

Andrea Carneal-Burrows Borowczak, Ed.D.

University of Central Florida ♦ College of Community Innovation and Education
 Director and Professor ♦ School of Teacher Education
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EDUCATION

Ed.D.	Curriculum & Instruction – Science	University of Cincinnati	2011
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Dissertation Title: *Secondary Teachers and University Partnerships: Does Being in a Partnership Create Teacher Partners?*
 Chair: Dr. Helen Meyer; Members: Dr. Jonathan Breiner, Dr. Mary Brydon-Miller, & Dr. Chester Laine

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

AWARDS and HONORS

2023	Invited Program Director panelist for GenCyber Meeting 2023, Baltimore, MD
2023	ASTE recognition for 6 years of CITE Journal Editor service (Jan '16- Jan'23)
2022	ASTE recognition for 3 years of Member At Large service (Conference Program Chair and Professional Development Chair)
2021	ASTE Award 1 – Outstanding Science Teacher Educator of the Year
2020	MDPI 'Editors' Choice Articles' Winner – <i>Integrated STEM: Focus on Informal Education and Community Collaboration</i>
2020	2019 Outstanding Reviewer Award – <i>Education Sciences</i>
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 Central Florida	July 2022 - present
Full Professor	University of Wyoming	Aug 2020 – July 2022
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

Leadership & Administrative Appointments – University

7) Director, School of Teacher Education (STE), University of Central Florida's College of Community Innovation and Education (CCIE), July 2022 – present

Major responsibilities –

- Supervision for faculty (50+), adjuncts (75+), and staff (5+) of STE
- Budgeting over 8M annually
- Completing P&T as well as annual evaluations of faculty
- Leading four sub-unit programs (Elementary, Secondary, Early Childhood, & Exceptional Student Education)

- e) Communication of STE activities with STE, CCIE, UCF, and the community
 - f) Visionary work for STE programs and collaborations
- 6) Associate Dean for Undergraduate Programs, University of Wyoming College of Education, July 1, 2020 - Aug 31, 2022
- Major responsibilities –
- a) Accreditation (CAEP & AAQEP) - College of Education leading 50+ faculty;
 - b) Direct the Teaching Preparation and Advising Office w/5+ staff including hiring and budgeting;
 - c) Articulation with 8+ community college programs across the state;
 - d) Assist program development with STE and CLAD School Directors;
 - e) Lead College of Education program policy and policy changes;
 - f) Lead College of Education in potential CLAD termination talks and resolution.
- 5) Associate Director for Field Placements, College of Education, Dec 2019–Aug 2020,
Major responsibility – Oversight of student teaching placements >200+ students
- 4) Program Coordinator, (Post-bac) Graduate Certificate Program, Sept 2018–Aug 2020,
Major responsibility – Reorganizing the program to accommodate more students
- 3) Co-Editor, CITE Journal Science, June 2016 – January 2023,
CiteJournal.org/Category/Science
- 2) Grants PI, January 2013 – to present, Leading faculty to create and implement NSF and other funded grants – locally, regionally, and nationally
- 1) STEP Grant Coordinator, July 2007 – December 2011, Liaison for NSF GK-12 initiatives with Cincinnati Public School teachers and the University of Cincinnati's College of Engineering and Applied Science faculty

Elected Leadership Positions – Other Organizations

President

Association for Science Teacher Education (ASTE) -
President-elect 2022, President **2023**, Past-president **2024**

Chair

American Educational Research Association (AERA) –
Action Research (AR) SIG
Computer and Internet Applications in Education (CIAE) SIG
Science Teaching and Learning (STL) SIG
American Society for Engineering Education (ASEE) -
Pre-Collegiate Engineering Education (PCEE) Division
Chair elect 2019-2021, Chair 2021-2023, Past chair – **2023-2025**

Association for Science Teacher Education (ASTE) -

Professional Development Committee

Conference Planning Committee

Society for Information Technology and Teacher Education (SITE) –
Science Education SIG

Other positions

American Educational Research Association (AERA) –
Action Research (AR) SIG – Secretary/Treasurer
Science Teaching and Learning (STL) SIG – Secretary/Treasurer
American Society for Engineering Education (ASEE) -
Pre-Collegiate Engineering Education (PCEE) – Member at Large
Association for Science Teacher Education (ASTE) -
Board Member at Large

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

Leadership & Administrative Appointments – K-12 Schools & Districts

- Learning Resource Specialist, Orange County Public Schools, 2003-2005 -
 - Major responsibilities –
 - 1) Administrative team duties (e.g., after school, emergencies, all subjects hiring)
 - 2) Coordinating STEM education initiatives w/60+ teachers; Budgeting
- Department Head – Middle School Science – 2001-2003 –
 - Major responsibility – Coordinating 6-8 science teachers; Hiring; Budgeting
- Department Head – High School Science – 1997-2000 –
 - Major responsibility – Coordinating 6-8 science teachers; Hiring; Budgeting

PUBLICATIONS (*indicates graduate advisee; **indicates colleague outside my current college)**Books and Chapters**

- 13) Rush, L. S., Buss, A., **Burrows**, A. C., Gull, C., Yates, J. (Accepted book chapter – waiting publication). Collaborative Data Inquiry for Program Improvement: Shifting from External to Internal Motivations and Processes. In K.N. Rainville, D. Title, and C.G. Desrochers (Eds.), *Faculty Learning Communities: Communities of Practice that Support, Inspire, Engage, and Transform Higher Education Classrooms*. Information Age Publishing, Inc.
- 12) **Burrows**, A. C., Kilty, T. J., & Slater, T. F. (Accepted book chapter August 2022 – waiting publication). Integrated STEM: Interdisciplinary Teams and Proposed Framework for Pre-service Teacher Utilization. In P. Jenlink (Ed.), *STEM Teacher Preparation and Practice for the 21st Century: Research-based Insights*.
- 11) Schwartz, A. C., Hickman, B., **Burrows Borowczak**, A. C., Dale, D. A., & Myers, A. D. Roles of technology in the science classroom: Meta-analysis, example vignettes, and guidance for teacher practitioners and educators. (2023). In S. Asim, J. Ellis, D. Slykhuis, & J. Trumble (Eds.), *Theoretical and Practical Teaching Strategies for K-12 Science Education in the Digital Age*. IGI Global.
- 10) Slater, T. F., Kilty, T. J., & **Burrows**, A. C. (2022). Improving the integration of STEAM concepts for teacher preparation and practice. In P. Jenlink (Ed.), *Literacy in Teacher Preparation and Practice: Enabling Individuals to Negotiate Meaning* (pp. 203-218). Information Age Publishing (IAP).
- 9) **Burrows**, A. C., Chamberlin, M., & Borowczak, M. (2022). Intentional focus on integrated STEM: Was Costner the original STEM influencer? In E. Janak & L. Sourdout (Eds.), *Kevin Costner, America's Teacher* (pp. 153-168). Rowman & Littlefield Publishing Group, Inc.
- 8) Mouza, C., Driskell, S., Wheeler, A., **Burrows**, A., & Millman, N. (2021). From Submission to Publication: Guidance from CITE Journal Editors. In R. Hartshorne, R. Ferdig, Y G. Bull (Eds.), *What journal editors wish authors knew about academic publishing* (pp. 17-28). Advancement of Computing in Education (AACE). Retrieved March 25, 2021, from <https://www.learntechlib.org/p/219093/>
- 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

- 43) *Addido, J., **Borowczak, A. C.**, & **Walwema, G. (2023). Teaching Newtonian physics with LEGO EV3 robots: An integrated STEM approach. *Eurasia Journal of Mathematics, Science, and Technology Education (EJMSTE)*, 19(6). doi.org/10.29333/ejmste/13232 [2022: H-index:50; **Q2**]
- 42) *Northrup, A., **Burrows Borowczak, A.C.**, & Slater, T. F. (2022). K-12 teachers' perceptions and experiences in starting to teach computer science. *Education Sciences*, 12(11), 742. https://doi.org/10.3390/educsci12110742 [2021: H-index:30; **Q2**]
- 41) *Addido, J., **Burrows, A. C.**, & Slater, T. F. (2022). The effect of the conceptual change model on conceptual understanding of electrostatics. *Education Sciences*, 12(10), 696. doi.org/10.3390/educsci12100696 [2021: H-index:30; **Q2**]
- 40) *Northrup, A., & **Burrows, A. C.** (2022). Integrating computer science across Wyoming's K-12 curriculum from inception to implementation: Analysis using systems theory. *Computers in Education Journal*. [2020 H-index:13; **Q4**]
- 39) *Addido, J., **Burrows, A. C.**, & Slater, T. F. (2022). Addressing pre-service teachers' misconceptions and promoting conceptual understanding through the conceptual change model. *Problems of Education in the 21st Century*, 80(4), 499-515. [2019 H-index:8; **Q3**]
- 38) Reynolds, T., **Burrows, A. C.**, & **Borowczak, M. (2022). *Confusion over models: Exploring discourse in STEM professional development*. *SAGE Open*, 12(2). doi.org/10.1177/215824402210979 [2020 H-index:32; **Q2**]
- 37) *Northrup, A., **Burrows, A. C.**, & Slater, T. F. (2022). Identifying implementation challenges for a new computer science curriculum in rural western regions of the United States. *Problems of Education in the 21st Century*, 80(2), 353-370. https://doi.org/10.33225/pec/22.80.353 [2019; H-index:7, **Q3**]
- 36) *Schwartz, A. C., & **Burrows, A. C.** (2022). Listening to find integrated STEM discourse: Power and positioning during a teacher professional development dataset activity. *Education Sciences*, 12(2), 84. https://doi.org/10.3390/educsci12020084 [2021: H-index:30; **Q2**]
- 35) Kilty, T., & **Burrows, A. C.** (2022). Integrated STEM and partnerships: What to do for more effective teams in informal settings. *Education Sciences*, 12(1), 58. https://doi.org/10.3390/educsci12010058 [2021: H-index:30; **Q2**]
- 34) **Burrows, A. C.**, **Borowczak, M., & Mugayitoglu, B. (2022). Computer science beyond coding: Partnering to create teacher cybersecurity microcredentials. *Education Sciences*, 12(1), 4. https://doi.org/10.3390/educsci12010004 [2021: H-index:30; **Q2**]

- 33) **Burrows**, A. C., Swarts, G., Hutchison, L., Katzmann, J., Thompson, R., *Freeman, L., *Schanke, A., Kilty, T., & Reynolds, T. (2021). Finding spaces: Teacher education technology competencies (TETCs). *Education Sciences*, *11*(11), 1-21. doi.org/10.3390/educsci11110733 [2021: H-index:30; **Q2**]
- 32) Mugayitoglu, B., **Borowczak, M., & **Burrows**, A. C. (2021). A university's developmental framework: Creating, implementing, an evaluating a K-12 teacher cybersecurity micro-credential course. *Journal on Systemics, Cybernetics, and Informatics (JSCI)*, *19*(2), 13-22. <http://www.iiisci.org/journal/sci/Contents.asp?Previous=ISS2102>
- 31) Kilty, T. J., & **Burrows**, A. C. (2021). Secondary science preservice teachers: Technology integration in methods and residency. *Journal of Science Teacher Education– JSTE*, *32*(5), 578-600. Doi.org/10.1080/1046560X.2021.1907514 [2020: H-index:45; **Q1**]
- 30) Kilty, T. J., **Burrows**, A. C., *Christoffersen, D., Kilty, K., Muir-Welsh, K., **McBride, S., **Bergmaier, P., *Bitzas, C., *Rainey, C. (2021). Instructional planning modifications to meet social distancing requirements: Secondary and post-secondary options. *Education Sciences*, (*11*)5. doi.org/10.3390/educsci11050217 [2021: H-index:30; **Q2**]
- 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 [2020: H-index:9; **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 [2021: H-index:30; **Q2**]
- 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> [2020: H-index:19; **Q2**; >694 abstract views & >441 full-text views (March 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:32; **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:17, **Q3**]
- 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; >2019 views & >1464 downloads worldwide (March 2021); H-index7; **Q3**]
- 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; >2268 views & >1637 full-text views (October 2021); H-index7; **Q3**]
- 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; >4367 views & >3016 downloads worldwide (March 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 21st Century*, 75(3), 215-234. [OAJI: 0.350 (2016); GIF 0.652 (2015); IC™ 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 20th 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 21st Century*, 70, 59-73. [OAJI: 0.350 (2016); GIF 0.652 (2015); IC™ 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 21st 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 21st 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 21st 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)

Submitted for Review

- Burrows Borowczak**, A. C., & Kilty, T. (Submitted - May 2023). Engineering education in secondary science classrooms: Importance of partnerships and mentoring. *Problems of Education in the 21st Century*. [H-index:7; Q3]
- Kilty, T., **Burrows Borowczak**, A., *Carper C., *Robins, A., **Borowczak, M. (Submitted January 2023). Building consensus in STEM group work. *Education Sciences*. [H-index:30; Q2]
- *Addido, J., **Burrows**, A. C., Slater, T., F., & Dale, D. (Submitted October 2022). Teachers' instructional practices for conceptual understanding and students' science achievement: A five country comparison of TIMSS data. *The Journal of Research in Science Teaching*, [2021: H-index:139; Q1]

Refereed Publications

- 13) Begin, K., Fearneyhough, A., Hamp, C., Kilty, T., Bergmaier, P., Kilty, K., **Burrows**, A. C., McBride, S., & Welsh, K. M. (2022). Cell signals at altitude: On the same wavelength. *TeachEngineering.org*. Retrieved from:
- 12) Begin, K., Fearneyhough, A., Hamp, C., Kilty, T., Bergmaier, P., Kilty, K., **Burrows**, A. C., McBride, S., & Welsh, K. M. (2022). (Submitted March 2022). Cell phone signals at altitude: Data in the details. *TeachEngineering.org*. Retrieved from:
- 11) *Relaford, T., *Plowman, J., *Crips, J., Kilty, T., **Bergmaier, P., **McBride, S., **Kilty, K., **Burrows**, A.C., Welsh, K., Pannell, A., Streube, T., & Williams, T. (2022). How does the speed of sound vary with altitude? *TeachEngineering.org*. Retrieved from: <https://www.teachengineering.org/activities/view/uow-2585-speed-sound-altitude-activity>
- 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: <https://www.teachengineering.org/lessons/view/uow-2546-cosmic-radiation-space-agency-scenario-lesson>

- 10a) *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: <https://www.teachengineering.org/lessons/view/uow-2546-cosmic-radiation-space-agency-scenario-lesson>
- 10b) *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: <https://www.teachengineering.org/lessons/view/uow-2546-cosmic-radiation-space-agency-scenario-lesson>
- 10c) *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: <https://www.teachengineering.org/lessons/view/uow-2546-cosmic-radiation-space-agency-scenario-lesson>
- 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
- 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
- 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
- 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
- 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
- 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
and www.uwyo.edu/wyys

NSF Funded “Black Holes” Grants:

Black Holes II - Order of Magnitude Estimation: sites.dartmouth.edu/estimation

Black Holes I -Astronomy Days: physics.uwyo.edu/~mike/workshop/

Support Websites:

NSF Noyce Participant and Recruitment Site: UWSWARMS.org

Other – Permanently redirected:

Website for RAMPED PD: UWpd.org/ramped

Wiki/Blog for courses, research and T&P material: Aburrows.com

Video Assessment Tool: YouDemo.org

Electrical and Computer Engineering Capstone Project Site: 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

CONFERENCE PAPERS and PRESENTATIONS

National/International Papers

Refereed Papers

- 51) **Burrows Borowczak, A.**, & Kilty, T. (2023). Transcending disciplines: Engaging college students in interdisciplinary research, integratd STEM, and partnerships. Paper session at the 2023 International Conference of the Association for Science Teacher Educators (ASTE). Jan 12, 2023.
- 50) Kilty, T., **Burrows Borowczak, A. C.**, Carper, C., Robins, A., Kilty, K., & Borowczak, M. (2023). Building consensus in STEM group work. Paper session at the 2023 International Conference of the Association for Science Teacher Educators (ASTE). Jan 12, 2023.
- 49) *Robins, A., *Radosevich, D., **Burrows, A. C.**, & Borowczak, M. (2022). *On the development of cybersecurity and computing centric professional developments and the subsequent implementation of topics in K12 lesson plans (RTP)*. American Society for Engineering Education (ASEE) Paper. Minneapolis, MN. June 27, 2022 (11:30 CDT).
- 48) *Addido, J., & **Burrows, A. C.** (April 2022). *Science teacher education: Using conceptual change model to promote pre-service teachers' conceptual understanding of electrostatics*. AERA Roundtable Paper. San Diego, CA. April 25, 2022.
- 47) *Schwartz, A., & **Burrows, A. C.** (April 2022). *Integrated STEM discourse: A teacher professional development STEM activity*. American Education Research Association (AERA) Roundtable Paper. San Diego, CA. April 24, 2022.

- 46) Guffey, K., **Burrows**, A., & Schwartz, A. (March 2022). *Impact of STEM professionals engaging with students in title one schools*. National Association of Research in Science Teaching (NARST) Roundtable Paper. Vancouver, BC. March 29, 2022.
- 45) *Addido, J., & **Burrows**, A. C. (March 2022). *Addressing pre-service teachers' misconceptions and promoting conceptual understanding through the conceptual change model*. National Association of Research in Science Teaching (NARST) paper. Vancouver, BC.
- 44) **Burrows**, A. C., & Kilty, T. (2022). *Secondary science preservice teachers: Technology integration in methods and residency*. Association for Science Teacher Education (ASTE) Paper. Greenville, SC. Jan. 8, 2022.
* *The National Technology Leadership Initiative (NTLI) Award finalist paper*
- 43) Kilty, T., & **Burrows**, A. C. (Jan 2022). *Instructional planning modifications to meet social distancing requirements*. Association for Science Teacher Education (ASTE) Paper. Greenville, SC. Jan. 8, 2022.
* *The National Technology Leadership Initiative (NTLI) Award finalist paper*
- 42) *Schwartz, A., & **Burrows**, A. C. (Jan 2022). *Listening to find integrated STEM discourse: Power and positioning during a teacher professional development STEM activity*. Paper. Greenville, SC/Virtual. Jan. 7, 2022.
- 41) *Addido, J., & **Burrows**, A. C. (2022). *Science teacher education: Using conceptual change model to promote pre-service teachers' conceptual understanding of electrostatics*. Association for Science Teacher Education (ASTE) Paper. Greenville, SC. Jan. 6, 2022.
- 40) Borowczak, M., **Burrows**, A. C., & *Johnson, M. (2021). *WySLICE – Integrating computer science throughout existing K-12 core disciplinary areas*. Paper presentation at the Annual Meeting of the American Society for Engineering Education (ASEE). July 26, 2021.
- 39) *Northrup, A., & Floyd, R., Dechert, S. R., & **Burrows**, A. C. (2021). *Coding is the new coal: A history of integrating computer science across Wyoming's K-12 curriculum*. Paper presentation at the Annual Meeting of the American Society for Engineering Education (ASEE), Virtual. July 26, 2021.
- 38) *Mugayitoglu, B., Borowczak, M., & **Burrows**, A. C. (2021). *Designing a creative cybersecurity micro-credential for educators: Challenges and successes of K-12 teacher professional development*. Paper presentation at the Annual Meeting of the American Society for Engineering Education (ASEE), Virtual. July 26, 2021.
- 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 12th International Conference on Education, Training, and Informatics (ICETI 2021), Virtual. March 9-12, 2021.
* *Selected as one of the 'Best Papers' of the conference*

- 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, Virtual. 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

- 99) Schwartz, A., **Burrows Borowczak, A.**, Myers, A., & Dale D. (2023). Analysis of graduate physics and astronomy programs PER/AER. Poster session at the 2023 International Conference of the National Association for Research in Science Teaching (NARST). Virtual poster - April 2023.
- 98) Schwartz, A., **Burrows Borowczak, A.**, Myers, A., & Dale D. (2023). Analysis of graduate physics and astronomy programs. Poster session at the 2023 International Conference of the Association for Science Teacher Educators (ASTE). Jan 13, 2023.
- 97) Borowczak, M., **Burrows Borowczak, A.**, & Kinskey, M. (2023). Review of lesson plan creation and implementation of integrated STEM concepts. Poster session at the 2023 International Conference of the Association for Science Teacher Educators (ASTE). Jan 12, 2023.
- 96) Ellis, J., Schwartz, A., Hickman, B., **Burrows Borowczak, A. C.**, and other chapter authors (2023). Theoretical and practical teaching strategies for K-12 science education in the digital age. Roundtable presentation at the conference of the Association for Science Teacher Educators (ASTE). Jan 12, 2023.
- 95) *Wolf, S. M., *Wolf, S., *Hu, H., **Burrows, A. C.**, & Borowczak, M. (2022). *The artful craft of improving virtual summer camps in the midst of COVID-19 (WIP)*. American Society for Engineering Education (ASEE) Paper. Minneapolis, MN. June 27, 2022.
- 94) **Burrows, A. C.** (2022). PCEE Business Meeting. Chair's presentation and business meeting of the Pre-collegiate Engineering Education (PCEE) Division at the American Society of Engineering Education (ASEE). Minneapolis, MN. June 27, 2022 (1:45 pm CDT)

- 93) Malinowski, P., Kern, B. D., Wallhead, T. L., & **Burrows**, A. (2022, April). Investigating Physical Educators' Adoption of Models-Based Practices. In *Research Quarterly for Exercise and Sport* (Vol. 93, pp. A96-A97). 2-4 Park Square, Milton Park, Abingdon OX14 4RN, Oxon, England: Routledge Journals, Taylor & Francis LTD. (April 28, 2022)
- 92) Milman, N., Mouza, C., Heath, M., **Burrows**, A. C., Krutka, D., & Meier, H. (June 2022). *Contemporary issues in technology and teacher education*. Poster session at the American Educational Research Association (AERA). San Diego, CA. Friday, April 22, 2022.
- 91) Hartshorne, R., Ferdig, R., Bull, G., **Burrows**, A. C., Dennen, V., Lin, L., Milman, N. (2022). *What editors wish authors knew about academic publishing*. Society for Information Technology and Teacher Education (SITE) Conference Panel – Invited presentation. San Diego, CA and virtual, April 13, 2022.
- 90) Schwartz, A., & **Burrows**, A. C. (March 2022). *Listening to Find Integrated STEM Discourse: Power and Positioning During a Teacher Professional Development STEM Activity*. National Association of Research in Science Teaching (NARST) poster. Vancouver, BC. March 29, 2022.
- 89) Borowczak, M., Mugayitoglu, B., & **Burrows**, A. C. (2021). *K-12 teachers experiences of cybersecurity during the microcredential*. On-demand video at the NICE K-12 Cybersecurity Interactive Conference (NICE K-12), Virtual. Dec. 6, 2021.
- 88) *Schwartz, A., & **Burrows**, A. C. (2021). *Listening to find integrated STEM discourse: Power and positioning during a teacher professional development STEM activity*. Poster presented at the New England Section of the American Physical Society and American Association of Physics Teachers (AAPT-NES) Joint Regional Fall Meeting, Online, October 22-23, 2021.
- 87) **Burrows**, A. C., **Borowczak, M., Mugayitoglu, B., *Kennedy, C., *Carson, A., Person, C., & Finch, A. (2021). *Assisting K-12 Teachers to make the connection between computational thinking in cybersecurity unplugged activities and mathematical mindset through A cybersecurity micro-credential*. Poster presentation at the virtual Annual Meeting of the Society for Information Technology and Teacher Education (SITE), Virtual. March 30, 2021.
- 86) Mugayitoglu, B., **Borowczak, M., **Burrows**, A. C., *Finch, A., *Kennedy, C., *Carson, A., & *Person, C. (2021). *Lessons learned on integrating STEM into a micro-credential cybersecurity course for K-12 teachers: Results of two pilot studies*. Poster presentation at the virtual X-DBER Conference hosted by University of Nebraska. March 3, 2021.
- 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., **Burrows**, A. C., Albeke, S., *Manandhar, R., & **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 29th 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 26th 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 ITEEST 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). *21st 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 125th 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 21st 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

- 8) **Burrows Borowczak, A.C. and other panelists. (May 15, 2023)** GenCyber Conference. Invited by Cheryl Brewer, GenCyber Program Office.
- 7) **Burrows, A.C. and other panelists. (September 22, 2021)** Wyoming Blockchain Stampede: What should the future of computing education look like? Invited by Dr. Bryan Shader. University of Wyoming sponsored and nationally/internationally broadcasted.
- 6) **Burrows, A. C. (May 26, 2021)** *STEAM Talks: STEAM Teachers.* Invited by Dr. Margarida Marques and Susana Ambrosio. Universidade de Aveiro (Portugal).
- 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. (Apr 17 – 21, 2020)** *Contemporary Issues in Technology and Teacher Education* [Invited Roundtable]. American Educational Research Association (AERA) Annual Meeting San Francisco, CA <http://tinyurl.com/s3s766x> (Conference Canceled)
- 3) **Burrows, A.C. and two other panelists. 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) **Burrows, A.C. 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) **Burrows, A.C. 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

- 41) **Buss, A., Burrows, A. C., & Welsh, K. (2021).** *UW opportunities for professional development and grants.* Presentation at the Level Up Conference, Virtual. Nov 19, 2021.
- 40) **Burrows, A.C., & Borowczak, M. (2021).** *Integrating science and art: Microbes and more in silk batik.* Presentation (1 hour) at the Wyoming Full STEAM Ahead Conference. Casper, WY (in-person), October 2, 2021.

- 39) **Burrows, A.C.**, & Borowczak, M. (2021). *Integrating computer science into all disciplines*. Presentation (45 min) at the Wyoming 2021 Innovations in Learning Conference, Virtual. Cheyenne, WY, October 1, 2021.
- 38) Mugayitoglu, B., Borowczak, M., & **Burrows, A. C.** (2021). *Using a design thinking approach: Microcredential professional development in cybersecurity education for K-12 teachers*. Paper presented at the Rocky Mountain Section of the American Society for Engineering Education (RMS ASEE), Virtual. June 9, 2021.
- 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 10th 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 7th 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

- 16) Burrows, A. C. (2021). Presentation on partnership skills and conflict management. Invited by Dr. Ruben Gamboa and Dr. Mike Borowczak as an engineering senior design class Guest Speaker. University of Wyoming, Laramie, WY. Dec 7, 2021.
- 15) Burrows, A. C. (2021). Population Education. Invited by Lindsey Bailey from Population Education. Presented two model lessons in Dr. Amy Roberts EDEL 4109 – Elementary Education Humanities Methods – course. University of Wyoming, Laramie, WY. September 29, 2021.
- 14) Burrows, A. C. (2021). *UW President Seidel's Future forward Track of the Wyoming Blockchain Stampede*. University of Wyoming, Invited by Dr. Bryan Shader as a panelist for *Action Planning the Future Forward Vision*. University of Wyoming, Laramie, WY. September 23, 2021.
- 13) Burrows, A. C., (2021). *Grants, Fellowships, Other Funding, and the Research Template*. College of Education, Invited by Dr. Sara Axelson as a PRST 5610, Intro to Doc Studies, Guest Speaker. University of Wyoming, Laramie, WY. September 21, 2021.
- 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) Burrows, A.C. *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) Burrows, A.C. *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) Burrows, A.C. *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) Burrows, A.C. *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) Burrows, A.C. *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) Burrows, A.C. *Researcher Work and Practice in Science Education*, Invited by Dr. Slater for Colloquium – UW Science Education Speaker, University of Wyoming, Laramie, WY. Sept 27, 2016.
- 2) Burrows, A.C. *Science and Art Integration*, Wyoming State Science Fair – Junior Division Panel Speaker, University of Wyoming, Laramie, WY. March 2, 2015.
- 1) Burrows, A.C. *Math and Science Applications in Engineering*. Pre-Service Mathematics Education, University of Cincinnati, Cincinnati, OH. January 26, 2010.

GRANT ACTIVITY				
Year	Role	Grants <i>Since 2012:</i> Total funding: \$ 10,591,466 (~10.5M) Funding as PI: \$ 4,265,677 (~4.3M)	Budget Sponsor (Start/End Date)	Funding Status
The full grey rows indicate current/active (awarded) grants.				
2022	35) PI	<i>MilliporeSigma Outreach – The Artful Craft of Science (TACoS IX) - Summer 2023</i> [Team: Burrows & Borowczak]	\$17,000 MilliporeSigma (2022-2023)	52) Awarded
2022	Collaborator CoPI: WRNN Western States	<i>WRNN: Western Regional Noyce Network (Sub-award for Wyoming)</i> [Sub-award Team: Borowczak & Burrows]	\$150,000 of 4.2M NSF – Noyce (Oct '22-Sept '25)	51) Awarded
2022	34) PI Program Director	<i>GenCyber: Wyoming 2023 (Summer/Fall 2023)</i> <i>K-12 STEM Teachers & Students</i> [Team: Burrows & Borowczak]	\$324,700 DOD – NSA/NSF (Summer 2023)	50) Awarded
2022	33) PI	<i>Microsoft for Code.org Regional Trainer Support</i> [Team: Burrows & Borowczak]	\$35,000 Microsoft Corp. (Aug 2022 – July 2023)	49) Awarded (#2021030020)
2021	32) PI	<i>MilliporeSigma Outreach – The Artful Craft of Science (TACoS VIII) - Summer 2022</i> [Team: Burrows, Russel, & Borowczak]	\$17,000 MilliporeSigma (2021-2022)	48) Awarded
2021	31) PI	<i>Workshop: Human-Technology Interface Series – Pathways to Products (HTI Workshop)</i> [Team: Burrows, Campbell, Rose, Allen, Borowczak]	\$99,998 NSF ENG/IIP (Aug 2021 – July 2022)	47) Awarded (#2140283)
2021	Collaborator (whole grant) K12 EOD	<i>Environment & Water: Data Collection with Technology</i> [Team: Yang, Albeke, & Burrows]	\$1M of 20M NSF - EPSCOR (Sept 2022 - 2027)	Not funded
2021	30) PI Program Director	<i>GenCyber: Cyberstar Champions (Summer/Fall 2022)</i> <i>K-12 STEM Teachers & Students</i> [Team: Burrows & Borowczak]	\$174,998 DOD – NSA/NSF (Summer 2022)	46) Awarded (H98230-21-1-0129)
2021	29) PI	<i>Microsoft for Code.org Regional Trainer Support</i> [Team: Burrows & Borowczak]	\$26,000 Microsoft Corp. (Aug 2021 – July 2022)	45) Awarded (#2021030020)
2020	CoPI	<i>AI Institute: Cyberinfrastructure Innovation Transforming Data-Driven Scientific Discovery (AI4CI)</i> [Team: Allen, Burrows, Foster, Fox, Kotthoff]	\$20,000,000 NSF	Not funded
2020	CoPI	<i>RET: Supporting Teachers and Computing Knowledge (WySTACK)</i> [Team: Borowczak, Burrows, Kotthoff, Banic, Shukla]	\$600,000 NSF CNS RET (April 2021-Mar 2024)	44) Awarded (#2055621)

2020	28) PI Program Director	<i>GenCyber: Cyberstar Champions (Summer/Fall 2021)</i> <i>K-12 STEM Teachers & Students</i> [Team: Burrows & Borowczak]	\$125,000 DOD – NSA/NSF (Summer 2021)	43) Awarded (21-WY-UWYX-UV-C1)
2020	27) PI	<i>MilliporeSigma Outreach – The Artful Craft of Science (TACoS VII) - Summer 2021</i> [Team: Burrows, Russel, & Borowczak]	\$17,000 MilliporeSigma (2020-2021)	42) Awarded
2020	26) PI	<i>Microsoft Code.org Regional Support</i> [Team: Burrows & Borowczak]	\$25,800 Microsoft Corp. (Aug 2020 – July 2021)	41) Awarded (# 2020020014)
2019	25) PI Program Director	<i>GenCyber: Cyberstar Champions (Summer/Fall 2020)</i> <i>K-12 STEM Teachers</i> [Team: Burrows & Borowczak]	\$99,909 DOD – NSA/NSF (March 2020-Oct 2020)	40) Awarded (20-WY-UWYX-UV-T1)
2019	24) PI	<i>MilliporeSigma Outreach – The Artful Craft of Science (TACoS VI) - Summer 2020</i> [Team: Burrows, Russel, Borowczak, & Kilty]	\$17,000 MilliporeSigma (2019-2020)	39) Awarded
2019	23) PI	<i>(CS) Micro-credentials for Wyoming</i> [Team: Burrows & Borowczak]	\$396,000 WDE (Sept. 2019 – Dec. 2023)	38) Awarded
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	22) PI	<i>Microsoft Code.org Regional Support</i> [Team: Burrows & Borowczak]	\$16,000 Microsoft Corp.	37) Awarded (# 2019030011)
2019	21) PI	<i>Code.org Education GA & Outreach</i> [Team: Burrows & Borowczak]	\$123,330 Code.org (\$74,330 + \$49,000)	36) Awarded
2019	CoPI	<i>CS4ALL: Booting Up Computer Science in Wyoming (WySLICE)</i> [Team: Borowczak, Burrows, Kotthoff, & Myers]	\$999,929 NSF DRL (Aug 2019 - July 2022)	35) Awarded (#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</i> [Team: Borowczak, Burrows]	\$499,997 NSF SaTC: DGE	Not funded
2019	20) PI	<i>MilliporeSigma Outreach – The Artful Craft of Science V (TACoS V) - Summer 2019</i> [Team: Burrows, Russel, & Borowczak]	\$17,000 MilliporeSigma (2018-2019)	34) Awarded
2018	19) PI	<i>Teacher Extensions in Wyoming: Canvas and Beyond</i> [Team: Burrows & Borowczak]	\$75,113.46 WDE Title IIA (2018)	33) Awarded
2018	PI	<i>GenCyber: K12 STEM Teachers</i> [Team: Borowczak & Burrows]	~\$99,000 DOD – NSA (March 2019-Sept 2019)	Not funded

2018	18) PI Program Director	<i>GenCyber (Summer 2019)</i> <i>Casper (K-12 students)</i> [Team: Burrows & Borowczak]	\$99,970 DOD – NSA/NSF (March 2019-Sept 2019)	32) Awarded
2018	CoPI	<i>CS4ALL: Booting Up Computer Science in Wyoming</i> [Team: Borowczak, Burrows, Caldwell, Gamboa, & Northrup]	\$996,911 NSF EHR	Not funded
2018	17) PI	<i>RAMPED: Robotics, Applied Mathematics, Physics, and Engineering Design II</i> <i>(COWPOKES – IoT – Summer 2018)</i> [Team: Burrows, Borowczak, Myers & Banic]	\$297,612 DOE, WDE MSP (Jan 2018-Sept 2018)	31) Awarded (#WY1601506 MSPA2)
2018	16) PI	<i>MilliporeSigma Outreach – The Artful Craft of Science IV (TACoS IV) - Summer 2018</i> [Team: Burrows, Haynes, Russel, & Borowczak]	\$16,900 MilliporeSigma (2017-2018)	30) Awarded
2018	CoPI	<i>INFEWS</i> [Team: Wang, Burrows, and others]	~3M NSF NRT	Not funded
2017 - 2018	CoPI	<i>LIFT: Learning to Integrate Fundamentals through Teaching</i> [Team: McBride, Kilty, Welsh, Burrows]	\$649,991 NSF IUSE: HER (October 2018-2021)	29) Awarded (# 1821566)
2017	CoPI	<i>SWEEP</i> [Team: Borowczak, Burrows, Belmont, Wang, & Muknahallipatna]	~2 M NSF IUSE: EHR	Not funded
2017	CoPI	<i>CROSSWIND</i> [Team: Borowczak, Burrows]	~300K NSF SaTC: EDU	Not funded
2017	External Evaluator	<i>PIER Network</i> [Team: Krasnow, Cook, Welsh, & Burrows]	~330,000 NSF - AISL	Not funded
2017 - 2018	15) PI Program Director	<i>GenCyber (Summer 2018)</i> <i>Ts & Ss: Riverton & Laramie</i> [Team: Borowczak & Burrows]	\$99,976 DOD – NSA/NSF (March 2018-Sept 2018)	28) Awarded
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</i> [Team @ time of award: Leonard, Burrows, Gellis, Kitchen, & Verma]	\$1,199,884 NSF DRL ITEST (March 2018-2021)	27) Awarded (# 1757976)
2017	Collaborator 14) PI: WRNA WY& CO	<i>WRNA: Western Regional Noyce Alliance (Sub-award for Wyoming)</i> [Sub-award Team: Burrows & UNC/Reinsvold]	\$180,000 of 3M NSF – Noyce (April 2018-Mar 2022)	26) Awarded (# 1745263)
2017	CoPI	<i>ESP4T – Engineering Summer Program for Teachers (Summer 2018)</i> [Team: Muknahallipatna, Kubichek, Anderson, Burrows, & Parker]	\$300,000 College of Engineering & Applied Science (July 2018 – June 2019)	25) Awarded
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 [Team: Burrows, Borowczak, Muknahallipatna, Kubichek, Dousay, & Anderson]</i>	\$1,999,997 NSF IUSE: EHR	Not funded
2017	PI	<i>KEEN Award for Engineering Module Implementation</i>	\$2,000 KEEN	Not funded
2017	13) PI	<i>MilliporeSigma Outreach – The Artful Craft of Science III (TACoS III – Summer 2017) [Team: Burrows, Haynes, Russel, & Borowczak]</i>	\$16,900 MilliporeSigma (2016-2017)	24) Awarded
2016	CoPI	<i>ESP4T – Engineering Summer Program for Teachers (Summer 2017) [Team: Muknahallipatna, Kubichek, Anderson, Burrows, & Parker]</i>	\$425,400 College of Engineering and Applied Science (July 2017 – June 2018)	23) Awarded
2016	Senior Personnel	<i>EasyNano: Combined Experimental and Visual Simulation Based Nanoelectronics (Based out of Univ. of North TX) [Team: Mohanty, Rout, & Burrows]</i>	\$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 [Team: Leonard, Burrows, Gamboa, McBride, & Davis]</i>	\$1,199,416 NSF DRL ITEST	Not funded
2016	CoPI	<i>Training Requirements for Sustainable, High Performance Building Operations [Team: Wang & Burrows]</i>	\$52,537 ASHRAE	Not funded
2016	Collaborator (whole grant) 12) PI: K12 EOD	<i>Making Wyoming's Microbial Life Accessible: Expanding Public Outreach Using a Data Discovery & Visualization Tool – K12 EOD, Outreach, & Diversity [Team: Burrows & Albeke]</i>	\$349,500 of 20M NSF - EPSCOR (Sept 2017-Aug 2022)	22) Awarded (#EPS #1655726)
2016	11) PI	<i>Biology Active Learning Through Order of Magnitude (BAL-OoM) [Team: Burrows, Borowczak, & Kost]</i>	\$1,000 UW Biology Department	21) Awarded
2016	10) PI	<i>MilliporeSigma Outreach – The Artful Craft of Science II (TACoS II – Summer 2016) [Team: Burrows, Haynes, Myers, & Russel]</i>	\$10,000 Sigma Aldrich (2015-2016)	20) Awarded
2016	External Evaluator	<i>More than Just a Scientist – Preparing STEM Graduate Students for a Diverse World [Team: McBride, Candelaria, Katzmann, Welsh, & Burrows]</i>	\$499,977 NSF NRT-IGE	Not funded
2016	External Evaluator	<i>MEDTRACK [Team: Amos, Bashir, Boppart, Mariscalco, & Burrows]</i>	~\$500,000 NSF NRT	Not funded
2015	Consultant and External Evaluator	<i>Biosensing for Health: Introducing Research Experiences into Engineering Undergraduate Education [Team: Novak, Wright, Kubichek, Muknahallipatna, & Burrows]</i>	\$298,900 Keck Foundation Undergraduate Education Program	Not funded
2015	9) PI	<i>RAMPED: Robotics, Applied Mathematics, Physics, and Engineering Design (Summer 2016) [Team: Burrows, Myers, Kubichek, Muknahallipatna, Hurley, & Borowczak]</i>	\$211,355 DOE, WDE MSP (2016-2017)	19) Awarded (#WY1601506 MSPA2)

2015	8) PI	<i>Sigma Aldrich Outreach – The Artful Craft of Science (TACoS – Summer 2015)</i> [Team: Burrows & Russell]	\$10,000 Sigma Aldrich/ UW Foundation (2014-2015)	18) Awarded
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	7) PI	<i>Biology Active Learning Through Computer Science (BAL-CS)</i> [Team: Burrows, Borowczak, & Kost]	\$1,000 UW Biology Department	17) Awarded
2015	CoPI	<i>Science and Art Integration</i> [Team: Dambekalns & Burrows]	\$1,200 UW Secondary Education	16) Awarded
2015	Senior Personnel	<i>RH 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 & STEM Integration (LASSI) – Year 2 Expanded</i> [Team: Burrows & Myers]	~\$166,183 DOE, WDE MSP (2015-2016)	Not funded
2014	CoPI	<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> [Team: Myers & Burrows]	\$176,197 NSF AST (Aug 2015 - Dec 2017)	15) Awarded (# 1515404)
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	<i>PhysTec at UW – Recruiting Physics Teachers</i> [Team: Dale, Slater, & Burrows]	\$19,841 Physics Teacher Education Coalition (APS, AAPT, NSF) (2014-2016)	14) Awarded
2014	6) PI	<i>Science (STEM) Summer Camp 2014</i> [Team: Burrows]	\$17,000 Ellbogen Dean’s Excellence Fund (2014)	13) Awarded
2014	5) PI	<i>Educational STEM Integration</i> [Team: Burrows]	\$4,060 Summer Graduate Research – Graduate Student Enhancement (2014)	12) Awarded
2014	4) PI	<i>Launching Astronomy: Standards & STEM Integration (LASSI)</i> [Team: Burrows & Myers]	\$165,191 DOE, WDE MSP (2014-2015)	11) Awarded (#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)	10) Awarded

2013	3) PI	AAC&U Conference Award	\$2,000 UW Assessment Mini-Grant	9) Awarded
2013	2) PI	<i>Sustaining Wyoming's Advancing Reach in Mathematics and Science (SWARMS)</i> [Team: Burrows, Slater, Jafari, Dale, & Northrup]	\$1,186,365 NSF DUE Noyce (2014 – 2021)	8) Awarded (# 1339853)
2013	1) PI	<i>Mary Garland Early Career Fellowship</i> [Team: Burrows]	\$25,000 UW College of Education (2013-2015)	7) Awarded
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 NSF ITEST (Oct 2013 - Dec 2017)	6) Awarded (# 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 NSF AST (Sept 2012- Dec 2016)	5) Awarded (# 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 P	Not funded
2012	External Evaluator	<i>Flooding the Fields with Problem Based Learning</i> (Year 1) <i>Biodiversity</i> (Year 2) [Team: Forrester, Flaherty, & Burrows]	~\$300,000 DOE, WDE MSP (2012 - 2013)	4) Awarded
2012	CoPI	<i>Robotics for the 21st Century.</i> [Team: Slater, Dale, Burrows & Haynes]	\$207,156 DOE, WDE MSP (2012 - 2013)	3) Awarded
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 NSF (2007 -2 012)	2) Awarded
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)	1) Awarded

PROFESSIONAL AFFILIATIONS

AAC&U	Association of American Colleges and Universities	
AAS	American Astronomical Society	
AERA	American Educational Research Association	Elected STL, CIAE, & AR SIG chair
ASEE	American Society for Engineering Education	Elected Member-at-Large & PCEE chair
ASTE	Association for Science Teacher Education	CITE Co-Editor; Elected Director-at-Large & Pres
NSTA	National Science Teaching Association	
NARST	National Association for Research in Science Teaching	
SITE	Society for Information Technology and Teacher Education	Elected Sci Ed SIG Chair

SERVICE***National/International***

- External Reviewer – Invited peer review for a science education tenure & promotion case; Letter of recommendation returned to Louisiana State University in February **2023**.
- External Reviewer – Invited peer review for a science education tenure & promotion case; Letter of recommendation returned to Tennessee Tech in October 2021.
- External Reviewer –Invited peer review for a science education tenure & promotion case; Letter of recommendation returned to Texas Tech University in September 2021.
- External Reviewer –Invited peer review for a science education tenure & promotion case; Letter of recommendation returned to Utah State University in September 2021.
- External Reviewer –Invited peer review for a science education tenure & promotion case; Letter of recommendation returned to the University of Central Florida in June 2021.
- 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 2019-2022.
- 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:

3-year Elected Position (Jan 2022-2025)

Association for Science Teacher Education (ASTE)
President elect 2022, President 2023, Past president 2024

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 apt.)

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 Articles¹ and Conference Papers²:

Action in Teacher Education¹, 2013, 2016-**present**

Action Research Journal¹, 2013

American Society for Engineering Education² (ASEE), 2011, 2015-**present**

American Educational Research Association² (AERA), 2011-2013, 2015-**present**

Asia-Pacific Education Researcher¹, 2012

Association for the Advancement of Computing in Education (AACE),

JCMST – Journal of Computers in Math & Science Teaching¹ - 2012

Association for Science Teacher Education² (ASTE), 2012 - **present**

Contemporary Issues in Technology & Teacher Education¹ (CITE), '13- **present**

Educational Action Research¹, 2018

Educational Research and Reviews¹, 2015

Innovations in Science Teacher Education¹ (ISTE), 2016 – **present**

International Journal of STEM Education¹, 2019

Journal of Engineering Education¹ (JEE), 2019

Journal of Research in Science Teaching¹ (JRST), 2018

Journal of Science Teacher Education¹ (JSTE), 2016, 2017, 2018, 2019

Journal of STEM Education¹, 2014

Linguistics and Education¹, 2012, 2014

MDPI¹ (e.g., Education Sciences, Sustainability), 2017 - **present**

National Association of Research in Science Teaching² (NARST), 2008, '10, '15

Physical Review Physics Education Research¹ (PRPER), 2017, 2018

Sage Open¹ (Article editor), 2017, 2018

School Science and Mathematics Journal¹ (SSMJ), 2018

Society for Information Technology & Teacher Education² (SITE), 2016- **present**

Teaching and Teacher Education¹, 2017- **present**

The Teacher Educator¹, 2019

The Science Education Review¹, 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 virtual summer camp for teachers for GenCyber. NSA/NSF grant. Program Director: A. Burrows. October 2021.
- Presenter/Organizer, STEM virtual summer camp for upper 5th, and 6th graders for TACoS VI (The Artful Craft of Science – Take 7). UW Foundation/MilliporeSigma grant. PI: A. Burrows. July 2021.
- Presenter/Organizer, WySLICE grant. NSF CSforAll. CoPI: A. Burrows. July 2021.
- Director/Organizer, Code.org follow-up workshop for 15 K-12 teachers. July 26-30, 2021.
- Presenter/Organizer, Cybersecurity virtual summer camp for teachers for GenCyber. NSA/NSF grant. Program Director: A. Burrows. October 2020.
- Presenter/Organizer, STEM virtual summer camp for upper 5th, and 6th 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 8th-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 5th, and 6th 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 8th-12th graders for GenCyber: COWPOKES. NSA/NSF grant. Program Director: A. Burrows. July 2-6, 2018.
- Presenter/Organizer, STEM summer camp for upper 4th, 5th, and 6th 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 4th, 5th, and 6th 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 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 4th, 5th, and 6th 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 4th, 5th, and 6th 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 (2nd – 5th 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 & 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 21st 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 21st 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

- Non-Academic Student Appeal Committee (Chair – Dr. King), 2021-2022
- External member for RTP for College of Health Sciences, 2020- present
- University Course Review Committee for CoE, 2020 - present
- University Assessment Committee, CoE representative, 2020 – present
- Honors College Council Member, CoE representative, 2020 – present
- 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- 2022
- Noyce-UW (active RSO) Sponsor, 2015-2022
- 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 - 2022
Associate Director for Field Placements – Spring 2020
Co-Chair New Faculty Mentor Group, 2019- 2020
New Faculty Mentor (mentee: Dr. Lee), 2018- 2022
TEI Pilot and Implementation Design Team (CIS), 2018- 2022
Coordinator, School of Teacher Education Graduate Certificate, 2017-2022
Chair (2018-20), College of Education Student Appeals Committee, 2014 – 2020
Coordinator, Secondary Science concurrent majors, 2011-2020
UW College of Education Ambassadors (active RSO) Sponsor, 2013 – 2022
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

<i>Graduate Advising</i>	<i>Admit</i>	<i>Program</i>	<i>Thesis Topic</i>	<i>Role</i>
<i>UCF</i>				
<i>Katherine Deiter-Cruz</i>	2018	Ph.D.	Science Identity	Chair
<i>Gay Brielle Crawford</i>	2019	Ed.D.	STEM Education	Chair
UWyo Graduates (Chair of Committee graduates listed here; For all mentored graduates see end of CV)				
Amanda Carson	2020	2022 M.A.	Science Education – Micro-credentials	TBD
Andy Merritt	2020	2022 M.A.	TeachEngineering Lessons in Chemistry	Classroom Teacher
Johannes Addido	2019	2022 Ph.D.	Conceptual Change in Physics Education	ETS
Astrid Northrup	2016	2022 Ph.D.	Implementation of Universal K-12 Computer Science Education in Wyoming: A Qualitative and Quantitative Study	Professor, NWC
Andria Schwartz	2013	2021 Ph.D.	Physics: Quasars; Education: Expert/Novice STEM Interaction	Professor – Quinsigamond CC
Colton Lewer	2018	2021 M.S.N.S.	Place Based Education in Classrooms	Teacher, WY
Caitlin Kennedy	2019	2021 M.A.	Science Outreach – Place-based Ed.	Teacher Glendale, AZ
Kyle Mogensen	2019	2021 M.A.	Code.org Implementation in Wyoming	Teacher
Caitlin Person	2020	2021 M.A.	Integrated STEM Implementation in CS Lesson Plans	Para-professional Laramie, WY
Nycole Marsh	2019	2020 M.A.	Short-term Professional Development: STEM Teachers and Noyce Scholars	Teacher, Minden, NV
Trina J. Kilty	2013	2019 Ph.D.	Technology Integration & Science Ed: Instr Design & Tech Perspective	Post-doc: CEAS Laramie, WY
John Olson	2016	2018 M.S.N.S.	AR & Nature of Science	Teacher Douglas, WY
Jacob Schell	2016	2018 M.A.	GIS – STEM Lessons TeachEngineering.org	Teacher, Jackson, WY
Debbie A. French	2013	2016 Ph.D.	Snapshots of Authentic Scientific Inquiry & Teacher Preparation: STEM Courses, PST & IST Experiences	Asst Professor, Wake Forest University, NC
Meghan Lockwood	2014	2016 M.S.N.S.	Addressing Three-Dimensional Learning w/ Citizen Science Projects	Game & Fish, Cheyenne, WY
Christina Belardo	2014	2015 M.S.N.S.	STEAM Integration with Art: A Renewed Reason for STEAM in the K12 Classroom	Walking Mtns. Sci. Center, CO
Samantha Suter	2012	2015 M.A.	Impact of Teacher Reflection on Student Learning Gains: Action Research Study	Teacher, Snowy Range, WY

OTHER PROFESSIONAL DEVELOPMENT

- 15) Council of Academic Deans from Research Education Institutions (CADREI), St. Petersburg, FL, October 2022
- 14) Institute for Academic Leadership, Howey-in-the-Hills, FL, September 2022
- 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

- Oviedo Life Magazine (Burrows Borowczak featured as new UCF CCIE STE Director), May 2023
- Laramie Boomerang (Burrows featured as educational technologies expert) - March 25, 2022 - Leveling up: LHS math students connect with education on another plane with virtual reality
https://www.wyomingnews.com/laramieboomerang/news/leveling-up-lhs-math-students-connect-with-education-on-another-plane-with-virtual-reality/article_0b100c26-90b8-5ea3-916e-f1c06b56376a.html
- UW News story on Human Technology Interface (HTI) grant (Burrows featured as PI and education expert): October 7, 2021 – UW Receives NSF Grant to Promote Lifelong Learning with New Technologies.
<http://www.uwyo.edu/uw/news/2021/10/uw-receives-nsf-grant-to-promote-lifelong-learning-with-new-technologies.html>
- Powell Tribune story on Computer Science in Wyoming (Burrows featured as co-author): June 3, 2021 – Teachers in Northwest Wyoming Receive Computer Science Endorsement
<https://www.powelltribune.com/stories/teachers-in-northwest-wyoming-receive-computer-science-endorsement,32150>
- UW News story on NSF WySLICE grant (Burrows featured as CoPI and education expert): April 14, 2021 – UW WySLICE Program Readies K-8 Teachers, Librarians to Meet Future State Computer Science Requirements.
<http://www.uwyo.edu/uw/news/2021/04/uw-wyslice-program-readies-k-8-teachers,-librarians-to-meet-future-state-computer-science-requirements.html>
- 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
- UW News story on Burrows’ Award: January 19, 2021 – UW Professor Names ASTE Outstanding Science Teacher Educator of the Year.
<http://www.uwyo.edu/uw/news/2021/01/uw-professor-named-aste-outstanding-science-teacher-educator-of-the-year.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/FMfcgxwGDDjrSflqpTgnLpfmrWQqWgzzr?compose=DmwnWrRpdLjQhFhlGVnRVLxBhxXrjilJPBhnJNpZGhSkLSPXsvphGwsgXDzSzXSzmlmKPbTvwwfG>

- 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
- 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*. <http://www.uwyo.edu/uw/news/2019/12/uw-education-students-support-out-of-this-world-experience-for-wyoming-pupils.html>
- Foresight – UW College of Engineering and Applied Science (CEAS) story on WYSLICE (Burrows CoPI); Nov. 19, 2019 - *\$1 Million Grant Promotes Computer Science Education in Wyoming*. https://issuu.com/uwyo/docs/foresight_fall19_web
- Foresight – UW College of Engineering and Applied Science (CEAS) story on Code.org (Burrows Director); Nov. 19, 2019 – *UW’s Partnership with Code.org to Improve K-12 Computer Science Instruction*. https://issuu.com/uwyo/docs/foresight_fall19_web
- The Sheridan Press story (Burrows expertise with Wyoming Computer Science Standards); Oct. 25, 2019 – *Computer Science: Students Undertake Cutting-Edge Venture*. <https://thesheridanpress.com/114304/students-undertake-cutting-edge-venture/>
- Laramie Boomerang on the NSF CSforAll grant WySLICE (Burrows CoPI); Aug. 19, 2019 – *UW’s WySLICE Awarded Grant to Help Bring Computer Science to 150 Teachers Statewide*. https://www.laramieboomerang.com/news/local_news/uw-s-wyslice-awarded-grant-to-help-bring-computer-science/article_6c479e86-1613-5abe-a4cb-d8140bf9b83a.html
- New York Times story on the partnership with Code.org (Burrows Regional Partner Director); Aug. 10, 2019 – *How a State Plans to Turn Coal Country into Coding Country*. <https://www.nytimes.com/2019/08/10/us/wyoming-computer-science.html>
- Casper Star Tribune story on NSF CSforAll grant WySLICE (Burrows CoPI); Aug. 9, 2019 – *UW helps bring nearly \$1 million to Equality State to Support Computer Science Push*. https://trib.com/news/state-and-regional/govt-and-politics/education/uw-helps-bring-nearly-million-to-equality-state-to-support/article_00707944-e97a-597f-9824-dfb6a8f3cbe5.html#tracking-source=home-the-latest
- Wyo4News story on NSF CSforAll grant WySLICE (Burrows CoPI); Aug. 8, 2019 – *Three-Year Grant to UW Promotes Computer Science Education in Wyoming*. <https://wyo4news.com/news/three-year-grant-to-uw-promotes-computer-science-education-in-wyoming/>
- UW News story on the NSF CSforAll grant WySLICE (Burrows CoPI); Aug. 8, 2019 – *Three-Year Grant to UW Promotes Computer Science Education in Wyoming*. <http://www.uwyo.edu/uw/news/2019/08/three-year-grant-to-uw-promotes-computer-science-education-in-wyoming.html>
- Foresight – UW College of Engineering and Applied Science (CEAS) story on GenCyber (Burrows PI); Winter 2019 – *GenCyber Program Educates Wyoming Youth*. https://www.uwyo.edu/ceas/dean/publications/foresight/2019/foresight_winter2019_web.pdf
- Wyo4News story on the Code.org Regional Partner status (Burrows Regional Partner Director); July 23, 2019 – *UW Partners with Code.org to Improve K-12 Computer Science Instruction*. <https://wyo4news.com/news/uw-partners-with-code-org-to-improve-k-12-computer-science-instruction/>
- UW News Story regarding Burrows’ role as director for Code.org Regional Partner; July 23, 2019 – *UW’s Partnership with Code.org to Improve K-12 Computer Science Instruction*. <http://www.uwyo.edu/uw/news/2019/07/uws-partnership-with-code.org-to-improve-k-12-computer-science-instruction.html>

- UW News Story regarding teaching CS in STEM courses led by PI Burrows; Nov 19, 2018 - *K-12 Teachers get Jumpstart on Integrating Computer Science into Curriculum at UW Camp*. <http://www.uwyo.edu/uw/news/2018/11/k-12-teachers-get-jumpstart-on-integrating-computer-science-into-curriculum-at-uw-camp.html>
- STEM for All 2018 Video Showcase led by PI A. Burrows; May 13, 2018 – *RAMPED II and STEM Integration*. <http://videohall.com/p/1223>.
- UW News Story regarding teaching science methods led by Burrows; Nov 9, 2017 - *Future Science Teachers Gain Hands-On Experience at UW*. <http://www.uwyo.edu/uw/news/2017/11/future-science-teachers-gain-hands-on-experience-at-uw.html>
- 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>
- NSF Day at the University of Wyoming with panel member A. Burrows; May 3, 2017 – *Join us for NSF Day at the University of Wyoming, Laramie*. https://www.nsf.gov/events/event_group.jsp?group_id=20013
- UW News Story regarding a MilliporeSigma sponsored event set up by A. Burrows. April 5, 2017 – *Curiosity Cube Brings Science to UW April 11-12* <http://www.uwyo.edu/uw/news/2017/04/curiosity-cube-brings-science-to-uw-april-11-12.html>
- UWyo Magazine. January 2017. *Strengthening STEM Education*. <http://online.publicationprinters.com/launch.aspx?eid=7916cf7b-07f4-405a-9ed1-3486299d9fea>
- 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://thesh Sheridanpress.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>

Wyoming Public Radio (WPR) guest. (July 18, 2016). *Robotics Workshops Provide New Tools for Wyoming Teachers*. <http://wyomingpublicmedia.org/post/robotics-workshops-provide-new-tools-wyoming-teachers>

ASTE Newsletter. (June 2016). Newsletter features *CITE Journal* article (p. 7). Enabling Collaboration and Video Assessment: Exposing Trends in Science Pre-service Teachers' Assessments. <http://theaste.org/wp-content/uploads/2012/11/Spring-16-Final2.pdf>

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).

SWARMS/NSF Noyce Grant information for UW community.

<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.

<http://www.uwyo.edu/uw/news/2015/02/uw-stem-opportunities-abound-for-wyoming-students-this-summer-.html>

Or see <http://www.uwyo.edu/wystem/03-summer-programs-for-students-list.html>

UW Blackboard Article. (Fall 2014). *Secondary Education Department faculty members reach out to Wyoming*.

http://www.uwyo.edu/education/_files/bb-archive/finalfall2014blackboard.pdf

- UW Blackboard Article. (Fall 2014). *National Science Foundation grants fund science, mathematics teaching certification.*
http://www.uwyo.edu/education/_files/bb-archive/finalfall2014blackboard.pdf
- UW Website: College of Education College News Feature for 2013. (October 21, 2014). *Student-created lessons address common science misconceptions.*
<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
- Star Tribune. Casper, Wyoming. (October 25, 2013). *NSF Grant to help train future teachers at UW.*
http://trib.com/news/local/education/university-of-wyoming-wins-grant-to-teach-math-science-teachers/article_8e301b3f-69b7-58a4-b9d7-0fee8e06769d.html
- Laramie Boomerang. Laramie, Wyoming. (October 18, 2013). *UW receives \$1.2 million NSF grant to train 70 math, science teachers.*
<http://www.laramieboomerang.com/articles/2013/10/18/news/doc5260a4604e44a162420880.txt>
- UW Website: College of Education College News Feature for 2013. (October 10, 2013). *Student-created lessons address common science misconceptions.*
<http://www.uwyo.edu/education/news/2013/2013%20science%20lessons.html>
- UW Website: College of Education College News Feature for 2012. (October 11, 2012). *Class constructs standards-based science lessons.*
<http://www.uwyo.edu/education/news/2012/science%20lessons.html>
- Wyoming Public Radio (WPR) guest. (September 28, 2012). *A new teacher assessment could help UW Education students improve.* <http://wyomingpublicmedia.org/post/new-teacher-assessment-could-help-uw-education-students-improve>
- UW Blackboard Article. (Fall 2012). *Secondary Ed Faculty Focus on Research, Professional Development.* Written by L. Rush. A University of Wyoming College of Education Publication.
- UW Blackboard Article. (Fall 2012). *Class Constructs Creative, Standards-based Science Lessons.* Written by D. Beck. A University of Wyoming College of Education Publication.
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All graduates (past students)

(I have served as either chair or committee member): 36

Of those 36 graduates, I have chaired 17 students to graduation.

Chair for Master's graduates = 12

Chair for Doctorate graduates = 5

University of Central Florida:

1. [REDACTED] – Ph.D. – anticipated August 2023 (chair)
2. [REDACTED] – Ph.D. – anticipated August 2024 (chair)

University of Wyoming:

3. Mandi Leigh – M.S.N.S. – April 2012 (member)
4. Debra Stork – Ph.D. – 2012-2013 (member); Oct 2014
5. Gabriel Alsina – M.A. – July 2013 (member)
6. Katherine Kruse Volk – M.A. – July 2014 (member)
7. **Chrisy Belardo – M.S.N.S. chair (1)– April 2014**
8. **Samantha Suter – M.A. chair (2)– April 2015**
9. Katharin Johnson – M.A. – August 2015 (member - PETE)
10. Paul Kasza – M.S.N.S. – 2015 (member); July 2016
11. **Meghan Lockwood – M.S.N.S. chair (3)- April 2016**
12. Ashely Anderson – M.S.N.S. – April 2016 (member)
13. **Debbie French – Ph.D. chair (1)– May 2016**
14. ShiAnne Kattner – Ph.D. – Dec. 2016 (member)
15. Karen Cloud – Ph.D. – Jan. 2017 (member)
16. Katie Guffey – Ph.D. – April 2017 (member)
17. **Jake Schell – M.A. chair (4)– April 2018**
18. Lindsey Freeman – M.A. – April 2018 (member)
19. **John Olson – M.S.N.S. chair (5)– April 2018**
20. Todd Jamison – Ph.D. – Nov. 2018 (member)
21. **Trina Kilty – Ph.D. chair (2)– April 2019**
22. David Kasper – Ph.D. – May 2019 (member A&S)
23. Rasheda Moody-Marshall, University of the West Indies, Ph.D., Sept. 2019 (member)
24. Carlos Trejos – M.A. – Nov. 2019 (member)
25. Leita Rolfe – M.A. – Dec. 2019 (member)
26. **Nycole Marsh – M.A. chair (6)– April 2020**
27. Jason Browning – Ph.D. – April 2022 (member)
28. **Kyle Mogensen – M.A. chair (7)– August 2021**
29. **Caitlin Kennedy – M.A. chair (8)– August 2021**
30. **Caitlin Person – M.A. chair (9)– August 2021**
31. **Colton Lewer – M.S.N.S. chair (10)– December 2021**
32. **Andria Schwartz – Ph.D. co-chair (3) – December 2021**
33. Paul Mallinowski – M.S. – March 2022 (member)
34. Janet Webb Lebeda – Ph.D. – April 2022 (member)
35. **Astrid Northrup – Ph.D. chair (4) – August 2022**
36. **Amanda Carson – M.A. chair (11)– Dec 2022**
37. **Johannes Addido – Ph.D. chair (5) – Dec 2022**
38. **Andy Merritt – M.A. chair (12) – Dec 2022**