

Alex J. Sobotka
University of Nebraska-Lincoln
506 Hardin Hall
Lincoln, Nebraska, 68505
asobotka4@unl.edu

**FORMAL
EDUCATION**

- 2023 Ph.D. – Curriculum and Instruction
Emphasis: Science Education
Texas A&M University
- 2017 M.A.T. – Science Education
Iowa State University
- 2016 B.S. - Mechanical Engineering
Iowa State University

**PROFESSIONAL
APPOINTMENTS**

- 2023 University of Nebraska-Lincoln. Lincoln, Nebraska. (8/'23 to present)
Post-Doctoral Research Associate
- 2019 Texas A&M University. College Station, Texas. (8/'19 to 8/'23)
Graduate Assistant Teaching; Senior Science Methods Instructor
Graduate Assistant Research
- 2017 Interstate 35 Community Schools. Truro, Iowa. (8/'17 to 5/'19)
Instructor: Physics, Chemistry, Physical Science, STEM
- 2015 Iowa State University (1/'15 to 7/'16)
Undergraduate Teaching Assistant

**HONORS/
AWARDS**

- 2023 Association of Former Students Distinguish Graduate Student Awards
Excellence in Teaching-Doctoral Nominee
Texas A&M University
- 2023 Graduate and Professional Student Government Awards
The Aggie Core Values Award Nominee
Texas A&M University
- 2019 College of Education and Human Development Merit Fellowship Award
Texas A&M University

**PROFESSIONAL
MEMBERSHIPS**

- Science Teachers Association of Texas (STAT)
- The Association for Science Teacher Education (ASTE)
- National Association for Research in Science Teaching (NARST)

Postsecondary Teaching

Instructor of Record (n = 6)

TEFB 406: Science in the Middle and Secondary School. Texas A&M University.

Fall 2022

MEFB 470: Science Methods in Middle Grades. Texas A&M University. Fall 2022

TEFB 413: Science in the Elementary School. Texas A&M University. Fall 2020, Fall 2021, Spring 2022, Fall 2022

Teaching Assistant (n = 11)

SCIL 101: Science and Decision-Making for a Complex World. University of Nebraska-Lincoln. Fall 2023

MASC 420: Inquiries in Life and Earth Sciences. Texas A&M University. Spring 2023

EDCI 701: Scientific Inquiry in Science Education. Texas A&M University. Fall 2021

MASC 320: Inquiries in Physical Science. Texas A&M University. Spring 2021

EDCI 667: Nature of Science and Science Education. Texas A&M University. Spring 2020, Fall 2022

TEFB 413: Science in the Elementary School. Texas A&M University. Fall 2019

ME 324L: Manufacturing Engineering Laboratory. Iowa State University. Spring 2015, Fall 2015, Spring 2016, Summer 2016

Guest Lecturer (n = 7)

MASC 420: Inquiries in Life and Earth Sciences. Texas A&M University. Spring 2023

EDCI 358: Instructional Methods in Engineering and Technology Education Spring 2022

MASC 320: Inquiries in Physical Science. Texas A&M University. Fall 2021, Fall 2022, Spring 2023

TEFB 406: Science in the Middle and Secondary School. Texas A&M University. Fall 2019, Spring 2023

Manuscripts Under Review or in Progress

6. Sobotka, A. J. Assessing nature of science constructs: An instrument for students' views regarding scientists' efforts to mitigate bias.
5. Sobotka, A. J. Nature of science assessment efforts: Historical trends support a cautionary approach.
4. Sobotka, A. J., Janney, B.A., Herman, B. C., Poor, S. V., Kidd, A. E., & Clough, M. P. University biology students' sociocultural and NOS associated positions about policymakers' and scientists' COVID-19 responses.

3. Clough, M. P., Olson, A. R., & Sobotka, A. J. Philosophy of science: The central issues for science education.
2. Clough, M. P., Herman, B. C., Olson, A. R., & Sobotka, A. J. Impact of historical science stories on post-secondary biology students' NOS understanding and attitudes towards science.
1. Sobotka, A. J. Transcending tinkering: Redefining success and promoting equity through novel STEM activities.

Refereed Publications

5. Herman, B. C., Clough, M. P., & Sobotka, A. J. (In Press). The influence of COVID-19 science views, risk perceptions, and group membership on socioscientific decisions. *International Journal of Science Education*.
4. Sobotka, A. J., Janney, B. A., & Kidd, A. E. (2023) Plotting success: A communication activity for refining approaches to interpreting graphs. *A Journal of Educational Strategies, Issues and Ideas*, 96(4), 116-121. <https://doi.org/10.1080/00098655.2023.2204210>
3. Kidd, A. E., Sobotka, A. J., & Janney, B. A. (2023) Exploring energy distribution in ecosystems by integrating a classroom-level biological survey. *The American Biology Teacher*, 85(3), 152-158.
2. Janney, B. A., Sobotka, A. J., & Kidd, A. E. (2022) Decontextualizing velocity and acceleration in a concrete (and sweet) eating activity. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 95(5), 202-209. DOI: 10.1080/00098655.2022.2104785
1. Sobotka, A. J. & Clough, M. P. (2022) Transcending tinkering: Building understanding of content and the nature of the STEM disciplines. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 95(4), 178-185. <https://doi.org/10.1080/00098655.2022.2083054>

Other Publications

3. Sobotka, A. J., Herman, B. C., & Clough, M. P. (2022). Global Warming Denialism: Manufacturing a Climate of Uncertainty. *The Story Behind the Science: Bring Science and Scientists to Life* project website, <https://www.storybehindthescience.org>.
2. Sobotka, A. J., Herman, B. C., & Clough, M. P. (2020). COVID-19 Pandemic and the Fool's Errand of Pseudoscience-Based Decision-Making. *The Story Behind the Science: Bring Science and Scientists to Life* project website, <https://www.storybehindthescience.org/pdf/covid19pseudoscience.pdf>.
1. Baldwin, M., Sobotka, A. J., & Clough, M. P. (2019). Conceptualizing Energy: Conservation of Mechanical Energy and the Introduction of Potential Energy. *The Story Behind the Science: Bring Science and Scientists to Life* project website, <http://storybehindthescience.org/pdf/conceptualizingenergy.pdf>.

Presentations

2023

19. Herman, B. C., Clough, M. P., Rao, A., Poor, S. V., Janney, B. A., Kidd, A. E., Sobotka, A. J., & Olson, A. R. Beyond the science: Factors that influence university biology students' COVID-19 actions and vaccine acceptance. The Association for Research in Science Teaching (NARST) international conference. Chicago, IL, April 18-21.

18. Sobotka A. J. & Clough, M. P. Nature of science assessment efforts: Interplay between contemporary frameworks and curricular tensions. The Association for Research in Science Teaching (NARST) international conference. Chicago, IL, April 18-21.
17. Pedersen, R., Sobotka, A. J., Kersey, A., & Mostafavi, A. Flying into failure: An introduction into project management. American Society for Engineering Education annual conference. Baltimore, MD, June 25-28.
16. Herman, B. C., Clough, M. P., Rao, A., Poor, S. V., Janney, B. A., Kidd, A. E., Sobotka, A. J., & Olson, A. R. The influence of science perceptions and ideology on university biology students' COVID-19 actions and vaccine acceptance. The Association for Science Teacher Education international conference. Salt Lake City, UT, January 11-14.

2022

15. Kidd, A. E., Sobotka, A. J., & Janney, B. A. Exploring energy in ecosystems by integrating a classroom BioBlitz model. Science Teachers Association of Texas Conference. Dallas, TX, November 10-12.
14. Sobotka, A. J., Janney, B. A., & Kidd, A. E. Plotting success: An activity for refining approaches to interpreting graphs. Science Teachers Association of Texas Conference. Dallas, TX, November 10-12.
13. Clough, M. P., Olson, A. R., & Sobotka, A. J. Philosophy of science: The central issues for science education. International History, Philosophy, and Science Teaching (IHPST) international conference. Calgary, Alberta, July 3-7.
12. Janney, B. A., Kidd, A., Sobotka, A. J. Modeling concepts of motion with a decontextualized, edible activity. National Science Teaching Association (NSTA) national conference. Houston, TX, March 30-April 2.
11. Sobotka, A. J., Janney, B. A., Herman, B. C., Poor, S. V., Kidd, A., Clough, M. P., & Rao, A. University biology students' sociocultural and NOS associated positions about policymakers' and scientists' COVID-19 responses. The Association for Research in Science Teaching (NARST) international conference. Vancouver, BC, March 27-30.
10. Herman, B. C., Clough, M. P., Rao, A., Poor, S. V., Janney, B. A., Sobotka, A. J., Kidd, A. University biology students' COVID-19 decisions: The interconnected influence of COVID-19 science perceptions and sociocultural membership. The Association for Research in Science Teaching (NARST) international conference. Vancouver, BC, March 27-30.
9. Clough, M. P., Olson, A. R., & Sobotka, A. J. Philosophy of science: The central issues for science education. The Association for Science Teacher Education international conference. Greenville, SC, January 6-8.
8. Herman, B. C., Clough, M. P., Rao, A., Poor, S. V., Janney, B. A., Sobotka, A. J., Kidd, A. The influence of COVID-19 science perceptions and sociocultural membership on university biology students' COVID-19 decisions and policy support. The Association for Science Teacher Education international conference. Greenville, SC, January 6-8.
7. Sobotka, A. J., Janney, B. A., Herman, B. C., Poor, S. V., Kidd, A., Clough, M. P., & Rao, A. University biology students' perceptions of policymakers' and scientists' COVID-19 responses. The Association for Science Teacher Education international conference. Greenville, SC, January 6-8.

2021

6. Herman, B. C., Clough, M. P., Rao, A., Olson, J. K., Olson, A. R., Sobotka, A. J., & Poor, S. V. University biology students' pandemic decisions: The role of COVID-19 science beliefs and sociocultural membership. Association for Research in Science Teaching (NARST) international conference. Orlando, FL, April 7-10.

5. Clough, M. P., Herman, B. C., Olson, A. R., & Sobotka, A. J. Impact of historical science stories on post-secondary biology students' NOS understanding and attitudes toward science. The Association for Science Teacher Education international conference, Salt Lake City, UT, January 13-16.

2020

4. Stigers, C., Sobotka, A. J., Olson, A. R., & Clough, M. P. Institutional constraints to general reform-based science teaching: Implications for teacher preparation and professional development. The Association for Science Teacher Education international conference, San Antonio, TX, January 9-11.

2019

3. Clough, M. P., Olson, A. R., Sobotka, A. J., Stigers, C. Incorporating inquiry in everyday instruction. Science Teachers Association of Texas Conference, Dallas, TX, November 21-23.
2. Sobotka, A. J., Clough, M. P. Incorporating concrete experience to demarcate between science, engineering, and tinkering. Science Teachers Association of Texas Conference, Dallas, TX, November 21-23.

2018

1. Sobotka, A. J., & Schumacher, R. What floats your boat?: Using classroom competition to demarcate between tinkering and STEM disciplines while promoting and emphasizing 3D Learning. Iowa Science Teaching Section Conference, Des Moines, IA, October 7-8.

Workshops and Consulting

2023

4. Sobotka, A. J. Fine-tuning distance acquisition procedures for GPS-driven sled measurement system. Three-day engineering consulting for GLS Manufacturing conducting trials, analyzing data, and delivering reports. Mount Ayr, IA, July 1-3, 2023.
3. Sobotka, A. J. Streamlining measures of institutional effectiveness and evaluation through AEFIS midterm course evaluations. One-day workshop for Texas A&M University, Department of Teaching, Learning, and Culture. College Station, TX, February 13, 2023.

2021

2. Sobotka, A. J. Predicting additional layer of water protection using pressure calculations within fiberglass burial vaults. Two-day engineering consulting for Taylor Fiberglass. Bucyrus, KS, March 7-8, 2021.

2020

1. Sobotka, A. J. Replicating inertia dynamometer with AC motor to simulate road load emissions output. Two-week engineering consulting for Excel Engineering. Diagonal, IA, May 11-22, 2020.

Professional Activities

Association for Research in Science Teaching (NARST)

2021-2022 Conference Proposal Reviewer: History, Philosophy, Sociology, and Nature of Science strand.

Association for Science Teacher Education (ASTE)

2022-2023 Stand Coordinator: History, Philosophy, and Nature of Science strand.

2020-2021 Conference Proposal Reviewer: STEM Education strand.

2020-2023 Conference Proposal Reviewer: History, Philosophy, and Nature of Science strand.

Other Activities

2021 Navasota ISD Science Fair, Fair Judge

2020-2022 Texas A&M University, Senior Methods Field Supervisor.

2020-2021 Texas A&M University, Graduate Student Association mentor.

2020 Texas Junior Academy of Science Competition, Engineering I judge.

2020-2021 Texas Junior Science and Humanities Symposium, Engineering judge.

2019-2023 Texas A&M University MASC 320 Science Fair, Fair judge.

2019 Texas Junior Academy of Science Competition, Energy engineering judge.

2018-2019 Interstate 35 Community Schools Science Fair, Fair judge.

2017-2019 Interstate 35 Community Schools, Coach robotics, middle school football, volunteer track.

2017 State Science and Technology Fair of Iowa, Fair judge.