

Andrea Carneal Burrows, Ed.D.

Associate Professor ♦ School of Teacher Education – Secondary Science
 University of Wyoming
 1000 E. University Ave., Dept. 3374, Laramie, WY 82071
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EDUCATION

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

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

2017	Recognition at UW Fall Convocation: Honored College of Education Faculty
2016	University of Wyoming, College of Education, Faculty Award for Outstanding Service to the Educational Profession
2015	Most Creative ECE Senior Capstone Project: A Block of Code (Sponsor)
2015	University of Wyoming, College of Education, Faculty Award for Outstanding Research and Scholarship
2015	National Technology Leadership Initiative Award Finalist Paper (<i>ASTE</i>)
2014	AERA Early Career Award Nominee
2014	Dr. James Hurst <i>Each Student – A Person Award</i> Nominee
2013	UW Assessment Mini-Grant – AAC&U Conference Award \$2,000
2013	Mary Garland Early Career Fellowship – Research Award \$25,000
2012	Science & Math Teaching Center (SMTC) Affiliate Faculty Appointment
2010	Lillian C. Sherman Scholarship for Outstanding Academic Performance
2007-2011	University Graduate Scholarship, University of Cincinnati
2007-2011	NSF GK-12 Grant Coordinator Fellowship, University of Cincinnati
2000-2001	Waynesboro High School Teacher of the Year Nominee (VA)

PROFESSIONAL EXPERIENCE

Appointments – University

<i>Associate Professor</i>	University of Wyoming	July 2017 to present
<i>Assistant Professor</i>	University of Wyoming	Aug 2011 – June 2017
<i>Adjunct Professor</i>	University of Cincinnati	Aug 2007 – July 2011
<i>Adjunct Professor</i>	Northern Kentucky University	Aug 2006 – July 2011

Teaching - Graduate courses

University of Wyoming (2011 through present)
 EDCI 5250 – Advanced Topics in Pedagogy
 EDRE 5550 – Action Research
 EDCI 5550 – Art & Science of Teaching

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

University of Cincinnati (2007 through 2011)

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

Northern Kentucky University (2006 through 2011)

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

Teaching - Undergraduate courses

University of Wyoming (2011 through present)

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

University of Cincinnati (2007 through 2011)

18-SEC-550 – Secondary Teaching Methods - Science

Northern Kentucky University (2006 through 2011)

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

K-12 Teaching - Middle and High School

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

PUBLICATIONS (*indicates graduate advisee)

Books and Chapters

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.

Refereed Articles

Published

*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.

- *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.
- *Walwema, G.B., *French, D. A., Verley, J. D., & **Burrows**, A. C. (2016). Is classical mechanics a prerequisite for learning modern physics? *Physics Education*, 51. [H index:11; Q3] [<http://dx.doi.org/10.1088/0031-9120/51/6/065022>]
- *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 [<http://www.tandfonline.com/doi/full/10.1080/09650792.2016.1221838>] [H index:16; Q2]
- 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(70), 59-73.
- 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]
- Burrows**, A. C., & Slater, T. (2015). A proposed integrated STEM framework for contemporary teacher preparation. *Teacher Education and Practice*, 28(2-3), 318-330.
- Burrows**, A. C., & Harkness, S. (2015). 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; Q2]
- 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.
- 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.
- 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; Q1]
- 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; Q2]

- 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.
- Burrows, A. C., Herfat, S., Truesdell, P., & Miller, M. (2013).** More than tolerance for engineering lessons. *Technology and Engineering Teacher*, 72(7), 13-18.
- 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.
- 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; Q2]
- Burrows, A. C. & Clinton, C. (2009).** Engineering chemistry learning. *Chemical Education*, 36(1), 47-49.

In Press or Under Revision (through publisher)

- Burrows, A. C., French, D. A., Borowczak, M., & Myers, A. (Revisions September 2017). Astronomy in science, technology, engineering, and mathematics education: K-12 teachers' experiences and ideas. Under review in Physical Review Physics Education Research (PRPER). (Article ID: YE10060).
- *Kattner, S., **Burrows, A. C., & Slater, T.** (Revisions October 2017). Establishing a relationship between students' spatial ability and eclipse pedagogy. Under review in the *RELEA – Latin- American Journal of Astronomy Education*. (Under revision)

Submitted for Review

- Burrows, A. C., *Lockwood, M., *Belardo, C., & Janak, E. (Submitted October 2017). Nova book chapter entitled: Action research: The researcher's role and engagement in K-20 STEM education for publication in *Action research: Theory, applications and challenges*.
- *Schwartz, A. C., & **Burrows, A. C.** (Ready for resubmission). Using STEM datasets: The who and how of expert/novice levels.
- *French, D., & **Burrows, A. C.** (Ready for resubmission). Supporting teachers to create a classroom environment for authentic scientific inquiry.
- *French, D., & **Burrows, A. C.** (Ready for resubmission). Evidence of science and engineering practices in pre-service secondary science teachers' instructional planning.

Refereed Publications

- Borowczak, M., & **Burrows, A. C.** (2016). Developing and sustaining computing based outreach experiences. *VLSI Circuits and Systems Letter (VCAL)*, 2(2), 21-25.
[https://www.computer.org/cms/tcvlsi/newsletters/2016/VLSI Circuits and Systems vol 2 issue2 Oct2016.pdf](https://www.computer.org/cms/tcvlsi/newsletters/2016/VLSI_Circuits_and_Systems_vol_2_issue2_Oct2016.pdf)

Borowczak, M., & **Burrows**, A. C. (2016). Are we still teaching VLSI the same way that we were in the mid-90s? *VLSI Circuits and Systems Letter (VCAL)*, 2(1), 25-27.
[https://www.computer.org/cms/tcvlsi/newsletters/2016/VLSI Circuits and Systems vol 2_issue1_Apr2016.pdf](https://www.computer.org/cms/tcvlsi/newsletters/2016/VLSI_Circuits_and_Systems_vol_2_issue1_Apr2016.pdf)

Borowczak, M., & **Burrows**, A. C. (2015). Methods to approach outreach: Help for the classroom and beyond. *VLSI Circuits and Systems Letter (VCAL)*, 1(2), 29-31.
[https://www.computer.org/cms/tcvlsi/newsletters/2015/VLSI Circuits and Systems vol 1_issue2_Sep2015.pdf](https://www.computer.org/cms/tcvlsi/newsletters/2015/VLSI_Circuits_and_Systems_vol_1_issue2_Sep2015.pdf)

Borowczak, M., & **Burrows**, A. C. (2015). K-20 education. *VLSI Circuits and Systems Letter (VCAL)*, 1(1), 28-29.
[https://www.computer.org/cms/tcvlsi/newsletters/2015/VLSI Circuits and Systems vol 1_issue1_Apr2015.pdf](https://www.computer.org/cms/tcvlsi/newsletters/2015/VLSI_Circuits_and_Systems_vol_1_issue1_Apr2015.pdf)

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

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 Websites:

Central Professional Development Resources : UWpd.org

WDE MSP Grants:

ESP4T: UWpd.org/ESP4T

RAMPED: UWpd.org/RAMPED or UWramped.org

LASSI : UWpd.org/LASSI

UWROBOTICS: UWRobotics.com

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/

SigmaAldrich Grant: UWSAVE.org

Support Websites:

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

NSF Noyce Participant and Recruitment Site: UWSWARMS.org

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. Lead 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

Works in Progress

AR Class 08/09 including **Burrows, A.** (In progress). An AR quality of life project. In M. Brydon-Miller, K. Burklow, I. Khanani, L. Mills, M. Raider-Roth, & L. Vaughn, (Eds.), *Action research for institutional and community change: The University of Cincinnati model*. Proposed Sage Publication. (Book Chapter)

CONFERENCE PAPERS and PRESENTATIONS

National/International Papers

Refereed Papers

Borowczak, M., & **Burrows, A. C.** (2017). *Developing collegiate cybersecurity interest through authentic inquiry*. Paper presentation at the American Society of Engineering Education: Rocky Mountain Section Conference (ASEE RMS), Provo, UT, September 21, 2017.

Burrows, A. C., & Borowczak, M. (2017). *Hardening freshman Engineering Student Soft Skills*. Paper presentation at the American Society of Engineering Education: First Year Engineering Experience (ASEE FYEE), Daytona Beach, FL, August 7, 2017.

Burrows, A. C., & Borowczak, M. (2017). *Teaching teachers to think like engineers using NetLogo*. Paper presentation at the American Society of Engineering Education (ASEE), Columbus, OH. June 25, 2017.

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 of Engineering Education (ASEE), Columbus, OH. June 28, 2017.

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.

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), Portland, OR. January 12-14, 2017.

Burrows, A. C., & Borowcak, 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.

Burrows, A. C., & Borowczak, M. (2016). *Arduinos & sensors: K-12 teachers explore computer science.* Paper presentation at the American Society of Engineering Education (ASEE), New Orleans, LA. June 27, 2016.

Borowczak, M., & **Burrows, A. C. (2016).** *Developing a creative K-12 manipulative: An ECECS capstone.* Paper presentation at the American Society of Engineering Education (ASEE), New Orleans, LA. June 29, 2016.

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. March 21-26, 2016.

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.

* *National Technology Leadership Initiative (NTLI) Award Finalist Paper*

Burrows, A. C., & Borowczak, M. (2014). *Online STEM integration: Pre-service science teachers in the Directors Chair.* Paper presentation at E-Learn (World Conference on E-Learning), Proceedings: <http://www.editlib.org/p/149007/>, New Orleans, LA. Oct. 30, 14.

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.

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.

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.

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.

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.

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.

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 of Engineering Education (ASEE), Louisville, KY, June 23, 2010.

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 of Engineering Education (ASEE), Louisville, KY, June 22, 2010.

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 and publication at the American Society of Engineering Education (ASEE), Louisville, KY, June 22, 2010.

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.

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.

Burrows, A. C. (2008). *STEPping in engineering education.* Virtual paper at the international colloquium of the American Engineering Educators Association, Cape Town, South Africa.

National/International Presentations, Workshop Sessions, and Posters

Refereed Sessions

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.

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 of Engineering Education (ASEE) from 6-9 pm. Columbus, OH. June 24, 2017.

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.

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.

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.

- 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.
- 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.
- 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.
- 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*. NSF - Western Regional Noyce Conference (WRNC), Fresno, CA. January 18, 2017.
- 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.
- 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.
- 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.
- 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.
- Burrows, A.C.** (2016). *CITE Science: Co-editor presentation*. Workshop session at the National Technology Leadership Summit (NTLS). Washington, D.C. Sept. 30, 2016.
- 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.
- 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.
- Burrows, A.C.** (2016). *Pre-Service teacher perspectives on STEM*. Poster presented at the NSF Noyce Summit. Washington, D.C. July 20, 2016.
- Burrows, A. C., Leonard, J., & Borowczak, M.** (2016). *Visualization basics, UGame-ICompute: An ITEST year-3 summary of K-12 teacher/student observations in the field*. Poster presentation at the Society for Information Technology and Teacher Education Conference (SITE), Savannah, GA. March 21-26, 2016.

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

- 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.
- French, D., & **Burrows**, A. C. (2015). *LASSI*. Poster presented at the American Astronomical Society (AAS), AAS Meeting #224, Seattle, WA. January 8, 2015.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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) Meeting #222, #120.16, Indianapolis, IN, June 3, 2013.
- 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.
- 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.
- 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.

- Burrows, A. C., & Borowczak, M. (2012).** *Video characteristics: YouDemo.info*. Presentation at the Florida Education Technology Conference (FETC), Orlando, FL, Jan. 25, 2012.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- Burrows, A. C. (2010).** *Fellow training*. Presentation made to the GK12 Special Focus Session, San Diego, CA, February 18 – 19, 2010.
- Burrows, A. C. (2010).** *Research experience for teachers at UC*. Poster presentation for Engineering Education Centers Awardees Conference, Washington, DC, Jan. 31 – Feb. 1, 2010.
- 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.

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

Invited Talks

- NSF Panel Day: Laramie Wyoming*. 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>
- 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.
- YouDemo.info: Effective use of videos in the classroom*. College of Education, 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

- 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.

- 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.
- 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.
- Burrows**, A. C. & colleagues (6 different presentation). (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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

- 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.
- 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.
- 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.
- 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.
- 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.
- 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, Laramie, WY. Oct. 23-25, 2014.
- Burrows, A. C. (2013).** *Astronomy: Boldly going into mathematics and science.* Mathematics and Science Teachers' Conference, Casper, WY. Oct. 18, 2013.
- 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.
- 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.
- 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.
- 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.
- Meyer, H., & **Burrows, A. C. (2010).** *Grant writing.* Session presented as a part of the STEM Inspiring Innovations Conference. Cincinnati, OH. Sept. 20, 2010.
- Burrows, A. C. (2010).** *Collaborations at UC.* Presentation made to UC community including President G. Williams, Cincinnati, OH, March 15, 2010.

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.

Burrows, A. C. (2009). *STEPing into partnerships*. Graduate Poster Forum for the University of Cincinnati, Cincinnati, OH, March 6, 2009.

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.

Burrows, A. C. (2008). *STEP and high school education*. Graduate Poster Forum for the University of Cincinnati in Cincinnati, OH, March 7, 2008.

Burrows, A. C. (2004). *3-D cutouts to enhance teaching*. Workshop for Orange County Teachers of Florida in Ocoee, FL, August 15, 2004.

Invited Talks

Partnerships and Engineering Soft Skills. College of Engineering and Applied Science, Invited by Dr. Borowczak as a COSC 4275 Guest Instructor. University of Wyoming, Laramie, WY, March 2, 2017.

Grant Works and Ideas, College of Education, Invited by Dr. Tonia Dousay as a PRST 5610 Guest Speaker. University of Wyoming, Laramie, WY. Nov. 15, 2016.

Researcher Work and Practice, Colloquium – UW Science Education Series Speaker, University of Wyoming, Laramie, WY. Sept. 27, 2016.

Science and Art Integration, Wyoming State Science Fair – Junior Division Panel Speaker, University of Wyoming, Laramie, WY. March 2, 2015.

Math and Science Applications in Engineering. Pre-Service Mathematics Education, University of Cincinnati, Cincinnati, OH. January 26, 2010.

GRANT ACTIVITY				
Year	Role	Grant	Budget Sponsor (Start/End)	Funding
The full grey rows indicate active (awarded) grants.				
2017	Collaborator (whole grant) PI: WRNA WY& CO	<i>WRNA: Western Regional Noyce Alliance (Sub-award for Wyoming, Colorado, & others)</i> [Sub-award Team: Burrows & Reinhold]	\$180,000 of 3M NSF - Noyce	Pending
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
m2017	External Evaluator	<i>MEDTRACK</i> [Team: Amos, Bashir, Boppart, Schneider, Li, & Burrows]	~\$500,000 NSF NRT	Not funded
2017	PI	<i>WEST: Wyoming's Engineering, Security, and Teaching: Utilizing K12 Teachers as a Vehicle for University Engineering Faculty Change</i> [Team: Burrows, Borowczak, Muknahallipatna, Kubichek, Dousay, & Anderson]	\$1,999,997 NSF IUSE: EHR	Not funded
2017	PI	<i>KEEN Award for Engineering Module Implementation</i>	\$2000 KEEN	Not funded
2017	CoPI	<i>ESP4T – Engineering Summer Program for Teachers</i> [Team: Muknahallipatna, Kubichek, Anderson, Burrows, & Parker]	\$425,400 College of Engineering (July 2017 – June 2018)	Awarded
2017	PI	<i>Millipore Sigma Outreach – The Artful Craft of Science III (TACoS III)</i> [Team: Burrows, Haynes, Russel, & Borowczak]	\$16,900 MilliporeSigma/ UW Foundation (2016-2017)	Awarded
2016	Senior Personnel	<i>EasyNano: Combined Experimental and Visual Simulation Based Nanoelectronics (Based out of Univ. of North TX)</i> [Team: Mohanty, Rout, & Burrows]	\$287,987 NSF REU	Not funded

2016	CoPI	<i>STRATEGIES: The Bessie Coleman Project – Using Computer Modeling, Robotics, and Flight Simulation to Create STEM Pathways</i> [Team: Leonard, Burrows, Gamboa, McBride, & Davis]	\$1,199,416 NSF DRL ITEST	Not funded
2016	CoPI	<i>Training Requirements for Sustainable, High Performance Building Operations</i> [Team: Wang & Burrows]	\$52,537 ASHRAE	Not funded
2016	Collaborator (whole grant) PI: K12 EOD	<i>Making Wyoming's Microbial Life Accessible: Expanding Public Outreach Using a Data Discovery & Visualization Tool – K12 Ed, Outreach, & Diversity</i> [Team: Burrows & Stoesz]	\$349,500 of 20M NSF - UW EPSCOR	Awarded
2016	PI	<i>Biology Active Learning Through Order of Magnitude (BAL-OoM)</i> [Team: Burrows, Borowczak, & Kost]	\$1,000 UW Biology Department	Awarded
2016	PI	<i>MilliporeSigma Outreach – The Artful Craft of Science II (TACoS II)</i> [Team: Burrows, Haynes, Myers, & Russel]	\$10,000 Sigma Aldrich/ UW Foundation (2015-2016)	Awarded
2016	External Evaluator	<i>More than Just a Scientist – Preparing STEM Graduate Students for a Diverse World</i> [Team: McBride, Candelaria, Katzmann, Welsh, & Burrows]	\$499,977 NSF NRT-IGE	Not funded
2016	External Evaluator	<i>MEDTRACK</i> [Team: Amos, Bashir, Boppart, Mariscalco, & Burrows]	~\$500,000 NSF NRT	Not funded
2015	Consultant and External Evaluator	<i>Biosensing for Health: Introducing Research Experiences into Engineering Undergraduate Education</i> [Team: Novak, Wright, Kubichek, Muknahallipatna, & Burrows]	\$298,900 Keck Foundation Undergraduate Education Program	Not funded
2015	PI	<i>RAMPED: Robotics, Applied Mathematics, Physics, and Engineering Design</i> [Team: Burrows, Myers, Kubichek, Muknahallipatna, & Hurley]	\$211,355 DOE, WDE MSP (2016-2017)	Awarded (Grant # WY1601506M SPA2)
2015	PI	<i>Sigma Aldrich Outreach – The Artful Craft of Science (TACoS)</i> [Team: Burrows & Russell]	\$10,000 Sigma Aldrich/ UW Foundation (2014-2015)	Awarded

2015	CoPI	<i>EasyNano: Combined Experimental and Visual Simulation Based Nanoelectronics</i> (Based out of Univ. of North TX) [Team: Mohanty, Rout, & Burrows]	\$230,420 NSF REU	Not funded
2015	PI	<i>Biology Active Learning Through Computer Science (BAL-CS)</i> [Team: Burrows, Borowczak, & Kost]	\$1,000 UW Biology Department	Awarded
2015	CoPI	<i>Science and Art Integration</i> [Team: Dambekalns & Burrows]	\$1,200 UW Secondary Education	Awarded
2015	Senior Personnel	<i>RII Track-2 FEC: DESI/EPSCoR Participation Group – Timely Opportunities for Data-Rich Astronomy in EPSCoR States</i> [Team: Myers, Dale, Pierce, Brotherton, Lauroesch, Williger, Haberzetti, Yan, Samushia, Ratra, & Burrows]	~\$5,998,645 NSF EPSCoR (2016-2019)	Not funded
2014	PI	<i>Launching Astronomy: Standards & 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 (2015-2017)	Awarded (Grant # 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)	Awarded
2014	PI	<i>Science (STEM) Summer Camp in Douglas, WY</i> [Team: Burrows]	\$17,000 Ellbogen Dean's Excellence Fund (2014)	Awarded
2014	PI	<i>Educational STEM Integration</i> [Team: Burrows]	\$4,060 Summer Graduate Research – Graduate Student Enhancement (2014)	Awarded
2014	PI	<i>Launching Astronomy: Standards & STEM Integration (LASSI)</i> [Team: Burrows & Myers]	\$165,191 DOE, WDE MSP (2014-2015)	Awarded (Grant # WY140202)

2013	PI	<i>Sustaining and Valuing Earth (SAVE)</i> [Team: Burrows & Leonard]	\$23,000 <i>Sigma Aldrich/ UW Foundation</i> (2013-2014)	Awarded
2013	PI	<i>Sustaining Wyoming's Advancing Reach in Mathematics and Science (SWARMS)</i> [Team: Burrows, Slater, Jafari, Dale, Escoto]	\$1,186,365 <i>NSF DUE Noyce</i> (2014 – 2019)	Awarded (Grant # 1339853)
2013	PI	<i>Mary Garland Early Career Fellowship</i> [Team: Burrows]	\$25,000 UW College of Education (2013-2015)	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 <i>NSF</i>	Not funded
2012	CoPI	<i>Science and Math Inquiry through Literacy Engagement (SMILE)</i> [Team: Gillis, Hutchison, Rush, Burrows, Hamann & Albeke]	\$202,190 <i>DOE, WDE MSP</i>	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 <i>DOE, WDE MSP</i>	Not funded
2012	Senior Personnel	<i>Visualization Basics: UGame - ICompute.</i> [Team: Leonard, Hamann, Jafari, Slater, & Burrows]	\$1,199,953 <i>NSF ITEST</i> (2015-2017)	Awarded (Grant # 069690956)
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 <i>NSF AST</i> (Sept 2012-Aug 2015)	Awarded (Grant # 1211112)
2012	CoPI	<i>Hooked on STEM: Using Robotics to Apply Mathematical Reasoning and Scientific Processes.</i> [Team: Leonard, Schaeffe, Verma, & Burrows]	\$2,160,742 <i>DOE F³</i>	Not funded
2012	External Evaluator	<i>Flooding the Fields With Problem Based Learning (Year 1)</i> <i>Biodiversity (Year 2)</i> [Team: Forrester & Flaherty]	~\$300,000 <i>DOE, WDE MSP</i> (2012-2013)	Awarded
2012	CoPI	<i>Robotics for the 21st Century.</i> [Team: Slater, Dale, Burrows & Haynes]	\$207,156 <i>DOE, WDE MSP</i> (2012-2013)	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 (2007-2012)	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 Univ. School <i>Using Innovative Teaching Skills in a Technology/Computer Science Facility</i> [Lead PI: Hook]	~\$10,000 <i>Toshiba Tapestry Grant</i> (1993-1994)	Awarded

PROFESSIONAL AFFILIATIONS

AAC&U	Association of American Colleges and Universities	
AAS	American Astronomical Society	
AERA	American Educational Research Association	Elected position
ASEE	American Society for Engineering Education	Elected & Appointed position
ASTE	Association for Science Teacher Education	Journal Co-Editor
NSTA	National Science Teachers Association	
NARST	National Association for Research in Science Teaching	
SITE	Society for Information Technology and Teacher Education	Elected position

SERVICE***National/International***

Co-Editor of the Science Education Section for the Journal of Contemporary Issues in Technology and Teacher Education (CITE) – **June 2016 to May 2019.**

NSF Grant Review Panel Member, Washington, D.C. – **2016, 2017.**

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

Article Editor – SAGE Open – June **2017.**

Elected Positions:

2-year Elected Position (April 2016-2018):

American Educational Research Association (AERA)
-Action Research Sig - Secretary

3-year Elected Position (April 2016-2019):

American Educational Research Association (AERA)
-Science Teaching and Learning Sig – Secretary/Treasurer

2-year Elected Position (March 2016-2018):

Society for Information Technology & Teacher Education (SITE)
Science Education SIG - Co-Chair

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 Co-leader/organizer

2016 NSTA sessions in Columbus, Minneapolis, & Portland, Dec. 2015

2017 NSTA sessions in Baltimore, Milwaukee, & New Orleans, Dec. 2016

Journal Editorial Review Board Member:

Innovations in Science Teacher Education (ISTE), Editorial Review Board,
March 2016- 2017 (1-year appt.); April **2017-2020** (3-year appt.)

Case Studies in Education (<http://www.aabri.com/journals.html>), 2015 - **present**

Journal of Science Teacher Education (JSTE), Editorial Review Board,
2015-2018 (3-year appointment)

Contemporary Issues in Technology & Teacher Education (CITE–Science),
2013 – 2016.

Reviewer - Journal Articles and Conference Papers:

Action in Teacher Education, 2013, **2016, 2017**
Action Research Journal, 2013
American Society of Engineering Education (ASEE), 2011, 2015-**present**
American Educational Research Association (AERA), 2011-2013, 2015-**present**
Asia-Pacific Education Researcher, 2012
Association for the Advancement of Computing in Education (AACE),
JCMST – Journal of Computers in Math and Science Teaching - 2012
Association for Science Teacher Education (ASTE), 2012 - **present**
Contemporary Issues in Technology & Teacher Education, 2013 - 2016
Educational Research and Reviews, 2015
Education Sciences, **2017**
Innovations in Science Teacher Education, 2016, **2017**
Journal of Science Teacher Education, 2016, **2017**
Journal of STEM Education, 2014
Linguistics and Education, 2012, 2014
National Association of Research in Science Teaching (NARST), 2008, 2010,
2015
Physical Review Physics Education Research (PRPER), **2017**
Sage Open (Article editor), **2017**
The Science Education Review, 2010

Presider/Moderator - Conferences:

Association for Science Teacher Education (ASTE), 2014 – **2017**
American Society for Engineering Education (ASEE), **2017**

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

State/Regional/Local

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 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-arduinis. 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, and March 28, 2015.

Presenter/Organizer, K-12 Teacher Professional Development for Wyoming Teachers related to *Collaborative Research - The Hidden Side of Rapidly Growing Black Holes: Host Masses and Evolution of Obscured Quasars with SDSS and WISE*. National Science Foundation (NSF). Website: <http://physics.uwyo.edu/~mike/workshop/>. NSF PI- Team: A. Myers and A. Burrows. Laramie, WY: June 16-18, 2014.

Presenter/Organizer, K-12 Teacher Professional Development – *Robotics in the 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.

Volunteer - Science Fair Judge, Erpenbeck Elementary School, KY, February 2010.

University

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

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

Chair, Faculty Senate - Library Council, 2013 – **present**

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

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

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

College of Education WTEP Assessment Committee, **present**

College of Education Student Appeals Committee, 2014 – **present**

C&I Graduate Admissions Committee, 2013 – 2016, **2017-present**

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

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

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

College of Education Conceptual Framework Committee, 2015

Search Committee – Modern Language Position, 2012-2013

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

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

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

Technology Committee, UW Secondary Education, 2011 – 2012

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

Representative, UC C&I Graduate Student, 2009

CURRENT ADVISEES**29 total students – Graduate and Undergraduate**

<i>Graduate Advising</i>	<i>Admitted</i>	<i>Program</i>	<i>Thesis Topic</i>	<i>Role</i>
12 Current Advisees				
Rick Sanchez	2011	Ph.D.	Robotics - FLL	Chair
Rick Willey	2013	Ph.D.	Assessment	Member
ShiAnne Kattner	2013	Ph.D.	Spatial Learning	Member
Andria Schwartz	2013	Ph.D.	Quasars and Expert/Novice	Co-Chair
Lindsey Freeman	2014	M.A.	C&I - Agriculture	Member
John Olson	2014	M.S.N.S.	Nature of Science	Chair
Astrid Northrup	2016	Ph.D.	Engineering Education	Advisor
Jacob Schell	2016	M.A.	GIS & Science in Mathematics	Chair
Graduates (Chair of Committee)				
Joe Ahlstrom	2015	2017 M.A.	STEM Classroom Implementation	Para-professional Teacher, WY
Debbie French	2013	2016 Ph.D.	Snapshots of Authentic Scientific Inquiry and Teacher Preparation: Undergraduate STEM Courses, Pre-service and In-service Teachers' Experiences	Assistant Professor, Wilkes University, PA
Meghan Lockwood	2014	2016 M.S.N.S.	Addressing Three-Dimensional Learning with Citizen Science Projects	
Christina Belardo	2014	2015 M.S.N.S.	STEAM Integration with Art: A Renewed Reason for STEAM in the K-12 Classroom	Citizen Science Ed. Coordinator, NY
Samantha Suter	2012	2015 M.A.	Impact of Teacher Reflection on Student Learning Gains: An Action Research Study	Teacher: Snowy Range Academy, WY

<i>Undergraduate Advising</i>			<i>Certification Area</i>
17 current advisees	2016		<i>Biology, Earth Science, Chemistry, Physics</i>

OTHER PROFESSIONAL DEVELOPMENT

Science Summit – Sponsored by the UW Partnership – Casper, WY, 2015, 2016, **2017**
AAC&U on Assessment – Association of American Colleges and Universities, February - March 2014, Portland, Oregon.

Summer Summit Collaboration Fellowship (Dr. Kroeger), UC, Sept. 2010 – June 2011

RESEARCH ACTIVITY

Partnerships and Collaboration: 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

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

UW-Led Technology Program Helps Glendo Teacher

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

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

UW-Led Technology Program Helps Kaycee Teacher Explore New Possibilities

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

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

Lander Teacher Learns from UW-Led Technology Program

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

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

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

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

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

Sheridan Teacher Learns from UW-Led Technology Program

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

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

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.