Many behaviors are learned. So they can be unlearned.
Perpetual learner, like a grad student in life.
More when you are tired.
ALSO: Add opposition between “lack of confidence” and “behaving like a man”. Not to consider female characteristics as virtues. Learn to embrace them.
Gender Breakdown of Mathematics Departments at Five Group I Private Institutions- 2015

<table>
<thead>
<tr>
<th>Number</th>
<th>Bachelor’s</th>
<th>PhD</th>
<th>Senior Faculty</th>
<th>Bachelor’s</th>
<th>PhD</th>
<th>Senior Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvard</td>
<td>20%</td>
<td>12%</td>
<td>4%</td>
<td>245</td>
<td>58</td>
<td>25</td>
</tr>
<tr>
<td>MIT</td>
<td>28%</td>
<td>20%</td>
<td>8%</td>
<td>663</td>
<td>139</td>
<td>51</td>
</tr>
<tr>
<td>Yale</td>
<td>26%</td>
<td>16%</td>
<td>6%</td>
<td>176</td>
<td>31</td>
<td>17</td>
</tr>
<tr>
<td>Princeton</td>
<td>15%</td>
<td>13%</td>
<td>7%</td>
<td>209</td>
<td>85</td>
<td>41</td>
</tr>
<tr>
<td>Brown</td>
<td>27%</td>
<td>21%</td>
<td>8%</td>
<td>113</td>
<td>42</td>
<td>24</td>
</tr>
</tbody>
</table>

https://math.mit.edu/wim/2019/03/10/national-mathematics-survey/

Table 2: Profile of US math-related bachelor's degree recipients as reported by the National Center for Education Statistics via its Integrated Postsecondary Education Data System (IPEDS)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic (US Citizen or Permanent Resident)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Math-related Majors</td>
<td>15,183</td>
<td>18,298</td>
<td>23,505</td>
</tr>
<tr>
<td>Percent Female</td>
<td>46.4%</td>
<td>45.8%</td>
<td>44.0%</td>
</tr>
<tr>
<td>Percent Underrepresented Minority</td>
<td>11.6%</td>
<td>11.4%</td>
<td>13.5%</td>
</tr>
<tr>
<td>Mathematics Education Majors</td>
<td>1,525</td>
<td>1,924</td>
<td>2,211</td>
</tr>
<tr>
<td>Percent Female</td>
<td>66.2%</td>
<td>67.3%</td>
<td>66.8%</td>
</tr>
<tr>
<td>Percent Underrepresented Minority</td>
<td>7.4%</td>
<td>7.0%</td>
<td>9.8%</td>
</tr>
<tr>
<td>Foreign (Non-resident Alien)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Math-related Majors</td>
<td>764</td>
<td>903</td>
<td>2,734</td>
</tr>
<tr>
<td>Percent Female</td>
<td>36.0%</td>
<td>39.8%</td>
<td>44.4%</td>
</tr>
<tr>
<td>Number of Math Education Majors</td>
<td>6</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>Domestic and Foreign majors combined</td>
<td>15,947</td>
<td>19,201</td>
<td>26,239</td>
</tr>
</tbody>
</table>

1 Percent after deleting counts of individuals whose race/ethnicity was reported as unknown and, in 2012–2013, as 2 or more races. See Data Source Notes on p. 661 of this report for further details on the data and the definition of underrepresented minorities.


Women’s share of S&E bachelor’s degrees, by field: 2000–15

% of female grad students % tenured women

<table>
<thead>
<tr>
<th>Institution</th>
<th>2018</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvard</td>
<td>9.1</td>
<td>5.6</td>
</tr>
<tr>
<td>Brown</td>
<td>32.6</td>
<td>5.6</td>
</tr>
<tr>
<td>MIT</td>
<td>17.8</td>
<td>7.9</td>
</tr>
<tr>
<td>Yale</td>
<td>10.7</td>
<td>9.1</td>
</tr>
<tr>
<td>Chicago</td>
<td>27.8</td>
<td>9.4</td>
</tr>
<tr>
<td>Princeton</td>
<td>28.6</td>
<td>10.0</td>
</tr>
<tr>
<td>Cornell</td>
<td>28.1</td>
<td>10.3</td>
</tr>
<tr>
<td>Stony Brook</td>
<td>11.3</td>
<td>11.4</td>
</tr>
<tr>
<td>CalTech</td>
<td>12.5</td>
<td>11.8</td>
</tr>
<tr>
<td>UUIC</td>
<td>35.1</td>
<td>11.9</td>
</tr>
<tr>
<td>Texas-Austin</td>
<td>36.5</td>
<td>13.3</td>
</tr>
<tr>
<td>Michigan</td>
<td>29.4</td>
<td>16.9</td>
</tr>
</tbody>
</table>

Faculty and grad students body in some top math departments (Data from 2015 AMS website)

Why?

Why?

Why?

...and what can we do about it?

Why?

After her husband death, in 1710, Maria Winckelmann Kirch asked the Royal Berlin Academy of Sciences if she could fill her husband's position as Royal Astronomer (she had been doing the job herself since her husband became ill). The Academy refused.

In 1870, Sofia Kovalevskaya took private lessons with Karl Weierstrass, since the university would not even allow her to audit classes.

Why there is very little diversity in math?

- Gender schemas (Stereotypes)
- Implicit bias (self and from outside)
- Lack of role models (a vicious circle)
- Negative messages (expectations of brilliance..)
- Lack of mentors
- “Equal calls equal”
- Impostor feeling
- Isolation, feeling of not belonging.
- Accumulation of disadvantage.
- “Invisibility” of women
- Tendency to believe that “what it is is what ought to be.”
- Variability hypothesis??????
When did women get the right to vote in the US?

19th amendment, 1920 “The right of citizens of the United States to vote shall not be denied or abridged by the United States or by any State on account of sex.

When did African-Americans get the right to vote in the US?

15th Amendment - 1870: “The right of citizens of the United States to vote shall not be denied or abridged by the United States or by any State on account of race, color, or previous condition of servitude.”

The Voting Rights Act of 1965 prohibited a range of discriminatory state voting practices.

The Supreme Court struck down part of the Voting Rights Act in Shelby County v. Holder (2013), holding that the racist practices which necessitated the law in 1965 no longer present a problem in 2013.

A (male) look at a women’s suffrage movement

Words, as time goes by

<table>
<thead>
<tr>
<th>courtesan</th>
<th>a woman who attends a royal court as a companion or adviser to the king or queen.</th>
<th>Courtier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mistress</td>
<td>a woman in a position of authority or control.</td>
<td>Master</td>
</tr>
<tr>
<td>Governess</td>
<td>a woman employed to teach children in a private household.</td>
<td>Governor</td>
</tr>
</tbody>
</table>

1893 New Zealand
1902 Australia
1906 Finland
1913 Norway
1915 Denmark
1917 Canada
1918 Austria, Germany, Poland, Russia
1919 Netherlands
1920 United States (with exceptions. Voting rights act in 1965)
1921 Sweden
1928 Britain, Ireland
1930 South Africa (except black people, until 1994)
1931 Spain
1934 Turkey
1944 France
1945 Italy
1947 Argentina, Japan, Mexico, Pakistan
1949 China
1950 India
1954 Colombia
1957 Malaysia, Zimbabwe
1962 Algeria
1963 Iran, Morocco
1964 Libya
1967 Ecuador
1971 Switzerland
1972 Bangladesh
1974 Jordan
1976 Portugal
1989 Namibia
1990 Western Samoa
1993 Kazakhstan, Moldova
2005 Kuwait
2006 United Arab Emirates
2011 Saudi Arabia

Women and the right to vote

New Zealand 1893
Australia 1902 (except aboriginal)
Finland 1906
Norway 1913
Denmark 1915
Canada 1917 (except Indian)
Austria, Germany, Poland, Russia 1918
Netherlands 1919
United States 1920
Sweden 1921
Britain, Ireland 1928
South Africa 1930 (except black people, until 1994)
Spain 1931
Turkey 1934
France 1944
Italy 1945
Argentina, Japan, Mexico, Pakistan 1947
China 1949
India 1950
Colombia 1954
Malaysia, Zimbabwe 1957
Algeria 1962

1931 Spain
1934 Turkey
1944 France
1945 Italy
1947 Argentina, Japan, Mexico, Pakistan
1949 China
1950 India
1954 Colombia
1957 Malaysia, Zimbabwe
1962 Algeria
1963 Iran, Morocco
1964 Libya
1967 Ecuador
1971 Switzerland
1972 Bangladesh
1974 Jordan
1976 Portugal
1989 Namibia
1990 Western Samoa
1993 Kazakhstan, Moldova
2005 Kuwait
2006 United Arab Emirates
2011 Saudi Arabia
Searching for an illustration that would help me put things in perspective, went to google images once more.

The conclusion seems to be the that humans evolved to be white and male… does this mean that some of us do not exist?....

1924: Most men ask "Is she pretty?" not "Is she clever?"

1939: Beautiful but dumb. She has never learned the first rule of feminine charm. A Long-Lasting Deodorant. ODO-RO-NO.

We overheard that plaint… "If my hair looks such a mess one more night, I’ll kill myself!"
This mother’s day, Get back to the job that really matters.

Contributions to the accumulation of disadvantage.

SIMPLE ENOUGH FOR A WOMAN TO DRIVE. PHEW.

Used BMW’s
You know you are not the first. But do you really care?

Bechdel–Wallace test

To pass the test, a movie, TV show (video game, comic..), must
1. have at least two women in it,
2. who talk to each other,
3. about something other than a man

Variation: two ethnic minorities talk to each other for more than five minutes about something other than race.
On the Physiological Feeble-Mindedness of Woman, P.J. Möbius Published in 1900, by 1906, eight editions had appeared.

(IRreleVant Coincidence: P.J. Möbius was the grandson of Augustus Möbius Band.)

Contributions to the accumulation of disadvantage.

In the last 12 years,
- women made up, on average, 24% of the bench,
- 32% of interruptions were of the female justices,
- 4% were by the female justices.

<table>
<thead>
<tr>
<th></th>
<th>% Women</th>
<th>%interruption to all women</th>
<th>%interruption to each woman</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>11.11%</td>
<td>35.70%</td>
<td>35.70%</td>
</tr>
<tr>
<td>2002</td>
<td>22.22%</td>
<td>45.30%</td>
<td>22.65%</td>
</tr>
<tr>
<td>2015</td>
<td>33.33%</td>
<td>65.90%</td>
<td>21.97%</td>
</tr>
</tbody>
</table>

Jacobi and Schweers, 2017

While preparing a talk, I wanted to emphasize an idea. I searched in Google for the classical cartoon with a person and floating lightbulb.

Human beings in “idea clipart” are male with one exception and white, with no exceptions.

..don’t forget that Ginger Rogers did everything Fred Astaire did, ...backwards and in high heels.”
A princess lives in a row of seventeen adjacent rooms, each connected by a door to each room next to it. Each room also has a door to the outside. The princess enjoys the rooms but never stays in the same room two days in a row: at the end of each day she moves from the room she occupied to one of the rooms next to it (she chooses randomly).

On the first of June a prince arrives from a faraway kingdom to woo the princess. The princess’s guardian explains the habits of the princess and the rules he must follow: Each day he may knock on a single outside door. If the princess is behind it she will open it and meet the prince. If not, the prince gets another chance the next day. Unfortunately the prince must return to his kingdom on July 1. Can he devise a strategy to make sure he meets the princess before then?

No mathematician should ever allow himself to forget that mathematics, more than any other art or science, is a young man’s game.
In 2014-2015, 1214 Ph.D.s in pure math were granted in the US. 26% of those were granted to women.

Women disqualify themselves

Imposter Syndrome or Feeling

Two American psychologists, Pauline Clance and Suzanne Imes, coined the term in 1978. They described it as a feeling of “phoniness in people who believe that they are not intelligent, capable or creative despite evidence of high achievement.” While these people “are highly motivated to achieve,” they also “live in fear of being ‘found out’ or exposed as frauds.”

Implicit bias

- Implicit bias manifests in expectations or assumptions about physical or social characteristics dictated by stereotypes that are based on a person’s race, gender, age, or ethnicity.
- Many experiment suggest that people who intend to be fair, and believe they are egalitarian, apply biases unintentionally.
- Some behaviors that result from implicit bias (…) can either can reduce the quality of the workforce or create an unfair and destructive environment.

Jo Handelsman and Natasha Sakraney (President Obama’s) White House Office of Science and Technology Policy
Ranks of men and women in academia

• (...) men and women [in academia] start out on roughly equal footing.

• (...) several years down the line, the men are earning more, and they are being promoted at a faster rate than the women are.

• (...) in a group of people with outstanding early promise, will the men and women advance equally in academia? (..) After 10 to 12 years, the men were almost a full rank ahead of the women.

Publishing in academia

• (...) men in academia publish more than women do,
  - Even when you control for productivity, men still advance more rapidly than women do.
  - Although men publish comparatively more papers, women's papers have a higher citation rate

Is it sexual harassment?
How would you proceed?

• You (a grad student) are in a conference. A senior person approaches you and starts talking about the talk you both just attended. You listen attentively, asking an occasional question. The senior person looks at you in the eyes and caresses your shoulder.

• You (a grad student) are in a conference. Along the whole weekend, a senior person sits at your side in every talk and constantly fixates eyes on you.

• You (a grad student) receive insistent offers of intimate nature from a senior person.
Sexual harassment undermines women's professional and educational attainment and mental and physical health.

“The cumulative effect of sexual harassment is significant damage to research integrity and a costly loss of talent in academic sciences, engineering, and medicine.”

2018 Report by Nacional Academies for Sciences, Engineering and Medicine

Sexual harassment in academia

Academic workplaces are second only to the military in the rate of sexual harassment, with 58 percent of academic employees indicating they had such experiences, according to one study cited in the report.

“There is no evidence to suggest that current policies, procedures, and approaches have resulted in a significant reduction in sexual harassment.”

NYTimes-June 12, 2018 about Nacional Academies for Sciences, Engineering and Medicine
Sexual harassment in academia: Suggestions of what to do/advice

• Read the Callisto Survivor’s Guide. https://www.projectcallisto.org/survivors-guide.pdf
• Document as much as possible: Write it down with details, take pictures, save messages, emails. If possible, document before talking to anybody, and with a time stamp.
• Try to find people who went through the same situation.
• Report when and if you are ready.
• Tell a friend.
• Talk to a therapist
• Have an answer prepared

Inspired on Sexual Harassment of Women Report, Nac. Acad. Science, Med, and Eng., 2018

Accumulation of disadvantage

❖ **nothing seems overtly wrong** in most work situations, especially in academia and science, where the **meritocratic ethos** is so prominent.

❖ People are often unable to perceive or assess **how small imbalances can really add up**.

❖ Any single instance of bias is likely to be tiny, and someone might say, **you're making a mountain out of a molehill**.

Mountains are molehills piled one on top of the other

Virginia Valian, 1998

Accumulation of disadvantage

• Members of a simulated organization were assigned a score with a normal distribution.
• 1% of bias points were added to men.
• At the lowest level of the pyramid there were as many women as there were men.
• At the end of the simulation, top of the pyramid, the highest career level, the distribution was 65% men, 35% women.

The cause for such distribution is the repeated disadvantage of 1%.

Martell, David, Emrich, 1996
We tend to believe, what is, is what ought to be... (Naturalization of the status quo)

...nothing seems overtly wrong in most work situations, especially in academia and science, where the meritocratic ethos is so prominent. (Valian, 1998)

Lack of self-confidence

...students who were not going on to Calculus II choose from a list of potential reasons,

'I do not believe I understand the ideas of Calculus I well enough to take Calculus II.'

• Roughly twice as many women as men chose this as one of their reasons.

• Previous research suggests that the perceived lack of understanding by women is not because women do not actually understand the material as well as men;

  Ellis, Fosdick, and Rasmussen, 2016

Stereotype Threat

An instance: Women taking a math test will perform less well when told that women aren't expected to do well in math than when they are told that they can do well.

Stereotype threat refers to a situation in which people are or feel themselves to be at risk of conforming to stereotypes about their social group. If negative stereotypes are presented regarding a specific group, group members are likely to become anxious about their performance, which may hinder their ability to perform at their maximum level”

The effect of stereotype threat (ST) on math test scores for girls and boys. Data from Osborne (2007)

Steele, Aronson, Quinn, 1999
We hypothesize that, across the academic spectrum, women are underrepresented in fields whose practitioners believe that raw, innate talent is the main requirement for success, because women are stereotyped as not possessing such talent. This hypothesis extends to African Americans’ underrepresentation as well, as this group is subject to similar stereotypes.

Leslie, Cimpian, Meyer, Freeland, 2015

Expectations of Brilliance

Thao Do (who scored highest from the SB team on the Putnam the year we finished 4th in the country)

An excerpt from an email she sent me when she was a Freshman at Stony Brook

“Interestingly, when I searched your email on gmail, I found out that you are the person who takes care of math club in our school, which I attend every week. Also, I think I met you once in the talk of Prof John Milnor. I admire you a lot because I want to become a female math professor and I know that it is not easy.”

Role models (my personal experience)

Thao Do (who scored highest from the SB team on the Putnam the year we finished 4th in the country)

An excerpt from a recent email.

I find it very important to have women mathematicians around. At MIT we have a strong female community; each year there's a nice party, and several talks per semester where we invite successful female mathematicians come to share about their career path. Most of my friends at MIT now are female; I live with 2 other female grad students which is great because we often share our insecurities, how we feel stupid in math, how uncertain the future is and how hard it must be to find a tenure job nowadays.

Role models

Lack of role models

One of the initial difficulties I faced as a woman in math was the lack of a role model. Despite having kind and encouraging professors here at Stony Brook, (often) being the only woman in the class, and not having a single female math professor resulted in self doubt. I found it hard to believe that women are good enough for math, or that I am good enough for math. I blamed all my accomplishments on affirmative action. This all changed once I met Professor Moira Chas. Her passion for the subject, the vividness and enthusiasm with which she taught, dispelled every doubt I had with regard to the competence of women in math. Not only that, Moira helped, supported, and encouraged me through difficult times. I don’t think I would have been where I am if not for Moira, and I want to pay forward what she has given me.

Role models

Lea Kenigsberg (extract from her essay for an NSF grant proposal)
Gender schemas

❖ Women may fear or suspect that their work will not be evaluated in the same way a man's is, so they need more documentation to back up what they are saying. Men may be more willing to take a flier, to come up with some intriguing hypothesis for which they have relatively meager data and just put it out there to be proven true or false. Women may believe, perhaps correctly, that they are less likely to be given the benefit of the doubt, and that their off-the-cuff ideas will be dismissed as foolish. We associate risk-taking behavior with men, and we may be less tolerant of intellectual risk-taking in women.

❖ In many professional situations, our gender schemas have the effect of making a man seem slightly more qualified and competent than he is, and a woman slightly less competent than she is. Valian, 1998

There are three broad hypotheses about the sources of the very substantial disparities with respect to the presence of women in high-end scientific professions.

❖ the first is what I call the high-powered job hypothesis… what fraction of young women in their mid-twenties make a decision that they don't want to have a job that they think about eighty hours a week.

❖ The second is what I would call different availability of aptitude at the high end, and

❖ The third is what I would call different socialization and patterns of discrimination in a search.

Variability Hypothesis? Hill recent paper

Side note: tests developed in the US (...) include almost no questions requiring complex problem solving.

Why diversity? (my take on it)

❖ We do not want to lose good mathematicians (by being biased)

❖ We should be fair, as fair as we can.

❖ Diversity helps to achieve excellence (by studying problems from different points of view)

❖ We want to attract and retain a diverse body of (grad and undergraduate) students, and a diverse faculty.

❖ To make High Authorities happy

Remember the words of former Harvard president Larry Summers?

Variability Hypothesis?

US girls perform as well as boys on standardized math tests at all grade levels.

Among the mathematically gifted, there may be as many as 2-to 4-fold more boys than girls.

This gender gap has been closing over time at all levels.

Hyde and Mertz, 2009

WHY DIVERSITY?

57

59

60
IDEAS FOR INDIVIDUAL SURVIVAL AND CHANGE

❖ Offer support to someone else who feels insecure.
❖ Find a community. If you cannot find members of a community locally, follow a Twitter feed ( #BLACKandSTEM or #womenandSTEM can serve as reassurance that they really do belong in science.)

❖ Remember and remind people that mistakes are valuable (if you learn from them). They help in the learning process and produce brain growth. (Jo Boaler)
❖ Do not interpret a failure as “I am not good enough at this”.

Emphasize the “growth mindset” as opposed to the “fixed mindset”.
Possibles strategies for individual change: A list found in internet (unidentified source)
Emphasize the “growth mindset” as opposed to the “fixed mindset”.

Advocate for yourself. This includes

- avoiding words such as ‘just’ and ‘only’ when describing your work,
- use the ‘elevator talk’ to talk to your colleagues about your math interests and achievements.

Learn about gender schemas.

- Gender schemas are largely non conscious hypothesis we all have about the different characteristics of males and females.
- We see females as nurturing, as communal, and as doing things out of concern for other people.
- We see males as capable of independent action, doing things for a reason, and getting down to the business at hand.
Ideas for Individual Survival and change

- Do not apologize for every mistake, whether real or perceived.
- Consider using a more assertive language.

“I noticed the female justices say things like,

‘May I ask,’ or, ‘Excuse me,’

before they actually get to the substance of their question, and

that’s where they’re most commonly interrupted…”

Jacobi, 2017

Imagine, in detail, people who violate expected stereotypes in a positive way and practice thinking about these positive examples.

Not all members of these groups will be affected in the same way.

Non-members of these groups might be affected by the same or similar issues.

Outliers exists.

Problematic situations occur with certain frequency but not all the time, and affect not only members of underrepresented groups.

Fake it until you make it?
In short, mathematics only exists in a living community of mathematicians that spreads understanding and breaths life into ideas both old and new.

The question of who is the first person to ever set foot on some square meter of land is really secondary.

Revolutionary change does matter, but revolutions are few, and they are not self-sustaining --- they depend very heavily on the community of mathematicians.

Bill Thurston

Thanks

❖ Many people, (mainly Virginia Valian and also Benson Farb, Amie Wilkinson, Helen Grundman, Jean Taylor, Dennis Sullivan, Katrin Wehrheim, Moira Soto) gave me suggestions for this presentation. The final product is of course my responsibility.

❖ The section about mentoring owes a great deal to a talk by Abigail Stewart. https://www.drp-network.org/workshop-2018.html

References

Ellis, Jessica, Bailey K. Fosdick, and Chris Rasmussen. "Women 1.5 times more likely to leave STEM pipeline after calculus compared to men: Lack of mathematical confidence a potential culprit." PloS one 11.7 (2016): e0157447.


Valian, Virginia. 'Why so slow.' The advancement of women 280 (1998).


Dealing With Impostor Syndrome When You’re Treated as an Impostor, June 12, 2018, by Kristin Wong, NYTimes


Implicit bias Jo Handelsman and Natasha Sakraney

Why Are There Still So Few Women in Science? NYTimes, Jo Bader website

You got the job! So what do you feel like a looser? Battle Tactics For Your Sexist Workplace, Podcast by Jeannie Yandel and Eula Scott Bynoe
Pause and question our schemas regularly

Implicit bias makes us forget people who belong to certain groups. Thus, it may be useful to make a conscious effort to bring those people “to the table” when organizing lists (of conferences, of candidates for a position…)

In fact, widening the pool of female candidates does help. Women progress faster through the ranks in those law schools with a high percentage of female faculty members than they do in schools where there are few female professors.

Studies have shown that when people are asked to rate a female candidate for a managerial job, they rate her more positively if she is one of several women in the candidate pool than if she is the only woman.

When assessing the behavior or performance of someone from a stigmatized group, try to focus on concrete positive and negative factors and your memory of what actually happened, rather than relying on overall “gut” feelings.

Valian, 1998
Ideas for change in hiring practices

Instead of
"We particularly encourage applications from minorities and under-represented groups." write
"We aim to be a diverse and inclusive department."
(unless you really have a diverse and inclusive department)
❖ Consider placing this sentence right after the sentence near the top, to make clear that it is not a pro forma interest.

Ideas for advising: A list found in internet (unidentified source)

What Can I Say To Myself?

Instead of...
• I'm not good at this. • What am I missing?
• I'm awesome at this. • I'm on the right track
• I give up. • I'll use some of the strategies we learned
• This is too hard. • This may take some time and effort
• I can't make this any better. • I can always improve, so I'll keep trying
• I just can't do math. • I'm going to train my brain in math
• I made a mistake. • Mistakes help me to learn better
• She's so smart. I will never be that smart. • I'm going to figure out how she does it so I can try it!
• It's good enough. • Is it really, my best work?
• Plan A didn't work. • Good thing the alphabet has 35 more letters.

Advising students

The mentee/student’s expectations:
❖ I don’t belong
❖ I’m not good at this
❖ People like me can’t do this
❖ You aren’t like me
❖ You can’t help me you won’t help me

Based on a talk by Abigail Stewart
Advising students

- **Surface-level differences** (like gender, race, age…) will decrease “interpersonal comfort”.
- **Find deep level similarities** (like values, tastes, experiences). Interpersonal comfort decreases anxiety and improves performance.
- Seek out ways to collaborate or be on the same footing
- Consider creating interdependent ”jigsaw” conditions, team projects where every member of the team has an individual task.
- Be aware that most likely, you will have a certain degree of **anxiety** in presence of a member of an underrepresented group.

Advising students

A mentor gives students access to an interpersonal relationship with a ”role model” in an area where they are trying out a “possible self”.

This identification becomes more difficult if you seem impossibly skilled.

Advising students

How can implicit biases affect the mentor-mentee relationship? The mentor might

- have lower expectations than the student can meet
- give overly positive feedback (because of low expectations)
- create a patronizing environment

It is important to be aware of our own implicit biases and how these biases might enter mentoring experiences

Advising students

**Good mentoring practices**

- Communicate high and reasonable expectations. Express confidence student can meet them
- Provide accurate and fair feedback
- Provide encouragement