

CHRISTINE GUY SCHNITTKA

I. PERSONAL INFORMATION

Updated: July 14, 2017

Name: Christine G. Schnittka
Rank: Associate 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
2014 - present	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, Lexington, KY

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, Administrator Village School, Charlottesville, VA
1993-1995	Research Assistant Dr. George Gillies, Biomedical Engineering, University of Virginia
1982 - 1984	Co-Op Engineer, IBM, Research Triangle Park, NC

IV. PERCENTAGE ALLOCATION OF TIME

Date	Teaching	Research	Service	Outreach	Administration
2016 - 2017	50%	22.5%	5%	10%	12.5%
2015 - 2016	35%	37.5%	5%	10%	12.5%
2014 - 2015	50%	35%	5%	10%	
2013 - 2014	60%	25%	5%	10%	
2012 - 2013	60%	25%	5%	10%	
2011 - 2012	50%	37.5%	10%		2.5%
2010 - 2011	40%	40%	20%		
2009 - 2010	40%	40%	20%		

V. AWARDS AND DISTINCTIONS

- 2017 Invited Board member, *I Am My Brother's Keeper, Inc.*
- 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, Research on Learning in Formal and Informal Settings, *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 Outstanding Faculty Early Career Award, *College of Education*, Auburn University.
- 2012 Invited NSF review panel member, *Research in Engineering Education*, 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. PUBLICATIONS

A. JOURNAL ARTICLES (^REFEREED, #INVITED, * STUDENT CONTRIBUTION)

- ^*Schnittka, C.G., Lakin, J.M., Savrda, A., Greene, S., Moss, J., & Alenzi, A. (in review, 2017). Science STUFF (Science, Society and Technology for Underrepresented Future Fabricators): Curriculum for future makers and designers. Submitted to *European Journal of Curriculum Studies*.
- ^Schnittka, C.G. (in review, 2017). Developing the Save the Animals STEM Curricula. Submitted to *European Journal of Curriculum Studies*.
- ^Schnittka, C.G. (accepted with revisions, 2017). Gravity can do what? Engineering a gravity-powered electrical generator. Submitted to *The Science Teacher*.
- ^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)
- ^Evans, M.A., Lopez, M., Radford, D., & **Schnittka**, C.G. (in review 2016). Interest-driven learning among rural middle school youth in an afterschool STEM studio. Manuscript submitted for publication to *International Journal of STEM Education*. (20% contribution)
- #**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

- ^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)
- ^ **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)
- ^**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)
- ^ 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)
- ^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)
- ^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)
- ^ **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/>
- ^ **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/ace-vol03-issue02-p04.pdf> (40% contribution)
- ^* Sheerer, K. & **Schnittka**, C.G. (2012). Save the Boulders Beach penguins. *Science and Children*, 49(7), 50-55. (75% contribution)
- 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. *Women in Engineering*, 6(1), 10-13.
- ^ **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)
- ^ **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)
- ^ **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)

- ^ 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)
- ^# **Schnittka**, C.G. (2006). Putting nanotechnology under the microscope. *The Science Teacher*, 73(9), 12.
- ^ **Schnittka**, C.G. (2006). Learning lessons from estuaries. *The Science Teacher*, 73(1), 31-35.
- ^ **Schnittka**, C.G. (2006). Creating a timeline of science history in your classroom. *Journal of Virginia Science Education*, 1(1), 72-78.

B. CHAPTERS IN BOOKS (^REFEREED, #INVITED, *STUDENT CONTRIBUTION, **INVITED REPRINT)

- ^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. Brunzell (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)

C. SCIENTIFIC PAPERS PUBLISHED IN CONFERENCE PROCEEDINGS

(^REFEREED, #INVITED, *STUDENT CONTRIBUTION)

- ^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.
- ^Schnittka, C.G. (2014, June). Curriculum exchange: Studio STEM, engineering after school. *Proceedings of the American Society for Engineering Education*, Indianapolis, IN.
- ^*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.
- ^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.
- ^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 of Engineering Education*, San Antonio, TX.
- ^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 of Engineering Education*, Louisville, KY.
- ^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 of Engineering Education*, Louisville, KY.
- ^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 of Engineering Education*, Austin, TX.
- ^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 of Engineering Education*, Pittsburg, PA.
- ^Richards, L.G., & Schnittka, C.G. (2007, June). Engineering teaching kits: Bringing engineering design in to middle schools. *Proceedings of the American Society of Engineering Education*, Honolulu, HI.

D. NATIONAL CONFERENCE PRESENTATIONS

(^REFEREED, #INVITED, * STUDENT CONTRIBUTION)

- ^Rossi, M., Khan, M., Wu, F., Schnittka, C. (2017, August). Introducing high school students to human factors psychology through the eyetrackers summer program. *American Psychological Association*, Washington, DC
- ^#Schnittka, C.G., & Schnittka, J.E. (2017, July). Kids do engineering in groups: Does gender matter? STEM Think Tank and Conference, Nashville, TN.
- ^Khan, M., Rossi, M., Wu, F., Schnittka, C. (2017, March). Teamwork using an authentic product development environment. *American Society of Engineering Education Zone 2*, San

Juan, Puerto Rico.

- ^Khan, M., Rossi, M., Wu, F., Schnittka, C. (2016, April). Engaging students in product development provides opportunities to enhance STEM. Annual Education 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. *National Association for Research in Science Teaching*, Baltimore, MD.
- ^Rossi, M., Khan, J., Wu, F., & Schnittka, C. (2015, June). Learning science, web design and eyetracking technology in a summer enrichment program. *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 ITTEST projects. *National Association for Research in Science Teaching*, Chicago, IL.
- ^Schnittka, J.E., & Schnittka, C.G. (2015, April). Gender and scientific learning in a design-based afterschool STEM program. *National Association for Research in Science Teaching*, Chicago, IL.
- ^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. *IEEE Integrated STEM Education Conference*. Princeton, NJ.
- ^*Schnittka, C.G., Turner, G., Colvin, R., & Ewald, M.L. (2014, March). Professional development in engineering with science and math teachers: Fostering conceptual understandings. *National Association for Research in Science Teaching*, Pittsburgh, PA.
- ^Schnittka, C.G. (2012, March). *Young engineers: Integrating engineering into your science classes*. A paper presented at the National Science Teachers Association annual meeting, 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. *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. *Proceedings 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. *Proceedings 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. *Proceedings 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? *Proceedings 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 National Meeting of the National Science Teachers Association, New Orleans, LA.
- ^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? *Proceedings of the National Association for Research in Science Teaching*, Baltimore, MD.
- ^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.
- ^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. *Proceedings of the National Association for Research in Science Teaching*, New Orleans, LA.
- ^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. *Proceedings 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.
- ^Bell, R.L., Binns, I., Schnittka, C.G. (2006, January). Preservice science teachers' conceptions of the NOS: Impacts on classroom practice. *Proceedings 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 National Meeting of the National Science Teachers Association, Dallas, TX.

E. STATE/LOCAL PRESENTATIONS

(^REFEREED, #INVITED, *STUDENT CONTRIBUTION)

- #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. & 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. (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 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.
- ^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.
- ^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., 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.

^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.

^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.

F. OTHER SCHOLARLY WORK AND PRESENTATIONS

(*STUDENT CONTRIBUTION)

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). *Re²-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. & 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. & 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.
- Schnittka, C.G. (2005). *History of science mural: 1531 to 2005*. Painted in a classroom at the University of Virginia, Ruffner Hall, Charlottesville, VA. See images at <http://www.auburn.edu/~cgs0013/mural.htm>

G. GRANTS AND CONTRACTS**SUMMARY TABLE OF FUNDED GRANTS AND CONTRACTS**

Grants	Years	Total Amount Funded
Co-PI: Spatial Problem-solving, Assessment, and Curriculum for Everyone: AU Space Program Source: Auburn University Intramural Grant Program PI: Joni Lakin	2017 - 2019	\$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, Tuskegee University	2014-2016	\$15,000
PI: SEC Travel Grant: Collaboration between Auburn and University of Kentucky	2014	\$2000
Co-PI: <i>Robotics and Engineering Education: Fostering the Conceptual Understanding of Science (The RE²-FoCUS Initiative)</i> 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: <i>Studio STEM: Engaging Middle School Students in Networked Science and Engineering Projects.</i> 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, <i>Summer Faculty Research Fellowship</i>	2010	\$7,000
Totals		\$2,461,347.14
		Auburn: \$1,039,943.14

Contracts/ Advisory Positions/ Senior Personnel:

Faculty Liaison: (2014 – 2017). NSF funded ITEST Grant: *The NanoBio Science Partnership for Alabama Black Belt Region*. 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: (2010). Kentucky Dept. of Education funded: *Science Leadership Support Network*. Total funded: \$390,000

VII. INSTRUCTION

A. ASSIGNED TEACHING

Course	Credits	Semester
^a CTSE 7920 Internship in Secondary Science	11	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

C. UNASSIGNED TEACHING

Course	Credits	Semester	Student(s)
CTSE 7900 Directed Studies	3	Summer 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	Spring 2017	Amal Alenzi
CTSE 7910 Practicum	1	Fall 2016	Shannon Bales
CTSE 7900 Directed Studies	1	Fall 2016	Jackson Moss
CTSE 7910 Practicum	1	Fall 2015	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. (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.

D. Instructional Development

- a. Technology in Science Education, CTSE 5000/6000 (2013)
Developed graduate level technology course at Auburn University for action research, reading about research, and 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
- b. 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.
- b. 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.
- c. 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.

E. Curriculum development

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>

E. Student Evaluations

Course	Credits	Semester	Enrollment	Teaching Overall	Learning Overall
³ 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
³ 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
³ CTEE 4300 Curriculum Natural Science (Elem. Ed.)	3	Fall 2015	25	3.5/6.0	3.5/6.0
³ CTSE 5100/6100 Curriculum and Teaching II: Science	4	Fall 2015	18	5.3/6.0	5.1/6.0
³ 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

Current Ph.D. Advisees:

<i>Name</i>	<i>Semester Entered</i>	<i>Full-Time/Part-Time</i>	<i>Approved Program Plan</i>	<i>Passed Written Exam</i>	<i>Passed Dissertation Proposal Defense</i>	<i>Passed Dissertation Final Defense</i>
Nick Soltis	Spring 2017	Full time				
Amal Alenzi	Spring 2016	Full Time	Fall 2016	Spring 2017		
Jackson Moss	Spring 2016	Full Time	Fall 2016			
Shannon Bales	Fall 2015	Full Time	Spring 2017			
George Turner	Fall 2012	Part Time	Fall 2016	Fall 2016	-	-
Randall Colvin	Fall 2012	Part Time		-	-	-

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

<i>Name</i>	<i>Date Entered</i>	<i>Passed Comprehensive Exam</i>	<i>Graduated</i>
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:

<i>Name</i>	<i>Date Entered</i>	<i>Passed Comprehensive Exam</i>	<i>Expected Graduation</i>
Joni Lakin	Fall 2016	-	Spring 2018
Kaila Melton	Fall 2016	-	Fall 2017
Amanda Savrda	Fall 2016	-	Fall 2017
Molly Nielsen	Fall 2016	-	Fall 2017
Sarah Greene	Spring 2016	-	Fall 2017
John Reese Claybrook	Fall 2015	-	Fall 2017
Kelley Suchman	Fall 2015	-	Fall 2017
Will Tidmore	Fall 2014	-	Fall 2017
Dianna Forbes	Fall 2016	-	Fall 2018
Jacob Helf	Fall 2017	-	Fall 2018
Xintong Yu	Summer 2017	-	

VIII. OUTREACH**A. Program Title: STEM Days at Sanford Middle School**

During two days in October, 2016, I worked with a handful of 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.

B. 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.

C. 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.

D. 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.

E. 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.

F. 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.

G. Program Title: Robotics and Engineering Education: Fostering the Conceptual Understanding of Science (The RE²-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.

H. 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.

I. 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.

J. 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.

K. 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.

IX. SERVICE

A. EDITING, CRITIQUING, REVIEWING FOR JOURNALS AND CONFERENCES

Manuscript Reviewer, *IEEE Transactions on Education*, 2016 – present.

Consulting Editor, *The Journal of Educational Research*, 2016 – present.

Manuscript Reviewer, *Journal of Pre-College Engineering Education Research*, 2016 – present.

Review Board, *Contemporary Issues in Technology and Teacher Education*, 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.

Proposal Reviewer, *National Science Teachers Association*, 2012.

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, *School Science and Mathematics*, 2006-2009.

Manuscript Reviewer, *Journal of Virginia Science Education*, 2006-2009.

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.

Proceedings Reviewer, American Society for Engineering Education Conference, 2005 – 2014.

Proceedings Reviewer, Frontiers in Education Conference, 2004-2009

B. PROFESSIONAL ORGANIZATION OFFICES AND ROLES

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.

Session Moderator, Annual Meeting of the *American Society for Engineering Education*; 2006, 2007, 2010, 2012, 2013.

C. AUBURN UNIVERSITY SERVICE

1. UNIVERSITY SERVICE

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

3. DEPARTMENT OF CURRICULUM AND TEACHING SERVICE

Coordinator, Departmental “Sunshine” Fund. 2017 – present.

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

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

Member, Research and Assessment Committee, Auburn University, 2015 - 2016

4. COLLEGE OF ENGINEERING SERVICE

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

D. 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.

E. OTHER SIGNIFICANT SERVICE ACTIVITIES

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

Board Member, Alabama Afterschool Network 2015 - present

Invited Member, Expert Review Panel, *NASA and US Dept. of Education: STEM Design Challenges*, January 27, 2016. Washington, DC.

Review Panel Member, *National Science Foundation (Research in Engineering Education)*, November 1-2, 2012.

X. MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS

National Association for Research in Science Teaching

Association for Science Teacher Education

National Science Teachers Association

Association for Science Teacher Education