CHRISTINE GUY SCHNITTKA

I. PERSONAL INFORMATION

Updated: February 24, 2023

Name: Christine G. Schnittka
Rank: Professor
Department: Curriculum and Teaching
Specialization: Science Education/Engineering Education
Level 2 member of the graduate faculty

Work Address:
5072 Haley Center
Auburn University, AL 36849
Home address:
831 S. Gay St. Auburn, AL 36830

II. EDUCATION HISTORY

Degree	Year	Institution
Ph.D.	2009	University of Virginia Science Education Additional focus: Engineering Education Co-Advisors: Dr. Randy Bell (education) & Dr. Larry Richards (engineering)
M.Eng.	1992	University of Virginia Mechanical Engineering Advisor: Dr. Larry Richards
B. Mech. Eng.	1986	Auburn University Major: Mechanical Engineering Advisor: Dr. John Goodling

III. EMPLOYMENT HISTORY

Date	Position and Location
2019 - present	Professor, Science Education Curriculum and Teaching, Auburn University
2014 - 2019	Associate Professor, Science Education Curriculum and Teaching, Auburn University
2012 – 2014	Assistant Professor, Science Education Curriculum and Teaching, Auburn University
2009 – 2012	Assistant Professor, Science Education Dept. of STEM Education, University of Kentucky

2007 - 2008	Science and Math Teacher Walton Middle School, Charlottesville, VA
2004 - 2007	Graduate Research Assistant, Graduate Teaching Assistant, University Supervisor for Student Teachers Department of Curriculum, Instruction, and Special Education, University of Virginia, Charlottesville, VA
1995 - 2004	Science and Technology Teacher, Grade-level Administrator Village School, Charlottesville, VA
1993 - 1995	Research Assistant Dr. George Gillies, Biomedical Engineering, University of Virginia
1982 - 1984	Mechanical Engineer (Co-Op), IBM, Research Triangle Park, NC

IV. PERCENTAGE ALLOCATION OF TIME

Date	Teaching	Research	Service	Outreach	Administration
2022 - 2023	48%	27%	5%	20%	
2021 - 2022	48%	25%	12%	15%	
2020 - 2021	50%	17.50%	5%	15%	12.50%
2019 - 2020	50%	22.50%	5%	10%	12.50%
2018 - 2019	50%	22.50%	5%	10%	12.50%
2017 - 2018	25%	50%	5%	10%	12.50%
2016 - 2017	50%	22.50%	5%	10%	12.50%
2015 - 2016	35%	37.50%	5%	10%	12.50%
2014 - 2015	50%	35%	5%	10%	
2013 - 2014	60%	25%	5%	10%	
2012 - 2013	60%	25%	5%	10%	
2011 - 2012	50%	37.50%	10%		2.50%
2010 - 2011	40%	40%	20%		
2009 - 2010	40%	40%	20%		

V. AWARDS AND DISTINCTIONS

2021 Emily R. and Gerald S. Leischuck Endowed Professor for Critical Needs in Education

2021 Invited, provost-funded professional development leave for one semester, spring 2021

2020 Completed National Center for Faculty Development & Diversity Faculty Success Program

2019 Invited Associate Editor, Electronic Journal of Research in Science and Mathematics Education

2019 Invited NSF review panel member, *National Science Foundation*

2019 Appointed to the Governor's Advisory Council for Excellence in STEM (ACES)

2019 Emily and Gerald Leischuck Outstanding Graduate Faculty Award, *College of Education*, Auburn University.

2018 Book and mural on science history selected for a juried exhibition at the Jule Collins Smith Museum of Fine Art, Auburn, AL.

2017 Invited Board Member, *I Am My Brother's Keeper, Inc.,* Auburn. AL.

2017 "Save the Penguins" curriculum translated into Finnish (now Pelasta Pingviinit) by the *LUMA (STEM) Centre at the University of Eastern Finland.* See https://peda.net/p/jesse.hietala/vtk/pp

2017 Invited Advisory Board, *Integration of Engineering Design and Life Science: Investigating the Influence of an Intervention on Student Interest and Motivation in STEM Fields*. NSF Award# 1721141, PI Siddika Guzey. 2017 – 2021.

2016 Invited Advisory Board, *Developing Pre-service Science Teachers' Pedagogical Content Knowledge for Engineering Design Integrated Science Teaching, and Assessing the Impact on Student Learning*. NSF Award# 1636443, PI Frackson Mumba. 2016 – 2019.

2016 Invited Consulting Editor, *The Journal of Educational Research*

2016 Invited NSF review panel member, STEM+C, *National Science Foundation*

2016 Invited Member, Editorial Board of the *Contemporary Issues in Technology and Teacher Education* journal

2016 Invited NSF review panel member, *National Science Foundation*

2015 Invited Board member, *Alabama Afterschool Community Network*

2015 Chair, *Engineering Education Research Interest Group*, National Association for Research in Science Teaching.

2015 Invited Member, Expert Review Panel, *NASA and US Dept. of Education: STEM Design Challenges*

2013 Invited Advisory Board, *EngrTEAMS: Engineering to Transform the Education of Analysis, Measurement, and Science in a Team-Based Targeted Mathematics-Science Partnership*. NSF Award# 1238140, PI Tamara Moore. 2013 – 2018.

2013 Outstanding Faculty Early Career Award, *College of Education*, Auburn University.

2012 Invited NSF review panel member, National Science Foundation.

2012 New Faculty Teaching Scholar, *Biggio Center for Teaching and Learning*, Auburn University.

2011 Invited Keynote Speaker. *Auburn University Luncheon for Incoming Female Engineering Students.* Auburn, AL, August 21, 2011.

2010 Best Paper Award. *American Society for Engineering Education*, K-12 and Pre-College Division. Schnittka, C.G., Evans, M.A., Jones, B., & Brandt, C.

2010 Elected Board Member. *American Society for Engineering Education*. K-12 and Pre-College Division.

2008 The Curry Foundation. *University of Virginia*: $5000 dissertation-year award for expenses related to dissertation research.

2007 American Society for Engineering Education. *Educational Research and Methods Division: Apprentice Faculty Award* for commitment to innovation in teaching and the potential for a substantial contribution to engineering education. Highly competitive national award providing $2000 toward travel expenses for the Annual Meeting of ASEE, Honolulu, HI.

1999 Virginia Piedmont Technology Council. *Red Apple Award for Excellence in Science and Technology Teaching*, given to one teacher in central Virginia.

VI. RESEARCH/CREATIVE WORK

A. BOOKS

Schnittka, C.G. (accepted). Teaching STEM through traditional crafts: Creating real-world lessons from the art of making for grades 3-8. Routledge.

B. ARTICLE- LENGTH PUBLICATIONS

BOOK CHAPTERS (^REFEREED, #INVITED, *STUDENT CONTRIBUTION, **INVITED REPRINT)

Schnittka, C.G. (2019). Engineering in K-12: A look back and forth. In Sahin, A., & Mohr-Schroeder, M. (Eds.) STEM Education 2.0. Leiden, Netherlands: Brill Publishers. ISBN 978-90-04-40539-4

^Evans, M.A., **Schnittka**, C.G., Brandt, C., & Jones, B. (2016). Studio STEM: A model to enhance integrative STEM literacy through engineering design. In L. Annetta & J. Minogue (Eds.) *Connecting science and engineering education practices in meaningful ways*. New York: Springer International Publishing, 107-137. (25% contribution)

Ganesh, T. & **Schnittka**, C.G. (2014). Engineering education in the middle grades. In J. Strobel, S. Purzer, & M. Cardella (Eds.) *Engineering in precollege settings: Research into practice.* Rotterdam, The Netherlands: Sense Publishers. (50% contribution)

#**Schnittka**, C.G. (2013). Heat and thermodynamics. In C.A. Wilson (Ed.) *Passing the state middle school science proficiency tests: Essential content for middle school science teachers*. Lanham, MD: University Press of America.

** **Schnittka**, C.G., Bell, R.L., & Richards, L.G. (2012). Save the penguins: Teaching the science of heat transfer through engineering design. In E. Brunsell (Ed.) *Integrating engineering + science in your classroom*. Arlington, VA: NSTA Press. (90% contribution)

** **Schnittka**, C.G., Bell, R.L., & Richards, L.G. (2012). Save the penguins: Teaching the science of heat transfer through engineering design. In S. Metz (Ed.) *Fuel for thought: Building energy awareness in grades 9-12*. Arlington, VA: NSTA Press. (90% contribution)

Bell, R.L., & **Schnittka**, C.G. (2007). Laying down the law. In R.L. Bell, *Teaching the Nature of Science through Process Skills*. Boston: Allyn & Bacon. (50% contribution)

Bell, R.L., & **Schnittka**, C.G. (2007). Patterns, patterns everywhere. In R.L. Bell, *Teaching the Nature of Science through Process Skills*. Boston: Allyn & Bacon. (50% contribution)

Bell, R.L., & **Schnittka**, C.G. (2007). Experiencing experiments. In R.L. Bell, *Teaching the Nature of Science through Process Skills*. Boston: Allyn & Bacon. (50% contribution)

Bell, R.L., & **Schnittka**, C.G. (2007). Subjectivity and the boiling point of water. In R.L. Bell, *Teaching the Nature of Science through Process Skills*. Boston: Allyn & Bacon. (50% contribution)

ARTICLES IN REFEREED JOURNALS (^REFEREED, #INVITED, * STUDENT CONTRIBUTION)

^* **Schnittka**, C.G. & Brenneman, M. (accepted). Teaching sublimation with markers! *Science Scope*. Acceptance Rate: 60%

^ **Schnittka**, C.G. (accepted). Preservice teachers learn: How coal keeps the lights on. *Discourse and Communication for Sustainable Education*. Impact factor 1.3 H-Index 10

^ **Schnittka**, C.G. (accepted). On teaching electricity through history. Submitted to *The Science Teacher*. Acceptance Rate: 25%

^* **Schnittka**, C.G. & Brenneman, M.A. (in review). Where's the peanut butter? Journaling about science practices in everyday life. Submitted to *Journal of Science Teacher Education*. Impact factor 1.438 H-Index 48

^ **Schnittka**, C.G. (in review). Coach in the classroom. Submitted to the *International Journal of Mentoring and Coaching in Education*. Impact factor 1.62. H-Index 18

^ Bland, S. M, Kane, E.M., & **Schnittka**, C.G. (2021). Development of the STEM Attitudes of Education (SAE) Tool: A Measurement Tool to Access the STEM Self-Efficacy and Motivation of Afterschool Educators. *Journal of Behavioral and Social Sciences,8* (2), 75-93.

^ **Schnittka**, C.G. (2021). Older adults' philanthropic crafting of face masks during COVID-19. *Craft Research, 12*(2), 223-245.

^ Soltis, N., McNeal, K., & **Schnittka**, C.G. (2021) Understanding Undergraduate Student Conceptions about Biogeochemical Cycles and the Earth System. *Journal of Geoscience Education, , 69*(3), 265-280. https://www.tandfonline.com/doi/full/10.1080/10899995.2020.1858267

^ **Schnittka**, C.G. (2017). Developing the Save the Animals curricula. *European Journal of Curriculum Studies, 4*(2), 556-576.

^Swamidass, P., & **Schnittka**, C.G. (2017). Finding and preparing teachers to meet the needs of US student innovators-in-the-making. *Technology and Innovation, 18*, 331-342. (40% contribution) Acceptance Rate: 80%

^* **Schnittka**, C.G., Lakin, J.M., Savrda, A., Greene, S., Moss, J., & Alenzi, A. (2017). Science STUFF (Science, Society and Technology for Underrepresented Future Fabricators): *European Journal of Curriculum Studies, 4* (1), 601-617. (50% contribution)

^ **Schnittka**, C.G. (2017). Gravity can do what? Engineering a gravity-powered electrical generator. *The Science Teacher, 84* (8), 37-43. (100% contribution) Acceptance Rate: 25%

^ **Schnittka**, C.G. & Richards, L.G. (2016). Powered by the sun: Teaching the science of energy, force, and motion through an engineering design challenge. *The Science Teacher, 83* (3). (90% contribution) Acceptance Rate: 25%

^ Schnittka, J.E., & **Schnittka**, C.G. (2016). Gender and learning in an engineering design-based afterschool STEM program. *Journal of Pre-College Engineering Education Research, 6*(2). (40% contribution) Acceptance Rate: 37%

^ **Schnittka**, C.G., Evans, M.A., Drape, T.D, & Won, S. (2016). After-school spaces: Looking for learning in all the right places. *Research in Science Education, 46,* 389-412. (50% contribution) Acceptance Rate: 25%, Impact factor: 1.52

^ Won, S.G.L., Evans, M.A., Carey, C., & **Schnittka**, C.G., (2015). Youth appropriation of social media for collaborative and facilitated design-based learning. *Computers in Human Behavior, 50,* 385-391. (20% contribution) Acceptance Rate: 30%, Impact factor: 3.435

^ Newbill, P.L., Drape, T., **Schnittka**, C.G., Baum, L., and Evans, M.A. (2015) Learning Across Space Instead of Over Time: Redesigning a School-Based STEM Curriculum for OST. *Afterschool Matters, 22,* 4-12. (20% contribution) Acceptance Rate: 50%

^ Jones, B., Chittum, J., Akalin, S., Schram, A., Fink, J., **Schnittka**, C.G., Evans, M.A., & Brandt, C. (2015). Elements of design-based science activities that affect students' motivation. *School Science and Mathematics, 115*, 404-415. (10% contribution) Acceptance Rate: 20%

^ **Schnittka**, C.G. (2012). Engineering Education in the Science Classroom: A Case Study of One Teacher's Disparate Approach with Ability-Tracked Classrooms. *Journal of Pre-College Engineering Education, 2*(1), 35–48. Downloaded from http://docs.lib.purdue.edu/jpeer/vol2/iss1/5/ Acceptance Rate: 37%

Schnittka, C.G. (2012). A cup of tenacity, a sprinkle of confidence, mixed well with community: Your recipe for success as a female engineering student. *IEEE Women in Engineering, 6*(1), 10-13. Acceptance Rate: 15%

^* Sheerer, K. & **Schnittka**, C.G. (2012). Save the Boulders Beach penguins. *Science and Children, 49*(7), 50-55. (75% contribution) Acceptance Rate: 50%

^ **Schnittka**, C.G., Brandt, C., Jones, B., & Evans, M.A. (2012). Informal engineering education after school: A studio model for middle school girls and boys. *Advances in Engineering Education, 3*(2). Downloaded from http://advances.asee.org/vol03/issue02/papers/aee-vol03-issue02-p04.pdf (40% contribution) Acceptance Rate: 25%

^ **Schnittka**, C.G., & Bell, R.L. (2011). Engineering design and conceptual change in the middle school science classroom. *International Journal of Science Education, 33*, 1861-1887. (90% contribution) Acceptance Rate: 32%, Impact Factor: 1.24

^ **Schnittka**, C.G., Bell, R.L., & Richards, L.G. (2010). Save the penguins: Teaching the science of heat transfer through engineering design. *Science Scope, 34*(3), 82-91. (90% contribution) Acceptance Rate: 60%

^ **Schnittka**, C. G., & Bell, R. L. (2009). Preservice biology teachers' use of interactive display systems to support reforms-based science instruction. *Contemporary Issues in Technology and Teacher Education*, *9*(2). Retrieved from http://www.citejournal.org/vol9/iss2/science/article1.cfm (75% contribution) Acceptance Rate: 29%

^ Richards, L., Hallock, A., & **Schnittka**, C.G. (2007). Getting them early: Teaching engineering design in middle schools. *International Journal of Engineering Education, 23, 874-883.* (30% contribution) Acceptance Rate: 20%

^# **Schnittka**, C.G. (2006). Putting nanotechnology under the microscope. *The Science Teacher, 73*(9), 12. Acceptance Rate: 25%

^ **Schnittka**, C.G. (2006). Learning lessons from estuaries. *The Science Teacher, 73*(1), 31-35. Acceptance Rate: 25%

^ **Schnittka**, C.G. (2006). Creating a timeline of science history in your classroom. *Journal of Virginia Science Education, 1*(1), 72-78.

PUBLISHED PROCEEDINGS

^*Schnittka, C.G., Brenneman, M., & Hudson, D.L. (2022). Teacher candidates noticing science. In J. Herron (Ed.). *Proceedings of the 121st Annual Convention of the School Science and Mathematics Association* (Vol. 9). SSMA

^Griffin, J., Brandt, C., Bickel, E., **Schnittka**, C., & Schnittka, J. (2015, March). Imbalance of power: A case study of a middle school mixed-gender engineering team. In *Integrated STEM Education Conference* (ISEC), 2015 IEEE (pp. 64-69). IEEE. Downloaded from http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7119947 Acceptance Rate: 90%, Impact Factor: 9.237

^**Schnittka**, C.G. (2014, June). Curriculum exchange: Studio STEM, engineering after school. *Proceedings of the American Society for Engineering Education*, Indianapolis, IN. Downloaded from https://peer.asee.org/20239 Acceptance Rate: 55%

^***Schnittka**, C.G., Turner, G., Colvin, R., & Ewald, M.L. (2014, June). A state-wide professional development program in engineering with science and math teachers in Alabama: Fostering conceptual understandings of STEM. *Proceedings of the American Society for Engineering Education*, Indianapolis, IN. Downloaded from https://peer.asee.org/19998 Acceptance Rate: 55%

^**Schnittka**, C.G., Evans, M.A., & Drape, T. (2013, June). Looking for learning in after school spaces. *Proceedings of the American Society for Engineering Education*, Atlanta, GA. Downloaded https://peer.asee.org/22261 Acceptance Rate: 55%

^**Schnittka**, C.G., Parry, E.A., Day, L.D., Macalalag, A.Z, Padilla, A., Zarske, M.S., Quinones, P.A. (2012, June). Best practices in K-12 – university partnerships. *Proceedings of the American Society for Engineering Education*, San Antonio, TX. Downloaded from https://peer.asee.org/21018 Acceptance Rate: 55%

^**Schnittka**, C.G., Evans, M.A., Jones, B., & Brandt, C. (2010, June). Studio STEM: Networked engineering projects in energy for middle school girls and boys. *Proceedings of the American Society for Engineering Education*, Louisville, KY. Downloaded from https://peer.asee.org/15933 Acceptance Rate: 55%

^Donohue, S., **Schnittka**, C.G., & Richards, L.G. (2010, June). The constructivist-based workshop: An effective model for professional development training activities. *Proceedings of the American Society for Engineering Education*, Louisville, KY. Downloaded from https://peer.asee.org/16270 Acceptance Rate: 55%

^**Schnittka**, C.G., Bell, R.L., & Richards, L.G. (2009, June). Encouraging conceptual change in science through the use of engineering design in middle school. *Proceedings of the American Society for Engineering Education*, Austin, TX. Downloaded from https://peer.asee.org/5020 Acceptance Rate: 55%

^**Schnittka**, C.G., & Richards, L. (2008, June). Teacher and student feedback about engineering design in middle school science classrooms: A pilot study. *Proceedings of the American Society for Engineering Education, Pittsburg, PA*. Downloaded from https://peer.asee.org/3340 Acceptance Rate: 55%

^Richards, L.G., & **Schnittka**, C.G. (2007, June). Engineering teaching kits: Bringing engineering design in to middle schools. *Proceedings of the American Society for Engineering Education,* Honolulu, HI. Downloaded from https://peer.asee.org/2990 Acceptance Rate: 55%

BOOK REVIEWS

#*Soltis, N., Helf, J., & **Schnittka**, C.G. (2018). A review of classic works in sustainability education. *Green Schools Catalyst Quarterly,V(2),* 100-101.

#**Schnittka**, C.G. (2016). Book review of *STEM road map: A framework for integrated STEM education*, edited by Carla C. Johnson, Erin E. Peters-Burton, and Tamara J. Moore. *The Journal of Educational Research*. DOI 10.1080/00220671.2016.1253949 (100% contribution) Acceptance Rate: 18%, Impact Factor: 1.197

B. PAPERS AT PROFESSIONAL MEETINGS

INTERNATIONAL PRESENTATIONS- RESEARCH (^REFEREED, #INVITED, * STUDENT CONTRIBUTION)

^***Schnittka**, C.G., & Brenneman, M. (April, 2023). The middle of the STEM sandwich: Investigating, modeling, analyzing, arguing, and explaining. *A paper presented at the annual meeting of NARST*, Chicago, IL.

^*Hudson, D.L., & **Schnittka**, C.G. (April, 2023). Looking for science: Preservice science teachers journaling about science. *A paper presented at the annual meeting of NARST*, Chicago, IL.

^**Schnittka**, C.G. (2017, June). Developing the Save the Animals STEM Curricula. A paper presented at the annual meeting of the *European Conference on Curriculum Studies*, Stirling, Scotland.

^* **Schnittka**, C.G., Lakin, J.M., Savrda, A., Greene, S., Moss, J., & Alenzi, A. (2017, June). Science STUFF (Science, Society and Technology for Underrepresented Future Fabricators). A paper presented at the annual meeting of the *European Conference on Curriculum Studies*, Stirling, Scotland.

^Khan, M., Rossi, M., Wu, F., **Schnittka**, C. (2017, March). Teamwork using an authentic product development environment. A paper presented at the annual meeting of the *American Society of Engineering Education Zone 2*, San Juan, Puerto Rico.

NATIONAL PRESENTATIONS- RESEARCH (^REFEREED, #INVITED, * STUDENT CONTRIBUTION)

^* **Schnittka**, C.G., Brenneman, M., & Hudson, D.L. (2022, October). Teacher candidates noticing science. A paper presented at the annual meeting of the *School Science and Mathematics Association*, Missoula, MT.

Schnittka, C.G. (2021). Evaluation of NSF Grant #1912047: Integration of Virtual Reality (VR) to Support Technology-based Active-learning and Retention. *Report submitted to NSF.*

^ Rossi, M., Khan, M., Wu, F., **Schnittka**, C. (2017, August). Introducing high school students to human factors psychology through the eyetrackers summer program. A paper presented at the annual meeting of the *American Psychological Association*, Washington, DC

^# **Schnittka**, C.G., & Schnittka, J.E. (2017, July). Kids do engineering in groups: Does gender matter? A paper presented at the annual *STEM Think Tank and Conference*, Nashville, TN.

^ Khan, M., Rossi, M., Wu, F., **Schnittka**, C. (2016, April). Engaging students in product development provides opportunities to enhance STEM. A paper presented at the annual meeting of the *American Educational Research Association*, Washington, DC.

^* **Schnittka**, C.G. & Nguyen, T. (2016, April). Examining the use of competition in robotics curriculum as a means of improving motivation and self-efficacy. A paper presented at the annual meeting of *NARST*, Baltimore, MD.

^ Rossi, M., Khan, J., Wu, F., & **Schnittka**, C. (2015, June). Learning science, web design and eyetracking technology in a summer enrichment program. A paper presented at the annual meeting of the *International Society for Technology in Education.* Philadelphia, PA.

^ Khan, J., Rossi, M., Wu, F., & **Schnittka**, C.G. (2015, April). Designing programs that engage, motivate, and interest youth to pursue STEM careers: NSF-funded ITEST projects. A paper presented at the annual meeting of *NARST*, Chicago, IL.

^ Schnittka, J.E., & **Schnittka**, C.G. (2015, April). Gender and scientific learning in a design-based afterschool STEM program. A paper presented at the annual meeting of *NARST*, Chicago, IL.

^ Evans, M., **Schnittka**, C.G., Jones, B., & Brandt, C. (2015, April). Studio STEM: An out-of-school design-based science learning program for rural middle school youth. A paper presented at the annual meeting of the *American Educational Research Association*, Chicago, IL

^* **Schnittka**, C.G., Turner, G., Colvin, R., & Ewald, M.L. (2014, March). Professional development in engineering with science and math teachers: Fostering conceptual understandings. A paper presented at the annual meeting of *NARST*, Pittsburgh, PA.

^ Jones, B, Akalin, S., Schram, A., Fink, J., Chittum, J., **Schnittka**, C.G., & Evans, M.A. (2014, April). Elements of design-based science teaching that affect middle school students' motivation. A round table presented at the annual meeting of the *American Educational Research Association*, Philadelphia, PA.

^ Brandt, C., & **Schnittka**, C.G. (2013, May). Space, time, and instruction in a networked after-school STEM club. A round table presented at the annual meeting of the *American Educational Research Association*, San Francisco, CA.

^ **Schnittka**, C.G. (2012, March). Young engineers: Integrating engineering into your science classes. A paper presented at the annual meeting of the *National Science Teachers Association*, Indianapolis, IN.

^ Brandt, C., Motto, A., **Schnittka**, C.G., Evans, M., & Jones, B. (2011, April). Socio-cognitive scaffolding in the studio: Informal STEM learning and identity. A paper presented at the annual meeting of the *National Association for Research in Science Teaching*, Orlando, FL.

^ **Schnittka**, C.G. (2011, April). Teaching science through engineering design: A case study of one teacher's disparate teaching approach with lower-achieving students. A paper presented at the annual meeting of the *National Association for Research in Science Teaching*, Orlando, FL.

^ Motto, A., Brandt, C., & **Schnittka**, C.G. (2011). Discursive scaffolding in the studio: Socio-cognitive and emotional dimensions for learning and STEM identity. A round table presented at the annual meeting of the *American Educational Research Association*, New Orleans, LA.

^ Motto, A., Brandt, C., & **Schnittka**, C.G. (2011). Studio STEM/Save the penguins: Connecting youth to environmental issues through design-based projects. A poster presented at the annual meeting of the *American Educational Research Association*, New Orleans, LA.

^ **Schnittka**, C.G., Bell, R.L., & Richards, L.G. (2010, August). Engineering design: A natural conduit for teaching science? A paper presented at the *P-12 Engineering and Design Education and Research Summit*, Seaside, OR.

^ **Schnittka**, C.G., & Bell, R.L. (2010, March). Engineering design and conceptual change in science: Addressing thermal energy and heat transfer in eighth grade. A paper presented at the annual meeting of the *National Association for Research in Science Teaching*, Philadelphia, PA.

^ **Schnittka**, C.G., & Bell, R.L. (2010, January). Engineering design activities and conceptual change in science. A paper presented at the annual meeting of the *Association for Science Teacher Education,* Sacramento, CA.

^ **Schnittka**, C.G., Binns, I.C. & Bell, R.L. (2009, April). PowerPoint in the science classroom: Reforms-based instruction or high-tech chalk & talk? A paper presented at the annual meeting of the *National Association for Research in Science Teaching*, Garden Grove, CA.

^ **Schnittka**, C.G., & Bell, R.L. (2009, March). Save the penguins: Engineering design in the science classroom. A paper presented at the annual meeting of the *National Science Teachers Association*, New Orleans, LA.

^ Binns, I.C., **Schnittka**, C., & Bell, R.L. (2008, January). PowerPoint: Encouraging high-tech chalk and talk or reforms-based science instruction? *Proceedings of the Association for Science Teacher Education*, St. Louis, MO. Acceptance Rate: 85%

^ **Schnittka**, C., Binns, I.C., & Bell, R.L. (2008, March). Preservice biology teachers' use of interactive display systems: Reform-based teaching or chalk and talk? A paper presented at the annual meeting of the *National Association for Research in Science Teaching,* Baltimore, MD.

^ Binns, I.C., **Schnittka**, C.G., Bell, R.L., & Toti, D. (2007, March). Preservice science teachers' nature of science instruction and its impact on pupil learning. A paper presented at the annual meeting of the *National Association for Research in Science Teaching*, New Orleans, LA.

^ **Schnittka**, C.G., Bell, R.L., Farquhar, H. (2007, January). Preservice teachers' use of interactive display systems to support reforms-based science instruction. *Proceedings of the Association for Science Teacher Education*, Clearwater, FL. Acceptance Rate: 85%

^ Binns, I.C., **Schnittka**, C.G., Bell, R.L., & Toti, D. (2007, April). Preservice science teachers' nature of science instruction and its impact on pupil learning. A paper presented at the annual meeting of the *National Association for Research in Science Teaching*, New Orleans, LA.

^ Bell, R.L., Binns, I., **Schnittka**, C.G. (2006, January). Preservice science teachers' conceptions of the NOS: Impacts on classroom practice. A paper presented at the annual meeting of the *Association for Science Teacher Education*, Portland, OR.

^ Bell, R. L., Toti, D., & **Schnittka**, C.G. (2005, April). Incorporating nature of science instruction in the classroom. A paper presented at the annual meeting of the *National Science Teachers Association*, Dallas, TX.

LOCAL PRESENTATIONS- RESEARCH (^REFEREED, #INVITED, * STUDENT CONTRIBUTION)

^* **Schnittka**, C.G., Brenneman, M., & Hudson, D.L (2022, October). Teacher candidates noticing science in their daily lives. A presentation at the *Southeastern Association of Science Teacher Education* conference, Gulf Shores, AL.

^* Brenneman, M., & **Schnittka**, C.G. (2019, October). The Effect of Interactive Science Journals on Pre-Service Teachers' Planning and Teaching. A presentation at the *Southeastern Association of Science Teacher Education* conference, Carrollton, GA.

Schnittka, C.G. (2018, October). Chris Schnittka: Engineer, curriculum designer, educational researcher, artist. A presentation to the *College of Engineering*, Auburn University, AL

^ Lakin, J. & **Schnittka**, C.G. (2018, October). Finding space to pursue STEM: Curriculum enrichment for spatially talented students. A presentation at the *Alabama Association of Gifted Children* conference, Birmingham, AL.

Schnittka, C.G. (2016, August). Engineering for kids? A quest to find out. A presentation to the *University Research Council*, Auburn University, AL

^ **Schnittka**, C.G. (2016, September). Save the Animals! STEM Education for Middle School. A poster presented at the *This is Research Faculty Symposium*, Auburn University, AL

^* Ewald, M.L., **Schnittka**, C.G., & Percival, E. (2013, February). The Alabama STEM Studio for Afterschool Learning (TASSAL). A paper presented at the *iSTEM Conference*, Huntsville, AL.

^* **Schnittka**, C.G. & Ewald, M.L. (2013, February). Research results: The Alabama STEM Studio for Afterschool Learning (TASSAL). A paper presented at the *Auburn University Outreach Symposium*, Auburn, AL.

^ **Schnittka**, C.G. (2012, February). How Kentucky coal keeps the lights on: Preservice teachers' conceptions about energy. A paper presented at the *University of Kentucky STEM Symposium*, Lexington, KY.

^ **Schnittka**, C.G. (2010, February). The impact of engineering design activities on conceptual change in science. A paper presented at the *University of Kentucky STEM Symposium*, Lexington, KY.

^ **Schnittka**, C.G., & Bell, R.L. (2009, October). Conceptual change in science through engineering design activities. A paper presented at the annual meeting of the *Mid-Atlantic Association for Science Teacher Education*, Friendship, OH.

^ **Schnittka**, C.G., Green, J., Skeeles-Worley, A., Sutphen, B, Bell, R.L. (2006, November). Teaching the nature of science through history. A presentation at the Annual Meeting of the *Virginia Association of Science Teachers*, Richmond, VA.

^ Bell, R.L., Binns, I., Smetana, L, & **Schnittka**, C.G. (2005, November). Technology showcase: Great ideas for teaching science with technology. A presentation at the annual meeting of the *Virginia Association of Science Teachers*, Roanoke, VA.

^ Bell, R.L., Binns, I.C., **Schnittka**, C.G., & Smetana, L. (2005, October). The process skills-based approach to nature of science instruction: Impact on preservice teachers' beliefs and instructional practices. A paper presented at the annual meeting of the *Association for Science Teacher Education, Mid-Atlantic Region*, Breaks, VA.

OTHER PRESENTATIONS- NOT RESEARCH (^REFEREED, #INVITED, * STUDENT CONTRIBUTION)

Schnittka, C.G. (2021). *The science of ceramics*. Jule Collins Smith Museum of Fine Art. August 7, 2021

Schnittka, C.G. (2021). *The science of natural dyeing*. Jule Collins Smith Museum of Fine Art. August 14, 2021

Schnittka, C.G. (2021). *The science of weaving*. Jule Collins Smith Museum of Fine Art. August 21, 2021

Schnittka, C.G. (2021). *Simulations for science teaching*. Alabama Science Teachers Association. Virtual Conference. March 15, 2021.

#*__Schnittka__, C.G., Lakin, J., Cox, J., & Brenneman, M. (2020, March). *Spatial thinking activities for teachers*. A workshop presented at the ASSE Southeast Regional Conference, Auburn, AL.

Bell, R.L., & **Schnittka**, C. (2017, June). *3-D Learning and the Next Generation Science Standards*. A workshop presented at the SMILE teacher professional development workshop. Oregon State University, Corvallis, OR.

*__Schnittka__, C.G. & Tguyen, T. (2015). *Save the Animals*. A workshop for teachers. Auburn University, July 13-17, 2015.

Schnittka, C.G. (2014). *Save the Animals*. A workshop for teachers. Indianapolis, IN. June 14, 2014.

Schnittka, C.G. (2014). *Save the Black Footed Ferrets*. A workshop for teachers. Lexington, KY. April 12, 2014.

*__Schnittka__, C.G. & Ewald, M.L. (2014). *The Alabama STEM Studio for After School Learning: Save the Snails*. A workshop for after school teachers. Auburn, AL. February 1, 2014.

Schnittka, C.G. (2014). *Save the Black Footed Ferrets*. A day-long workshop for after school teachers in Blacksburg, VA. January 17, 2014.

*__Schnittka__, C.G., Haynes, A., & Colvin, R. (2013). *Re^2-FOCUS: Save the Animals*. A three-day workshop for Alabama Math Science Technology Initiative (AMSTI) specialists. Auburn, AL. May 28-30, 2013.

*__Schnittka__, C.G. (2013). *The Alabama STEM Studio for After School Learning: Save the Penguins*. A workshop for after school teachers. Auburn, AL. January 26, 2013.

*__Schnittka__, C.G. & Turner, G. (2013). *Save the Sea Birds: Part 2*. A day-long workshop for after school teachers in Blacksburg, VA. January 18, 2013.

Schnittka, C.G. (2012). *Engineering for preservice teachers*. A workshop for faculty attending the Southeastern Association for Science Teacher Education conference, Macon, GA. October 13, 2012.

Schnittka, C.G. (2012). *Save the Penguins*. A half-day workshop for 90 teachers in the Science Leadership Support Network. Lexington, KY. March 20-21, 2012.

Schnittka, C.G. (2012). *Save the Penguins*. A day-long workshop for after school teachers in Blacksburg, VA. January 21, 2012.

Schnittka, C.G. (2011). *Save the Penguins and Save the Sea Birds*. A day-long workshop for teachers in Kenton County, KY. November 18, 2011

Young, J. & **Schnittka**, C.G. (2011). *Rice Engineering Design Experience*. A week-long workshop for teachers. Rice University, Austin, TX, June 13-17, 2011.

^*__Schnittka__, C.G. & Thomas, P. (2010, November). *Engineering design in the science classroom with an environmental theme*. A paper presented at the Kentucky Science Teachers Association, Lexington, KY.

^__Schnittka__, C.G. & Fisher, M. H. (2010, September). *P20 STEM Education Lab*. A presentation at the Next Generation Learning Summit, Lexington, KY.

*__Schnittka__, C.G. & Ferguson, J.C. (2010). *Save the Sea Birds*. A workshop for teachers. Lexington, KY, September 22, 2010.

Schnittka, C.G. (2010). *Save the Penguins and Sea Birds*, A workshop for teachers at the Lexmark Teacher Institute, Lexington, KY, July 2010.

Schnittka, C.G. (2010). *Save the Penguins*. A workshop for teachers. Lexington, KY, May 20, 2010.

Schnittka, C.G. (2009). *Save the Penguins: Energy and the Environment*. A session in a Project Lead the Way workshop for master teachers. San Diego, CA, October 17, 2009.

Richards, L.G., **Schnittka**, C.G., & Donohue, S.K. (2009). *Engineering in K-12 education: Learning science and mathematics through guided inquiry, conceptual restructuring, and engineering design*. A session in a workshop for teachers. American Society of Engineering Education, Austin, TX, June 13, 2009.

Schnittka, C.G., Richards, L.G., & Groves, J. (2008). *Everyday magic: The wonders of engineering*. A session in a STEM conference for middle school girls. Southwest Virginia Higher Education Center, Abingdon, VA, December 2, 2008.

Richards, L.G. & **Schnittka**, C.G. (2007). *Bringing engineering into middle schools: Learning science and math through guided inquiry and engineering design*. A session in a workshop for teachers. American Society for Engineering Education, Honolulu, HI, June 23, 2007.

Bell, R.L., & **Schnittka**, C.G. (2006). *Nature of science: Theories, laws, and other dangerous ideas*. A workshop for teachers. Albemarle County Schools, VA, November 6, 2006.

Schnittka, C.G. (2006). *I'm your density*. A workshop presented for the Explorations in Space Science and Astronomy Seminar for the Johns Hopkins University Center for Talented Youth, Waynesboro, VA, October 21, 2006.

Schnittka, C.G. (2006). *Observation and inference in science*. A session in a workshop for teachers. Albemarle County Schools, VA, August 15, 2006.

^__Schnittka__, C.G. (2006, November). *Survivor Chesapeake: Take your students to an island!* A paper presented at the Annual Meeting of the Virginia Association of Science Teachers, Richmond, VA.

Schnittka, C.G. & Richards, L.G. (2006). *Introduction to engineering.* A workshop for middle school girls. Sweet Briar College, VA, August 9, 2006.

Schnittka, C.G. (2006). *Inquiry or not?* A session in a workshop for teachers. James Madison University, VA, June 26, 2006.

Richards, L.G. & **Schnittka**, C.G. (2006). *Bringing engineering into middle schools.* A session in a workshop for teachers. American Society for Engineering Education. Chicago, IL, June 17, 2006.

^Bell, R.L., **Schnittka**, C.G. (2005, November). *Bringing the nature of science into your classroom.* A presentation at the Annual Meeting of the Virginia Association of Science Teachers, Roanoke, VA.

Schnittka, C.G. (2005, November). *Engaging students through the history of science: Bring it back to life!* A presentation at the Annual Meeting of the Virginia Association of Science Teachers, Roanoke, VA.

Schnittka, C.G. (2005). *History of science mural: 1531 to 2005*. Painted in a classroom at the University of Virginia, Ruffner Hall, Charlottesville, VA.

^Bell, R. L., Toti, D., & **Schnittka**, C.G. (2004, December). *High-tech, low-stress activities for effective science instruction.* A presentation at the Annual Meeting of the National Science Teachers Association, Eastern Region, Richmond, VA.

XIII. GRANTS AND CONTRACTS

SUMMARY TABLE OF FUNDED GRANTS AND CONTRACTS

Grants	Years	Total Amount Funded
PI: AUTeach Source: Alabama Commission on Higher Education	2023-2027	$3,000,000
Co-PI: Spatial Problem-solving, Assessment, and Curriculum for Everyone: AU Space Program Source: Auburn University Intramural Grant Program PI: Joni Lakin	2017 - 2020	$40,000
Co-PI: Kindergarten Saves the World! Source: 100K in 10 PI: Philip Molebash, Loyola Marymount Univ.	2017-2018	$215,136 (Auburn: $60,000)
PI: Science STUFF: Curriculum for future makers and designers. Source: Auburn University College of Education	2016-2017	$5000
PI: Spatial thinking, hyperbolic planes, and fiber engineering: Curriculum development for middle school youth. Source: AU College of Education National Advisory Council	2015-2016	$1966

External Evaluator: NSF ITEST Grant: The Eyes Say it All. PI: Javed Khan, Tuskeegee University	2014-2016	$15,000 for evaluation
PI: SEC Travel Grant: Collaboration between Auburn and University of Kentucky	2014	$2000
Co-PI: *Robotics and Engineering Education: Fostering the Conceptual Understanding of Science (The RE^2-FoCUS Initiative)* Funded by the National Science Foundation (NSF) Mathematics and Science Partnership Program through the Alabama Math, Science, and Technology Initiative (AMSTI). PI: Allen Landers	2013-2015	$804,254.14
PI: *Studio STEM: Engaging Middle School Students in Networked Science and Engineering Projects.* Funded by the National Science Foundation (NSF) Innovative Technology Experiences for Students and Teachers (ITEST).	2011-2014	$1,370,991 UK: $46,135 Auburn: $111,723
PI: University of Kentucky Vice President for Research, *Summer Faculty Research Fellowship*	2010	$7,000
Totals		**$5,461,347.14** **Auburn: $4,039,943.14**

Contracts/Advisory Positions/Senior Personnel:

External Consultant, *Integration of Virtual Reality (VR) to Support Technology-based Active-learning and Retention: iVR to STAR. NSF Award #1912047, PI Mohammed Javed Khan. 2021.*

Advisory Board Member, *Integration of Engineering Design and Life Science: Investigating the Influence of an Intervention on Student Interest and Motivation in STEM Fields*. NSF Award# 1721141, PI Siddika Guzey. 2017 – 2021.

Advisory Board Member: (2016-2019). NSF funded EEC grant: Developing Pre-service Science Teachers' Pedagogical Content Knowledge for Engineering Design Integrated Science Teaching, and Assessing Impact on Student Learning. The University of Virginia. Total funded: $325,000

Faculty Liaison to NanoBio Fellows (Senior Personnel)**:** (2014 – 2017). NSF funded ITEST Grant: *The NanoBio Science Partnership for Alabama Black Belt Region*. Tuskegee University/Auburn University/Alabama State University. Total funded: $8,352,651

Curriculum Designer: (2013). Institute for Creativity, Arts, and Technology funded Grant: *Studio STEM 2.0: Scaling Design-Based Science Inquiry to Alternative Informal Learning Spaces*. Total funded: $24,000

Advisory Board Member: (2013-2018). NSF funded MSP Grant: *Engineering to Transform the Education of Analysis, Measurement* (EngrTEAMS), University of Minnesota STEM Education Center. Total funded to date: $3,413,681

Higher Education Mentor (Senior Personnel): (2010). Kentucky Dept. of Education funded: *Science Leadership Support Network*. Total funded: $390,000

IX. INSTRUCTION

A. ASSIGNED TEACHING

Course	Credits	Semester
[a] CTSE 5100/6100 Curriculum and Teaching II:	4	Fall 2022
[a] CTSE 5000/6000 Technology and App. in Science	2	Fall 2022
[a] CTSE 4970/7970 Special Topics: The Science of Craft	3	Spring 2022
[a] CTSE 4920/7920 Internship in Secondary Science	8/11	Spring 2022
[a] CTSE 5240/6240 Seminar in Clinical Residency	1	Spring 2022
[a] CTSE 5100/6100 Curriculum and Teaching II:	4	Fall 2021
[a] CTSE 5000/6000 Technology and App. in Science	2	Fall 2021
[a] CTSE 7910 Practicum in Science Teaching	1	Fall 2021
[a] CTSE 5100/6100 Curriculum and Teaching II:	4	Fall 2020
[a] CTSE 7540 Assessment and Evaluation: Science	3	Fall 2020
[a] CTSE 5000/6000 Technology and App. in Science	2	Fall 2020
[a] CTSE 7920 Internship in Secondary Science	8	Spring 2020
[a] CTSE 5100/6100 Curriculum and Teaching II:	4	Fall 2019
[a] CTSE 7540 Assessment and Evaluation: Science	3	Spring 2019
[a] CTSE 7920 Internship in Secondary Science	8	Spring 2019
[a] CTSE 5100/6100 Curriculum and Teaching II:	4	Fall 2018
[a] CTSE 5000/6000 Technology and App. in Science	2	Fall 2018
[a] CTSE 7910 Practicum in Science Teaching	1	Spring 2018
[a] CTSE 6000 Technology and Applications in Science	2	Spring 2018
[a] CTSE 7540 Assessment and Evaluation: Science	3	Spring 2018
[a] CTSE 5100/6100 Curriculum and Teaching II:	4	Fall 2017
[a] CTSE 7920 Internship in Secondary Science	8	Spring 2017
[a] CTSE 7540 Assessment and Evaluation: Science	3	Spring 2017

[a] CTSE 6240 Seminar in Clinical Residency	1	Spring 2017
[a] CTSE 6240 Seminar in Clinical Residency	1	Fall 2016
[a] CTSE 6000 Technology and Applications in Science	2	Fall 2016
[a] CTSE 5100/6100 Curriculum and Teaching II: Science	4	Fall 2016
[a] CTSE 7910 Practicum in Science Teaching	1	Spring 2016
[a] CTSE 5100/6100 Curriculum and Teaching II: Science	4	Fall 2015
[a] CTSE 4030 Natural Sciences for Elementary School	3	Fall 2015
[a] CTSE 7540 Assessment and Evaluation: Science	3	Spring 2015
[a] CTSE 4090 Curriculum and Teaching I: Science	4	Spring 2015
[a] CTSE 4090 Curriculum and Teaching I: Science	4	Spring 2014
[a] CTSE 6000 Technology and Applications in Science	2	Fall 2013
[a] CTSE 7540 Assessment and Evaluation: Science	3	Fall 2013
[a] CTSE 4100 Curriculum and Teaching II: Science	4	Spring 2013
[a] CTSE 4000 Technology and Applications in Science	2	Fall 2012
[a] CTSE 4920 Internship in Secondary Science	3	Fall 2012
[b] SEM 708 Engineering in STEM Education	3	Spring 2012
[b] SEM 328 Elementary Science Ed	3	Fall 2011
[b] SEM 348 Middle School Science Ed	3	Fall 2011
[b] SEM 328 Elementary Science Ed	3	Spring 2011
[b] SEM 708 Engineering in STEM Education	3	Spring 2011
[b] SEM 328 Elementary Science Ed	3	Fall 2010
[b] SEM 348 Middle School Science Ed	3	Fall 2010
[b] SEM 328-1 Elementary Science Ed	3	Spring 2010
[b] SEM 328-2 Elementary Science Ed	3	Spring 2010
[b] SEM 746 Internship in Secondary Science	2	Spring 2010
[b] SEM 328-1 Elementary Science Ed	3	Fall 2009
[b] SEM 328-2 Elementary Science Ed	3	Fall 2009

[c] EDIS 550L Secondary Science Education Lab	1	Spring 2006
[c] EDIS 558 Internship in Secondary Science	3	Fall 2006
[c] EDIS 550L Secondary Science Education Lab	1	Spring 2005

[a] courses taught at Auburn Univ. [b] courses taught at Univ. of Kentucky [c] courses taught at Univ. of Virginia

A. UNASSIGNED TEACHING

Course	Credits	Semester	Student(s)
CTSE 7900 Dir Studies	2	Fall 2022	Danielle Hudson
CTSE 7910 Practicum	1	Fall 2022	Pasquale Ferraro Jon Davis
CTSE 7910 Practicum	1	Fall 2019	Hannah Powell
CTSE 4910 Practicum	1	Fall 2019	Yakira Cochran
CTSE 4910 Practicum	1	Spring 2019	Yakira Cochran
CTSE 7910 Practicum	2	Spring 2019	Jackson Moss
CTSE 4910 Practicum	1	Spring 2018	Skyylar Muehleisen
CTSE 7910 Practicum	1	Spring 2018	Audra Welch Dianna Forbes
CTSE 7910 Practicum	1	Spring 2018	Nick Soltis
CTSE 4970 and 6970 – Spatial Thinking in STEM	1	Fall 2017	8 students
CTSE 7900 Directed Studies	3	Fall 2017	Audra Welch
CTSE 7910 Practicum	2	Summer 2017	Joni Lakin
CTSE 7910 Practicum	1	Summer 2017	Audra Welch
CTSE 4910 Practicum	1	Summer 2017	Michael Moultrie
CTSE 7910 Practicum	1	Summer 2017	Amal Alenzi
CTSE 7910 Practicum	1	Spring 2017	Shannon Bales
CTSE 7900 Directed Studies	1	Fall 2016	Jackson Moss
CTSE 7910 Practicum	1	Fall 2016	Amal Alenzi
CTSE 7900 Directed Studies	3	Spring 2015	Amal Alenzi Kathy Placek
CTSE 7900 Directed Studies	1	Spring 2014	Erin Percival
CTSE 7900 Directed Studies	1	Spring 2013	Kristan Abney
CTSE 7900 Directed Studies	2	Fall 2012	George Turner

Unassigned Teaching Activities:
(*STUDENT CONTRIBUTION)

Schnittka, C.G. (February, 2022). Indigo dyeing and Shibori. Osher Life Long Learning Institute, Auburn, AL.

Schnittka, C.G. (August, 2016). *Spiritual Scientific Scenic Serene Alaska.* Osher Life Long Learning Institute, Auburn, AL.

Schnittka, C.G. (October, 2014). *Can you design a windmill?* Osher Life Long Learning Institute, Auburn, AL.

*Schnittka, C.G., & Placek, K. (September – December 2014). *Knitting for spatial thinking*, Notasulga High School, Notasulga, AL.

*Schnittka, C.G. & Abney, K. (July, 2013). *Save the Snails*, Women in Engineering Summer Camp, Auburn AL.

*Schnittka, C.G., Fasina, Y., & Middleton, J. (April, 2013). *Save the Sea Birds*, Auburn Junior High School 8th grade physical science class, Auburn, AL.

*Schnittka, C.G., Fasina, Y., & Norton, D. (May, 2013). *Save the Sea Birds*, Auburn High School 10th grade physical science class, Auburn AL.

Schnittka, C.G. (February, 2013), *Next Generation Science Standards: An Overview*. Mathematics/Mathematics Education/Science Education Seminar, Auburn University, AL.

Schnittka, C.G. (January, 2013), *Engineering in STEM Education*. Mathematics/Mathematics Education/Science Education Seminar, Auburn University, AL

Schnittka, C.G. (September, 2012), *Save the Penguins*. Freshman Design Course in Polymer and Fiber Engineering, Auburn University, AL.

B. Instructional Development

a. The Science in Crafts, CTSE 4970/6970 (2022)
Developed special topics course on the science embedded in traditional crafts. Throughout history, people learned by listening to stories and by making things. The elders possessed knowledge, which was passed down through the generations. People made things from natural materials in their environment to live better lives and solve problems.

b. Thinking Spatially across the Curriculum, CTSE 4970/6970 (2017)
Developed special topics course on spatial thinking that was taken by undergraduate and graduate students in the College of Education, and one student outside the College of Education. Students read research, participated in discussions with guests, and developed spatial thinking curriculum that they taught in an afterschool setting.

c. Technology in Science Education, CTSE 5000/6000 (2013-2020)
Developed graduate level technology course at Auburn University for pedagogical teaching techniques with educational technology in science education. This course was taught for the first time in fall 2013 alongside a revised and updated undergraduate level course that focused on pedagogy and teaching applications for educational technology in science teaching. Graduate and undergraduate students enrolled together, and the learning objectives were differentiated. A grant was secured to purchase ten 3D printers for this class, and in the fall of 2020, they were loaned out to students on a rotating basis so that students could complete assignments that were developed.

d. Engineering in STEM Education SEM 708 (2011)
Developed hybrid distance education graduate course at the University of Kentucky. Delivered synchronously over Adobe Connect and Skype. Course appealed to both math

and science education graduate students and included curriculum development, review of research, and several guest speakers from around the country.

e. Methods of Teaching Science in the Middle School, SEM 348 (2011)
Developed first in a new two course sequence. Courses were developed after a thorough review of all science coursework required for middle level science certification, and filled in gaps between state standards and required coursework in the sciences.

f. Applications of Teaching Science in the Middle School, SEM 448 (2011)
Developed second in a new two course sequence. This course focused on project based learning, engineering design-based science, interdisciplinary science, and other innovative methods for applying national and state science standards to real-world contexts.

C. Curriculum development

Schnittka, C.G. (2021). *STEM+Craft: Beeswax candles.*https://27fc3f4f-33ac-4f4b-9f63-fde52896113f.filesusr.com/ugd/503804_3003c12ddab84f75a48e611fcbd12c58.pdf

Schnittka, C.G. (2021). *STEM+Craft: Paper.* https://27fc3f4f-33ac-4f4b-9f63-fde52896113f.filesusr.com/ugd/503804_95324d445ee0407fbce1b726b09e1b37.pdf

Schnittka, C.G., Lakin, J.M., & Cox, J.K. (2020). Visualizing the 3rd dimension: Activities for spatial thinking training. Self-published in book form.

Schnittka, C.G. (2020). *STEM+Craft: Sewing.* https://27fc3f4f-33ac-4f4b-9f63-fde52896113f.filesusr.com/ugd/503804_22e64dbb518b4b60b82553614114179b.pdf

Schnittka, C.G. (2020). *STEM+Craft: Dyeing.* https://27fc3f4f-33ac-4f4b-9f63-fde52896113f.filesusr.com/ugd/503804_2737297b9ae0415a99634e9a0c2e3fe2.pdf

Schnittka, C.G. (2020). *STEM+Craft: Clay whistles.* https://27fc3f4f-33ac-4f4b-9f63-fde52896113f.filesusr.com/ugd/503804_df7a68fa984a46b6999180c046bbadb0.pdf

Schnittka, C.G. (2009). *Save the Penguins Engineering Teaching Kit: An Introduction to Thermodynamics and Heat Transfer.*
http://www.auburn.edu/~cgs0013/ETK/SaveThePenguinsETK.pdf

and https://itunes.apple.com/us/book/save-penguins-engineering/id952066703?mt=11

Schnittka, C.G. (2012). *Save the Sea Birds Engineering Teaching Kit: An Introduction to Solar Energy, Force, and Motion.*
http://www.auburn.edu/~cgs0013/ETK/SaveTheSeaBirdsETK.pdf

and https://itunes.apple.com/us/book/save-sea-birds-engineering/id952076488?mt=11

Schnittka, C.G. (2013). *Save the Snails Engineering Teaching Kit: An Introduction to Electromagnetic Induction and Gears.* http://www.auburn.edu/~cgs0013/ETK/SaveTheSnailsETK.pdf

and https://itunes.apple.com/us/book/save-snails-salamanders-other/id961212887?ls=1&mt=11

Schnittka, C.G. (2014). *Save the Black Footed Ferrets Engineering Teaching Kit: An Introduction to CAD, Circuits, and Capacitors.* http://www.auburn.edu/~cgs0013/ETK/SaveTheFerretsETK.pdf

and https://itunes.apple.com/us/book/save-black-footed-ferrets/id949997503?mt=11

Schnittka, C.G., Haynes, A., Bales, S., Brennan, B., & Welch, A. (2017) *Save the Baby Penguins STEM Teaching Kit: An Introduction to Heat Transfer for Kindergarten*

Schnittka, C.G., Welch, A. & Brennan, B. (2018) *Save the Baby Snails STEM Teaching Kit: An Introduction to Force and Motion for Kindergarten*

A. Student Evaluations

Course	Credits	Semester	Enrollment	Overall
CTSE 5000 Technology and Applications in Science	2	Fall 2022	9	5.5/6.0
CTSE 6000 Technology and Applications in Science	2	Fall 2022	6	5.8/6.0
CTSE 6100 Curriculum and Teaching II: Science	4	Fall 2022	7	5.8/6.0
CTSE 5100 Curriculum and Teaching II: Science	4	Fall 2022	9	5.6/6.0
CTSE 4970 The Science of Craft	3	Spring 2022	12	5.7/6.0
CTSE 7970 The Science of Craft	3	Spring 2022	4	6.0/6.0
CTSE 5100 Curriculum and Teaching II: Science	4	Fall 2021	4	5.7/6.0
CTSE 6100 Curriculum and Teaching II: Science	4	Fall 2021	6	5.7/6.0
CTSE 5000 Technology and Applications in Science	2	Fall 2021	11	6.0/6.0
CTSE 6000 Technology and Applications in Science	2	Fall 2021	7	6.0/6.0

CTSE 5100 Curriculum and Teaching II: Science	4	Fall 2020	4	6.0/6.0	
CTSE 6100 Curriculum and Teaching II: Science	4	Fall 2020	2	5.9/6.0	
CTSE 5000 Technology and Applications in Science	2	Fall 2020	9	5.8/6.0	
CTSE 6000 Technology and Applications in Science	2	Fall 2020	9	5.3/6.0	
CTSE 7540 Evaluation of Program in Science Education	3	Fall 2020	6	5.4/6.0	
CTSE 4923 Clinical Residency in Science Education	11	Spring 2020	2	6.0/6.0	
CTSE 7540 Evaluation of Program in Science Education	3	Spring 2019	6	5.91/6.0	
CTSE 5100/6100 Curriculum and Teaching II: Science	4	Fall 2019	10	5.96/6.0	
				Teaching Overall	Learning Overall
[a] CTSE 5000/6000 Technology and Applications in Science	2	Fall 2018	20	5.9/6.0	5.9/6.0
[a]CTSE 5100/6100 Curriculum and Teaching II: Science	4	Fall 2018	13	5.88/6.0	5.88/6.0
[a]CTSE 7540 Evaluation of Program in Science Education	3	Spring 2018	8	5.82/6.0	5.82/6.0
[a]CTSE 5100/6100 Curriculum and Teaching II: Science	4	Fall 2017	19	5.85/6.0	5.85/6.0
[a]CTSE 4970/5970 Thinking Spatially across Curriculum	1	Fall 2017	8	5.34/6.0	5.34/6.0
[a]CTSE 7540 Assessment and Evaluation: Science	3	Spring 2017	10	5.5/6.0	5.1/6.0

[a] CTSE 7920 Clinical Residency in Science Education	11	Spring 2017	2	5.75/6.0	5.75/6.0
[a]CTSE 5100/6100 Curriculum and Teaching II: Science	4	Fall 2016	15	5.47/6.0	5.37/6.0
[a] CTSE 5000/6000 Technology and Applications in Science	2	Fall 2016	16	5.57/6.0	5.57/6.0
[a] CTSE 7920 Clinical Residency in Science Education	11	Fall 2015	2	5.5/6.0	5.5/6.0
[a]CTEE 4300 Curriculum Natural Science (Elem. Ed.)	3	Fall 2015	25	3.5/6.0	3.5/6.0
[a]CTSE 5100/6100 Curriculum and Teaching II: Science	4	Fall 2015	18	5.3/6.0	5.1/6.0
[a]CTSE 7540 Assessment and Evaluation: Science	3	Spring 2015	15	4.9/6.0	4.4/6.0
[a]CTSE 4090 Curriculum and Teaching I: Science	4	Spring 2015	11	5.6/6.0	5.2/6.0
[a] CTSE 5000 Technology and Applications in Science	2	Fall 2014	18	5.6/6.0	5.3/6.0
[a]CTSE 4090 Curriculum and Teaching I: Science	4	Spring 2014	16	5.1/6.0	4.9/6.0
[a]CTSE 7540 Assessment and Evaluation: Science	3	Fall 2013	8	5.9/6.0	5.9/6.0
[a] CTSE 4000 Technology and Applications in Science	2	Fall 2013	14	5.2/6.0	5.3/6.0
[a] CTSE 6000 Technology and Applications in Science	2	Fall 2013	4	5.8/6.0	5.3/6.0
[a]CTSE 4100 Curriculum and Teaching II: Science	4	Spring 2013	9	5.6/6.0	5.6/6.0

[a] CTSE 4000 Technology and Applications in Science	2	Fall 2012	5	5.2/6.0	5.4/6.0
[b] SEM 708 Engineering in STEM Education	3	Spring 2012	8	4.0/4.0	4.0/4.0
[b] SEM 328 Elementary Science Ed	3	Fall 2011	30	3.8/4.0	3.7/4.0
[b] SEM 348 Middle School Science Ed	3	Fall 2011	5	3.4/4.0	3.8/4.0
[b] SEM 328 Elementary Science Ed	3	Spring 2011	14	3.6/4.0	3.6/4.0
[b] SEM 708 Engineering in STEM Education	3	Spring 2011	7	4.0/4.0	4.0/4.0
[b] SEM 328 Elementary Science Ed	3	Fall 2010	25	2.8/4.0	2.8/4.0
[b] SEM 348 Middle School Science Ed	3	Fall 2010	25	2.9/4.0	3.0/4.0
[b] SEM 328 Elementary Science Ed	3	Spring 2010	29	3.5/4.0	2.9/4.0
[b] SEM 328-1 Elementary Science Ed	3	Fall 2009	29	3/4.0	2.8/4.0
[b] SEM 328-2 Elementary Science Ed	3	Fall 2009	27	2.7/4.0	2.3/4.0

[a] assigned teaching at Auburn University – scored on a 6 point scale. Average scores are based on responses to the following questions as required by departmental policy:

Q1: Instructor's overall teaching effectiveness

Q2: Overall learning in class

[b] assigned teaching at University of Kentucky – scored on a 4 point scale. Average scores are based on responses to the following two questions as required by departmental policy:

Q1: Overall quality of teaching

Q2: Overall value of course

F. Advising and Mentoring

Ph.D. Students

Name	*Role*	*Semester Entered*	*Full-Time/ Part-Time*	*Approved Program Plan*	*Passed Written Exam*	*Passed Dissertation*	*Passed Dissertation*

						Proposal Defense	*Final Defense*
Joy Rushing	Outside Reader						Summer 2022
Danielle Hudson	Chair	Fall 2020	Full time				
Jon Davis	Chair	Spring 2019	Part time	Fall 2022	Fall 2022		
Mark Brenneman	Chair	Fall 2017	Full time	Fall 2020	Fall 2020		
Steph Courtney	Committee Member	Fall 2017	Full time				
Dianna Forbes	Outside Reader		Full time				Summer 2018
Benjamin Miedema	Outside Reader						Summer 2018
Stephen Swann	Chair	Spring 2018	Part time	-	-	-	-
Adam Kilcrease	Outside Reader						Spring 2018
Nick Soltis	Committee Member	Spring 2017	Full time	Fall 2019	Fall 2019	Spring 2020	Spring 2020
Amal Alenzi	Chair	Spring 2016	Full Time	Fall 2016	Spring 2017	Fall 2017	Spring 2018
Jackson Moss	Chair	Spring 2016	Full Time	Fall 2016	Fall 2017	Spring 2018	Spring 2019
Shannon Bales	Chair	Fall 2015	Full Time	Spring 2017	Fall 2017	Spring 2018	Spring 2019
George Turner	Chair	Fall 2012	Part Time	Fall 2016	Fall 2016	-	-
Jessica Cooper	Outside Reader						Spring 2015
Randall Colvin	Chair	Fall 2012	Part Time	-	-	-	-

Completed M.Ed. or M.S. Committee Chair:

Name	*Date Entered*	*Passed Comprehensive Exam*	*Graduated*
Cheikouna Ka	Fall 2020	Fall 2022	Fall 2022
Talia Tornabene	Fall 2019	Spring 2022	Spring 2022
Enya Granados	Fall 2019	Spring 2022	Spring 2022
Ha Bui	Fall 2020	Fall 2021	Fall 2021
Brian Peters	Spring 2018	Fall 2019	Sp 2020
Hannah Powell	Fall 2017	Fall 2019	Sp 2020
Joni Lakin	Fall 2016	Fall 2019	Fall 2019

Emily McCall	Fall 2017	Spring 2018	Fall 2018
Reese Claybrook	Fall 2015	Summer 2018	Fall 2018
Dianna Forbes	Fall 2016	Spring 2018	Fall 2018
Jacob Helf	Spring 2017	Summer 2018	Fall 2018
Kaila Melton	Fall 2016	Summer 2018	Sp 2018
Audra Welch	Spring 2017	Spring 2018	Sp 2018
Xintong Yu	Spring 2017	Spring 2018	Sp 2018
Will Tidmore	Spring 2015	Summer 2017	Fall 2017
Kelley Suchman	Fall 2015	Fall 2017	Fall 2017
Sarah Greene	Spring 2016	Summer 2017	Fall 2017
Amanda Savrda	Fall 2016	Summer 2017	Fall 2017
Molly Neilsen Teasley	Fall 2016	Summer 2017	Fall 2017
Peter Starnes	Fall 2015	Fall 2016	Sp 2017
Amanda Haynes	Spring 2016	Spring 2017	Sp 2017
Will Haynes	Fall 2015	Fall 2016	Fall 2016
Erica Williams	Fall 2015	Fall 2016	Fall 2016
Catherine Wolfe	Fall 2015	Fall 2016	Fall 2016
Thanh Nguyen	Spring 2014	Spring 2016	Sp 2016
Amal Alenzi	Spring 2015	Fall 2015	Fall 2015
Kathy Placek	Spring 2014	Summer 2015	Fall 2015
Tara McAdam	Spring 2014	Summer 2015	Fall 2015
Nicole Engleman	Fall 2013	Fall 2014	Fall 2014
Julia Rich	Fall 2013	Fall 2014	Fall 2014
Shannon Bales	Fall 2013	Fall 2014	Fall 2014
Kristan Abney	Fall 2012	Fall 2013	Fall 2013
Sean Sinclair	Fall 2012	Fall 2013	Fall 2013

Current M.Ed. or M.S. Committee Chair:

Name	*Date Entered*	*Passed Comprehensive Exam*	*Expected Graduation*
Alivia Carden	Fall 2022		Spring 2024
Keirstin Cramer	Fall 2022		Spring 2024
Katherine Carothers	Spring 2022	?	Summer 2023
Mary Beth Humphrey	Spring 2021	?	Spring 2023
Damien Ruiz	Fall 2020		Spring 2023

X. OUTREACH

A. Teaching science through crafts

In August of 2021, I taught three workshops at the Jule Collins Smith Museum of Fine Art at Auburn University. Approximately 45 individuals of all ages attended each workshop. The first one was on making things out of clay. The second was on weaving, and the third was on natural dyeing. I taught them the science behind the crafts as well.
On February 16, 2022, I conducted a workshop for OLLI (Osher Lifelong Learning Institute) on the science of indigo dyeing. There were 8 adults attending the three hour workshop.

B. Clay Whistle Lessons for Elementary Education Students

In January and February of 2020, I taught several groups of elementary education students at Auburn University how to construct clay whistles, and I taught them the science behind their actions and the resultant music made by the instruments.

C. East Samford School Crochet Club

In January and February of 2020, I volunteered at East Samford School in Auburn Alabama to teach crochet to youth in 7th grade. The goal of this project was to develop spatial thinking skills, persistence, and self-confidence.

D. Zoom Science School for East Alabama

When the pandemic meant that my methods students could not attend their lab placements, I got online and started recruiting for an online science class for home-schooled students in East Alabama. I recruited a dozen students, 8 of whom were regulars, and on a weekly basis, I supervised my students as they rotated teaching for the entire semester. I kept in touch with parents on a weekly basis, letting them know the supplies they needed each week, and managed the feedback forms that were sent to students weekly so that they could let us know what they liked and did not like.

E. Mask Making Initiative at Osher Lifelong Learning Institute

In April 2020, I worked with OLLI @Auburn to develop a mask-making initiative that resulted in over 10,000 cloth fabric masks sewn and delivered to first responders and others in need. I created a mask design, chose fabrics, recorded video instructions for sewing them, designed written instructions, fielded questions from sewists, and made over 800 that were donated.

F. STEM Club at I AM MY BROTHER'S KEEPER (IAMBK)

From the fall semester of 2017 to the fall semester 2022, I co-directed a STEM club for underserved youth one-two evenings a week. One evening the club is located in Auburn, and the other evening it is located in Tuskegee. The club serves approximately 25 youth through the overarching organization, I Am My Brother's Keeper. The club focuses on building STEM content knowledge and identity, while encouraging critical thinking and problem-solving skills.

G. Program Title: STEM Days at Sanford Middle School

During two days in October, 2016, I worked with undergraduate and graduate students at Sanford Middle School during their school-wide STEM showcase. We taught every student at the school in groups for 30 minutes each. The curriculum was Solar ArtBots, something I developed for the STEM Class at Burns Middle School. Students designed, constructed, and tested solar-powered robots that drew designs on paper.

H. Program Title: STEM Class at Burns Middle School

During fall semester 2016 and spring semester 2017, I worked with three graduate students and a colleague in the EFLT Department to teach four STEM classes at W.F. Burns Middle School. Each Monday, we taught two 6th grade, one 8th grade, and one 7th grade 50 minute class. We developed some of the lessons ourselves around the theme of arts-infused STEM, or STEAM. From Solar ArtBots to Rockpunzel… with lessons on Bernoulli's Principle and Evolution included, this outreach was beneficial to students at Burns, to my graduate students needing more teaching experience, and gave me the chance to pilot test some new curriculum ideas.

I. Program Title: Studio STEAM at Notasulga High School
During spring semester, 2016, I spent Monday afternoons at Notasulga High School conducting an after-school program designed to build spatial thinking skills. A group of 9 middle and high school students enrolled, and two graduate students assisted me each week. I was able to test some new curriculum ideas, and really connect with these youth in a way that would not be possible during the school day.

J. Program Title: Notasulga Knits
During fall semester, 2014 I traveled to Notasulga, Alabama on a weekly basis to teach "3D Printing with Yarn" (knitting) to a group of nine high school seniors enrolled in a home economics class. The purpose of this outreach project was two-fold: to establish a collaborative relationship with students and faculty at the school, and to explore the idea that knitting might engender spatial thinking skills. I used social media to raise awareness of this project and solicit donations of yarn and knitting needles.

K. Program Title: Auburn Connects Writing Contest for High School Students
During the spring and summer of 2014, I sponsored a writing contest for rising juniors and rising seniors at Notasulga High School. The contest focused on the book, The Boy Who Harnessed the Wind, by William Kamkwamba. Two students were selected as winners, and I hosted them on campus for a day where they toured with me, received lessons on engineering and science, and met several of my current students. When the author, William Kamkwamba visited Auburn, I ushered the two winners to a reception in his honor and also to his speech.

L. Program Title: Save the Animals Engineering Teaching Kits
For the past few years I have been working on developing a series of curriculum units that blend science, environmental issues affecting animals, and engineering. Each unit is available free of charge on my website, www.auburn.edu/~cgs0013 and in the iTunes bookstore. *Save the Penguins* has been very widely disseminated and used across the country and world. It was adopted by the organization, Project Lead the Way, for inclusion in their middle school curriculum. It was published in two books. A version of it is being used with the Boston Museum of Science's program, *Engineering is Elementary*. The second unit, *Save the Sea Birds* is now seeing increased usage based on the number of emails requesting additional information. The final two units, *Save the Snails*, and *Save the Ferrets*, are also released and seeing increased use.

M. Program Title: Robotics and Engineering Education: Fostering the Conceptual Understanding of Science (The RE^2-FoCUS Initiative)
In this grant-funded three-year program, I am delivering professional development using my *Save the Animals* curriculum to teachers across the state starting in May, 2013. In a train-the-trainer model, I trained 17 math and science teachers from 9 Alabama Math Science and Technology

Initiative (AMSTI) sites, and they in turn trained nearly 200 teachers at schools in their districts. I studied the impact on teacher attitudes and content knowledge, and will be studying the learning gains of students across the state.

N. Program Title: The Alabama STEM Studio for After-school Learning (TASSAL)
TASSAL is a collaborative effort between the Truman Pierce Institute, the College of Science and Math, the College of Engineering, and myself. The goal is to bring quality professional development and STEM curricula to after-school teachers across the state.
We conducted a day-long workshop in January 2013 for 21 after school teachers across the state of Alabama to teach them how to use the curriculum I developed, *Save the Penguins*. We are recruiting after-school programs such as Boys and Girls Clubs, 21st Century Community Learning Centers, etc. to join TASSAL.

O. Program Title: Studio STEM
Studio STEM is an NSF-funded afterschool project in rural southwestern Virginia. In cooperation with Virginia Tech and Temple University, we implemented my curriculum in three middle-grades afterschool programs with volunteer college students as facilitators. The program was very successful, and we now have multiple programs at each site to accommodate new students. We have applied for additional funding from NSF to bring Studio STEM to Alabama. See www.studiostem.org for more information.

P. Program Title: Black Males Working Saturday Academy
Fifty young males attended this program on three Saturdays in October, 2010 in Lexington, KY, With the help of 30 college student volunteers that I organized to come each week and facilitate, the boys were taught engineering design through the *Save the Penguins* curriculum. I trained all the volunteers to be effective facilitators. The program was very successful and they participants proudly presented their work at a family night.

Q. Program Title: Family Science and Engineering Nights
Two family science nights and one family engineering night were conducted at elementary schools in Lexington, KY in 2011 and 2012. Education and engineering student volunteers were recruited to help create and run the stations set up around the schools. The goal was to increase awareness of science and engineering, and encourage problem solving and creativity and promote enthusiasm for the fields. Each event was very successful, and praised by students, parents, administrators, and teachers alike.

XI. SERVICE

A. EDITORIAL REVIEW BOARD

Associate Editor, *Electronic Journal of Science and Mathematics Education*, 2019 - 2023
Review Board, *Contemporary Issues in Technology and Teacher Education*, 2016-present
Consulting Editor, *The Journal of Educational Research,* 2016 – present.

B. MANUSCRIPT REVIEWER

Manuscript Reviewer, *International Journal of STEM Education*, 2019 - present
Manuscript Reviewer, *IEEE Transactions on Education*, 2016 – present.
Manuscript Reviewer, *Journal of Pre-College Engineering Education Research*, 2016 – present.

Manuscript Reviewer, *Journal of Engineering Education*, 2016-present
Manuscript Reviewer, *Journal of Science Education and Technology*, 2012 – present.
Manuscript Reviewer, *Current Issues in Education*, 2012 – present.
Manuscript Reviewer, *International Journal of Science Education*, 2010-present.
Manuscript Reviewer, *Advances in Engineering Education*, 2011-present.
Manuscript Reviewer, *The Science Teacher*, 2004 - present.
Manuscript Reviewer, *Science Scope*, 2004 – present.
Manuscript Reviewer, *School Science and Mathematics*, 2006-present.
Manuscript Reviewer, *Journal of Virginia Science Education*, 2006-2009.

C. CONFERENCE PAPER REVIEWER

Proposal Reviewer, *National Science Teachers Association*, 2012.
Proposal Reviewer, Annual meeting of the *American Society for Engineering Education*; 2005-present.
Proposal Reviewer, Annual meeting of the *Association for Science Teacher Education*; 2008, 2010.
Proposal Reviewer, Annual meeting of the *National Association for Research in Science Teaching*- 2007, 2010, 2016, 2022
Proceedings Reviewer, American Society for Engineering Education Conference, 2005 – 2014.
Proceedings Reviewer, Frontiers in Education Conference, 2004-2009

D. PROFESSIONAL ORGANIZATION OFFICES AND ROLES

Committee member, Publications Committee, *School Science and Mathematics Association.* 2023 – present.

Chair, Engineering Education Research Interest Group, *National Association for Research in Science Teaching*, 2015-2016.

Board Member at Large, *American Society for Engineering Education K-12 and Pre-College Division*; 2010- 2012.

Secretary, Graduate Student Forum, *Association for Science Teacher Education*, 2007-2008.

E. AUBURN UNIVERSITY SERVICE

1. UNIVERSITY SERVICE

Senator, *Faculty Senate*, Auburn University, 2021 - present

Member, Review committee for Dean George Flowers, fall 2022

Member, *Calendar and Schedules Committee*, Auburn University, 2013 – 2016.

Member, Search committee for science education faculty member in COSAM. 2016.

2. COLLEGE OF EDUCATION SERVICE

Member, *Field Experiences Committee*, Auburn University, 2018 – present.

Member, *Scholarship and Innovation Committee*, Auburn University, 2013 – 2016.

3. DEPARTMENT OF CURRICULUM AND TEACHING SERVICE

Coordinator, *Departmental "Sunshine" Fund.* 2017 – present.

Member, *Peer Mentoring Committee*, Tierney Hinman, 2021-present

Member, *Peer Mentoring Committee*, Megan Burton, 2020 – present.

Member, *Academic Affairs Committee,* Auburn University, 2020- present.

Member, *Promotion and Tenure Committee*, Auburn University, 2020- present.

Program Coordinator, *Secondary Science Education*, Auburn University, 2013 – 2021.

Chair, *Search Committee for ELA Faculty Member*, Auburn University, 2015-2016.

Chair, *Peer Mentoring Committee for Michael Cook*, 2017-2018.

Member, *Research and Assessment Committee*, Auburn University, 2015 – 2016

4. COLLEGE OF ENGINEERING SERVICE

Faculty Advisor, Alpha Omega Epsilon Engineering Sorority, May 2013 – 2016.

F. OTHER SIGNIFICANT SERVICE ACTIVITIES

External Reviewer for Dossier of a faculty member at Purdue University. Fall 2022

External Reviewer for Dossier of a faculty member at the Univ. of Tennessee. Fall 2022

Board Member, Alabama Afterschool Network 2015 – 2020.

Board Member, I Am My Brother's Keeper, Inc. 2017 – 2019.

G. UNIVERSITY OF KENTUCKY SERVICE

1. UNIVERSITY SERVICE

Judge, *Graduate Student Interdisciplinary Conference*, University of Kentucky, April 9, 2010.

2. COLLEGE OF EDUCATION SERVICE

Member, *Library Committee*, College of Education, University of Kentucky, 2011- 2012.

Co-director, *STEM Education Innovation Lab*, A P20 Innovation Lab, University of Kentucky, 2010 – 2011.

Faculty advisor, *UK Student Chapter of National Science Teachers Association*, 2010 – 2012.

3. DEPARTMENT OF STEM EDUCATION SERVICE

Search committee member, *Mathematics Education Faculty Search*, University of Kentucky, 2009-2010.

XII. MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS

NARST, A worldwide organization for improving science teaching and learning through research

School Science and Mathematics Association (SSMA)

Association for Science Teacher Education (ASTE)

National Science Teachers Association (NSTA)

American Society for Engineering Education (ASEE)