Active learning in math and statistics courses

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Contact

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- Blogs: rtalbert.org / gradingforgrowth.com / intentionalacademia.substack.com
- Books:
  - Flipped Learning: A Guide for Higher Education Faculty
  - Grading for Growth: A Guide to Alternative Grading Practices that Promote Authentic Learning and Student Engagement in Higher Education (with David Clark; preorder now, available July 2023)

From this morning's talk

- Slides from the talk: Talbert YSU talk
- Resource page from the talk: Talbert YSU resource page
- Slides for this session: Talbert YSU math session

Class materials

Help yourself, no attribution or permission needed

- MTH 201: Calculus
  - Main repository
  - Syllabus
  - Activity with basic derivatives
  - Activities about the Second Derivative Test
- MTH 225: Discrete Structures for Computer Science 1
  - Main repository
  - Syllabus
  - Sample slides with lots of active learning activities about sums
- MTH 302: Linear Algebra and Differential Equations
  - Main repository
  - Syllabus
  - Directory of class activities
- MTH 325: Discrete Structures for Computer Science 2
  - Main repository

    - Syllabus
    - Sample group activity (Euler and Hamiltonian structures)

To learn more

- Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the national academy of sciences*, *111*(23), 8410-8415. https://www.pnas.org/doi/full/10.1073/pnas.1916903117
- Overview of peer instruction
- How active learning can improve inequities in STEM
- Seminar on implementing active learning in STEM courses