

**S. Selcen Guzey**  
 100 N. University St.  
 West Lafayette, IN, 47906  
 sguzey@purdue.edu

### Degrees

Degree	Institution	Title of Doctoral Thesis/Advisor	Date
B.S.	Hacettepe University	Biology	May 2003
M.A.	University of Minnesota	Science Education, Advisor: Gillian Roehrig Thesis: The influences on inquiry-based teaching: Pedagogical content knowledge, teaching beliefs, and teaching experience	July 2007
Ph.D.	University of Minnesota	Science Education, Advisor: Gillian Roehrig Dissertation: Science, technology, and pedagogy: Exploring secondary science teachers' effective uses of technology	August 2010

### Positions

Title	Institution	Date
Research Associate	STEM Education Center, University of Minnesota	2010-2014
J.A. Thwait's Fellow	Center for Engineering Education, St. Thomas University	Summer 2014
Assistant Professor of Science Education	Department of Curriculum and Instruction and Department of Biological Sciences, Purdue University	2014 - 2019
Associate Director of Research Initiatives	Center for Advancing the Teaching and Learning of STEM (CATALYST), College of Education, Purdue University	2016 - present
Courtesy Faculty	School of Engineering Education, Purdue University	2017 - present
Associate Professor of Science Education	Department of Curriculum and Instruction and Department of Biological Sciences, Purdue University	2019-present

### Selected Publications

- Anwar, S., Menekse, M., **Guzey, S. S.**, & Bryan, L. (2022). The effectiveness of an integrated STEM curriculum unit on middle school students' life science learning. *Journal of Research in Science Teaching*, 59(7), 1204-1234.
- Guzey, S. S.** & Yoon, J. (2021). Productive thinking in engineering design. *International Journal of Science and Mathematics Education*, 19, 215-232.
- Siverling, E., Moore, T., Suazo, E., Mathis, C., **Guzey, S. S.** (2021). What initiates evidence based reasoning?: Situations that prompt students to justify their design ideas and decisions. *Journal of Engineering Education*, 110(2), 294-317.
- Guzey, S. S.**, Caskurlu, S., & Kozan, K. (2020). Integrated STEM education approaches and STEM learning. In C. C. Johnson, M. J. Mohr-Schroeder, T. J. Moore, & L. D. English (Eds.), *Handbook of Research on STEM Education* (pp. 65-75). Routledge.
- Bryan, L., & **Guzey, S. S.** (2020). K-12 STEM education: An overview of perspectives and considerations. *Hellenic Journal of STEM Education*, 1(1), 5-15.
- Aranda, M., **Guzey, S. S.** & Moore, T. J. (2020). Multidisciplinary discourses in engineering design based science curricular unit. *International Journal of Technology and Design Education*, 30(3), 507-529.
- Aranda, M. L., Lie, R., **Guzey, S. S.**, Akarsu, M., Johnston, A., & Moore, T. J. (2020). Examining teacher talk moves in an engineering design-based science curricular unit. *Research in Science Education*, 50, 469-487.
- Johnston, A. C., Akarsu, M. G., Moore, T., & **Guzey, S. S.** (2019). Engineering as the integrator: A case study of one middle school science teacher's talk. *Journal of Engineering Education*, 108, 418-440.

- Dubinsky, J., **Guzey, S. S.**, Schwartz M. S., Roehrig, G., MacNabb, C., et al. (2019). Contributions of neuroscience knowledge to teachers and their practice. *The Neuroscientist*, 25(5), 394-407.
- Radloff, J., **Guzey, S. S.**, Eichinger, D., & Capobianco, B. M. (2019). Introducing engineering design to an introductory preservice elementary biology content course using a life science compost modeling task. *Journal of College Science Teaching*, 49(2), 45-52.
- Lie, R., Aranda, M., **Guzey, S. S.**, Moore, T. (2019). Students' views of design in an engineering design-based science curriculum unit. *Research in Science Education*, 51, 663-683.
- Guzey, S. S.**, Whalen-Ring, E., Harwell, M., & Peralta, Y. (2019). LifeSTEM: A study of life science learning through engineering design. *International Journal of Science and Mathematics Education*, 17(1), 23-42.
- Guzey, S. S.** & Ring-Whalen, B. (2018). Negotiating science and engineering: An exploratory case study of a reform-minded science teacher. *International Journal of Science Education*, 40(7), 723-741.
- Guzey, S. S.** & Aranda, M. (2017). Student participation in engineering practices and discourse: An exploratory case study. *Journal of Engineering Education*, 106, 585-606.
- Guzey, S. S.**, Harwell, M., Moreno, M., Peralta, Y., & Moore, T. (2017). The impact of design-based STEM integration curricula on student achievement in science, engineering, and mathematics. *Journal of Science Education and Technology*, 26(2), 207-222.
- Guzey, S. S.**, Harwell, M., Moreno, M., & Moore, T. (2016). STEM Integration in middle school life science: Student learning and attitudes. *Journal of Science Education and Technology*, 25(4), 550-560.

### **Selected Grants**

- U.S. Department of Education**, Indy STEM Teacher Residency, 2019-2024, \$5,072,651, Co-PI.
- NSF, DRK-12**, Integration of Engineering Design and Life Science: Investigating the Influence of an Intervention on Student Interest and Motivation in STEM Fields, 2017-2022, \$1,838,015, PI.
- NSF, NOYCE**, Project Einstein: Excellence in STEM teaching in Indiana, 2018-2023, \$1,415,500, Co-PI.
- Indiana Commission for Higher Education**, Strengthening Indiana's Future through the 21st Century STEM Teachers Scholarship Program, 2016-2021, \$688,000, Co-PI.
- NSF, MSP**, EngrTEAMS: Engineering to Transform the Education of Analysis, Measurement, and Science in Team-Based Targeted Mathematics-Science Partnership 2013-2019, \$7,998,001, Co-PI.

### **Awards and Honors**

- Purdue Excellence in Research Award, Purdue University, 2016-2017, 2018-2019, 2020-2021
- Provost's Teaching for Tomorrow Award, Purdue University, 2017-2018
- Outstanding Faculty Scholarship Award, Curriculum & Instruction, Purdue University, 2019-2020
- Christian Foster Engagement Award, Purdue University, 2021

### **National and International Recognition**

#### **Member of Conference Committees**

- ASTE Conference, Professional development committee member, 2014-2017
- NARST, Engineering Education RIG Board Member, 2015-2017
- NARST, Engineering Education RIG, Chair-elect (2017-2018), Chair (2018-2019)
- NARST, Research Committee, 2019-present

#### **Associate Editor, School Science and Mathematics**

**Editorial Board Member**, *Journal of Research in Science Teaching*, *Journal of Science Education and Technology*

**Reviewer for Journals**, *Science Education*, *International Journal of Science and Mathematics Education*, *Journal of Science Education and Technology*, *School Science and Mathematics*, *Journal of Engineering Education*