# diversity & inclusion

## Inclusive Environment

### Identifying the Athena Factor

## the Athena Factor

### Why do women leave engineering?

"52% of highly qualified females working for SET companies quit their jobs, driven out by hostile work environments and extreme job pressures."[1]

© ARUP

ARUP

---

## the Athena Factor

The 2008 *Harvard Business Review* research report entitled "The Athena Factor: Reversing the Brain Drain in Science, Engineering, and Technology" examines why women leave these fields.[2] The so-called Athena Factor refers to the fact that many women's motivator for staying in engineering is their belief that their work contributes to society (Figure 1). The study was conducted in 28 focus groups with almost 2,500 men and women. It found that women list the following as their primary reasons for leaving the field: hostile macho cultures, isolation, mysterious career paths, systems linking reward to risk, and extreme work pressures.

Four of the five reasons are interrelated: a woman who is one of only a handful of females in her department may experience an "old boys' network" around her that she is not invited to join socially or professionally. This would likely lead to feelings of isolation, and thus the lack of access to support or mentoring from senior staff, and the consequential lack of confidence to take risks because of it. The fifth element, that of extreme work pressures, is endemic to our industry's deadline-driven multi-time-zone work patterns and is often the final compounding factor in the decision to leave.
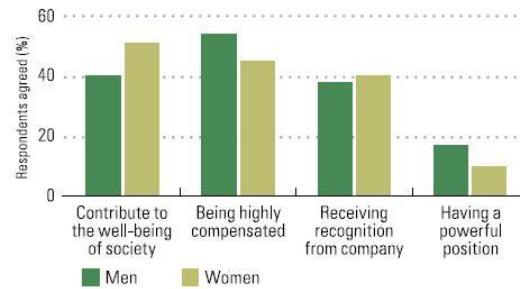
3 x 4.13 in
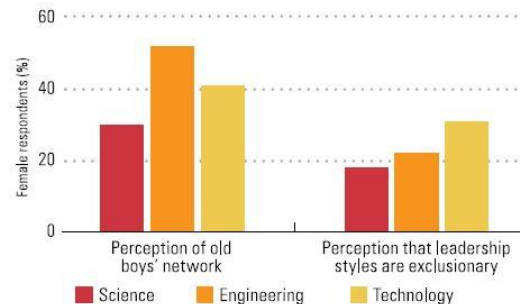


Fig. 1: Motivators for SET talent[3]

- Men
- Women

Categories: Contribute to the well-being of society; Being highly compensated; Receiving recognition from company; Having a powerful position



Fig. 2: Views of leadership[4]

- Science
- Engineering
- Technology

Categories: Perception of old boys' network; Perception that leadership styles are exclusionary

6

SWE
Society of Women Engineers

## Identifying the Athena Factor
20 minute activity with discussion

## Athena Factor Background
Companies are facing serious shortfalls in the supply of high-caliber talent across science, engineering, and technology (SET). The Bureau of Labor Statistics predicts that over the 2006–2016 period, job opportunities in SET will grow five times faster than other sectors (jobs in network systems, for example, are expected to grow by 53%). The supply of talent is not expected to keep up with the need.

*[Based on the 2008 study on The Athena Factor: Reversing the Brain Drain in Science, Engineering, and Technology]* Athena Factor survey data showed that 41% of highly qualified scientists, engineers, and technologists on the lower rungs of corporate career ladders were female. Despite the challenges females face at school and in our culture, a significant number of girls continue to begin their careers in science: Two-thirds of female scientists choose their fields to contribute to the well-being of society.

Athena Factor literature supports the statement that females are drawn to their fields because they want to save lives or make a difference to society." However, the overarching challenges that exist do in fact deter females from staying in SET careers; over time, fully 52% of highly qualified females working for SET companies quit their jobs, driven out by hostile work environments and extreme job pressures.

## Activity Objective
This activity and discussion intends to highlight the challenges that may exist within an organization that impact a female's motivation; contributing to the well-being of society, for staying in a SET field.

> *Note: This activity can be used in a small group setting or with a classroom environment. For rich discussions have participants team up by tables or in groups of 2's or 3's. This pairings will allow a variety of thoughts and stories to accompany responses to the activity and debrief questions.*

## Facilitation Steps
**Allow 2-3 minutes**
[As participants gather into the room] Ask participants to read through the Athena Factor Diversity & Inclusion Knowledge Card; front and back.

**Allow 5 minutes**
When it seems as if all participants have read through the front/back of the card, review the following challenges that contribute to women leaving organizations, share a story that may highlight the impact of one of the challenges below:

- **Hostile macho cultures.** Women in SET are marginalized by lab coat, hard hat, and geek workplace cultures that are often exclusionary and predatory (fully 63% experienced sexual harassment).

- **Isolation.** A woman in SET can be the lone woman on a team or at a site. This makes it difficult to find support or sponsorship (45% lack mentors; 83% lack sponsors).

- **Mysterious career paths.** As a result of macho cultures and isolation, women in SET find it hard to gain an understanding of the way forward—fully 40% feel "stalled" or "stuck" in their careers.

- **Systems of risk and reward.** The "diving catch" culture of SET companies disadvantages women, who tend to be risk averse (35% have difficulty with risk). Without buddies to support them they feel they can go from "hero to zero" in a heartbeat.

- **Extreme work pressures.** SET jobs are unusually time intensive and, because of their global scope, often involve working in multiple time zones (54% work across time zones).

**Ask:** Are there any questions about the Athena Factor motivator and/or the challenges that prevent growth and development in the SET field?

**Allow 5 minutes.**
Ask all participants to think of an a time, in the recent past or currently where they have either been a part of, witnessed, or heard about a situation where a female has been impacted by the various stated challenges. Discuss the situation with the partner/team using the worksheet sample format on the following page:

- Create a summary of the situation, the department, specific words, actions, or behaviors that have been/were exhibited to indicate the catalyst for an exit or fight or flight response was present.

- Next to the words, actions, and behaviors, create a column labeled, "results." Did the situation get resolved? Why or why not. Did the individual leave the organization? Transfer to another role/location/group?

- Create another column and label it, "Systemic Changes." Create a list of actions, behaviors, learning, and/or other reinforcement support by employees and leadership that will begin to create a path to inclusion for women that may prevent the occurrence of such situations and allow females to thrive and survive within the organization that is supportive of their motivation to contribute to the well-being of society.

**Allow 5-7 minutes.**
Ask participants/teams/tables to share one example of a situation where they spent time documenting the details on their worksheet. Listed below are a few questions that can assist in providing thoughts about systemic changes for each example presented:

- How can an organization at large ensure that individuals feel valued and trusted?
- What can you do within your team to encourage all people and ensure that they feel valued and respected?
- What evidence visibly represents and reinforces a commitment to diversity and inclusion within your organization?

| DESCRIBE | DETAIL | RESULTS | SYSTEMIC CHANGES |
|---|---|---|---|
| What was the situation that led to the exit of a female in an SET career? Be certain to document the associated challenge. | Words, actions, and behavior exhibited by either party involved. | What happened? | What might need to change |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |