## Works Cited

- Brown, P. C., Henry L. Roediger, I., & McDaniel, M. A. (2014). *Make It Stick: The Science of Successful Learning*. New York, New York: Belknap Press.
- Carey, B. (2014). *How We Learn: The Surprising Truth About When, Where, and Why It Happens.* New York, New York: Random House.
- Carnegie Mellon University. (2014, August 27). Flexing the brain: Why learning tasks can be difficult.

  Retrieved October 7, 2016, from Science Daily: Flexing the brain: Why learning tasks can be difficult
- Columbia University. (2016, October 5). Brain Study Reveals How Teens Learn Differently Than Adults.

  Retrieved October 17, 2016, from Laboratory Equipment:

  http://www.laboratoryequipment.com/news/2016/10/brain-study-reveals-how-teens-learn-differently-adults
- Dunlosky, J., Rawson, K. A., Marsh, E. J., Nathan, M. J., & Willingham, D. T. (2013, January). *Improving Students' Learning With Effective Learning Techniques*. doi:10.1177/1529100612453266
- Northwestern University. (2014, February 15). A strategy that narrows academic achievement gap by 63 percent. Retrieved October 7, 2016, from (e) Science News:

  http://esciencenews.com/articles/2014/02/15/a.strategy.narrows.academic.achievement.gap.6
  3.percent
- University of Eastern Finland. (2015, November 3). *Empathetic teachers enhance children's motivation for learning*. Retrieved October 7, 2016, from Science Daily: https://www.sciencedaily.com/releases/2015/11/151103064738.htm
- Youlden, M. (2016, April 30). *The key to learning a new skill? Wanting it badly enough*. Retrieved October 7, 2016, from Guardian: https://www.theguardian.com/education/2016/apr/30/the-key-to-learning-new-skills-wn

Above is just a sample of available materials.

- 1. **Know your myths** visit website, talk about learning styles
- 2. Reinforcement learning inquiry-based, discovery learning
- 3. **Practice testing** can talk about my website—don't have to use your own if you can borrow someone else's, as long as it's similar enough; talk to students about strategy for writing tests
- 4. **Distributed Practice and Frequent Quizzing** Quizlet, homework quizzes, reading quizzes, daily quizzes, review quizzes; give audience index cards and have them write a flashcard or quiz question, maybe ask for a couple shares?
- 5. **Elaborative Interrogation** Not mnemonics, needs to be more meaningful; Songs
- 6. **Self-explanation** discussion questions; give audience a note card and ask them answer the question on the following slide
- 7. **Active Learning Strategies** get examples from the audience, talk about modeling projects in math, project-based learning in computer technology
- 8. **Interleaved Practice** we've talked about several different strategies so far, what are the plusses and minuses of the strategies: get feedback from audience
- 9. **Share your struggles** talk about my experience with multivariable calculus
- 10. **Relearning** earlier we talked about practice testing: what did we say about it? Give it a new context for easier recall, and build more connections

- 11. **Combine New and Old** give examples: last week, last month, last year? What do your students already know or should know?
- 12. **Do students want what you are teaching?** one of the biggest struggles teaching is the students who say "I'm never going to use this!" Have examples ready. Talk to faculty in the fields your students are majoring in as to why their program needs your course. Do you ask students what their majors are? Use real-world connections that everyone needs to know: money often helps!
- 13. Avoid Implicit Bias it's not just policing. Old stories about gender bias (unintentional, like calling on boy students more because they "act out" or need "more attention"). Everyone has them. Even minorities have negative opinions of their own ethnic group because it permeates the culture. It can be a matter of small sample sizes and our poor sense of intuitive statistics. Knowing what those biases are is the first step to actively counteracting them and developing neutral strategies. What would their reactions be if I'd walked in to give my talk wearing a T-shirt? Would it really matter to the material I'm talking about, or only to the audience? What about flip-flops?
- 14. **Explain it** Students teaching each other; as teachers we know we didn't really understand our subjects as well as we thought until we had to explain it to someone else; use it in the classroom; ask audience about a really hard course they were originally intimidated to teach and what they learned from it
- 15. **Praise the Right Way** success is pushing yourself, not an A; How many smart people do you know with poor study skills? (Lots!)

- 16. **Engage more senses** Stand up and do a dance? Talk about learning styles here. Use props!
- 17. **Teach students how to ask for help** talk about my own experience with being too prideful to ask for help from tutors or teachers, starting class every day with questions
- 18. **Make learning everyday** math stories anyone?
- 19. **Mix it up** Write down three of the strategies we've talked about that they'd like to try in their own classes.