What can I do today to create a more inclusive community in CS?

Start of Term:

- At the beginning of the quarter, ask each student to email you to introduce themselves by naming one of their core values, and one way that CS relates to or could be used in service of that core value (or write it down in class, and/or share with a neighbor in class).[1]

Mid-Term:

- Email top performers on a recent homework or exam to congratulate them; be sure to include a diverse group.
- Provide students with clear and timely feedback, including class-wide distribution data. Women and minority students often fear the worst about their position relative to the class and can be reassured by data.[2]
- After a midterm exam, step through the math showing the class that students can still pass the course even if they did poorly. It's just some multiplication, but take the time to talk about it. Be factual—no need to "sugar coat"—but provide facts that will help reassure students who think things are worse than they really are.
- Reach out to a student who has filed a disability accommodation form with you and ask them if their needs are being met in your class. Reaffirm your commitment to complying with their approved accommodations and your willingness to receive complaints if there is a problem.

End of Term:

- Personally invite a woman or minority student who is doing well to major in CS, apply to an internship, or go to grad school. If your TAs work with small groups of students in a discussion section, have them do this as well.[3]

Any Lecture Day:

- Review today's lecture slides to make sure that your slides are free from gendered pronouns, especially those used in ways that conform to stereotype. Use of "they" (along with their/them) is now widely accepted as a neutral alternative to arbitrarily choosing between "he" and "she," or the awkward construction "he or she."
- Review today's lecture slides to make sure that stock photos and illustrations with people in them include diverse races and genders in non-stereotyped roles.
- Take a moment in class today to encourage students to focus on their "slope," not their "y-intercept." That is, in the long run, it matters how fast you're growing and learning, not advantages or deficiencies in where you started.[4]
- Review today's lecture slides for the use of arbitrary names in examples. Choose a broader selection (Juan, Neha, Maria, Minseo, Mohammed, instead of just Jane Doe and John Smith).
- Start class today by telling the students you're proud of them and how hard they are working. Tell them you are enjoying working with them this quarter.

- Start class today by renewing your encouragement to students to come to office hours. Understand that not all students have had the mentoring necessary to be confident that they know you how expect them to interact with you, so explicitly instruct your class in how to do it. For example: "You don't need to have a particular question—you're welcome to just stop by for 5 minutes to introduce yourself," or "I'm not just here for homework questions—if you are considering changing your major to CS and want to talk about it, if you want to know what it's like to work as a software engineer, if you are thinking about applying to grad school but don't know where to begin, I'm happy to discuss that kind of thing as well."
- Choose a lecture to actually write a tally of how many times you've called on men vs women in the class. Both men and women are prone to calling on men more often. You may do this unconsciously unless you consciously do otherwise.[5]

General Do and Don't Advice:

- Never say, "This UI is so easy your mom could use it" or "How would you explain this to your mom?" or other phrases that equate women with lack of tech savvy.[6]
- Believe that hard work and effective practice matters more than DNA. Your beliefs influence students' beliefs and impact their performance.[7]
- Avoid heteronormative examples (e.g., bijective function between sets "boys" and "girls").
- Have very clear written expectations for student work (coding style, project components, etc.). Where possible, show sample solutions exactly as you would want a student to write them (don't just give a "sketch" of the solution).
- Allow and encourage pair programming on assignments.[8]
- If your class includes a significant group project, instruct students about your expectation that each member of the team contribute in both technical and non-technical components. Research has shown that in group projects in engineering classes, female students often find themselves pushed into stereotyped roles by their peers in the group. [9]
- When a student is speaking, wait for the student to finish then count "one one-thousand, two one-thousand" in your mind before responding. Both men and women are prone to prematurely cutting off women when they speak. You may do this unconsciously unless you consciously add that pause.[10]
- Actively mitigate when students may be intimidating each other. When a student uses jargon in a question (often one of those questions that is more of a boast than a real question), explicitly identify when you expect that most students will not be familiar with that jargon, and/or it is not something other students are expected to know for the class, e.g., "Thanks for your comment. For the rest of the class, I'm sure most of you aren't familiar with some of those terms. Don't worry, those terms are outside the scope of this class and not necessary to know."
- Ensure that you and your TAs call each student by their preferred name and gender pronoun—including allowing students to write their preferred name on homework and exams—even if these do not match their current legal and/or registrar records of name and sex.[11] This issue deeply affects transgender students, and also many students who prefer to have an alternate anglicized name. You could also put a statement in your syllabus that you are committed to honoring students' preferred name and gender pronoun.

- Watch out for examples or anecdotes about your childhood or daily life that may cause students to feel excluded for economic reasons (e.g., talking about pricey gadgets or vacations in Hawaii as normal). Even if you know that you did not experience these things and are simply using them as an example, students don't know that and can mistakenly assume you are referring to them in a normative way.
- **Encourage your colleagues to do the items on this list. Advertise your good example by bringing up your performance of these items in conversations with other faculty.**

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[1] Research shows this intervention mitigates stereotype threat. Reduced racial gap by 30%. https://www.gsb.stanford.edu/insights/value-values-affirmation

[2] These fears are related to "Imposter Syndrome"—even highly talented students from under-represented groups fear that they are unskilled, and more unskilled than everyone else. Overview of Imposter Syndrome research: https://en.wikipedia.org/wiki/Impostor_syndrome

[3] Holly Lord and Joanne McGrath Cohoon. "Recruiting and Retaining Women Graduate Students in Computer Science and Engineering," 2006.

[4] Articulating this idea as slope/y-intercept is from Professor John Ousterhout of Stanford.

[5] Jere Brophy and Thomas Good. "Teachers' communication of differential expectations for children's classroom performance," 1970. http://psycnet.apa.org/journals/edu/61/5/365.pdf

[6] This sexist trope is something women have been working to expunge from our vocabulary. Unfortunately, it is still often seen in discussion of UI design. http://geekfeminism.wikia.com/wiki/So_simple,_your_mother_could_do_it

[7] Carol Dweck. "The New Psychology of Success." http://s3.amazonaws.com/ebsp/pdf/mindsett.pdf This research shows that minority students perform worse in classes where the professor believes in a "fixed mindset" (talent is innate) when compared to performance in classes where professor has a "growth mindset" (talent can be developed through effort). See also CS-specific work on mindsets: Laurie Murphy and Lynda Thomas. "Dangers of a fixed mindset: implications of self-theories research for computer science education." ITiCSE 2008.

[8] Among other research showing benefits of pair programming: Leo Porter and Beth Simon. "Retaining nearly one-third more majors with a trio of instructional best practices in CS1," SIGCSE '13. http://dl.acm.org/citation.cfm?id=2445248

[9] "When working with male classmates, …[female students] often spoke of being relegated to doing routine managerial and secretarial jobs, and of being excluded from the 'real' engineering work." https://hbr.org/2016/08/why-do-so-many-women-who-study-engineering-leave-the-field

[10] Occasioned by a news item about a panel discussion in Silicon Valley, NYTimes reviews research on women being interrupted when speaking: http://nytlive.nytimes.com/womenintheworld/2015/03/19/google-chief-blasted-for-repeatedly-interrupting-female-government-official/

[11] Faculty at institutions in the US should note that in May 2016, the US Department of Justice and the US Department of Education released a Dear Colleagues letter requiring such accommodation of transgender students' gender identities, in connection with Title IX obligations. http://www2.ed.gov/about/offices/list/ocr/letters/colleague-201605-title-ix-transgender.pdf