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Gender Diversity in the Built Environment

Research, Statistics & Personal Experiences

Learning Objectives

- Review the research regarding women working in engineering fields and how it impacts men and women alike.
- Overview the statistics regarding ASHRAE membership.
- Share personal experiences that support both the research and statistics.
- Discuss what ASHRAE is doing to support gender diversity.

Acknowledgements

- Erin McConahey, PE, FASHRAE - Arup
- Dr. Julia Keen, PE, PhD – Kansas State
- Jessica Mangler, PE – Affiliated Engineers
- Rene Josheph – Johnson Controls

Let's Get Personal

"It's important that we share our experiences with other people. Your story will heal you and your story will heal someone else. When you tell your story, you free yourself and give other people permission to acknowledge their own story."

Iylana Vanzant



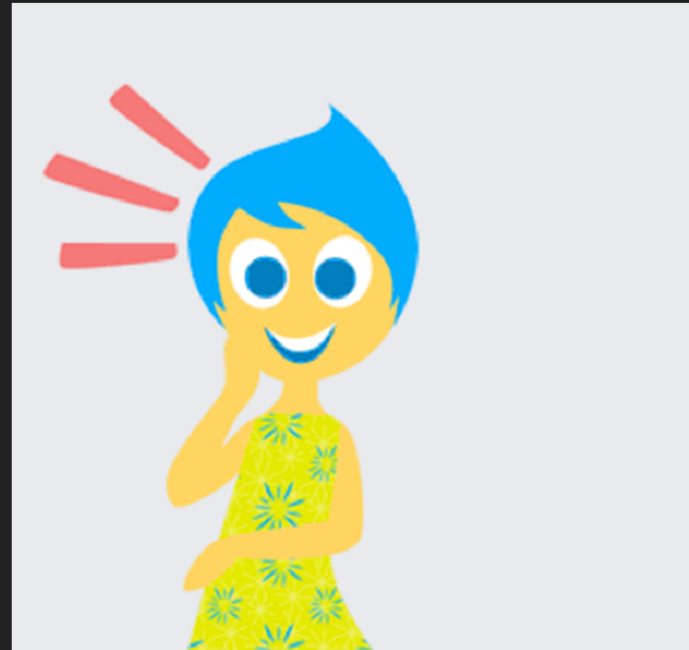


HOW DID WE GET HERE?

The Big Idea!

"I think we should
have a women's
group within
ASHRAE."

-Me, 6/25/2012



Women in Engineering

The focus of the Women in Engineering group within ASHRAE is to facilitate the retention of women working in the built environment by encouraging opportunities for professional development, expanding leadership skills, and creating a network of women supporting women.



April 16, 2013

Moving Beyond Baltimore



A Plea for Help!

June 2015 Address to the ASHRAE Board



Women in ASHRAE Presidential AdHoc Committee

MISSION

To facilitate the retention of and opportunities for women members in ASHRAE by improving the volunteer experience and creating a network for professional growth.

VISION

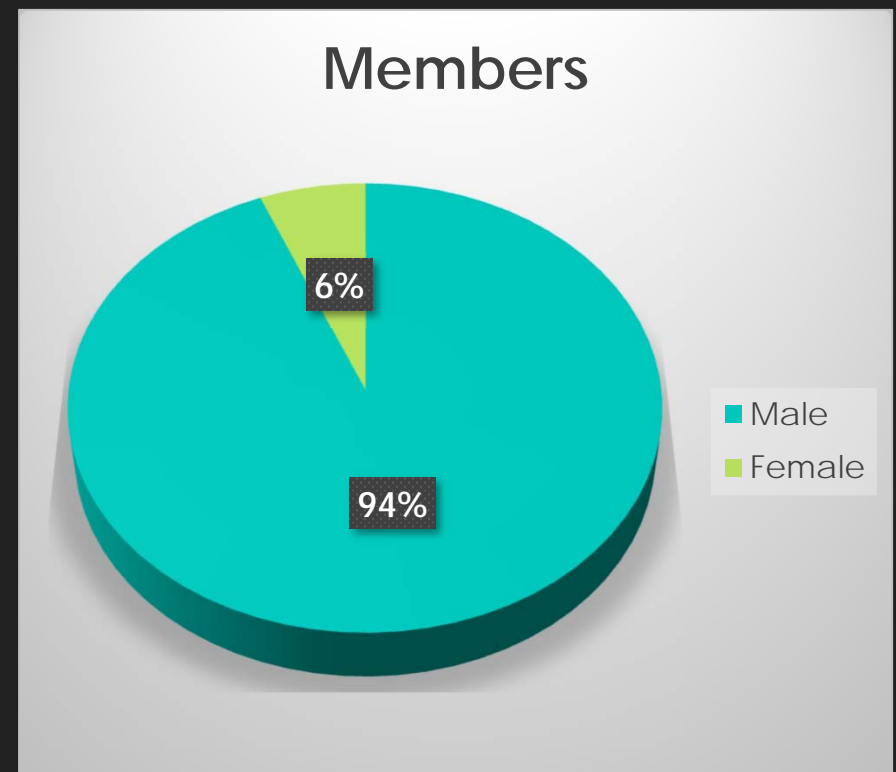
Create an environment where diversity and inclusion are the building blocks to success.



WHY DOES ASHRAE CARE?

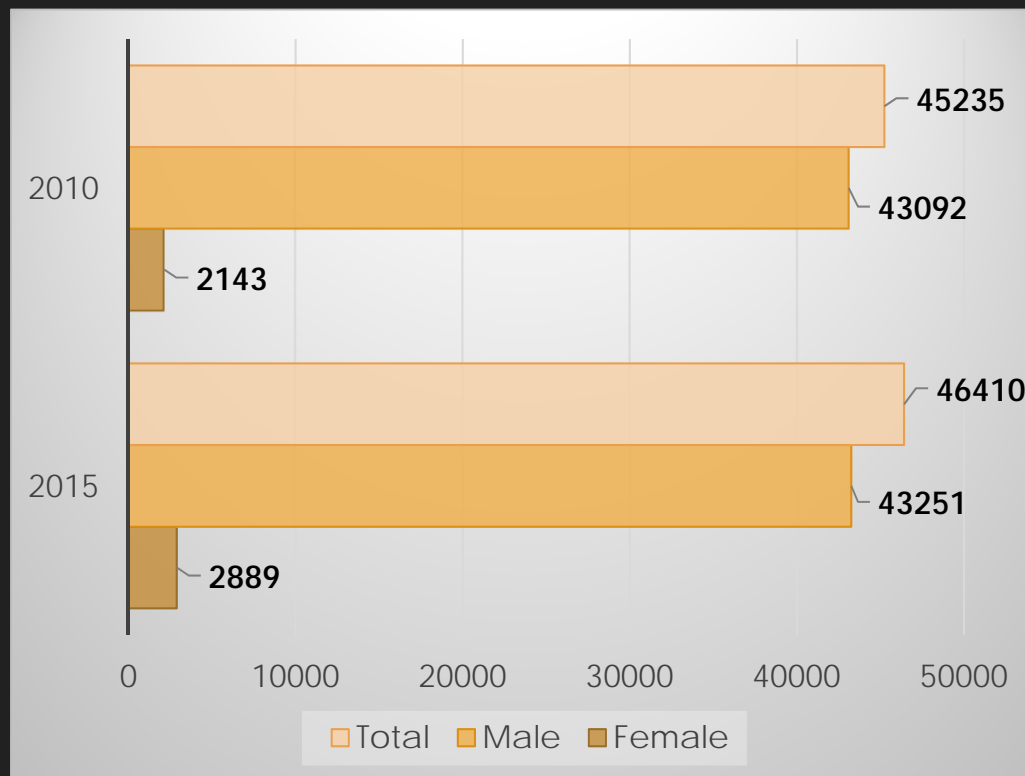
ASHRAE Membership*

All Members	46,410
Male	43,521
Female	2,889



* - ASHRAE Membership Data 2015

ASHRAE Membership*



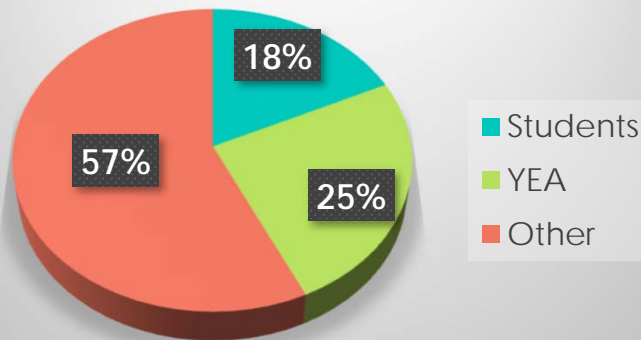
- Membership has increased 3%
- Male membership increased 1%
- Female membership increased 35%
- Females account for over 60% of the membership increase

* - ASHRAE Membership Data 2010 & 2015

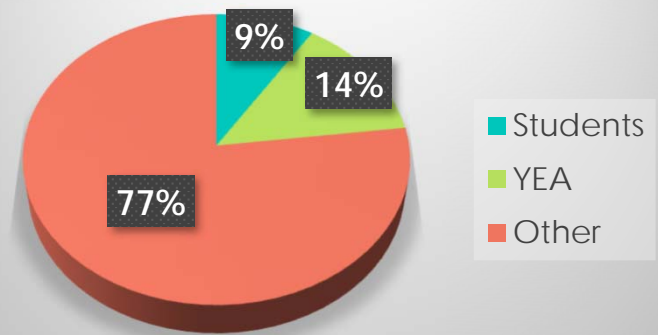
ASHRAE Membership*

- Approximately 20% of ASHRAE Members are "Young Engineers", under the age of 35
- YEA membership is 13% Female

Female Members



Male Members



* - ASHRAE Membership Data 2015

ASHRAE Membership*

Gender Involvement in ASHRAE			
<i>Involvement Type</i>	<i>Female</i>	<i>Male</i>	<i>All</i>
Standing Committees	2.67%	0.97%	1.07%
Technical Committees	8.03%	6.00%	6.13%
Society Level	10.70%	6.97%	7.20%
Chapter or Regional	11.25%	n/a	n/a

* - ASHRAE Membership Data 2015



WHY DO WE CARE?

Shortage in HVAC/R

- Retirement will increase the need for HVAC/R engineers
- US Social Security Administration estimates that 22% of the US workforce will retire by 2022



Alternate Demographics

- There are not enough white males to fill the gap
- Alternate demographics must be considered
- Women should be part of this equation
 - Need to reflect the composition of your customer base
 - Diversity = multiple experiences and perspectives
 - Increases effectiveness of problem solving

FACTS



- Companies employing women in large numbers outperform competitors in profitability (Del Giudice, Crawford)
- Women compose 11% of the engineering workforce
 - < 5% change of representation in 20 years
 - Other professions > 40% (Crawford)
 - Nearly 20% women enter the workforce with engineering bachelor degree each year (Frehill)

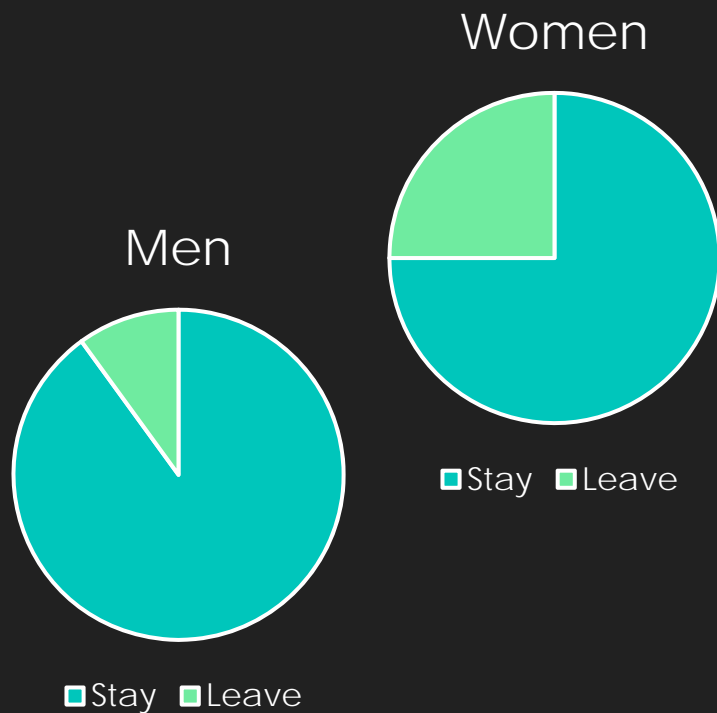
Retention



- Compared to other professions, women in STEM are:
 - 8 TIMES more likely to leave the field than other professions (Crawford)
 - Less likely to return to work after starting a family (Blackwell)
- Men also leave engineering but at lower rates.

Retention

1 in 4 women leave engineering after compared to 1 in 10 men



Nearly 70% of the women that leave engineering are working in another industry (Fouad)

Retention is not
a women issue
it's an employer
issue



*Cost of losing an
employee*

- Training
- Recruitment
- Knowledge, skills,
relationships

Barriers to Retention

- Image
- Work Culture
- Balance Between Personal and Professional Live



Barrier - Image

- Unattractive public view of the industry – stereotyping
- Negative opinions of women in masculine professions (Hill)
- Lack of female role models (Dahlmann)



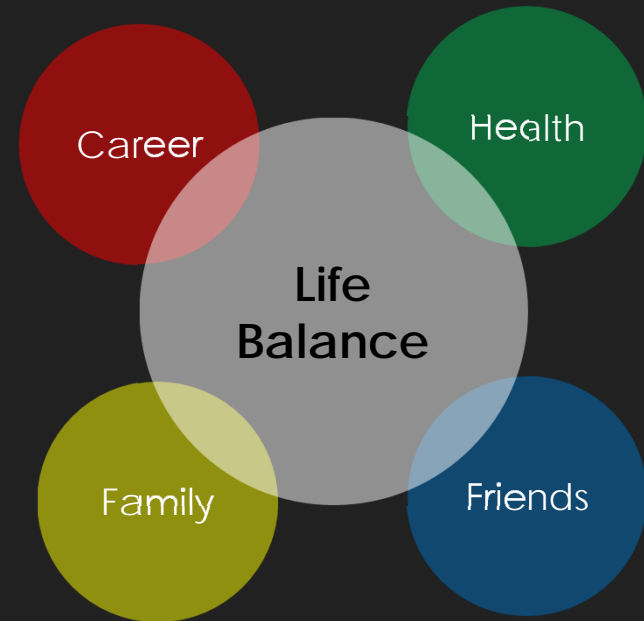
Barrier – Work Culture

- Isolation or sense of belonging
- Unclear rules for advancement
- Women perceive they have to work harder than men to be recognized as competent (Arditi)
- When a woman is clearly competent in a 'masculine' job, she is considered to be less likable (Hill)



Barrier – Balance

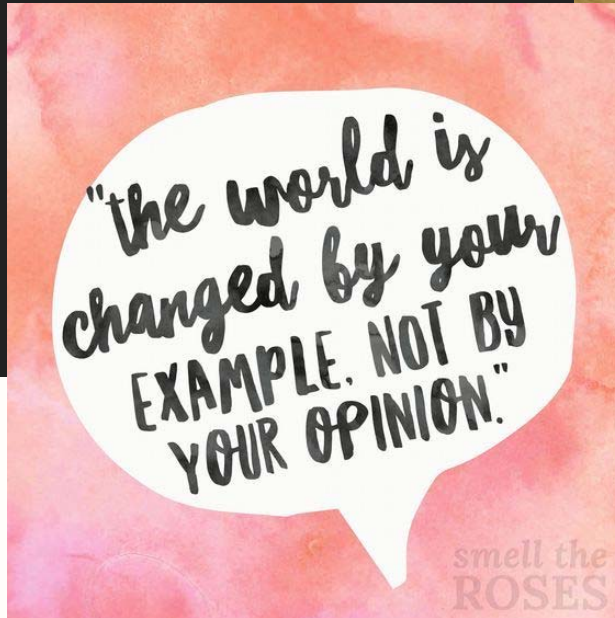
- Women & men feel having a family hinders success at work (Hill)
- Women & men identify interest in another career the primary reason to leave the industry
- Women are more likely to have a partner in STEM





WHAT DO WE DO?

Keep the Conversation Going



Women in ASHRAE



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