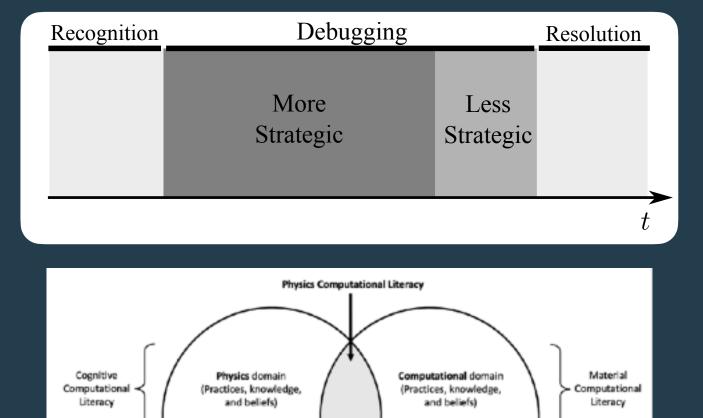
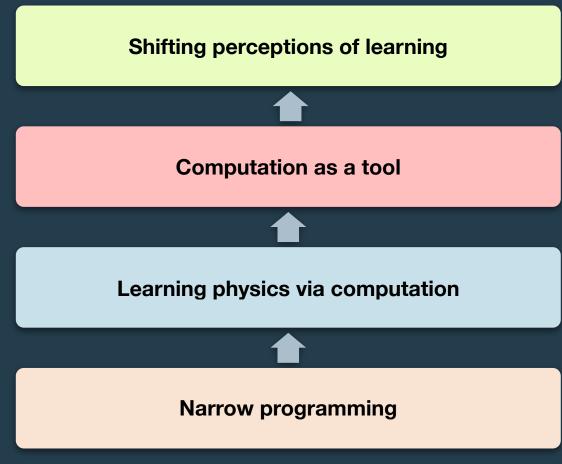
integrating computing in physics

research





Obsniuk, Irving, Caballero, PERC 2015 Pawlak, Irving, & Caballero, Phys. Rev. PER, 2020 Odden, Lockwood, Caballero, Phys. Rev. PER, 2019

faculty learning community





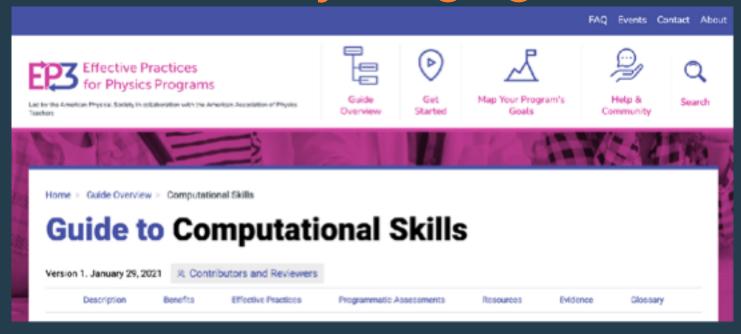


Caballero, et al. TPT 57.6 (2019): 397-399 gopicup.org

community engagement

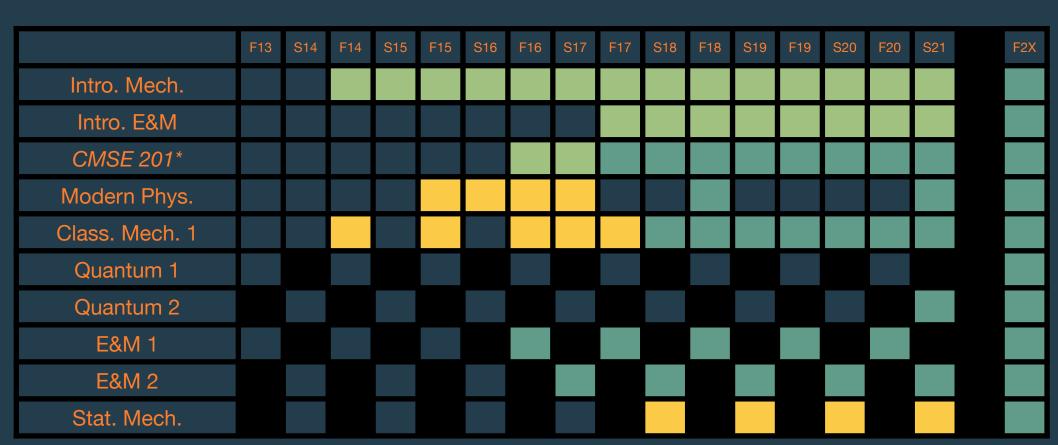
Social domain (Practices, knowledge, and beliefs)

Social Computational Literacy



department-wide efforts

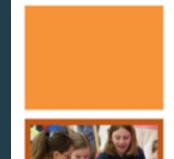
Caballero & Hjorth-Jensen, 2018



supporting pre-college physics educators







Michigan K-12 Standards Science



November 2015

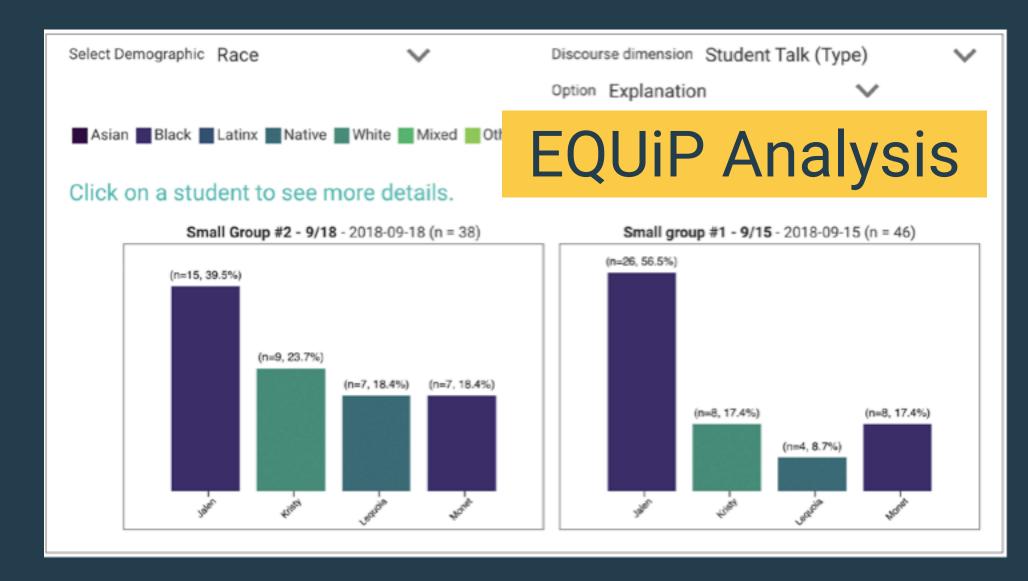




create a computational model to calculate...

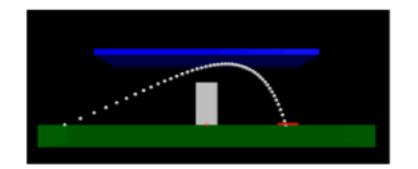
use mathematical and/or computational representations to support explanations of factors...

use mathematical or computational representations to predict the motion...



equip.ninja Christensen, et. al. TPT 60.6 (2022): 414-418.

Marshmallow Launch



Activity Information

Learning Goals

- Create and modify a computational model to describe a given system
- Use Newton's second law to relate the acceleration of a marshmallow with the forces acting on it (HS-

teacher developed computing activities

> Willison, et al. 2022 PERC Proc. Stroupe, David, et al. ICLS 2022.

Hamerski, Patti C., et al. Phys Rev PER 18.2 (2022): 020109.

