**Annotated Bibliography for O’Farrell and Freeman.**

**The following list is by no means exhaustive, but centers around themes that were important to us in the design of this course, particularly a) overcoming student math anxiety and encouraging a “growth mindset”, b) combining math and geoscience for an “integrative approach” for STEM learning, and c) implementing active learning strategies including “problem/project based learning” (PBL). It is meant to be a starting place for geoscientists who are interested in teaching an introductory math class.**

**References and resources for how students learn STEM:**

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Nadelson, L. S., and Seifert, A. L., 2017, Integrated STEM defined: contexts, challenges, and the future: The Journal of Educational Research, v. 110, no. 3, p. 221–223. DOI: 10.1080/00220671.2017.1289775 *(Summary of the idea of integrated STEM and why it is important)*

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Pluta, W. J., Richards, B. F., and Mutnick, A., 2013, PBL and beyond: trends in collaborative learning: Teaching and Learning in Medicine, v. 25, no. S1, p. S9–S16. DOI: 10.1080/10401334.2013.842917 *(Summary of different collaborative learning models, including “problem-based learning” from the medical profession, which invented the PBL model)*

**References and resources for how students learn math:**

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Seeley, C. L., 2016, Making Sense of Math: How to Help Every Student become a Mathematical Thinker and Problem Solver: Alexandria, ASCD/Aurora, NCSM/Reston, NCTM, 61 p. *(Good introductory book about teaching math that summarizes a lot of recent research)*

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