

## Andrea Carneal Burrows, Ed.D.

University of Wyoming ♦ College of Education  
 Associate Dean for Undergraduate Programs  
 Professor ♦ School of Teacher Education – Secondary Science  
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### EDUCATION

Ed.D. Curriculum & Instruction – Science University of Cincinnati 2011

Dissertation Title: *Secondary Teacher and University Partnerships:  
 Does Being in a Partnership Create Teacher Partners?*  
 Chair: Dr. Helen Meyer; Members: Drs. Jonathan Breiner, Mary Brydon-Miller, & Chester Laine

M.S. Science Education Florida State University 1994  
 B.S. Science Education/Biology University of Central Florida 1992

### AWARDS and HONORS

2021 ASTE Award 1 – Outstanding Science Teacher Educator of the Year  
 2020 MDPI ‘Editors’ Choice Articles’ Winner –  
*Integrated STEM: Focus on Informal Education and Community Collaboration*  
 2020 2019 Outstanding Reviewer Award – *Education Sciences*  
 2020 ASTE Award IV – Innovation in Teaching Science Teachers  
 2019 UWyo, College of Ed, Faculty Award for Outstanding Research and Scholarship  
 2019 ASEE, One of four selected for ‘Best of Computers in Education’ paper session  
 2019 ASTE John C. Park National Technology Leadership Initiative (NTLI) Award  
 2017 Honored College of Education Faculty: Recognition at UW Fall Convocation  
 2016 UWyo, College of Ed, Faculty Award for Outstanding Service to Ed Profession  
 2015 Most Creative ECE Senior Capstone Project: A Block of Code (Sponsor)  
 2015 UWyo, College of Ed, Faculty Award for Outstanding Research and Scholarship

### PROFESSIONAL EXPERIENCE

#### *Professional Appointments – University*

Full Professor	University of Wyoming	Aug 2020 - present
Associate Professor	University of Wyoming	July 2017 – July 2020
Assistant Professor	University of Wyoming	Aug 2011 – June 2017
Adjunct Professor	University of Cincinnati	Aug 2007 – July 2011
Adjunct Professor	Northern Kentucky University	Aug 2006 – July 2011

#### *Administrative Appointments – University*

Associate Dean for Undergraduate Programs, College of Education, July 2020-**present**  
 Major responsibility – AAQEP Accreditation for the College of Education  
 Associate Director for Field Placements, College of Education, Spring 2020  
 Post-baccalaureate Graduate Certificate Coordinator, 2017-2020

#### *Teaching - Graduate courses*

*University of Wyoming (2011 through present)*  
 EDCI 5250 – Advanced Topics in Pedagogy

EDRE 5550 – Action Research  
EDCI 5550 – Art & Science of Teaching  
EDRE 5660 – Dissertation Prospectus Writing  
EDCI 5870 – Research in Science Education I  
EDCI 5870 – Research in Science Education II  
EDCI 5990 – Internship: Residency in Teaching with supervision across WY

*University of Cincinnati (2007 through 2011)*

18-CI-799 - Master's Seminar  
18-CI-791 - Laboratories and Demonstrations in the Science Classroom  
18-SEC-511 and 20-ENG-651– Instructional Planning Course  
18-SEC-550 – Secondary Teaching Methods - Science  
20-ENG-652 – Instructional Planning Practicum Series

*Northern Kentucky University (2006 through 2011)*

EDMT 543 – Methodology/Pedagogy for Middle and Secondary Science  
EDU 599 – Teaching Science in the Middle Grades

### **Teaching - Undergraduate courses**

*University of Wyoming (2011 through present)*

EDSE 3275 - Science Methods I  
EDSE 4275 - Science Methods II  
EDSE 4500 – Residency in Teaching with supervision across WY

*University of Cincinnati (2007 through 2011)*

18-SEC-550 – Secondary Teaching Methods - Science

*Northern Kentucky University (2006 through 2011)*

EDU 394 – Middle Grades Practicum University Supervisor  
EDU 497 – Secondary Student Teaching University Supervisor  
EDU 311 – Admissions Practicum  
EDU 393 – Secondary Practicum  
EDU 324 – Fundamentals of Secondary Education

### **K-12 Teaching - Middle and High School**

Orange County Learning Resource Specialist - Ocoee, FL, 2003-2005  
Ocoee Middle School, Science Teacher - Ocoee, FL, 2001-2003  
Waynesboro High School, Science Teacher - Waynesboro, VA, 1998-2001  
Kate Collins Middle School, Science Teacher - Waynesboro, VA, 1996-1998  
Florida State University High School, Science Teacher - Tallahassee, FL, 1993-1996

## **PUBLICATIONS** (\*indicates graduate advisee; \*\*indicates colleague outside of College of Education)

### **Books and Chapters**

- 7) **Burrows, A. C., & Campbell, L. O.** (2020). Developing an online and mobile systems strategy for peer mentoring. In A. Rockinson-Szapkiw, J. Wendt, & K. Wade-Jaimes (Eds.), *Navigating the peer mentoring relationship: A handbook for women and other underrepresented populations in STEM* (pp. 129-138). Dubuque, IA: Kendall Hunt Publishers. [SENSE 2013 – ‘D-publishers’ professional publications published by major international organizations and good national publishers.]
- 6) J. Leonard, A. **Burrows**, & R. Kitchen (Eds.). (2019). *Recruiting, preparing and retaining STEM teachers for a global generation*. Leiden, Netherlands: Brill-Sense Publishers. [SENSE 2017 ‘B-publisher’ rating = good international publisher]  
Edited Book

- 5) **Burrows, A. C. (Ed.)**. (2019). Computer science and engineering education for pre-collegiate students and teachers. Basel, Switzerland: MDPI Publishers. [Not SENSE ranked] – Edited Book
- 4) **Burrows, A. C.** (2019). Secondary science and mathematics pre-service and in-service teachers' use of a chatroom. In J. Leonard, A. Burrows, & R. Kitchen (Eds.), *Recruiting, preparing and retaining STEM teachers for a global generation* (pp. 322-345). Brill-Sense Publishers. [SENSE '09 'B-publisher' rating = good international publisher]
- 3) **Burrows, A. C.** (2019). US perspectives of action research in education. In C. Mertler (Ed.), *Wiley's handbook of action research in education* (pp. 75-96). Wiley Publishers. [SENSE 2017 'A-publisher' rating = top-notch international publisher]
- 2) **Burrows, A. C., \*Lockwood, M., \*Belardo, C., & Janak, E.** (2018). Action research: The researcher's role and engagement in K-20 STEM education. In J. Calder and J. Foletta (Eds.), *(Participatory) Action research: Principles, Approaches and Applications* (pp. 89-124). New York: Nova Science Publishers, Inc. ISBN:978-1-53613-042-3 [SENSE 2009 'C-publisher' rating = decent international publishers & excellent national publisher]
- 1) **Burrows, A. C., & Keiner, J.** (2012). The social side of science. In T. Lintner (Ed.), *Teaching and learning social studies: Integrative strategies for the K-12 social studies classroom* (pp. 149-165). Charlotte, NC: Information Age Publication. [SENSE 2012 'D-publisher' rating = professional publications published by major international organizations and good national publishers.]

### ***Refereed Articles***

#### ***Published***

- 30) \*Kilty, T. J., & **Burrows, A. C.** (In press 2021). Secondary science preservice teachers: Technology integration in methods and residency. *Journal of Science Teacher Education – JSTE*. (Manuscript ID: JSTE-D-20-00072) [H index:40; **Q1**]
- 29) Kilty, T. J., **Burrows, A. C.**, Welsh, K., \*\*Kilty, K., \*\*McBride, S., & \*\*Bergmaier, P. (2021). Transcending disciplines: Engaging college students in interdisciplinary research, integrated STEM, and partnerships. *Journal of Technology and Science Education (JOTSE)*, 11(1), 146-166. doi.org/10.3926/jotse.1139 [H index:6; **Q3**]
- 28) **Burrows, A. C.**, \*\*Borowczak, M., \*\*Myers, A., & \*Schwartz, A., & McKim, C. (2021). Integrated STEM for Teacher Professional Learning and Development: 'I need time for practice.' *Education Sciences*, 11(1). doi.org/10.3390/educsci11010021 [H index:7; **Q3**; >535views & >227 full-text views worldwide (Feb 2021)]
- 27) \*Northrup, A. K., & **Burrows, A.C.** (2020). "I'm not good at math," she said: Gender and engineering majors. *Journal of Higher Education Theory and Practice (JHETP)*, 20(10), 123-137. doi.org/10.33423/jhetp.v20i10.3657. Article adapted from same titled ASEE conference paper. [H index: 13]
- 26) \*Wolf, S., **Burrows, A. C.**, \*\*Borowczak, M., \*Johnson, M, \*Cooley, R., & \*Mogensen. (2020). Integrated outreach: Increasing engagement in computer science and cybersecurity. *Education Sciences*, 10(12). https://doi.org/10.3390/educsci10120353 [H index:7; **Q3**; >614 abstract views & >325 full-text views (Feb 2021)]
- 25) \*Schwartz, A. C., & **Burrows, A. C.** (2020). Authentic science experiences with STEM datasets: Post-secondary results and potential gender influences. *Research in Science and Technological Education (RSTE)*, doi.org/10.1080/02635143.2020.1761783. [H index:13; **Q2**]

- 24) \*Kilty, T., & **Burrows**, A. C. (2020). Systematic review of outdoor science learning activities with integration of mobile devices. *International Journal of Mobile and Blended Learning (IJMBL)*, 12(2), 33-56. [H index:15; **Q2**]
- 23) \*\*Borowczak, M., & **Burrows**, A. C. (2019). Ants go marching – Integrating computer science into teacher professional development with NetLogo. *Education Sciences*, 9(1), 66. doi.org/10.3390/educsci9010066 [ESCI, ERIC, & ERIH Plus indexes; >1941 views & >1365 downloads worldwide (Feb 2021)]
- 22) \*Kilty, T. J., & **Burrows**, A. C. (2019). Secondary science preservice teachers' perceptions of engineering: A learner analysis. *Education Sciences*, 9(1), 29. doi:10.3390/educsci9010029 [ESCI, ERIC, & ERIH Plus indexes; >1933 views & >1312 downloads worldwide (Feb 2021)]
- 21) **Burrows**, A. C., & \*\*Borowczak, M. (2019). Computer science and engineering: Utilizing action research and lesson study. *Educational Action Research*, 27(4), 631-646. doi:10.1080/09650792.2019.1566082 [H index:23; **Q2**]
- 20) \*Kattner, S., **Burrows**, A. C., & Slater, T. (2018). Relationship between students' spatial ability and effectiveness of two different eclipse teaching pedagogies. *RELEA, Latin-American Journal of Astronomy Education*, 26, 7-33. [Qualis Rating: Teaching (**B2**)]
- 19) \*French, D., & **Burrows**, A. C. (2018). Evidence of science and engineering practices in pre-service secondary science teachers' instructional planning. *JOST – Journal of Science Education and Technology*, 27(6), 536-549. doi.org/10.1007/s10956-018-9742-4 [H index:48; SJR **Q1**]
- 18) **Burrows**, A. C., \*Lockwood, M., \*\*Borowczak, M., Janak, E., & \*\*Barber, B. (2018). Integrated STEM: Focus on informal education and community collaboration through engineering. *Education Sciences*, 8(1), 4. doi:10.3390/educsci8010004 [ESCI, ERIC, & ERIH Plus indexes; >4194 views & >2884 downloads worldwide (Feb 2021)]
- 17) \*Belardo, C., **Burrows**, A. C., & Dambekalns, L. (2017). Partnering science and art: Pre-service teachers' experiences for use in pre-collegiate classrooms. *Problems of Education in the 21<sup>st</sup> Century*, 75(3), 215-234. [OAJI: 0.350 (2016); GIF 0.652 (2015); IC<sup>TM</sup> 87.04 (2015); **Q4** 2018]
- 16) \*French, D., & **Burrows**, A. C. (2017). Inquiring astronomy: Incorporating student-centered pedagogical techniques in an introductory college science course. *Journal of College Science Teaching*, 46(4), 24-32. [RG Journal Impact 0.81 (2015)]
- 15) \*Walwema, G.B., \*French, D. A., \*\*Verley, J. D., & **Burrows**, A. C. (2016). Is classical mechanics a prerequisite for learning physics of the 20<sup>th</sup> century? *Physics Education*, 51, 1-7. http://dx.doi.org/10.1088/0031-9120/51/6/065022 [H index:11; **Q3**]
- 14) \*Schwartz, A., **Burrows**, A. C., & \*Guffey, K. (2016). Mentoring partnerships in science education. *Educational Action Research*, 25(4), 630-649. doi:10.1080/09650792.2016.1221838 [H index:16; SJR **Q2**]
- 13) **Burrows**, A. C., \*\*DiPompeo, M., \*\*Myers, A., \*\*Hickox, R., \*\*Borowczak, M., \*French, D., & \*Schwartz, A. (2016). Authentic science experiences: Pre-collegiate science teachers' successes and challenges during professional development. *Problems of Education in the 21<sup>st</sup> Century*, 70, 59-73. [OAJI: 0.350 (2016); GIF 0.652 (2015); IC<sup>TM</sup> 87.04 (2015); **Q4** 2018]
- 12) \*\*Borowczak, M., & **Burrows**, A. C. (2016). Enabling collaboration & video assessment: Exposing trends in science pre-service teachers' assessments. *Contemporary Issues in Technology and Teacher Education (CITE)*, 16(2), 127-150. Retrieved from <http://www.citejournal.org/volume-16/issue-2-16/science/enabling-collaboration-and-video-assessment-exposing-trends-in-science-preservice-teachers-assessments>. [Eric Index: EJ1103980; h5-index:14]

- 11) **Burrows, A. C., & Harkness, S.** (2016). Experiencing action evaluation's cyclic process: Partnering conflict, reflection, and action. *Educational Action Research*, 24(4), 460-478. doi.org/10.1080/09650792.2015.1108211 [H index:16; SJR **Q2**]
- 10) **Burrows, A. C., & Slater, T.** (2015). A proposed integrated STEM framework for contemporary teacher preparation. *Teacher Education and Practice*, 28(2-3), 318-330.
- 9) **Burrows, A. C.** (2015). Partnerships: A systemic study of two professional developments with university faculty and K-12 teachers of science, technology, engineering, and mathematics. *Problems of Education in the 21<sup>st</sup> Century*, 65(65), 28-38. [OAJI: 0.350 (2016); GIF 0.652 (2015); IC™ 87.04 (2015); Q4 2018]
- 8) Slater, T., **Burrows, A. C., \*French, D., \*Sanchez, R., & \*Tatge, C.** (2014). A proposed astronomy learning progression for remote telescope observation. *Journal of College Teaching and Learning*, 11(4), 197-206. [RG Journal Impact 0.22 (2014)]
- 7) **\*\*Sabo, C., Burrows, A. C., & \*\*Childers, L.** (2014). Shaking up pre-calculus: Incorporating engineering into K-12 curricula. *Advances in Engineering Education*, 4(2), 1-26. [H index:10; SJR **Q1**]
- 6) **Burrows, A. C., Breiner, J., \*\*Keiner, J., & \*\*Behm, C.** (2014). Biodiesel and integrated STEM: Vertical alignment of high school biology/biochemistry and chemistry. *The Journal of Chemical Education*, 91(9), 1379-1389. doi:10.1021/ed500029t [H index:57; SJR **Q2**]
- 5) **Burrows, A. C., \*\*Wickizer, G., \*\*Borowczak, M., & Meyer, H.** (2013). Enhancing pedagogy with context and partnerships: Science in hand. *Problems in Education in the 21<sup>st</sup> Century: Science, Technology, Society and Environment Education*, 54, 7-13. [GIF 0.460 (2013)]
- 4) **Burrows, A. C., \*\*Herfat, S., \*\*Truesdell, P., & \*\*Miller, M.** (2013). More than tolerance for engineering lessons. *Technology and Engineering Teacher*, 72(7), 13-18.
- 3) **Burrows, A. C., \*\*Borowczak, M., Slater, T., & Haynes, C.** (2012). Teaching computer science & engineering through robotics: Science & art form. *Problems of Education in the 21<sup>st</sup> Century: Education in a Changing Society*, 47, 6-15. [GIF 0.429 (2012); **Q4** 2018]
- 2) **Burrows, A. C., Thomas, J., Woods, A., Suess, B., & Dole, D.** (2012). Riding the wave: Student researcher reflection on the action research process. *Educational Action Research*, 20(2), 291-312. doi:10.1080/09650792.2012.676308 [H index:16; SJR **Q2**]
- 1) **Burrows, A. C. & \*\*Clinton, C.** (2009). Engineering chemistry learning. *Chemical Education*, 36(1), 47-49.

#### ***In Press or Under Revision (through publisher)***

Mouza, C., Driskell, S., Wheeler, A., **Burrows, A., & Millman, N.** (Under Revision - February 2021). From Submission to Publication: Guidance from CITE Journal Editors. In R. Hartshorne, R. Ferdig, Y G. Bull (Eds.), *CITE*.

#### ***Submitted for Review***

Reynolds, T., & **Burrows, A. C.** (Submitted article February 2021). Confusion over models: Exploring how the term model caused confusion in a computer science professional development. *Journal of Engineering Education* [H index:101; **Q1**]

**\*Christoffersen, D., Kilty, T., Burrows, A., Kilty, K., Muir-Welsh, K., McBride, S., Bergmaier, P., \*Bitzas, C., \*Rainey, C.** (Submitted article February 2021). Ready for anything: Lab/lecture modifications to meet social distancing requirements.

**Burrows, A. C., Kilty, T. J., & Slater, T. F.** (Submitted book chapter January 2021). Integrated STEM: Interdisciplinary Teams and Proposed Framework for Pre-service Teacher Utilization. In P. Jenlink (Ed.), *STEM Teacher Preparation and Practice for the 21<sup>st</sup> Century: Research-based Insights*.

Slater, T. F., Kilty, T. J., & **Burrows**, A. C. (Submitted book chapter January 2021). Improving the integration of STEAM concepts for teacher preparation and practice. In P. Jenlink (Ed.), *Examining Teacher Literacy in Preparation and Practice: Research-based Insights*.

**Refereed Publications**

- 13) \*Bell, J., \*Block, M., \*Burrows, G., Bergmaier, P., Kilty, T., **Burrows**, A.C., Kilty, K., Muir-Welsh, K., & McBride, S. (In press). Activity - Shielding from cosmic radiation: Post-launch analysis. *TeachEngineering.org*. Retrieved from:
- 12) \*Bell, J., \*Block, M., \*Burrows, G., Bergmaier, P., Kilty, T., **Burrows**, A.C., Kilty, K., Muir-Welsh, K., & McBride, S. (In press). Activity - Shielding from cosmic radiation: High-altitude balloon launch test. *TeachEngineering.org*. Retrieved from:
- 11) \*Bell, J., \*Block, M., \*Burrows, G., Bergmaier, P., Kilty, T., **Burrows**, A.C., Kilty, K., Muir-Welsh, K., & McBride, S. (In press). Activity - Shielding from cosmic radiation: Building the payload. *TeachEngineering.org*. Retrieved from:
- 10) \*Bell, J., \*Block, M., \*Burrows, G., Bergmaier, P., Kilty, T., **Burrows**, A.C., Kilty, K., Muir-Welsh, K., & McBride, S. (In press). Lesson - Shielding from cosmic radiation: Space agency scenario. *TeachEngineering.org*. Retrieved from:
- 9) \*Schell, J. & **Burrows**, A. C. (2018). Hands-on activity: Topographic maps and ratios: A study of Denali. *TeachEngineering*. Retrieved from:  
<https://www.teachengineering.org/activities/view/uow-2262-studying-denali-topographic-maps-ratios-gis>
- 8) \*Schell, J., & **Burrows**, A. C. (2018). Hands-on activity: Geometry and geocaching using GIS and GPS. *TeachEngineering*. Retrieved from:  
<https://www.teachengineering.org/activities/view/uow-2262-geometry-geocaching-gis-gps-technology>
- 7) **Burrows**, A. C., Garofalo, J., Barbato, S., Christensen, R., Grant, M., Kinshuk, Parrish, J., Thomas, C., & Tyler-Wood, T. (Dec 2017). Editorial: Integrated STEM and Current Directions in the STEM Community. Retrieved from <http://www.citejournal.org/volume-17/issue-4-17/science/editorial-cite-journal-science-education-3-0/>
- 6) \*\*Borowczak, M., & **Burrows**, A. C. (2016). Developing and sustaining computing-based outreach experiences. *VLSI Circuits and Systems Letter (VCAL)*, 2(2), 21-25.  
[https://www.computer.org/cms/tcvlsi/newsletters/2016/VLSI\\_Circuits\\_and\\_Systems\\_vol\\_2\\_issue2\\_Oct2016.pdf](https://www.computer.org/cms/tcvlsi/newsletters/2016/VLSI_Circuits_and_Systems_vol_2_issue2_Oct2016.pdf)
- 5) \*\*Borowczak, M., & **Burrows**, A. C. (2016). Are we still teaching VLSI the same way that we were in the mid-90s? *VLSI Circuits and Systems Letter (VCAL)*, 2(1), 25-27.  
[https://www.computer.org/cms/tcvlsi/newsletters/2016/VLSI\\_Circuits\\_and\\_Systems\\_vol\\_2\\_issue1\\_Apr2016.pdf](https://www.computer.org/cms/tcvlsi/newsletters/2016/VLSI_Circuits_and_Systems_vol_2_issue1_Apr2016.pdf)
- 4) \*\*Borowczak, M., & **Burrows**, A. C. (2015). Methods to approach outreach: Help for the classroom and beyond. *VLSI Circuits and Systems Letter (VCAL)*, 1(2), 29-31.  
[https://www.computer.org/cms/tcvlsi/newsletters/2015/VLSI\\_Circuits\\_and\\_Systems\\_vol\\_1\\_issue2\\_Sep2015.pdf](https://www.computer.org/cms/tcvlsi/newsletters/2015/VLSI_Circuits_and_Systems_vol_1_issue2_Sep2015.pdf)
- 3) \*\*Borowczak, M., & **Burrows**, A. C. (2015). K-20 education. *VLSI Circuits and Systems Letter (VCAL)*, 1(1), 28-29.  
[https://www.computer.org/cms/tcvlsi/newsletters/2015/VLSI\\_Circuits\\_and\\_Systems\\_vol\\_1\\_issue1\\_Apr2015.pdf](https://www.computer.org/cms/tcvlsi/newsletters/2015/VLSI_Circuits_and_Systems_vol_1_issue1_Apr2015.pdf)
- 2) **Burrows**, A. C. (2011). *Secondary teacher and university partnerships: Does being in a partnership create teacher partners?* Dissertation. Ohio Link.  
[http://rave.ohiolink.edu/etdc/view?acc\\_num=ucin1307323122](http://rave.ohiolink.edu/etdc/view?acc_num=ucin1307323122)

- 1) **Carneal**, A. D. (1994). *Needs of Florida's middle school science teachers and research methods*. Florida State University Publication.

### ***Non-refereed Publications***

#### ***Published***

- Tobin, K., Spiegel, S., & **Carneal**, A. D. (1993). *Florida's Comprehensive Plan*. Tallahassee, FL: Florida State University Publication.

### ***Creative Contributions***

Professional Development & Summer Camp Websites:

Central Professional Development & Summer Camp Resources: [www.uwyo.edu/seed](http://www.uwyo.edu/seed)  
and [www.uwyo.edu/wyys](http://www.uwyo.edu/wyys)

NSF Funded “Black Holes” Grants:

Black Holes II - Order of Magnitude Estimation: [sites.dartmouth.edu/estimation](http://sites.dartmouth.edu/estimation)

Black Holes I -Astronomy Days: [physics.uwyo.edu/~mike/workshop/](http://physics.uwyo.edu/~mike/workshop/)

Support Websites:

NSF Noyce Participant and Recruitment Site: [UWSWARMS.org](http://UWSWARMS.org)

Other – Permanently redirected:

Website for RAMPED PD: [UWpd.org/ramped](http://UWpd.org/ramped)

Wiki/Blog for courses, research and T&P material: [Aburrows.com](http://Aburrows.com)

Video Assessment Tool: [YouDemo.org](http://YouDemo.org)

Electrical and Computer Engineering Capstone Project Site: [ErebusLabs.com/elaunch](http://ErebusLabs.com/elaunch)

### ***Evaluation Projects***

- DOE WDE MSP at the University of Wyoming. Flooding the Fields with Problem Based Learning (Year 1). Biodiversity (Year 2 renewal). Evaluation, 2012–2013. PI – Forrester. University of Cincinnati President's Office Community Partnerships; Evaluation, 2010, Summary can be found in UC publication:  
[http://www.uc.edu/cdc/area\\_events/press/GreaterRewards.pdf](http://www.uc.edu/cdc/area_events/press/GreaterRewards.pdf)

### ***Works in Progress***

**Burrows**, A. C., Swarts, G., Hutchison, L., Katzmann, J., Thompson, R., Freeman, L., \*Schanke, A., \*Kilty, T., & Reynolds, T. (To be submitted ~December 2020). A critical analysis of the TETCs: University methods' instructor experiences. *Teaching in Higher Education*.

**Burrows**, A. C. (To be submitted ~December 2020). Engineering education in secondary science classrooms: Importance of partnerships and mentoring. *Problems in Education*.

\*French, D., & **Burrows**, A. C. (In progress – no submission date set). Supporting teachers to create a classroom environment for authentic scientific inquiry.

\*\*Barber, B., \*Lockwood, M., & **Burrows**, A. C. (In progress – no submission date set). Years later: The effects of authentic science experiences on Girl Scouts.

**CONFERENCE PAPERS and PRESENTATIONS****National/International Papers****Refereed Papers**

- 37) Mugayitoglu, B., **Burrows**, A. C., **\*\*Borowczak**, M., \*Person, C., \*Finch, A., \*Kennedy, C., & \*Carson, A. (2021). *Fostering accessibility: Creating high-quality, competency-based computer science micro-credentials for K-12 teachers*. Paper presentation at the virtual Annual Meeting of the American Educational Research Association (AERA), Virtual. April 9-12, 2021.
- 36) Mugayitoglu, B., **\*\*Borowczak**, M., **Burrows**, A. C., \*Carson, A., \*Person, C., \*Finch, A., & \*Kennedy, C. (2021). *A University's developmental framework: Creating, implementing, and evaluating a K-12 teacher cybersecurity micro-credential course*. Paper presentation at the 12<sup>th</sup> International Conference on Education, Training, and Informatics (ICETI 2021), Virtual. March 9-12, 2021.
- 35) **\*\*Borowczak**, M., Mugayitoglu, B., **Burrows**, A. C., \*Kennedy, C., \*Carson, A., \*Person, C., & \*Finch, A. (2020). *Self-paced e-learning: Exploring the development of a cybersecurity micro-credential through K-12 teacher professional development*. Paper presentation at the Society for Information Technology and Teacher Education Conference (SITE Interactive), Virtual. October 26, 2020.
- 34) \*Northrup, A. & **Burrows**, A. C. (2020). *"I'm not good at math," she said: Gender and engineering majors*. Paper presentation at the American Society for Engineering Education (ASEE). Virtual Conference due to COVID-19. June 2020.
- 33) Verma, G., **Burrows**, A. C., Leonard, J., Djonko-Moore, C., & Buss, A. (2020). *Engaging minoritized students in STEM pathways using aviation and computer modeling*. Paper presentation at the Association for Science Teacher Education (ASTE), San Antonio, TX. January 9, 2020.  
\* *The National Technology Leadership Initiative (NTLI) Award finalist paper*
- 32) \*Wolf, S., \*Moss, F., \*Manandhar, R., \*Cooley, M., \*Cooley, R., **Burrows**, A. C., & **\*\*Borowczak**, M. (2019). *Building collaboration and securing interest in computer science education through outreach opportunities*. Paper presentation at the American Society for Engineering Education (ASEE), Tampa, FL. June 17, 2019.  
\* *Selected for 'The Best of Computers in Education' paper session*
- 31) Schwartz, A. C., **Burrows**, A. C., & Guffey, S. K. (2019). *Mentoring partnerships in science education*. Roundtable paper presentation at the Annual Meeting of the American Educational Research Association (AERA), Toronto, Canada. April 8, 2019.
- 30) **Burrows**, A. C., & **\*\*Borowczak**, M. (2019). *NTLI Science Education Winner - Cybersecurity and technology: How do they fit into a science classroom?* Paper presentation (30 min) at the Society for Information Technology and Teacher Education (SITE), Las Vegas, NV. March 21, 2019. *\*Invited presentation for NTLI Award winner.*
- 29) **Burrows**, A. C., & **\*\*Borowczak**, M. (2019). *Cybersecurity and technology: How do they fit into a science classroom?* Paper presentation at the Association for Science Teacher Education (ASTE), Savannah, GA. January 4, 2019.  
\* *The National Technology Leadership Initiative (NTLI) Award Winning Paper*
- 28) \*Moss, F., \*Manandhar, R., \*Cooley, M., \*Wolf, S., **Burrows**, A. C., & **\*\*Borowczak**, M. (2018). *Accessible computer science education – Results paper*. Paper presentation at the Rocky Mountain Celebration of Women in Computing (RMCWIC 2018). Denver, CO, Thursday, Nov 1, 2018.



- 27) \*\*Borowczak, M., & **Burrows, A. C.** (2018), *Enabling advanced topics in computing and engineering through authentic inquiry: A cybersecurity case study*. Paper presentation at the American Society for Engineering Education (ASEE) Annual Conference & Exposition, Salt Lake City, Utah, June 23, 2018. Link: <https://peer.asee.org/30370>
- 26) **Burrows, A. C.**, & \*Belardo, C. (2018). *STEM integration: What's art got to do with it?* Paper presentation at the International Conference of the Association for Science Teacher Education (ASTE), Baltimore, MD. January 5, 2018.
- 25) \*\*Borowczak, M., & **Burrows, A. C.** (2018). *Developing interest bleeding edge STEM fields like cybersecurity*. Paper presentation at the International Conference of the Association for Science Teacher Education (ASTE), Baltimore, MD. January 4, 2018.
- 24) \*\*Borowczak, M., & **Burrows, A. C.** (2017). *Developing collegiate cybersecurity interest through authentic inquiry*. Paper presentation at the American Society for Engineering Education: Rocky Mountain Section Conference (ASEE RMS), Provo, UT, September 21, 2017.
- 23) **Burrows, A. C.**, & \*\*Borowczak, M. (2017). *Hardening freshman engineering student soft skills*. Paper presentation at the American Society for Engineering Education: First Year Engineering Experience (ASEE FYEE), Daytona Beach, FL, August 7, 2017.
- 22) **Burrows, A. C.**, & \*\*Borowczak, M. (2017). *Teaching teachers to think like engineers using NetLogo*. Paper presentation at the American Society for Engineering Education (ASEE), Columbus, OH. June 25, 2017.
- 21) \*\*Borowczak, M., & **Burrows, A. C.** (2017). *Interactive web notebooks using the cloud to enable CS in K-16+ classrooms and PDs*. Paper presentation at the American Society for Engineering Education (ASEE), Columbus, OH. June 28, 2017.
- 20) Leonard, J., Buss, A., **Burrows, A. C.**, & \*\*Unertl, A. (2017). *Pathways to equity in engineering and computer science: Fostering STEM in rural learning environments*. Paper presentation at the Annual Meeting of the American Educational Research Association (AERA), San Antonio, Texas. May 1, 2017.
- 19) \*\*Borowczak, M., & **Burrows, A. C.** (2017). *Naturally inspired – Modeling natural systems to teach computer science fundamentals*. Paper presentation at the International Conference of the Association for Science Teacher Education (ASTE), Des Moines, IA. January 12-14, 2017.
- 18) **Burrows, A. C.**, & \*\*Borowczak, M. (2017). *Pre-service teachers' computer science and engineering perspectives: What is this?* Paper presentation at the International Conference of the Association for Science Teacher Education (ASTE), Des Moines, IA. January 12-14, 2017.
- 17) **Burrows, A. C.**, & \*\*Borowczak, M. (2016). *Arduinos & games: K-12 teachers explore computer science*. Paper presentation at the American Society for Engineering Education (ASEE), New Orleans, LA. June 27, 2016.
- 16) \*\*Borowczak, M., & **Burrows, A. C.** (2016). *Developing a creative K-12 manipulative: An ECECS capstone*. Paper presentation at the American Society for Engineering Education (ASEE), New Orleans, LA. June 29, 2016.
- 15) \*\*Borowczak, M., & **Burrows, A. C.** (2016). *GIS technology + socio-scientific issues = teacher and student learning: The lake*. Paper presentation at the Society for Information Technology and Teacher Education Conference (SITE), Savannah, GA. Mar 21-26, 2016.
- 14) \*Schwartz, A. & **Burrows, A.** (2015). *Astronomy databases: Novices and experts*. Paper presentation at the International Conference of the Association for Science Teacher Education (ASTE), Portland, OR. January 7-10, 2015.  
\* *The National Technology Leadership Initiative (NTLI) Award finalist paper*
- 13) **Burrows, A. C.**, & \*\*Borowczak, M. (2014). *Online STEM integration: Pre-service science teachers in the Director's Chair*. Paper presentation at E-Learn (World Conference on E-Learning), Proceedings: <http://www.editlib.org/p/149007/>, New Orleans, LA. Oct. 30, 14.

- 12) \*Sanchez, R., **Burrows**, A.C., & Slater, T. (2013). *First LEGO league coaches: Prior experiences affecting outcomes?* Paper presentation at the Northern Rocky Mountain Educational Research Association (NRMERA), Jackson, WY. Oct. 3, 2013.
- 11) \*\*Borowczak, M., & **Burrows**, A. C. (2011). *YouDemo: Capturing live data from videos*. Paper presentation and publication at the International Conference on Information and Communication Technologies and Applications (ICTA), Orlando, FL, Nov. 29, 2011.  
\* Best Conference Paper Finalist
- 10) \*\*Darwish, A., \*\*Schnieders, M., **Burrows**, A. C., & \*\*Thiel, S. (2011). *Project blob: Edible emulsions*. Paper presentation and publication at the Integrated STEM Education Conference (ISEC), Ewing, NJ, April 2, 2011.
- 9) \*\*Sabo, C., \*\*Mullen, M., & **Burrows**, A. C. (2011). *Teaching bio-inspired engineering in K-12 schools*. Paper presentation and publication at the American Institute of Aeronautics and Astronautics (AIAA), St. Louis, MO, March 29-31, 2011.
- 8) **Burrows**, A. C. (2011). *Exploring partnerships: Science teachers and graduate engineering students*. Paper presentation and publication at the Association for Science Teacher Education (ASTE), Minneapolis, MN, January 21, 2011.
- 7) \*\*Borowczak, M., **Burrows**, A. C., & \*\*Maxwell, K. (2011). *Collaboration: Science, social studies, and students using technology*. Paper presentation and publication at the Association for Science Teacher Education (ASTE), Minneapolis, MN, January 20, 2011.
- 6) \*\*Hunt, B., \*\*Lamendella, R., \*\*Garrison, S., **Burrows**, A. C., \*\*Borowczak, M., & \*\*Kukreti, A. (2010). *Go with the flow: Describing storm water runoff rates using the derivative*. Paper presentation and publication at the American Society for Engineering Education (ASEE), Louisville, KY, June 23, 2010.
- 5) **Burrows**, A. C., \*\*Kukreti, A., \*\*Borowczak, M., & \*\*Safwat, A. (2010). *Improving future faculty with graduate engineering education*. Paper presentation and publication at the American Society for Engineering Education (ASEE), Louisville, KY, June 22, 2010.
- 4) \*\*Hadaway, L., \*\*Urbaitis, M., \*\*Lamendella, R., \*\*Oerther, D., **Burrows**, A. C., \*\*Borowczak, M., & \*\*Kukreti, A. (2010). *Engineering education collaboration: Innovative pedagogical methods for high school and university environmentalists*. Paper presentation at the American Society for Engineering Education (ASEE), Louisville, KY, June 22, 2010.
- 3) **Burrows**, A. C. (2010). *What is a partnership?* Paper presentation and publication at the National Association of Research in Science Teaching (NARST) Annual International Conference, Philadelphia, PA, March 22, 2010.
- 2) **Burrows**, A. C., \*\*Kukreti, A., \*\*Clinton, C., \*\*Cross, K., \*\*Lamendella, R., \*\*Mtshiya, F., \*\*Safwat, A., & \*\*Wickizer, G. (2009). *STEPping to sustainability in a graduate K-12 partnership*. Paper presentation and publication at the 39th Annual Frontiers in Education (FIE) Conference, San Antonio, Texas, October 18 - 21, 2009.
- 1) **Burrows**, A. C. (2008). *STEPping in engineering education*. Virtual paper - International Colloquium of American Engineering Educators Association, Cape Town, South Africa.

### *National/International Presentations, Workshop Sessions, and Posters*

#### ***Refereed Sessions***

- 85) Addido, J., & **Burrows**, A. C. (2021). Impacting elementary science education: Preservice teacher physical sciences instruction. Poster session at the virtual 2021 International Conference of the Association for Science Teacher Educators (ASTE). Jan 14, 2021.
- 84) \*\*Borowczak, M., Mugayitoglu, B., & **Burrows**, A. C. (2020). *The importance of cybersecurity in STEM and CS: A K-12 micro-credential*. On-demand video at the NICE K-12 Cybersecurity Interactive Conference (NICE K-12), Virtual. Dec 5, 2020.

- 83) **Burrows**, A. C., Cohen, J., Dieker, L., Foulger, T., & Wilson, C. (2020). *The role of preparation programs in preparing teacher candidates in the post-COVID-19 era and beyond*. Birds of a feather presentation at the Society for Information Technology and Teacher Education (SITE Interactive), Virtual Conference. October 26, 2020.
- 82) **Burrows**, A. C., & Borowczak, M. (2020). *Hosting a Virtual Teacher Camp*. Half hour presentation at the GenCyber Virtual Fall Meeting, Virtual Conference. Sept 25, 2020.
- 81) \*Wolf, S., \*Cooley, R., \*Johnson, M., **Burrows**, A. C., & Borowczak, M. (2020). *Constructing and refining engaging computer science outreach*. Virtual poster presentation at the American Society for Engineering Education (ASEE). Virtual Conference due to COVID-19. June 2020.
- 80) Kilty, T. & **Burrows**, A. C. (2020, Apr 17 - 21) *Systematic review of outdoor science learning activities with integration of mobile devices* [Poster Session]. American Educational Research Association (AERA) Annual Meeting San Francisco, CA <http://tinyurl.com/wdgeana> (Conference Canceled - presented at 2021 conference).
- 79) Hartshorne, R., Schmidt-Crawford, D., Archambault, L., Borup, J., Mouza, C., Driskell, S., Milman, N., & **Burrows**, A. C. (2020). *Academic publishing made easy: Expert tips, considerations, & resources*. Panel presentation at the Society for Information Technology & Teacher Education (SITE), Virtual Conference (COVID-19). April 2020.
- 78) \*Marsh, N., \*Palmquist-Whaley, D., \*Manandhar, R., & **Burrows**, A. C., Borowczak, M., & Albeke, S. (2020). *Teaching data collection and analysis: Using DataCorral technology to create lesson plans for STEM secondary teachers*. Poster presentation at the Society for Information Technology and Teacher Education (SITE), Virtual Conference due to COVID-19. April 2020.
- 77) \*Palmquist-Whaley, D., \*Marsh, N., & **Burrows**, A. C. (2020). *Transforming Zooniverse data into STEM lessons in a secondary science class*. Poster presentation at the Society for Information Technology and Teacher Education (SITE), Virtual Conference due to COVID-19. April 2020.
- 76) Bergmaier, P., Kilty, T., McBride, S., Kilty, K., **Burrows**, A. C., & Welsh, K. (2020). *Engaging undergraduates in K-12 STEM education through high-altitude ballooning: The LIFT project*. Presentation at the American Meteorological Society 29<sup>th</sup> Conference on Education (AMS100). Boston, MA, January 15, 2020.
- 75) Wolf, S., **Burrows**, A. C., \*\*Borowczak, M., & \*Cooley, R. (2019). *Teaching cybersecurity through physical computing: A micro:bit approach*. Hands-on session at presentation at the National Initiative for Cybersecurity Education (NICE) K12 Cybersecurity Education Conference. Orange County, CA, Dec. 10, 2019.
- 74) **Burrows**, A. C., & \*\*Borowczak, M. (2019). *Fitting together science and computing, lessons to use today in secondary science classrooms*. One-hour activity and presentation at the National Science Teaching Association (NSTA). Cincinnati, OH, Friday, Nov. 15, 2019.
- 73) **Burrows**, A. C., & \*\*Borowczak, M. (2019). *Free engineering resources for K-12 classrooms and connections to engineering soft skills*. One-hour activity and presentation at the National Science Teaching Association (NSTA). Cincinnati, OH, Friday, Nov. 15, 2019.
- 72) \*Manandhar, R., **Burrows**, A. C., & \*\*Borowczak, M., & \*\*Albeke, S. (2019). *Implementing data science for outreach and training: Using “wild-caught” data in the classroom*. Presentation at the NSF 26<sup>th</sup> National Conference - EPSCoR. Columbia, SC, Tuesday, Oct 29, 2019.
- 71) **Burrows**, A. C., & \*\*Borowczak, M. (2019). *Sustaining Wyoming’s advancing reach in mathematics and science: 2014-2019 SWARMS embraces computer science*. NSF – Noyce Conference, Washington, D.C. July 11, 2019.

- 70) **\*\*Borowczak, M., & Burrows, A. C.** (2018). *Partnering with professionals to provide cybersecurity hands-on experience to students: NGSS and Common Core Connections*. Presentation at the National Initiative for Cybersecurity Education (NICE) K-12 Cybersecurity Education Conference. San Antonio, TX, Dec 3, 2018.
- 69) **\*Manandhar, R., \*Moss, F., \*Cooley, M., \*Wolf, S., Burrows, A. C., & \*\*Borowczak, M.** (2018). *Accessible computer science education – Workshop and demonstration*. Workshop presentation at the Rocky Mountain Celebration of Women in Computing (RMCWIC 2018). Denver, CO, Thursday, Nov 1, 2018.
- 68) **Burrows, A. C., & \*Belardo, C.** (2018). *Microbes and the artful craft of science*. One-hour activity and presentation at the National Science Teachers Association (NSTA). Reno, NV, Friday Oct 12, 2018.
- 67) **Burrows, A. C., \*\*Borowczak, M., \*Burrows, G., & \*Robinson, N.** (2018). *Science teacher lessons showcasing engineering from RAMPED II*. One-hour activity and presentation at the National Science Teachers Association (NSTA). Reno, NV, Friday Oct 12, 2018.
- 66) **\*\*Borowczak, M., & Burrows, A. C.** (2018). *GenCyber Wyoming: COWPOKES, professional development, camp, & experiences*. One-hour activity and presentation at the National Science Teachers Association (NSTA). Reno, NV, Friday Oct. 12, 2018.
- 65) **Burrows, A. C., \*\*Myers, A. D., \*\*Borowczak, M.** (2018). *Noyce SWARMS scholars and two professional development models (LASSI & RAMPED)*. iPoster session at the American Astronomical Society (AAS), AAS Meeting #232, Denver, CO, June 4, 2018.
- 64) **\*\*Borowczak, M., & Burrows, A. C.** (2018). *Computer science GenCyber expo: Microbits and pin guessers*. Two-hour table presentation at the GenCyber Conference. Bellevue, WA, Friday, April 25, 2018.
- 63) **Burrows, A. C., & \*\*Borowczak, M.** (2018). *Using Flipgrid with K12 STEM teachers: Successes and challenges*. Poster presentation at the Society for Information Technology & Teacher Education (SITE). Washington, DC, Wednesday, March 28, 2018.
- 62) **Burrows, A. C., & \*\*Borowczak, M.** (2017). *Engineering education: Simple electronics and microcontrollers for the classroom*. Hour long workshop and presentation at the National Science Teachers Association Regional Meeting (NSTA). Milwaukee, WI. Nov 10, 2017.
- 61) **Burrows, A. C., & \*\*Borowczak, M.** (2017). *Engineering education: K12 teachers using Netlogo*. Presentation at the Northern Rocky Mountain Educational Research Association (NRMERA). Boulder, CO. Oct 12, 2017.
- 60) **Burrows, A. C., & \*\*Borowczak, M.** (2017). *Taste of Columbus, and flavors of P-12: Computer science in K-12 schools*. Table presentation at the American Society for Engineering Education (ASEE) from 6-9 pm. Columbus, OH. June 24, 2017.
- 59) **\*Lockwood, M., & Burrows, A. C.,** (2017). *Citizen science, informal education, and action research: Next generation science standards, girl scouts, and water*. Roundtable presentation at the American Educational Research Association (AERA). San Antonio, TX, May 1, 2017.
- 58) **\*Schwartz, A.C., & Burrows, A.C.** (2017). *Mentoring partnerships in undergraduate physics and astronomy education*. Poster at the Spring 2017 Meeting of the APS New England Section held jointly with NonoWorcester, 62(5). Worcester, MA. April 14-15, 2017.
- 57) **Burrows, A. C., & \*Guffey, K.** (2017). *Noyce Interactions: SWARMS Uses a chatroom*. Poster presentation at the Society for Information Technology and Teacher Education (SITE), Austin, TX. March 7, 2017.
- 56) **Burrows, A. C., & \*\*Borowczak, M.** (2017). *NetLogo: Teachers using computer science*. Poster presentation at the Society for Information Technology and Teacher Education (SITE), Austin, TX. March 7, 2017.
- 55) **\*\*Borowczak, M., & Burrows, A. C.** (2017). *Interactive web notebooks*. Poster presentation at the Society for Information Technology and Teacher Education (SITE), Austin, TX. March 7, 2017.

- 54) \*French, D., & **Burrows**, A. C. (2017). *Incorporating student-centered pedagogies in an undergraduate astronomy course*. Presentation at the American Association of Physics Teachers (AAPT) Winter Meeting, Atlanta, GA. February 20, 2017.
- 53) **Burrows**, A. C., \*Guffey, K., \*Mogensen, K., \*Hurley, M., \*Seeley, C., \*Kennedy, C., & Borowczak, M. (2017). *Building community in a Noyce program using the SWARMS chatroom*. Presentation at the NSF - Western Regional Noyce Conference (WRNC), Fresno, CA. January 18, 2017.
- 52) **Burrows**, A. C. (2017). *CITE Science – Journal Editor Presentation*. Presentation at the International Conference of the Association for Science Teacher Education (ASTE), Portland, OR. January 11-14, 2017.
- 51) Leonard, J. & **Burrows**, A. C. (2017). *Using robotics and game design to promote spatial ability and computational thinking*. Presentation at the International Conference of the Association for Science Teacher Education (ASTE), Portland, OR. January 11-14, 2017.
- 50) **Burrows**, A.C. (2016). *ASEE Session: Engineering, Go for it (eGFI), teach engineering, the national science digital library, and UC project STEP*. Workshop session at the National Science Teachers Association (NSTA) Area Conference. Columbus, OH. Dec. 1-3, 2016.
- 49) **Burrows**, A.C., & \*\*Borowczak, M. (2016). *ASEE Session: Computer science as a bridge between concepts, ideas, and practice in grades 6-12 science classrooms*. Workshop session at the National Science Teachers Association (NSTA) Area Conference. Portland, OR. Nov. 10-12, 2016.
- 48) **Burrows**, A.C. (2016). *CITE Journal Science: Co-editor presentation*. Workshop session at the National Technology Leadership Summit (NTLS). Washington, D.C. Sept. 30, 2016.
- 47) **Burrows**, A.C., & \*\*Borowczak, M. (2016). *Range of motion: Motivating students with STEM careers*. Workshop session at the National Science Teachers Association (NSTA) STEM Forum. Denver, Colorado. July 29, 2016.
- 46) **Burrows**, A.C. (2016). *Lessons learned: A perspective from a Noyce program PI*. Workshop session at the NSF Noyce Summit. Washington, D.C. July 20, 2016.
- 45) **Burrows**, A.C. (2016). *Pre-Service teacher perspectives on STEM*. Poster presented at the NSF Noyce Summit. Washington, D.C. July 20, 2016.
- 44) **Burrows**, A. C., Leonard, J., & \*\*Borowczak, M. (2016). *Visualization basics, UGame-ICompute: An ITEST year-3 summary of K-12 teacher/student observations in the field*. Poster presentation at the Society for Information Technology and Teacher Education Conference (SITE), Savannah, GA. March 21-26, 2016.
- 43) **Burrows**, A. C. (2016). *LASSI's lessons learned*. Presentation at the U.S. Department of Education Mathematics and Science Partnerships Program Conference (MSP). Baltimore, MD, March 2-3, 2016.
- 42) **Burrows**, A. C. (2016). *The systemic nature of professional development via partnerships*. Poster presented at the Association for Science Teacher Education (ASTE). Reno, NV, January 7, 2016.
- 41) \*\*Borowczak, M., & **Burrows**, A. C. (2016). *Non-intrusive assessment of communication and collaboration in STEM*. Poster presented at the Association for Science Teacher Education (ASTE). Reno, NV, January 7, 2016.
- 40) \*French, D., **Burrows**, A. C., & Slater, T. (2016). *Exploring NITARP's impacts on teacher's knowledge, attitudes, and teaching*. Poster presented at the Association for Science Teacher Education (ASTE). Reno, NV, January 7, 2016.
- 39) **Burrows**, A. C., & \*\*Borowczak, M. (2016). *Real world computing in K-20 classrooms through NGSS*. Three-hour workshop presented at the International Conference for the Association for Science Teacher Education (ASTE). Reno, NV, January 6, 2016.

- 38) \*Schwartz, A., & **Burrows**, A. C. (2015). *Quantitative analysis of data use: Post-secondary expert and novice characteristics*. Poster presented at the New England Section of the American Physical Society and American Association of Physics Teachers (NES-AAPT/APS) Joint Regional Fall Meeting, Hanover, NH, November 6-7, 2015.
- 37) **Burrows**, A. C., \*\*Myers, A., \*\*DiPompeo, M., \*\*Borowczak, M., \*Schwartz, A., \*French, D., \*\*Hall, S., & \*Peterson, F. (2015). *Partnerships: A systemic study of two professional developments*. Poster presentation at the National Science Teachers Association (NSTA) Area Conference in conjunction with the Association for Science Teacher Education (ASTE). Reno, NV, October 22, 2015.
- 36) \*\*Borowczak, M., & **Burrows**, A. C. (2015). *Collaboration and communication: Assessment using an open version control tool*. Poster presentation at the National Science Teachers Association (NSTA) Area Conference in conjunction with the Association for Science Teacher Education (ASTE). Reno, NV, Oct. 22, 2015.
- 35) \*French, D., **Burrows**, A. C., Castanada-Emenaker, I., French, R., Hunt, D., Singer, T., & Slater, T. (2015). *Integrated STEM with guitars: Teachers' perceptions, new learning activities and assessment tools*. Poster presentation at the National Science Teachers Association (NSTA) Area Conference in conjunction with the Association for Science Teacher Education (ASTE). Reno, NV, Oct. 22, 2015.
- 34) **Burrows**, A. C. (2015). *Student assessment: Reviewing NGSS and critical assessment components*. Presentation at the National Science Teacher Association (NSTA) National Conference on Science Education. Chicago, IL. March 13, 2015.
- 33) **Burrows**, A. C., & Katzmann, J. (2015). *The edTPA: Successes and challenges for pre-service teachers at the university of Wyoming*. Roundtable presentation at the International Conference of the Association for Science Teacher Education (ASTE), Portland, OR. January 7-10, 2015.
- 32) \*\*Borowczak, M., & **Burrows**, A. C. (2015). *Engineering and teacher partners in STEM education: What do engineers think?* Poster presentation at the International Conference of the Association for Science Teacher Education (ASTE), Portland, OR. January 7-10, 2015.
- 31) \*French, D., & **Burrows**, A. C. (2015). *LASSI*. Poster presented at the American Astronomical Society (AAS), AAS Meeting #224, Seattle, WA. January 8, 2015.
- 30) \*Schwartz, A., **Burrows**, A. C., & \*\*Myers, A. (2015). *Learning to work with databases in astronomy: Quantitative analysis of science educators' and students' pre/post-tests*. Poster presented at the American Astronomical Society (AAS), AAS Meeting #224, Seattle, WA. January 4-8, 2015.
- 29) **Burrows**, A. C. (2014). *LASSI - Launching astronomy: Standards and STEM integration*. Poster presented at the Department of Education, Math and Science Partnership (MSP) Conference. Washington, DC. September 30, 2014.
- 28) **Burrows**, A. C., Slater, T., & \*\*Borowczak, M. (2014). *Integrated STEM: What does it mean to educators?* Experiential Session/Presentation at the Association for Science Teacher Education (ASTE), San Antonio, TX, January 16, 2014.
- 27) **Burrows**, A. C., Slater, T., & \*French, D. (2013). *Integrated STEM: What is it?* Presentation at the National Association of Science Teachers (NSTA) Area Conference, Denver, CO, Friday, Dec. 13, 2013.
- 26) **Burrows**, A. C., & Dambekalns, L. (2013). *Partnerships with art and science pre-service teachers*. Presentation at the Northern Rocky Mountain Educational Research Association (NRMERA), Jackson, WY. Oct. 4, 2013.
- 25) \*Laatsch, S., & **Burrows**, A. C. (2013). *21<sup>st</sup> century media and technology: The use of digital planetariums in undergraduate astronomy instruction*. Oral presentation at the Astronomical Society of the Pacific (ASP) in Education and Public Outreach: Ensuring STEM Literacy's 125<sup>th</sup> Annual Meeting, San Jose, CA, July 23, 2013.

- 24) \*French, D., Slater, T., & **Burrows**, A. C. (2013). *First steps toward exploring NITARP's impacts on teachers' knowledge, attitudes, and teaching*. Poster presentation at the American Astronomical Society (AAS), AAS Meeting #222, #120.16, Indianapolis, IN, June 3, 2013.
- 23) **Burrows**, A. C., & Slater, T. (2013). *Integrated STEM: What is it?* Presentation at the National Association of Science Teachers (NSTA) STEM Forum and Expo, St. Louis, MO, Thursday, May 16, 2013.
- 22) **Burrows**, A. C. (2013). *Secondary teachers and university partnerships: A context process*. Roundtable presentation at the American Educational Research Association (AERA), San Francisco, CA, Sunday, April 28, 2013.
- 21) **Burrows**, A. C., Slater, T., & \*\*Borowczak, M. (2013). *Robotics in the 21<sup>st</sup> century: Making STEM come alive with computer science*. Experiential Session/Presentation at the Association for Science Teacher Education (ASTE), Charleston, SC, January 11, 2013.
- 20) **Burrows**, A. C., & \*\*Borowczak, M. (2012). *Video characteristics: YouDemo.info*. Presentation at the Florida Education Technology Conference (FETC), Orlando, FL, Jan. 25, 2012.
- 19) **Burrows**, A. C., & \*\*Borowczak, M. (2012). *Which qualities matter most in creating (STEM) methods videos?* Experiential Session/Presentation at the Association for Science Teacher Education (ASTE), Clearwater, FL, Jan. 4, 2012.
- 18) \*\*Borowczak, M., **Burrows**, A. C., \*\*Ervin, B., & \*\*Kukreti, A. (2012). *YouDemo.info for K-20 education: Creating appealing and interesting GK-12 deliverables in easily consumable forms – digital media to the rescue*. Presentation at the Annual NSF GK-12 Conference, Washington, D.C., March 17, 2012.
- 17) \*\*Borowczak, M., **Burrows**, A. C., \*\*Cargile, R., & \*\*Vemuri, R. (2011). *There was a big bang: But can you still hear it?* Poster Presentation for the National Science Foundation GK-12 Annual Meeting, Washington, D.C. March 11-13, 2011.
- 16) **Burrows**, A. C., \*\*Borowczak, M., & Breiner, J. (2011). *Teachers engineer a wiki*. Poster Presentation for the Society for Information Technology & Teacher Education (SITE), Nashville, TN, March 9, 2011.
- 15) **Burrows**, A. C. (2011). *Co-Teaching a secondary science methods course*. Small group roundtable presentation at the Association for Science Teacher Education (ASTE), Minneapolis, MN, January 22, 2011.
- 14) \*\*Borowczak, M., \*\*Hunt, B. & **Burrows**, A. C. (2010). *It's getting colder - but can you tell?* Poster presented as part of the National Science Foundation GK-12 Annual Meeting, Washington, DC., March 26-28, 2010. Abstract published in 2010 GK-12 Annual Projects Meeting Poster Abstracts. AAAS & NSF, Washington DC.
- 13) \*\*Borowczak, M., \*\*Urbaitis, M., **Burrows**, A. C. & \*\*Vemuri, R. (2010). *Engineer it!* Poster presented at the National Science Foundation GK-12 Annual Meeting, Washington, DC., March 26-28, 2010. Abstract published in 2010 GK-12 Annual Projects Meeting Poster Abstracts. AAAS & NSF, Washington DC.
- 12) Meyer, H., Woods, K., Dani, D., Jameson, A., Andreadis, M., \*\*Urbaitis, M., **Burrows**, A. C., Hutchinson, A., Maynard, K., & Marlow, M. (2010). *Teaching middle and high school: Characteristics and strategies of collaborative study and improved pedagogy*. Presentation at the National Association of Research in Science Teaching (NARST) Annual International Conference, Philadelphia, PA, March 24, 2010.
- 11) **Burrows**, A. C. (2010). *Fellow training*. Presentation made to the GK12 Special Focus Session, San Diego, CA, February 18 – 19, 2010.
- 10) **Burrows**, A. C. (2010). *Research experience for teachers at UC*. Poster presentation for Engineering Education Centers Awardees Conference, Washington, DC, Feb. 1, 2010.

- 9) **Burrows, A. C., & \*\*Kukreti, A. (2010).** *Trends that STEP to partnership sustainability.* Poster presentation for the Annual International Conference of the Association for Science Teacher Education (ASTE), Sacramento, CA, Jan. 13-15, 2010.
- 8) **Burrows, A. C. (2009).** *Useable lessons! Trends that STEP to partnership sustainability.* Workshop for Regional conference of the National Science Teacher Association (NSTA), Minneapolis, MN, Oct. 28 – 31, 2009.
- 7) **Burrows, A. C., \*\*Kukreti, A., \*\*Lamendella, R., & Boles, D. (2009).** *Training NSF GK-12 fellows: Making fellows classroom ready.* Special session workshop conducted for the NSF GK-12 Annual Meeting, Washington, D.C., March 28, 2009.
- 6) **\*\*Mtshiya, F., \*\*Smitherman, P., Burrows, A. C., \*\*Lamendella, R., & \*\*Kukreti, A. (2009).** *Exploring how urbanization affects the water cycle.* Poster for the NSF GK-12 Annual Meeting, Washington, D.C., March 28, 2009.
- 5) **Burrows, A. C., \*\*Starr, M., & \*\*Clinton, C. (2009).** *Empowering teachers with university support for enhanced student understanding.* Workshop conducted for the Annual National Science Teacher Association (NSTA) Conference, New Orleans, LA, March 19, 2009.
- 4) **\*\*Kukreti, A., Burrows, A. C., & Beach, M. (2009).** *RET and STEM education.* Poster presentation at the NSF EEC Awardees Conference 2009, Hyatt Reston, Reston, VA, February 1-3, 2009.
- 3) **Burrows, A. C., & \*\*Kukreti, A. (2009).** *STEPing to partnerships.* Poster Presentation at the NSF Engineering Education Centers Awardees Conference 2009, Washington, D.C., February 1-3, 2009.
- 2) **Burrows, A. C. (2009).** NSF GK-12 Partnerships. *GK-12 overview.* Poster Presentation at the Annual International Conference of the Association for Science Teacher Education (ASTE), Hartford, CT, January 8, 2009.
- 1) **Burrows, A. C., \*\*Starr, M., & \*\*Clinton, C. (2008).** *Empowering teachers with university support for enhanced student understanding.* Workshop conducted for the regional National Science Teacher Association (NSTA) Conference in Cincinnati, OH, Dec. 4, 2008.

#### ***National/International Invited Talks***

- 5) Burrows, A. C. (November 9, 2020) *Integrated STEM: Science Education that Highlights Engineering and Computer Science* [DBER Invited Seminar Talk]. Invited by Dr. Jerry Dwyer, Texas Tech University.
- 4) Milman, N. B., Mouza, C., Meier, E. B. & Burrows, A. C. (2020, Apr 17 - 21) *Contemporary Issues in Technology and Teacher Education* [Invited Roundtable]. AERA Annual Meeting San Francisco, CA <http://tinyurl.com/s3s766x> (Conference Canceled)
- 3) *NSF Panel Day: Laramie Wyoming - SWARMS.* National Science Foundation. Invited by Dr. Matlock as one of three people to represent NSF on a panel to ~175 beginning researchers, University of Wyoming, Laramie, WY, May 3, 2017. Link: <http://www.nsf.gov/nsfdays>
- 2) *STS and SSI: Social side of science.* College of Education. Invited by Dr. Butler as a Doctoral Seminar Guest Speaker, University of Central Florida, Orlando, FL, May 26, 2015.
- 1) *YouDemo.info: Effective use of videos in the classroom.* Invited by Dr. Bartley as an Education Seminar Speaker, Lakehead University, Thunder Bay, Ontario, Canada, May 23, 2012.

#### ***State/Local Papers, Presentations, Workshop Sessions, and Posters***

##### ***Refereed Sessions***

- 37) **Burrows, A. C. (2020).** *The state of computer science in Wyoming.* Paper presentation at the UW College of Education Research Symposium. Laramie, WY, March 6, 2020.



- 36) **Burrows, A. C.**, & 7 students (7 presentations). (2020). 1) Dawn Palmquist-Whaley – *Zooniverse*; 2) Caitlin Kennedy – *Micro-credentials*; 3) Colton Lewer – *Plan B Place-based Education*; 4) Kyle Mogensen – *Code.org*; 5) Johannes Addido – *Dissertation Physics Education*; 6) Nycole Marsh – *Plan B Short-term PD Successes and Challenges*; & 7) Astrid Northrup – *Active engagement in K-12 Learning*. Total: 5 posters (#1-5) and 2 papers (#6-7) at the UW College of Education Research Symposium. Laramie, WY, March 6, 2020.
- 35) **Muknahallipatna, S.**, **Kubichek, R.**, **Anderson, J.**, **Burrows, A. C.**, **Parker, S.**, & **Freedman, T.** (2019). *Introducing physical computing in STEM professional development workshop for K-12 teachers in the state of Wyoming*. Paper presentation at the Rocky Mountain Section of the American Society for Engineering Education (RMS ASEE). Laramie, WY, May 20, 2019.
- 34) **Wolf, S.**, **Cooley, R.**, **Burrows, A. C.**, & **Borowczak, M.** (2019). *CS: Unplugged*. Active engagement session at the Rocky Mountain Section of the American Society for Engineering Education (RMS ASEE). Laramie, WY, May 21, 2019.
- 33) **Schwartz, A.C.** & **Burrows, A.C.** (2018.) *Dataset Learning in Astronomy*. Fitchburg State University Science Symposium. Poster presentation. Fitchburg, MA, Oct. 11, 2018.
- 32) **Burrows, A.C.**, **Borowczak, M.**, **Cooley, R.**, **Wolf, S.**, & **Johnson, M.** (2018). *Integrating computer science in K-12 classes*. AdvancEd Mountain Region Fall Conference, Laramie, WY, Sept. 25, 2018.
- 31) **Burrows, A. C.**, & **Nguyen, M.** (2018). *SWARMS scholars: An overall update (2014-2018)*. Poster at the UW College of Education Research Symposium. Laramie, WY, March 2, 2018.
- 30) **Guffey, K.**, **Slater, T.**, & **Burrows, A. C.** (2017). *Misconceptions in the geosciences targeted by national standards and frameworks*. Poster at the UW College of Education Research Symposium. Laramie, WY, March 3, 2017.
- 29) **Guffey, K.**, **Burrows, A. C.**, & **Borowczak, M.** (2017). *Support in the classroom: SWARMS scholars' perceptions before and after beginning to teach*. Poster at the UW College of Education Research Symposium. Laramie, WY, March 3, 2017.
- 28) **Burrows, A. C.** (2017). *Two elementary teachers' perceptions on how they used biology and order of magnitude concepts*. Presentation at the K16 Life Sciences Summit – Lost in Transition. Casper, WY, February 10, 2017.
- 27) **Burrows, A. C.** & K-12 teacher colleagues (6 presentations). (2016). 1) *RAMPED: Virtual reality* (**Curtis, W.**, **Perry, R.**, & **Anderson, C.**); 2) *RAMPED: Raspberry Pi* (**Davis, V.** & **Kuberra, T.**); 3) *RAMPED: Arduinos* (**Hileman, M.** & **McAtee, M.**); 4) *RAMPED: Space* (**Lee, C.**); 5) *RAMPED: NetLogo* (**Graf, C.** & **Borowczak, M.**); & 6) *RAMPED: Science, math, & engineering education* (**Borowczak, M.**). Presentation of teacher projects by K-12 teachers and faculty showcasing insight from WDE MSP RAMPED – 2016, Math and Science Teachers Conference, Casper, WY, October 17-18, 2016.
- 26) **Burrows, A. C.**, **Borowczak, M.**, **French, D.**, **Myers, A.**, & **Schwartz, A.** (2016). *K-12 STEM Professional development: Lessons learned from LASSI*. Presentation at the UW College of Education Research Symposium. Laramie, WY, March 4, 2016.
- 25) **French, D.**, **Burrows, A. C.**, & **Slater, T.** (2016). *Core concepts to broader topics: Shifting the focus in Astro 101*. Presentation at the UW College of Education Research Symposium. Laramie, WY, March 4, 2016.
- 24) **French, D.**, & **Burrows, A. C.** (2016). *Evidence of inquiry, authentic scientific inquiry, and STEM integration in pre-service secondary science teachers' instructional planning*. Poster at the UW College of Education Research Symposium. Laramie, WY, March 4, 2016.

- 23) \*French, D., & **Burrows**, A. C. (2016). *Teachers' perceived barriers to implanting authentic scientific inquiry*. Poster at the UW College of Education Research Symposium. Laramie, WY, March 4, 2016.
- 22) **Burrows**, A. C., & \*\*Borowczak, M. (2016). *BAL-CS: Biological active learning-computer science*. Presentation at the 10<sup>th</sup> Annual K16 Life Sciences Lost in Transition Summit, Casper, WY, February 19, 2016.
- 21) \*\*Borowczak, M., **Burrows**, A. C., & \*French, D. (2016). *Fashion to medicine: Using code to change the world*. Workshop presentation for middle and high school students at UW WYSTEM's First Annual STEM Saturday, Laramie, WY, January 23, 2016.
- 20) **Burrows**, A. C., Katzmann, J., & Forrester, J. (2015). *Integrated curriculum: Demonstrations and lessons*. Presentation of pre-service NSTA students and faculty at the 2015 Math and Science Teachers Conference, Casper, WY, October 26, 2015.
- 19) **Burrows**, A. C., & \*\*Borowczak, M. (2015). *Enhancing K-12 STEM education through university and industry partnerships*. Poster presentation at the 7<sup>th</sup> Annual Symposium on STEM Education, Boulder CO, September 21, 2015.
- 18) **Burrows**, A. C., & \*\*Borowczak, M. (2015). *Engineers and educational partnerships: Perspectives*. Poster presentation at the UW Scholarship and Research Educational Symposium, Laramie WY, March 6, 2015.
- 17) \*French, D., & **Burrows**, A. C. (2015). *Pre-service teachers' perception of STEM*. Poster presentation at the UW Scholarship & Research Educational Symposium, Laramie WY, Mar 6, 2015.
- 16) \*Guffey, K., & **Burrows**, A. C. (2015). *SWARMS: Sustaining Wyoming's advancing reach in mathematics and science – Who is applying?* Poster presentation at the UW Scholarship and Research Educational Symposium, Laramie WY, March 6, 2015.
- 15) \*Sanchez, R., & **Burrows**, A. C. (2015). *Wyoming students in first lego league: What do we know?* Poster presentation at the UW Scholarship and Research Educational Symposium, Laramie WY, March 6, 2015.
- 14) \*Schwartz, A., & **Burrows**, A. C. (2015). *Novice and expert characteristics in teachers: Professional development in astronomy databases*. Poster presentation at the UW Scholarship and Research Educational Symposium, Laramie WY, March 6, 2015.
- 13) \*Schwartz, A., \*\*Wood, E., & **Burrows**, A. C. (2014). *The current state of computing education in STEM courses*. Birds of a Feather session/presentation at the Rocky Mountain Celebration of Women in Computing (RMCWiC), Laramie, WY. Oct 23, '14.
- 12) **Burrows**, A. C. (2013). *Astronomy: Boldly going into mathematics and science*. Presentation at the Mathematics and Science Teachers' Conference, Casper, WY. Oct. 18, 2013.
- 11) **Burrows**, A. C. (2011). *10th annual NSF GK-12 project STEP open house*. Presentation on partnerships between secondary teachers, secondary students, university faculty, and university graduate students covering the last 10 years of the grant. Cincinnati, OH, April 25, 2011.
- 10) **Burrows**, A. C. (2011). *10th annual NSF GK-12 technology workshop open house*. Presentation on technology used in the partnerships between secondary teachers, secondary students, university faculty, and university graduate students. Cincinnati, OH, February 2, 2011.
- 9) **Burrows**, A. C. (2010). *10th annual NSF GK-12 public fellow showcase*. Presentation on current lessons created by engineering Fellows from UC and highlighting partnerships between secondary teachers, secondary students, university faculty, and university graduate students. Cincinnati, OH, November 17, 2010.
- 8) **Burrows**, A. C. (2010). *STEM lesson implementation: Survey engineering inclinometer*. Session presented as a part of the STEM Inspiring Innovations Conference. Cincinnati, OH. Sept. 20, 2010.

- 7) Meyer, H., & **Burrows**, A. C. (2010). *Grant writing*. Session presented as a part of the STEM Inspiring Innovations Conference. Cincinnati, OH. Sept. 20, 2010.
- 6) **Burrows**, A. C. (2010). *Collaborations at UC*. Presentation made to UC community including President G. Williams, Cincinnati, OH, March 15, 2010.
- 5) Bolar, E., Brydon-Miller, M., **Burrows**, A. C., Dole, D., Eckler, J., Embury, D., Fulbright, K., Gomez, J., Howton, A., Micham, S., Miller, B., Smith, C., Suess, R., Thomas, J., & Woods, A. (2009). *Using appreciative inquiry to improve the doctoral student's quality of life (or How to move from post-it notes to post-graduate degrees)*. Workshop conducted for the Annual Spring Research Conference, Louisville, KY, April 4, 2009.
- 4) **Burrows**, A. C. (2009). *STEPing into partnerships*. Graduate Poster Forum for the University of Cincinnati, Cincinnati, OH, March 6, 2009.
- 3) **Kukreti**, A., **Burrows**, A. C., and Beach, M. (2008). *Research experiences for middle and high school teachers*, Poster presented at the Southern Ohio Reception session organized by the Ohio Southwest Center for Excellence in Science and Mathematics Education, NSTA Cincinnati Area Conference on Science Education, Cincinnati, OH, December 4-6, 2008.
- 2) **Burrows**, A. C. (2008). *STEP and high school education*. Graduate Poster Forum for the University of Cincinnati in Cincinnati, OH, March 7, 2008.
- 1) **Burrows**, A. C. (2004). *3-D cutouts to enhance teaching*. Workshop for Orange County Teachers of Florida in Ocoee, FL, August 15, 2004.

#### ***Local/State Invited Talks***

- 12) Burrows, A. C., (2020). *Grants, Fellowships, Other Funding, and Some Theoretical Frameworks*. College of Education, Invited by Dr. Sara Axelson as a PRST 5610, Intro to Doc Studies, Guest Speaker. University of Wyoming, Laramie, WY. September 22, 2020.
- 11) Burrows, A. C. (2019). *Grants, Fellowships, and Other Funding*. College of Education, Invited by Dr. Sara Axelson as a PRST 5610, Intro to Doc Studies, Guest Speaker. University of Wyoming, Laramie, WY. Oct 8, 2019.
- 10) Burrows, A. C., Welsh, K., & Robertson, D. (2020). *UW opportunities for professional development and grant funding*. Oral presentation at the Level-up Leadership Conference: Guiding Educator Leadership Forward. September 18, 2020.
- 9) Burrows, A. C. (2019). *Academic Writing*, College of Education, Invited by Dr. Marty Agran as a EDCI 5810, Writing for Publication, Guest Speaker. University of Wyoming, Laramie, WY. Feb 28, 2019.
- 8) *Grant Works and Ideas*, College of Education, Invited by Dr. Sara Axelson as a PRST 5610, Intro to Doc Studies, Guest Speaker. University of Wyoming, Laramie, WY. Nov 20, 2018.
- 7) *Grant Works and Ideas*, College of Education, Invited by Dr. Sara Axelson as a PRST 5610, Intro to Doc Studies, Guest Speaker. University of Wyoming, Laramie, WY. Nov 21, 2017.
- 6) *Partnerships and Engineering Soft Skills*. College of Engineering and Applied Science, Invited by Dr. Mike Borowczak as a COSC 4765, Computer Security, Guest Instructor. University of Wyoming, Laramie, WY, March 2, 2017.
- 5) *Partnerships and Engineering Soft Skills*. College of Engineering and Applied Science, Invited by Dr. Mike Borowczak as a COSC 2030, Computer Science II, Guest Instructor on Nov 14, 2017.
- 4) *Grant Works and Ideas*, College of Education, Invited by Dr. Tonia Dousay as a PRST 5610, Intro to Doc Studies, Guest Speaker. University of Wyoming, Laramie, WY. Nov 15, 2016.

- 3) *Researcher Work and Practice in Science Education*, Invited by Dr. Slater for the Colloquium – UW Science Education Series Speaker, University of Wyoming, Laramie, WY. Sept 27, 2016.
- 2) *Science and Art Integration*, Wyoming State Science Fair – Junior Division Panel Speaker, University of Wyoming, Laramie, WY. March 2, 2015.
- 1) *Math and Science Applications in Engineering*. Pre-Service Mathematics Education, University of Cincinnati, Cincinnati, OH. January 26, 2010.

<b>GRANT ACTIVITY</b>				
<b>Year</b>	<b>Role</b>	<b>Grants</b> Since 2012: <b>Total funding: \$9,232,770.46 (~9M)</b> <b>Funding as PI: \$3,382,205.46 (~3M)</b>	<b>Budget Sponsor</b> <b>(Start/End Date)</b>	<b>Funding Status</b>
<b>The full grey rows indicate current/active (awarded) grants.</b>				
2020	CoPI	<i>AI Institute: Cyberinfrastructure Innovation Transforming Data-Driven Scientific Discovery (AI4CI)</i> [Team: Allen, Burrows, Foster, Fox, Kotthoff]	\$20,000,000 NSF	Pending (#2112612)
2020	CoPI	<i>RET: Supporting Teachers and Computing Knowledge (WySTACK)</i> [Team: Borowczak, Burrows, Kotthoff, Banic, & Shukla]	\$600,000 NSF RET	Pending (#2055621)
2020	<b>26) PI</b>	<i>MilliporeSigma Outreach – The Artful Craft of Science (TACoS VII) - Summer 2021</i> [Team: Burrows, Russel, & Borowczak]	\$17,000 MilliporeSigma (2020–2021)	<b>42)</b> <b>Awarded</b>
2020	<b>25) PI</b>	<i>Microsoft Code.org Regional Support</i> [Team: Burrows & Borowczak]	\$25,800 Microsoft Corp. (Aug 2020 – July 2021)	<b>41)</b> <b>Awarded</b> (# 2020020014)
2019	<b>24) PI</b>	<i>GenCyber: Cyberstar Champions (Summer/Fall 2020) K-12 STEM Teachers</i> [Team: Burrows & Borowczak]	\$99,909 <b>DOD – NSA/NSF</b> (March 2020–Oct 2020)	<b>40)</b> <b>Awarded</b>
2019	<b>23) PI</b>	<i>MilliporeSigma Outreach – The Artful Craft of Science (TACoS VI) - Summer 2020</i> [Team: Burrows, Russel, Borowczak, & Kilty]	\$17,000 MilliporeSigma (2019–2020)	<b>39)</b> <b>Awarded</b>
2019	<b>22) PI</b>	<i>(CS) Micro-credentials for Wyoming</i> [Team: Burrows & Borowczak]	\$396,000 WDE (Sept. 2019 – Dec. 2023)	<b>38)</b> <b>Awarded</b>
2019	CoPI	<i>S-STEM: BACK - Broadening Access to Computing Knowledge</i> [Team: Borowczak, Burrows, Barrett, Nguyen, & Myers]	\$999,998 NSF DUE	Not funded
2019	<b>21) PI</b>	<i>Microsoft Code.org Regional Support</i> [Team: Burrows & Borowczak]	\$16,000 Microsoft Corp.	<b>37)</b> <b>Awarded</b> (# 2019030011)
2019	<b>20) PI</b>	<i>Code.org Education GA &amp; Outreach</i> [Team: Burrows & Borowczak]	\$123,330 Code.org (\$74,330 + \$49,000)	<b>36)</b> <b>Awarded</b>
2019	CoPI	<i>CS4ALL: Booting Up Computer Science in Wyoming (WySLICE)</i> [Team: Borowczak, Burrows, Kotthoff, & Myers]	\$999,929 <b>NSF DRL</b> (Aug 2019–July 2022)	<b>35)</b> <b>Awarded</b> (#1923542)
2019	PI	<i>CS:OK – Broadening Participation of Women in the Cybersecurity Workforce</i> [Team: Burrows, Borowczak, & Kelleher]	\$99,500 CISCO	Not funded

2019	CoPI	<i>SaTC: CROSSWIND – Cybersecurity Ready: Offering STEM Support for Wyoming’s Increasing Need for Diversification [Team: Borowczak, Burrows]</i>	\$499,997 NSF SaTC: DGE	Not funded
2019	<b>19) PI</b>	<i>MilliporeSigma Outreach – The Artful Craft of Science V (TACoS V) - Summer 2019 [Team: Burrows, Russel, &amp; Borowczak]</i>	\$17,000 MilliporeSigma (2018-2019)	<b>34) Awarded</b>
2018	<b>18) PI</b>	<i>Teacher Extensions in Wyoming: Canvas and Beyond [Team: Burrows &amp; Borowczak]</i>	\$75,113.46 WDE Title IIA (2018)	<b>33) Awarded</b>
2018	PI	<i>GenCyber: K12 STEM Teachers [Team: Borowczak &amp; Burrows]</i>	~\$99,000 DOD – NSA (March 2019-Sept 2019)	Not funded
2018	<b>17) PI</b>	<i>GenCyber (Summer 2019) Casper (K-12 students) [Team: Burrows &amp; Borowczak]</i>	\$99,970 <b>DOD – NSA/NSF</b> (March 2019-Sept 2019)	<b>32) Awarded</b>
2018	CoPI	<i>CS4ALL: Booting Up Computer Science in Wyoming [Team: Borowczak, Burrows, Caldwell, Gamboa, &amp; Northrup]</i>	\$996,911 NSF EHR	Not funded
2018	<b>16) PI</b>	<i>RAMPED: Robotics, Applied Mathematics, Physics, and Engineering Design II (COWPOKES – IoT – Summer 2018) [Team: Burrows, Borowczak, Myers &amp; Banic]</i>	\$297,612 DOE, WDE MSP (Jan 2018-Sept 2018)	<b>31) Awarded</b> (#WY1601506 MSPA2)
2018	<b>15) PI</b>	<i>MilliporeSigma Outreach – The Artful Craft of Science IV (TACoS IV) - Summer 2018 [Team: Burrows, Haynes, Russel, &amp; Borowczak]</i>	\$16,900 MilliporeSigma (2017-2018)	<b>30) Awarded</b>
2018	CoPI	<i>INFEWS [Team: Wang, Burrows, and others]</i>	~3M NSF NRT	Not funded
2017-2018	CoPI	<i>LIFT: Learning to Integrate Fundamentals through Teaching [Team: McBride, Kilty, Welsh, Burrows]</i>	\$649,991 <b>NSF IUSE: HER</b> (October 2018-2021)	<b>29) Awarded</b> (# 1821566)
2017	CoPI	<i>SWEEP [Team: Borowczak, Burrows, Belmont, Wang, &amp; Muknahallipatna]</i>	~2 M NSF IUSE: EHR	Not funded
2017	CoPI	<i>CROSSWIND [Team: Borowczak, Burrows]</i>	~300K NSF SaTC: EDU	Not funded
2017	External Evaluator	<i>PIER Network [Team: Krasnow, Cook, Welsh, &amp; Burrows]</i>	~330,000 NSF - AISL	Not funded
2017-2018	CoPI	<i>GenCyber (Summer 2018) Ts &amp; Ss: Riverton &amp; Laramie [Team: Borowczak &amp; Burrows]</i>	\$99,976 <b>DOD – NSA/NSF</b> (March 2018-Sept 2018)	<b>28) Awarded</b>
2017	CoPI through award SP Starting 7/2018	<i>STRATEGIES: The Bessie Coleman Project – Using Computer Modeling, Robotics, and Flight Simulation to Create STEM Pathways [Team @ time of award: Leonard, Burrows, Gellis, Kitchen, &amp; Verma]</i>	\$1,199,884 <b>NSF DRL ITTEST</b> (March 2018-2021)	<b>27) Awarded</b> (# 1757976)

2017	Collaborator <b>14) PI:</b> WRNA WY& CO	<i>WRNA: Western Regional Noyce Alliance (Sub-award for Wyoming)</i> [Sub-award Team: Burrows]	\$180,000 of 3M <b>NSF – Noyce</b> (April 2018-2021)	<b>26)</b> <b>Awarded</b> (# 1745263)
2017	CoPI	<i>ESP4T – Engineering Summer Program for Teachers (Summer 2018)</i> [Team: Muknahallipatna, Kubichek, Anderson, Burrows, & Parker]	\$300,000 College of Engineering (July 2018 – June 2019)	<b>25)</b> <b>Awarded</b>
2017	CoPI	<i>ENTICE: Engaging Teachers in Computational Experiences</i> [Team: Chamberlin, Burrows, Borowczak, Chamberlin, & Shader]	~1,100,000 NSF HER DRL	Not funded
2017	CoPI	<i>Safety, Technology Engineering, and Cybersecurity</i> [Team: Borowczak & Burrows]	~\$50,000 Motorola Foundation	Not funded
2017	External Evaluator	<i>MEDTRACK</i> [Team: Amos, Bashir, Boppart, Schneider, Li, & Burrows]	~\$500,000 NSF NRT	Not funded
2017	PI	<i>WEST: Wyoming's Engineering, Security, and Teaching: Utilizing K12 Teachers as a Vehicle for University Engineering Faculty Change</i> [Team: Burrows, Borowczak, Muknahallipatna, Kubichek, Dousay, & Anderson]	\$1,999,997 NSF IUSE: EHR	Not funded
2017	PI	<i>KEEN Award for Engineering Module Implementation</i>	\$2,000 KEEN	Not funded
2017	<b>13) PI</b>	<i>MilliporeSigma Outreach – The Artful Craft of Science III (TACoS III – Summer 2017)</i> [Team: Burrows, Haynes, Russel, & Borowczak]	\$16,900 MilliporeSigma (2016-2017)	<b>24)</b> <b>Awarded</b>
2016	CoPI	<i>ESP4T – Engineering Summer Program for Teachers (Summer 2017)</i> [Team: Muknahallipatna, Kubichek, Anderson, Burrows, & Parker]	\$425,400 College of Engineering (July 2017 – June 2018)	<b>23)</b> <b>Awarded</b>
2016	Senior Personnel	<i>EasyNano: Combined Experimental and Visual Simulation Based Nanoelectronics (Based out of Univ. of North TX)</i> [Team: Mohanty, Rout, & Burrows]	\$287,987 NSF REU	Not funded
2016	CoPI	<i>STRATEGIES: The Bessie Coleman Project – Using Computer Modeling, Robotics, and Flight Simulation to Create STEM Pathways</i> [Team: Leonard, Burrows, Gamboa, McBride, & Davis]	\$1,199,416 NSF DRL ITEST	Not funded
2016	CoPI	<i>Training Requirements for Sustainable, High Performance Building Operations</i> [Team: Wang & Burrows]	\$52,537 ASHRAE	Not funded
2016	Collaborator (whole grant) <b>12) PI:</b> K12 EOD	<i>Making Wyoming's Microbial Life Accessible: Expanding Public Outreach Using a Data Discovery &amp; Visualization Tool – K12 Ed, Outreach, &amp; Diversity</i> [Team: Burrows]	\$349,500 of 20M <b>NSF - EPSCOR</b> (Sept 2017-Aug 2022)	<b>22)</b> <b>Awarded</b> (#EPS #1655726)
2016	<b>11) PI</b>	<i>Biology Active Learning Through Order of Magnitude (BAL-OoM)</i> [Team: Burrows, Borowczak, & Kost]	\$1,000 UW Biology Department	<b>21)</b> <b>Awarded</b>
2016	<b>10) PI</b>	<i>MilliporeSigma Outreach – The Artful Craft of Science II (TACoS II – Summer 2016)</i> [Team: Burrows, Haynes, Myers, & Russel]	\$10,000 <i>Sigma Aldrich</i> (2015-2016)	<b>20)</b> <b>Awarded</b>

2016	External Evaluator	<i>More than Just a Scientist – Preparing STEM Graduate Students for a Diverse World</i> [Team: McBride, Candelaria, Katzmann, Welsh, & Burrows]	\$499,977 NSF NRT-IGE	Not funded
2016	External Evaluator	<i>MEDTRACK</i> [Team: Amos, Bashir, Boppart, Mariscalco, & Burrows]	~\$500,000 NSF NRT	Not funded
2015	Consultant and External Evaluator	<i>Biosensing for Health: Introducing Research Experiences into Engineering Undergraduate Education</i> [Team: Novak, Wright, Kubichek, Muknahallipatna, & Burrows]	\$298,900 Keck Foundation Undergraduate Education Program	Not funded
2015	<b>9) PI</b>	<b><i>RAMPED: Robotics, Applied Mathematics, Physics, and Engineering Design (Summer 2016)</i></b> [Team: Burrows, Myers, Kubichek, Muknahallipatna, Hurley, & Borowczak]	\$211,355 DOE, WDE MSP (2016-2017)	<b>19) Awarded (#WY1601506 MSPA2)</b>
2015	<b>8) PI</b>	<b><i>Sigma Aldrich Outreach – The Artful Craft of Science (TACoS – Summer 2015)</i></b> [Team: Burrows & Russell]	\$10,000 Sigma Aldrich/ UW Foundation (2014-2015)	<b>18) Awarded</b>
2015	CoPI	<i>EasyNano: Combined Experimental and Visual Simulation Based Nanoelectronics (Based out of Univ. of North TX)</i> [Team: Mohanty, Rout, & Burrows]	\$230,420 NSF REU	Not funded
2015	<b>7) PI</b>	<b><i>Biology Active Learning Through Computer Science (BAL-CS)</i></b> [Team: Burrows, Borowczak, & Kost]	\$1,000 UW Biology Department	<b>17) Awarded</b>
2015	CoPI	<b><i>Science and Art Integration</i></b> [Team: Dambekalns & Burrows]	\$1,200 UW Secondary Education	<b>16) Awarded</b>
2015	Senior Personnel	<i>RII Track-2 FEC: DESI/EPSCoR Participation Group – Timely Opportunities for Data-Rich Astronomy in EPSCoR States</i> [Team: Myers, Dale, Pierce, Brotherton, Lauroesch, Williger, Haberzetti, Yan, Samushia, Ratra, & Burrows]	~\$5,998,645 NSF EPSCoR (2016-2019)	Not funded
2014	PI	<i>Launching Astronomy: Standards &amp; STEM Integration (LASSI) – Year 2 Expanded</i> [Team: Burrows & Myers]	~\$166,183 DOE, WDE MSP (2015-2016)	Not funded
2014	CoPI	<b><i>Collaborative Research: Cross-correlation of WISE quasars with the Planck CMB lensing maps: A new probe of black holes and large-scale structure</i></b> [Team: Myers & Burrows]	\$176,197 NSF AST (Aug 2015 - Dec 2017)	<b>15) Awarded (# 1515404)</b>
2014	CoPI	<i>Computer Science Initiative -Wyoming (CSI-Wyoming)</i> [Team: Borowczak, Burrows, Kost, Jang-Condell, & Banic]	~\$156,312 DOE, WDE MSP (2015-2016)	Not funded
2014	CoPI	<b><i>PhysTec at UW – Recruiting Physics Teachers</i></b> [Team: Dale, Slater, & Burrows]	\$19,841 Physics Teacher Education Coalition (APS, AAPT, NSF) (2014-2016)	<b>14) Awarded</b>
2014	<b>6) PI</b>	<b><i>Science (STEM) Summer Camp 2014</i></b> [Team: Burrows]	\$17,000 Ellbogen Dean’s Excellence Fund (2014)	<b>13) Awarded</b>



2014	<b>5) PI</b>	<i>Educational STEM Integration</i> [Team: Burrows]	\$4,060 Summer Graduate Research – Graduate Student Enhancement (2014)	<b>12)</b> <b>Awarded</b>
2014	<b>4) PI</b>	<i>Launching Astronomy: Standards &amp; STEM Integration (LASSI)</i> [Team: Burrows & Myers]	\$165,191 DOE, WDE MSP (2014-2015)	<b>11)</b> <b>Awarded</b> (#WY14020 2)
2013	CoPI	<i>Sustaining and Valuing Earth (SAVE) Summer 2013</i> [Team: Leonard & Burrows] – Douglas, WY	\$23,000 Sigma Aldrich/ UW Foundation (2013-2014)	<b>10)</b> <b>Awarded</b>
2013	<b>3) PI</b>	AAC&U Conference Award	\$2,000 UW Assessment Mini-Grant	<b>9)</b> <b>Awarded</b>
2013	<b>2) PI</b>	<i>Sustaining Wyoming's Advancing Reach in Mathematics and Science (SWARMS)</i> [Team: Burrows, Slater, Jafari, Dale, & Northrup]	\$1,186,365 <b>NSF DUE Noyce</b> (2014 – 2020)	<b>8)</b> <b>Awarded</b> (# 1339853)
2013	<b>1) PI</b>	<i>Mary Garland Early Career Fellowship</i> [Team: Burrows]	\$25,000 UW College of Education (2013-2015)	<b>7)</b> <b>Awarded</b>
2013	Senior Personnel	<i>Wyoming Teaching Fellows Project: Creating Capacity.</i> National Science Foundation (NSF). Proposal for Capacity Building for TF/MTF. [Team: Hutchison, Chamberlin, Dale, Jafari, Beckett, & Burrows]	\$299,908 NSF	Not funded
2012	CoPI	<i>Science and Math Inquiry through Literacy Engagement (SMILE)</i> [Team: Gillis, Hutchison, Rush, Burrows, Hamann & Albeke]	\$202,190 DOE, WDE MSP	Not funded
2012	CoPI	Co-Principal Investigator, <i>iSTEM-Ag: Improving Student Learning by Integrating STEM through Agriculture Education.</i> [Team: Slater, Haynes, & Burrows]	\$165,000 DOE, WDE MSP	Not funded
2012	Senior Personnel	<i>Visualization Basics: UGame - ICompute.</i> [Team: Leonard, Hamann, Jafari, Slater, & Burrows]	\$1,199,963 <b>NSF ITTEST</b> (Oct 2013 - Dec 2017)	<b>6)</b> <b>Awarded</b> (# 1311810)
2012	CoPI	<i>Collaborative Research - The Hidden Side of Rapidly Growing Black Holes: Host Masses and Evolution of Obscured Quasars with SDSS and WISE.</i> [Team: Myers & Burrows]	\$249,228 <b>NSF AST</b> (Sept 2012- Dec 2016)	<b>5)</b> <b>Awarded</b> (# 1211112)
2012	CoPI	<i>Hooked on STEM: Using Robotics to Apply Mathematical Reasoning and Scientific Processes.</i> [Team: Leonard, Schaeffle, Verma, & Burrows]	\$2,160,742 DOE I <sup>2</sup>	Not funded
2012	External Evaluator	<i>Flooding the Fields with Problem Based Learning (Year 1) Biodiversity (Year 2)</i> [Team: Forrester, Flaherty, & Burrows]	~\$300,000 DOE, WDE MSP (2012-2013)	<b>4)</b> <b>Awarded</b>

2012	CoPI	<i>Robotics for the 21<sup>st</sup> Century.</i> [Team: Slater, Dale, Burrows & Haynes]	\$207,156 DOE, WDE MSP (2012-2013)	<b>3)</b> <b>Awarded</b>
2007-2011	Coordinator	University of Cincinnati College of Engineering <i>Graduate Students in K-12 Education (GK-12 Project STEP) and Research Experience for Teachers (RET)</i> [Lead PI: Kukreti]	~\$12,000,000 <b>NSF</b> (2007-2012)	<b>2)</b> <b>Awarded</b>
2009-2010	Contributing Writer and Editor	University of Cincinnati College of Engineering <i>Urban Sustainable Energy and Environments (U-SEE)</i> [Lead PI: Kukreti]	~4,000,000 NSF	Not funded (NSF Program canceled)
1993-1994	CoPI	Florida State University School, <i>Using Innovative Teaching Skills in a Technology/Computer Science Facility</i> [Lead PI: Hook]	~\$10,000 Toshiba Tapestry Grant (1993-1994)	<b>1)</b> <b>Awarded</b>

**PROFESSIONAL AFFILIATIONS**

AAC&U	Association of American Colleges and Universities	
AAS	American Astronomical Society	
AERA	American Educational Research Association	Three elected chair positions
ASEE	American Society for Engineering Education	Elected chair-elect position
ASTE	Association for Science Teacher Education	Journal Editor & Elected board position
NSTA	National Science Teaching Association	
NARST	National Association for Research in Science Teaching	
SITE	Society for Information Technology and Teacher Education	Past elected position

**SERVICE*****National/International***

External Reviewer - Invited peer review for a science education tenure & promotion case; Letter of recommendation returned to Florida International University in July **2020**.

Associate Editor, Computers in Education (COED) Journal, **June 2020-present**

Invited member of the International Advisory Panel of the *Canadian Journal of Action Research*. May 2019- April **2021**.

External Review Member – Invited external review member for doctoral dissertation work on environmental literacy; University of the West Indies, Cave Hill Campus; March – September 2019.

External Reviewer - Invited peer review for a science education tenure & promotion case; Letter of recommendation returned to the Utah State University in August 2019.

Assistant Editor, Computers in Education (COED) Journal, June 2019 - May 2020.

Director, Code.org Regional Partner at UW “Computer Science Hub,” May 2019-**present**  
Conference Co-Chair- RMS ASEE: Rocky Mountain Section of the American Society for Engineering Education; Held at UW, May 19-21, 2019. Link: RmsAsee.org

External Reviewer - Invited peer review for a science education tenure & promotion case; Letter of recommendation returned to the University of Minnesota Duluth in November 2018.

Co-Editor of the Science Education Section for the Journal of Contemporary Issues in Technology and Teacher Education (CITE; 2 terms) **June 2016 – Dec. 2022**.

NSF Grant Review Panel Member, Washington, D.C. – 2016, 2017, 2020;  
Invited 2018 & 2019

Invited NSF Panel Member, NSF Day at UW, Laramie, WY – May 3, 2017.

Article Editor – SAGE Open – June 2017

Guest Editor – Education Sciences – February to December 2018

Elected and Appointed International Association Positions:

*6-year Elected Position (June 2019-2025)*; 2 as elect, 2 as chair, 2 as past-chair  
American Society for Engineering Education (ASEE)  
Pre-College Engineering Education Division Chair

*3-year Elected Position (Jan 2019-2022)*  
Association for Science Teacher Education (ASTE)  
Board Director At-Large; Professional Development Chair;  
Conference Committee Chair

*3-year Elected Position (April 2018-2021)*:  
American Educational Research Association (AERA); 1 elect, 2 as chair  
Computer and Internet Applications in Education (CIAE) SIG Chair

- 3-year Elected Position (April 2018-2021):*  
American Educational Research Association (AERA)  
Science Teaching & Learning (STL) SIG Program Chair (18-19),  
Chair (19-20 & 20-21)
- 2-year Elected Position (April 2018-2020):*  
American Society for Engineering Education (ASEE)  
Program Chair-elect 2018-2019 & Program Chair 2019-2020
- 2-year Elected Position (April 2018-2020):*  
American Educational Research Association (AERA)  
Action Research (AR) SIG Chair
- 3-year Appointment (August 2017-2020):*  
Rocky Mountain Region of the American Society for Engineering  
Education (RMS ASEE) – Secretary/Treasurer
- 3-year Elected Position (April 2016-2019):*  
American Educational Research Association (AERA)  
-Science Teaching and Learning (STL) SIG – Secretary/Treasurer
- 2-year Elected Position (April 2016-2018):*  
American Educational Research Association (AERA)  
-Action Research SIG - Secretary
- 2-year Elected Position (March 2016-2018):*  
Society for Information Technology & Teacher Education (SITE)  
Science Education SIG Chair (Elect 2016, Chair 2017, Past Chair 2018)
- 2-year Elected Position (June 2015-2017):*  
American Society for Engineering Education (ASEE) Member-at-Large
- 3-year Appointment (January 2014-2017):*  
Association for Science Teacher Education (ASTE) Professional  
Development Committee
- ASEE Day at NSTA - Leader, Organizer, and Presenter:*  
2019 NSTA sessions in Cincinnati, OH - Nov 2019  
2018 NSTA sessions in Reno, NV - Nov 2018  
2017 NSTA sessions in Baltimore, Milwaukee, & New Orleans, Dec. 2017  
2016 NSTA sessions in Columbus, Minneapolis, & Portland, Dec. 2016
- Journal Editor and Editorial Review Board (ERB) Member:*  
Associate Editor, *Computers in Education Journal*, June **2020-2023** (3-year appt.)  
Co-Editor of the Science Education Section for the Journal of Contemporary  
Issues in Technology and Teacher Education (CITE; 2 terms)  
**June 2016 – Dec. 2022.**  
Editorial Review Board, *Journal of Science Teacher Education* (JSTE),  
2015-2018 and **2019-2022** (3-year appointments); Q1 journal.  
Assistant Editor, *Computer in Education Journal*, June 2019-2020 (1-year appt.)  
Editorial Review Board, *Innovations in Science Teacher Education* (ISTE),  
March 2016- 2017 (1-year appt.); April **2017-2020** (3-year appt.)  
Case Studies in Education (<http://www.aabri.com/journals.html>), 2015 – 2017  
ERB - Contemporary Issues in Technology & Teacher Education (CITE–  
Science), 2013 – 2016.
- Reviewer - Journal Articles<sup>1</sup> and Conference Papers<sup>2</sup>:*  
Action in Teacher Education<sup>1</sup>, 2013, 2016-**present**  
Action Research Journal<sup>1</sup>, 2013  
American Society for Engineering Education<sup>2</sup> (ASEE), 2011, 2015-**present**  
American Educational Research Association<sup>2</sup> (AERA), 2011-2013, 2015-**present**  
Asia-Pacific Education Researcher<sup>1</sup>, 2012

Association for the Advancement of Computing in Education (AACE),  
 JCMST – Journal of Computers in Math & Science Teaching<sup>1</sup> - 2012  
 Association for Science Teacher Education<sup>2</sup> (ASTE), 2012 - **present**  
 Contemporary Issues in Technology & Teacher Education<sup>1</sup> (CITE), '13- **present**  
 Educational Action Research<sup>1</sup>, 2018  
 Educational Research and Reviews<sup>1</sup>, 2015  
 Innovations in Science Teacher Education<sup>1</sup> (ISTE), 2016 – **present**  
 International Journal of STEM Education<sup>1</sup>, 2019  
 Journal of Engineering Education<sup>1</sup> (JEE), 2019  
 Journal of Research in Science Teaching<sup>1</sup> (JRST), 2018  
 Journal of Science Teacher Education<sup>1</sup> (JSTE), 2016, 2017, 2018, 2019  
 Journal of STEM Education<sup>1</sup>, 2014  
 Linguistics and Education<sup>1</sup>, 2012, 2014  
 MDPI<sup>1</sup> (e.g., Education Sciences, Sustainability), 2017 - **present**  
 National Association of Research in Science Teaching<sup>2</sup> (NARST), 2008, '10, '15  
 Physical Review Physics Education Research<sup>1</sup> (PRPER), 2017, 2018  
 Sage Open<sup>1</sup> (Article editor), 2017, 2018  
 School Science and Mathematics Journal<sup>1</sup> (SSMJ), 2018  
 Society for Information Technology & Teacher Education<sup>2</sup> (SITE), 2016- **present**  
 Teaching and Teacher Education<sup>1</sup>, 2017- **present**  
 The Teacher Educator<sup>1</sup>, 2019  
 The Science Education Review<sup>1</sup>, 2010

*Presider/Moderator - Conferences:*

Association for Science Teacher Education (ASTE), 2014 - **present**  
 American Society for Engineering Education (ASEE), 2017 - **present**  
 American Educational Research Association (AERA), 2017 - **present**

*Selected Test Team Member* –National Academy of Engineering's (NAE) PreK-12  
 engineering education website: LinkEngineering. March – Sept. 2015

***State/Regional/Local***

Presenter/Organizer, Cybersecurity summer camp for teachers for GenCyber. NSA/NSF  
 grant. Program Director: A. Burrows. October 2020.  
 Presenter/Organizer, STEM summer camp for upper 5<sup>th</sup>, and 6<sup>th</sup> graders for TACoS VI  
 (The Artful Craft of Science – Take 6). UW Foundation/MilliporeSigma grant.  
 PI: A. Burrows. July 2020.  
 Presenter/Organizer, WySLICE grant. NSF CSforAll. CoPI: A. Burrows. July 2020.  
 Director/Organizer, Code.org follow-up workshop for 15 K-12 teachers. Oct. 5&6, 2019.  
 Presenter/Organizer, Cybersecurity summer camp for upper 8<sup>th</sup>-12th graders for  
 GenCyber: The World Needs More Cyberstars. NSA/NSF grant. Project  
 Director: A. Burrows. June 24-28, 2019.  
 Presenter/Organizer, STEM summer camp for upper 5<sup>th</sup>, and 6<sup>th</sup> graders for TACoS V  
 (The Artful Craft of Science – Take 5). UW Foundation/MilliporeSigma grant.  
 PI: A. Burrows. June 10-14, 2019.  
 Presenter, 3-hour professional development presentation and discussion for teachers.  
*Computer Science in K-12 Schools*. Douglas, WY, March 8, 2019.  
 CSSRC – Computer Science Standards Review Committee member for the state of  
 Wyoming, 2018.  
 Presenter/Organizer, Cybersecurity summer camp for upper 8<sup>th</sup>-12th graders for  
 GenCyber: COWPOKES. NSA/NSF grant. Program Director: A. Burrows. July  
 2-6, 2018.

- Presenter/Organizer, STEM summer camp for upper 4<sup>th</sup>, 5<sup>th</sup>, and 6<sup>th</sup> graders related to TACoS IV (The Artful Craft of Science – Take 4). UW Foundation/MilliporeSigma grant. PI: A. Burrows. June 11-15, 2018.
- Presenter, UW Native American Institute, 2-hour presentation and activities for high school students related to computer science and cybersecurity (e.g., microbits). Laramie, WY. June 11, 2018.
- Presenter, UW Women in STEM. Three 1-hour presentations and activities for middle and high school students related to computer science and cybersecurity (e.g., pin guesser). Laramie, WY. May 15, 2018.
- Presenter, UW Native American Institute, 2-hour presentation and activities for high school students related to computer science and cybersecurity (secret messages). Laramie, WY. June 12, 2017.
- Presenter/Organizer, STEM summer camp for upper 4<sup>th</sup>, 5<sup>th</sup>, and 6<sup>th</sup> graders related to TACoS III (The Artful Craft of Science – Take 3). UW Foundation/MilliporeSigma grant. PI: A. Burrows. June 5-9, 2017.
- Presenter, UW Women in STEM. Three 1-hour presentations and activities for middle and high school students related to computer science and cybersecurity (e.g., secret messages). Laramie, WY. May 16, 2017.
- Presenter, UW Computer Science Middle & High School Student Day, two 1-hour presentations and activities for middle/high school students related to cybersecurity (secret messages). Laramie, WY. Dec. 10, 2016.
- Presenter/Organizer, K-12 Teacher Professional Development for Wyoming Teachers related to *RAMPED (Robotics, Applied Mathematics, Physics, and Engineering Design)*. Federally funded Wyoming Department of Education Math and Science Partnership grant (WDE MSP). Website: [UWpd.org/RAMPED](http://UWpd.org/RAMPED) July 1 – 15, 2016, and follow-up 1-day sessions in Sept., Oct., Nov., Feb., March, & April 2017.
- Presenter/Organizer, STEM summer camp for upper 4<sup>th</sup>, 5<sup>th</sup>, and 6<sup>th</sup> graders related to TACoS II (The Artful Craft of Science – Take 2). UW Foundation/MilliporeSigma grant. PI: A. Burrows. July 5-8, 2016.
- Presenter/Organizer, K-12 Teacher Professional Development for Wyoming Teachers related to *OoM (Order of Magnitude)*. NSF funded. Website: <http://www.uwpd.org/category/pd/order-of-magnitude/> June 30, 2016.
- Presenter, Central Wyoming College's Gear Up High School Student Day, one 2-hour presentation and soldering activities for high school students related to computing (making Simons). Laramie, WY, June 7, 2016. Website: <http://aburrows.com/2016/06/07/computing-spectrum-from-build-to-compute-awesome/>
- Presenter, CY Middle School Thursday, five (30 minutes each) presentations and activities for middle school students related to computing and coding. Laramie, WY, April 28, 2016.
- Presenter, WYSTEM Saturday, two (forty-five minutes each) presentations for middle and high school students related to computing and mini-arduinios. Laramie, WY, January 23, 2016.
- Presenter/Organizer, Biology Active Learning Thorough Computer Science (BAL-CS) for middle and high school teachers related to computing and NetLogo. Powell, WY, August 30, 2015.

- Presenter/Organizer, K-12 Teacher Professional Development for Wyoming Teachers related to *LASSI II (Launching Astronomy: Standards and STEM Integration II)* and *Black Holes*. Federally funded Wyoming Department of Education Math and Science Partnership grant (WDE MSP). Website: <http://physics.uwyo.edu/~aschwartz/LASSI/index.html>  
June 29 – July 10, 2015.
- Presenter/Organizer, STEM summer camp for upper 4<sup>th</sup>, 5<sup>th</sup>, and 6<sup>th</sup> graders related to TACoS (The Artful Craft of Science). UW Foundation/Sigma Aldrich grant. PI: A. Burrows. June 15-19, 2015.
- Selection Committee Member, Wyoming Presidential Science Teacher Awards, Casper, WY, June 3, 2015.
- Presenter/Organizer, K-12 Teacher Professional Development for Wyoming Teachers related to TACoS (The Artful Craft of Science). UW Foundation/Sigma Aldrich grant. PI: A. Burrows. May 2, 2015.
- Reviewer, Agriscience FFA Statewide Fair, Laramie, WY, March 2, 2015.
- Presenter, Wyoming State Science Fair – Junior Division Panel, *Science and Art Integration*, University of Wyoming, Laramie, WY, March 2, 2015.
- Conference Co-chair for Panels at the Rocky Mountain Celebration of Women in Computing Conference. Laramie, WY. Oct. 23-25, 2014.
- Presenter/Organizer, K-12 Teacher Professional Development for Wyoming Teachers and Students (2<sup>nd</sup> – 5<sup>th</sup> grades) related to *Science (STEM) Summer Camp– Douglas, WY*. Ellbogen Dean’s Excellence Fund. PI: Burrows. Douglas, WY: Aug. 4–15, 2014.
- Presenter/Organizer, K-12 Teacher Professional Development for Wyoming Teachers related to *LASSI (Launching Astronomy: Standards and STEM Integration)*. Wyoming Department of Education Math and Science Partnership (WDE MSP). Website: <http://physics.uwyo.edu/~aschwartz/LASSI/index.html>. MSP PI- Team: A. Burrows and A. Myers. Laramie, WY: July 28 – Aug. 8, 2014. Follow-up sessions: Oct. 24, Oct. 25, 2014 and Feb. 27, Feb. 28, March 27, and March 28, 2015.
- Presenter/Organizer, K-12 Teacher Professional Development for Wyoming Teachers related to *Collaborative Research - The Hidden Side of Rapidly Growing Black Holes: Host Masses and Evolution of Obscured Quasars with SDSS and WISE*. National Science Foundation (NSF). Website: <http://physics.uwyo.edu/~mike/workshop/>. NSF PI- Team: A. Myers and A. Burrows. Laramie, WY: June 16-18, 2014.
- Presenter/Organizer, K-12 Teacher Professional Development – *Robotics in the 21<sup>st</sup> Century: Integrated STEM*. Wyoming Department of Education Math and Science Partnership (WDE MSP). Website: <http://www.uwrobotics.com/>. Buffalo, WY Aug. 9/10 and Powell, WY: Aug. 15 & 16, 2013.
- Presenter/Organizer, K-12 Teacher Professional Development for Wyoming Teachers related to *Collaborative Research - The Hidden Side of Rapidly Growing Black Holes: Host Masses and Evolution of Obscured Quasars with SDSS and WISE*. National Science Foundation (NSF). NSF PI- Team: A. Myers and A. Burrows. Laramie, WY: June 14, 2013.
- Volunteer – Science Fair Judge, Wyoming State Science Fair, March 2013.
- Presenter, Secondary Teacher Professional Development – *Agriculture and Soil*; Lingle, WY: September 29, 2012.
- Presenter/Organizer, K-12 Teacher Professional Development – *Robotics in the 21<sup>st</sup> Century*; Buffalo, WY; April 12, 2012 and June 16 - June 29, 2012.

Outreach – MSP Grant and Collaboration Meeting, Wyoming Department of Education (WDE), May 18, 2012.

Volunteer – Science Fair Judge, Wyoming State Science Fair, March 2012.

***University***

External member for RTP for College of Health Sciences, **2020**

University Course Review Committee for CoE, **2020**

University Assessment Committee, CoE representative, **2020**

Honors College Council Member, CoE representative, **2020**

Search Committee External Member, Kinesiology and Health (PETE), 2019-2020

Advisory Group of Research-Intensive Faculty (AGRIF), Lead: Dr. Synakowski, 2019

Interdisciplinary Research & Scholarship Committee, Lead: Dean Benson, 2018- 2020

NSTA-UW (active RSO) Sponsor, 2011- **present**

Noyce-UW (active RSO) Sponsor, 2015-**present**

UW Faculty Dispute Resolution Panel- Hearing Committee, 2018

Chair (2017, 2018, 2019), Faculty Senate - Library Council, 2013 – **2020**

Search Committee Member – VP of Research & Economic Development, 2017

UW Life Sciences Brown Bag Speaker, Spring – May 2, 2016

Wyoming Governor’s Cup Council Member, 2015

NCATE (National Council for Accreditation in Teacher Education) Secondary Science

Co-Writer, NCATE Approval July 2015; 2014-2015

Education Initiative: UW Leadership Team, 2015

Faculty Senate – Chair, Parking Appeals Committee, Summer 2013 – Sept 2014

Representative - UC C&I Graduate Student Representative, 2009

***College and Department***

Advisory Council on Teacher Education (ACTE) ex-officio member, **2020 - present**

Associate Director for Field Placements – Spring **2020**

Co-Chair New Faculty Mentor Group, 2019- **2020**

New Faculty Mentor (mentee: Dr. Lee), 2018- **present**

TEI Pilot and Implementation Design Team (CIS), 2018- **present**

Coordinator, School of Teacher Education Graduate Certificate, 2017-**present**

Chair (2018-20), College of Education Student Appeals Committee, 2014 – **2020**

Coordinator, Secondary Science concurrent majors, 2011-**present**

UW College of Education Ambassadors (active RSO) Sponsor, 2013 – **present**

Chair, Search Committee – Agricultural Education (STE), 2018-2019

C&I Graduate Admissions Committee, 2013 – 2016, 2017, 2018

College of Education WTEP Assessment Committee, 2017

Chair, Advisory Council on Diversity, UW College of Education, 2012 – 2015

Search Committee – Social Studies Position, 2013-2014, 2016-2017, 2019-2020

College of Education Conceptual Framework Committee, 2015

Search Committee Member– Modern Language Position, 2012-2013

Teacher Performance Assessment (edTPA) Scorer, May and June 2012, 2013

Science & Math Teaching Center (SMTC) Affiliate Faculty Appointment, 2012

Ed.D Retreat Participant, UW College of Education, May 15-17, 2012

Student Disposition Committee Member, UW College of Education, 2011-2012

Technology Committee Member, UW Secondary Education, 2011 – 2012

Representative, UC C&I Review Board Graduate Student, 2010

Representative, UC C&I Graduate Student, 2009



## ***CURRENT ADVISEES***

### **Past Graduates (24)**

Served as committee chair for 2 Ph.D. and 6 masters graduates  
Served as a committee member for 7 Ph.D. and 9 masters graduates

### **Current Students (14)**

Currently serving as committee chair for 3 Ph.D. and 7 masters students  
Currently serving as committee member for 3 Ph.D. and 1 masters student(s)

## ***OTHER PROFESSIONAL DEVELOPMENT***

- 13) Academic Management Institute – Online, October **2020** and January & June **2021**
- 12) Higher Education Leadership Workshop – Presented by Dr. Buller – Online, September **2020**
- 11) AAQEP Quality Assurance Symposium – Atlanta, GA, Feb **2020**
- 10) Code.org – Regional Partner Training at week-long CSEdCon (Las Vegas, NV), Sept. 2019.
- 9) DoS – Dimensions of Success PEAR Training Certification – November 2015 and May 2019
- 8) Engineering is Elementary - EiE ('Train the Trainer'), Boston, MA, May 2019
- 7) NSF Synthesis and Design Workshop on Digitally-Mediated Team Learning (DMTL Workshop) – Orlando, FL, March-April 2019
- 6) AAQEP Quality Assurance Symposium – Louisville, KY, Feb 2019
- 5) NSF S-STEM Capacity Building Workshop; Competitive selection; Rice University, Jan 2019
- 4) SCRIPTS Symposium w/ Teton District, Uinta District, WDE, & UW – La Jolla, CA, Jan 2019
- 3) Science Summit – Sponsored by the UW Partnership – Casper, WY, 2015, 2016, 2017
- 2) AAC&U on Assessment (Association of American Colleges and Universities), Portland, OR, Feb-Mar 2014
- 1) Summer Summit Collaboration Fellowship, Lead: Dr. Kroeger, UC, Sept. 2010 – June 2011

## ***RESEARCH ACTIVITY***

Partnerships, Collaboration in Science education, Engineering education, and Computer science education: Negotiations and Meanings: 2010 to **present**

Graduate Student Research support:  
Physics Education Research (PER); 2014 – **present**  
Authentic Science Use; 2013 – **present**  
Integrated STEM/STEAM; 2014 - **present**

Pre-Service and In-Service Teacher Perceptions of STEM and Partnerships, Engineering Education, and Integrated STEM (including visits to Utah State University, University of Cincinnati, Brock University, University of Central Florida, and Stetson University - May 2015): 2011 to 2017

ECE Capstone Project: Building Blocks of Code (Portland State University); Sponsor; Partnership building with PSU and Erebus Labs; 2014 to 2015

ECE Capstone Project: VOC Well Sensor (Portland State University); Sponsor; Partnership building with PSU and Intel (Portland, OR); 2013 to 2015

Pre-Service Teacher Perceptions of Partnerships between Science Educators and Special Educators: 2010 to 2013

**MEDIA HIGHLIGHTS**

- Laramie Boomerang (Burrows featured as ASTE’s Award IV winner): January 27, 2021 - UW Professor Wins Award for Outstanding Science Educator of the Year.  
[https://www.wyomingnews.com/news/local\\_news/uw-professor-wins-award-for-outstanding-educator-of-the-year/article\\_c116d9be-b28b-52fd-9397-3312e2a028d2.html](https://www.wyomingnews.com/news/local_news/uw-professor-wins-award-for-outstanding-educator-of-the-year/article_c116d9be-b28b-52fd-9397-3312e2a028d2.html)
- UW News story on TACoS Summer Camp VI (Burrows featured as creator and Program Director): July 29, 2020 – UW Summer Camp Goes Virtual to Teach Science.  
<http://www.uwyo.edu/uw/news/2020/07/uw-summer-camp-goes-virtual-to-teach-science.html>
- UW News story on new Associate Dean position for Burrows: June 8, 2020 - UW’s Burrows Named Associate Dean of Undergraduate Programs in College of Education.  
<http://www.uwyo.edu/uw/news/2020/06/uws-burrows-named-associate-dean-of-undergraduate-programs-in-college-of-education.html>
- Wyo4News story on student teachers (Burrows featured as Associate Director of Field Placements); Feb 10, 2020 – *UW Announces Spring 2020 student-teacher placements*.  
<https://wyo4news.com/news/uw-announces-spring-2020-student-teacher-placements/>
- SweetwaterNow – Story on student teachers (Burrows featured as Associate Director of Field Placements): Feb 5, 2020 – *Local UW Student-Teachers Placed in Schools*.  
<https://www.sweetwaternow.com/local-uw-student-teachers-placed-in-schools/>
- Education@UWYO E-Newsletter – Story on supporting Wyoming Educators with computer science, the LIFT project, and more (Burrows featured in several spaces): Jan 31, 2020 – *Supporting Educators, Implementing the New State Standards: Part II*.  
<https://mail.google.com/mail/u/0/#inbox/FMfcgxwGDDjrSflqpTgnLpfmtWQqWgzr?compose=DmwnWrRpdLjQhFhlGVnRVLxBhxXrjilJPBhnJNpZGhSkLSPXsvphGwsgXDzSzXSzmlmKPbTvwvfG>
- Wyoming Business Report – Story on computer science in Wyoming (Burrows featured as expert): Dec. 30, 2019 – *New computer science standards define K-12 technology education*. [https://www.wyomingbusinessreport.com/current\\_edition/new-computer-science-standards-define-k--technology-education/article\\_9cbb5ebf-a0a1-5125-b0a9-e2971a61ad7d.html](https://www.wyomingbusinessreport.com/current_edition/new-computer-science-standards-define-k--technology-education/article_9cbb5ebf-a0a1-5125-b0a9-e2971a61ad7d.html)
- UW News story on the LIFT grant project (Burrows CoPI); Dec. 6, 2019 – *UW Education Students Support ‘Out of This World’ Experience for Wyoming Pupils*.  
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- UW News Story regarding The Artful Craft of Science (TACoS) led by PI A. Burrows; June 21, 2017 – *Students Receive Hands-On Experience at UW Camp*.  
<http://www.uwyo.edu/uw/news/2017/06/students-receive-hands-on-experience-at-uw-camp.html>
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UW News Featured Story regarding the WDE MSP RAMPED:

**UW-Led Program Focuses on Increasing Graduation Rates in Natrona County School District.**

August 18, 2016 - Natrona County School District (NCSD) leaders and teachers created a strategic plan to increase graduation rates, and one area that needed attention was boosting student interest in STEM fields. <http://www.uwyo.edu/uw/news/2016/08/uw-led-program-focuses-on-increasing-graduation-rates-in-natrona-county-school-district.html> and

<http://thesheridanpress.com/?p=58195>

**UW-Led Technology Program Helps Glendo Teacher**

August 16, 2016 — Tesha Frederick sees the endless possibilities of teaching science, thanks to a University of Wyoming program that promotes STEM (science, technology, engineering and mathematics) careers.

<http://www.uwyo.edu/uw/news/2016/08/uw-led-technology-program-helps-glendo-teacher.html>

**UW-Led Technology Program Helps Kaycee Teacher Explore New Possibilities**

August 16, 2016 — Kaycee teacher Victoria Davis can't wait to pass on to her students what she learned during an intense summer STEM (science, technology, engineering and mathematics) program at the University of Wyoming.

<http://www.uwyo.edu/uw/news/2016/08/uw-led-technology-program-helps-kaycee-teacher-explore-new-possibilities.html>

**Lander Teacher Learns from UW-Led Technology Program**

August 16, 2016 — Dean Cyphers says it is never too early for students, even as young as elementary age, to learn computer science and programming/coding.

<http://www.uwyo.edu/uw/news/2016/08/lander-teacher-learns-from-uw-led-technology-program.html>

**Riverton Teacher Receives Hands-On Experience in UW-Led Technology Program**

August 16, 2016 — Riverton High School physics instructor Ceira Lee says an intensive summer workshop at the University of Wyoming will help her teach students about STEM (science, technology, engineering and mathematics) subjects.

<http://www.uwyo.edu/uw/news/2016/08/riverton-teacher-receives-hands-on-experience-in-uw-led-technology-program.html>

**Sheridan Teacher Learns from UW-Led Technology Program**

August 16, 2016 — Sheridan Junior High School seventh/eighth-grade science teacher Rachael Esh is like many of her students, with limited exposure to many STEM (science, technology, engineering and mathematics) fields.

<http://www.uwyo.edu/uw/news/2016/08/sheridan-teacher-learns-from-uw-led-technology-program.html>

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UW College of Education Newsletter Recognition. (Spring 2016). A) *Secondary Ed Supports Schools Across Wyoming*, and B) *Grants Support Innovative SMTC STEM Initiatives*.

UW News: *UW Programs Lead STEM Students to Teaching Careers*. (October 30, 2015).

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<http://www.uwyo.edu/uw/news/2015/10/uw-programs-lead-stem-students-to-teaching-careers.html>

NASA EPSCoR: Stimuli 2014-15. (October 3, 2015). Physics/Astronomy collaboration (p. 204).

<http://www.nasa.gov/sites/default/files/atoms/files/epscor-stimuli.pdf>

UW News Stories regarding the WDE MSP LASSI:

**Wyoming Teachers Gain STEM Skills at UW**

July 15, 2015 – Teachers from around Wyoming have just finished a two-week program at the University of Wyoming called “Launching Astronomy: Standards and STEM Integration.” One of those teachers was Annie Grip, who teaches 5th grade at Cloud Peak Elementary School in Buffalo.

<http://www.sheridanmedia.com/news/wyoming-teachers-gain-stem-skills-uw80278>

**Wyoming Teachers Gain STEM Skills at UW**

July 14, 2015 - After spending two weeks this summer working with astronomy and education experts at the University of Wyoming, nearly two dozen teachers from kindergarten to high school will return to their classrooms this fall with new skills and ideas to stimulate young people’s interest in science, technology, engineering and mathematics (STEM).

<http://www.uwyo.edu/uw/news/2015/07/wyoming-teachers-gain-stem-skills-at-uw.html>

**Buffalo Teacher Hones STEM Skills at UW**

July 14, 2015 — A teacher at Cloud Peak Elementary School in Buffalo is among nearly two dozen teachers who will return to their classrooms this fall with new skills and ideas to stimulate young people’s interest in science, after spending two weeks this summer working with astronomy and education experts at the University of Wyoming.

<http://www.uwyo.edu/uw/news/2015/07/buffalo-teacher-hones-stem-skills-at-uw.html>

**Evanston Teacher Hones STEM Skills at UW**

July 14, 2015 — An Evanston Middle School teacher is among nearly two dozen educators who will return to their classrooms this fall with new skills and ideas to stimulate young people’s interest in science, after spending two weeks this summer working with astronomy and education experts at the University of Wyoming.

<http://www.uwyo.edu/uw/news/2015/07/evanston-teacher-hones-stem-skills-at-uw.html>

**Lander Teacher Hones STEM Skills at UW**

July 14, 2015 — A Lander Valley High School math teacher is among nearly two dozen teachers who will return to their classrooms this fall with new skills and ideas to stimulate young people’s interest in science, after spending two weeks this summer working with astronomy and education experts at the University of Wyoming.

<http://www.uwyo.edu/uw/news/2015/07/lander-teacher-hones-stem-skills-at-uw.html>

**Laramie Teachers Hone STEM Skills at UW**

July 14, 2015 — Four teachers from Laramie are among nearly two dozen educators who will return to their classrooms this fall with new skills and ideas to stimulate young people’s interest in science, after spending two weeks this summer working with astronomy and education experts at the University of Wyoming.

<http://www.uwyo.edu/uw/news/2015/07/laramie-teachers-hone-stem-skills-at-uw.html>

**Platte County Teachers Hone STEM Skills at UW**

July 14, 2015 — Two teachers from Platte County are among nearly two dozen educators who will return to their classrooms this fall with new skills and ideas to stimulate young people's interest in science, after spending two weeks this summer working with astronomy and education experts at the University of Wyoming.

<http://www.uwyo.edu/uw/news/2015/07/platte-county-teachers-hone-stem-skills-at-uw.html>

**Saratoga Teacher Hones STEM Skills at UW**

July 14, 2015 — A Saratoga Elementary School teacher is among nearly two dozen educators who will return to their classrooms this fall with new skills and ideas to stimulate young people's interest in science, after spending two weeks this summer working with astronomy and education experts at the University of Wyoming.

<http://www.uwyo.edu/uw/news/2015/07/saratoga-teacher-hones-stem-skills-at-uw.html>

**Sundance, Hulett Teachers Hone STEM Skills at UW**

July 14, 2015 — Four teachers from Crook County are among nearly two dozen educators who will return to their classrooms this fall with new skills and ideas to stimulate young people's interest in science, after spending two weeks this summer working with astronomy and education experts at the University of Wyoming.

<http://www.uwyo.edu/uw/news/2015/07/sundance,-hulett-teachers-hone-stem-skills-at-uw.html>

UW College of Education and Blackboard Recognition. (May 2015). *2015 Faculty, Staff, & GA Awards*. <http://www.uwyo.edu/education/>

UW News: *UW STEM Opportunities Abound for Wyoming Students this Summer*. (February 12, 2015). The Artful Craft of Science (TACoS), funded grant from Sigma-Aldrich, is one of the featured STEM opportunities for K-12 students.

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UW Blackboard Article. (Fall 2014). *National Science Foundation grants fund science, mathematics teaching certification*.

[http://www.uwyo.edu/education/\\_files/bb-archive/finalfall2014blackboard.pdf](http://www.uwyo.edu/education/_files/bb-archive/finalfall2014blackboard.pdf)

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<http://www.uwyo.edu/education/deans-office/college-news/2014/science%20misconceptions.html>

The Partnership: A Newsletter of the Wyoming School-University Partnership. (September 2014). Two stories including: 1) *Dean's Excellence Fund grant to inspire future STEM students, Science (STEM) Summer Camp in Douglas, WY*; and 2) *WDE MSP grant to inspire teachers to use astronomy as a vehicle for content exploration*.

[http://www.uwyo.edu/wsup/\\_files/docs/newsletters/partnership/september%202014/september-newsletter-2014-final.pdf](http://www.uwyo.edu/wsup/_files/docs/newsletters/partnership/september%202014/september-newsletter-2014-final.pdf)

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