducted more independently

97%

The flexibility in funding use was helpful to their career

89%

FWIS funding enabled them to be more innovative in their research

79%

FWIS funding facilitated receiving subsequent external funding

## FEMALE ROLE MODELS

74%

FWIS provided a network of fellow female scientists

## STRUCTURED, EFFECTIVE NETWORKING

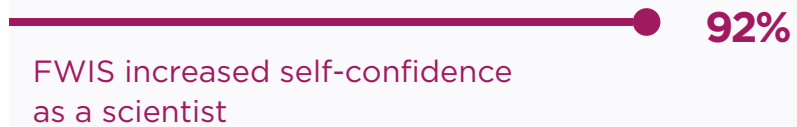
95%

FWIS provided training and professional development activities

87%

FWIS enabled more collaboration with other scientists

## CONFIDENCE & RECOGNITION



## LEADERSHIP & MANAGERIAL SKILLS







FOR WOMEN IN SCIENCE  
IN PARTNERSHIP WITH

