

Timothy F. Slater, Ph.D.

University of Wyoming, College of Education – School of Teacher Education

Excellence in Higher Education Endowed Chair of Science Education

Professor of Teacher Education

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PROFESSIONAL PREPARATION

Ph.D. 1993 University of South Carolina - Geological Sciences

MS 1991 Clemson University - Physics & Astronomy

BS 1989 Kansas State University - Physical Science

BS Ed 1989 Kansas State University - Secondary Science Education

Professional Teaching Certificate: Physics, Chemistry, Earth/Space Science (Kansas); Agribusiness (CASE)

PROFESSIONAL APPOINTMENTS

2008-present University of Wyoming

Excellence in Higher Education Endowed Chair of Science Education & Professor of Teacher Education

Adjunct Professor Physics

2001-2008 University of Arizona

Associate Professor of Astronomy & Director of UA Science and Mathematics Education Center

1996-2001 Montana State University

Research Associate Professor of Physics

1994-1996 Pittsburg State University

Assistant Professor of Physics & Director of PSU Planetarium and Science Education Center

Example Awards and Honors

Sequoyah Fellow of the AISES American Indian Science and Engineering Society, 2020

Textbook & Academic Authors' Association–McGuffey Longevity Award, 2017

American Association of Physics Teachers Lifetime Distinguished Service Citation *Nominated 2015*

NASA Hubble Space Telescope Education Innovation Award: Gold Star Award, 2011

NASA Hubble Space Telescope Education Innovation Award: Top Stars Award, 2010

Project ASTRO Astronomy Educator of the Year, 2007

PROFESSIONAL AFFILIATIONS

National Science Teachers Association (*elected to Board, 2010-1011*)

Society of College Science Teachers (*elected to the Board, 2006-2007*)

National Association of Agricultural Teachers (*National Finance Committee, 2019-2021*)

International Planetarium Society (*Education Committee, 2015-2017*)

American Association of Physics Teachers (*Life member, National Astro. Educ. Comm. Chair, 1996-2002*)

American Astronomical Society (*elected to the Board 2006-2009, 2009-2012*)

Astronomical Society of the Pacific (*elected to the Board 2003-2006, 2006-2009*)

Association of Astronomy Educators (*President, 1998-2001, 2001-2004*)

American Physical Society (*Education Board, 2013-2015*)

Association of Science Teacher Educators (Co-Editor: *Contemp Issues in Tech & Tchr Educ-Sci, 2016-2020*)

National Society of Hispanic Physicists (*Life member*)

SCHOLARSHIP**EXAMPLES OF BOOKS WRITTEN & PROCEEDINGS EDITED (38)**

([HTTPS://WWW.AMAZON.COM/TIMOTHY-F.-SLATER/E/B001HD44HO](https://www.amazon.com/TIMOTHY-F.-SLATER/e/B001HD44HO))

1. Tillery, B.W., Slater, T. F., & Slater, S. J. (in press for 2023, 2020). *Physical Science*, 13th/12th Ed. 752 pages, Dubuque: McGraw Hill Publishing, ISBN: 1260150542, 1260150542.
2. Slater, T. F. & Sanchez, R. L. (2021). *Teaching Integrated STEM with Drones: Classroom-ready Lesson Plans for an Integrated STEM+Arts Curriculum*. Pono Publishing, ISBN: 979-8769835230, <https://amzn.to/3urVaBm>
3. Tillery, B., Enger, E., Ross, F. C., Slater, T. F., & Slater, S. J. (2021, 2018). *Integrated Science*, 8th/7th Ed., 816 pages, Dubuque: McGraw Hill Publishing, ISBN: 978-1260721485, 978-0077862602
4. Slater, T. F. & Richard, E. C. (2021). *Learning with Drones: The FPV Experience Drone Curriculum & Classroom-Ready Lesson Plans*. Pono Publishing, ISBN: 979-8746354082. <https://amzn.to/3gqSFXS>
5. Margarit, V., & Slater, T. F. (2020). *The Successful Graduate Student Mindset: How to Set Your Mind to 'IT' When You're Busy*. KDP Amazon Publishing, ISBN: 979-8621988050, <https://amzn.to/2AefzzS>
6. Slater, T. F. (2020). *Not My Desk!: An Academic's Emergency Guide to Working from Home and Teaching Online*. KDP Amazon Publishing, ISBN: 979-8630751850, <https://amzn.to/3dwnwyE>
7. Slater, T. F. & Richard, E. C. (2020). *Teaching STEAM from the Sky with Drones: A Complete STEM+Arts Drone Curriculum with Classroom-Ready Lesson Plans*. Pono Publishing, ISBN: 979-8654052827, <https://amzn.to/2T2ndn3>
8. Slater, T. F. & Cole, C. J., Eds. (2020, 2019, 2018, 2017). *Proceedings of the Science Fictions & Popular Cultures Academic Conference*. Pono Publishing, ISBN: 8689344874, <https://amzn.to/3nSX5c2>
9. Slater, T. F. (2019). *University Teaching Matters: International Edition*. Pono Publishing, ISBN: 1091793727, <https://amzn.to/2GLOGDq> (Audible: <https://tinyurl.com/49252wd5>)
10. Slater, T. F. & Heyer, I. Eds. (2019). *Proceedings of the 2019 International Astronomy Teaching Summit*. Pono Publishing, ISBN: 978-1079174052, <https://amzn.to/2xSAB6m>
11. Morgan, W. A., & Slater, T. F. (2019). *Teaching OpenStax Astronomy with Peer Instruction: Implementing Think-Pair-Share for Intellectual Engagement*. Pono Publishing, ISBN: 1726434591, <https://amzn.to/2SciaSe>
12. Slater, T. F. & Jones, R. M., Eds. (2019). *Proceedings of the 2019 Pacific-basin STEAM Teaching Conference*. Pono Publishing, ISBN: 978-1688797536, <https://amzn.to/2Wn7u4v>
13. Slater, T. F., & Heyer, I. (2018). *Being a Successfully Busy Professor: Implementing Time Management Steps for Getting Your Busy Life under Control*, Hilo: Pono Publishing, 132 pages. ISBN: 978-1721808311, <https://amzn.to/2NcAiZD>
14. Slater, T. F. (2018). *Armed Academics: Your Personal Protection Guide to Staying Safe in Academia*. 138 pgs. Hilo: Pono Publishing. ISBN: 171916715X, <https://amzn.to/2GJELOK>
15. Slater, T. F. (2018). *The Busy Professor: Getting Your Academic Life Under Control*. Hilo: Pono Publishing, 116 pgs, ISBN: 978-1986156288, <http://amzn.to/2D3tTXV> (Audible: <https://tinyurl.com/2p9cjpzt>)
16. Slater, T. F. & Heyer, I. Eds. (2018). *Proceedings of the 2018 International Astronomy Teaching Summit*. Pono Publishing, ISBN: 978-1721537655, <https://amzn.to/2SQwLIB>
17. Slater, T. F., Slater, S. J., & Heyer, I. (2017). *Investigating Astronomy: A Conceptual View of the Universe*, 4th Ed., 393 pgs. Hilo: Pono Publishing, ISBN: 1978189516, <https://amzn.to/2GT8Efr>
18. Slater, T. F., & **TATGE, C. B.** (2017). *Research on Learning in the Planetarium*. Netherlands: Springer, ISBN: 978-3-319-57200-0, <http://amzn.to/2wXiHJ7>

EXAMPLES OF BOOK CHAPTERS (7)

- Slater, T. F., Kilty, T. J. & Burrows, A. C. (*in press*, 2021). Improving the Integration of STEAM Concepts for Teacher Preparation. In Examining Teacher Literacy in Preparation and Practice: Research-based Insight, P. M. Jenlink, *Editor*. Rowman & Littlefield Publishing.
- Burrows, A. C., Kilty, T. J., & Slater, T. F. (*in press*, 2021). Integrated STEM: Interdisciplinary teams and proposed framework for pre-service teacher utilization. In STEM Teacher Preparation and Practice for the 21st Century: Research-based Insights, P. M. Jenlink, *Editor*. Rowman & Littlefield Publishing.
- Slater, T. F. (2020). INVITED BOOK CHAPTER: Active learning in astronomy. In Active Learning Theory and Methods, edited by Joel Mintzes and Emily Walter, Springer, Berlin, ISBN: 978-3-030-33600-4. https://doi.org/10.1007/978-3-030-33600-4_50, <https://www.springer.com/gp/book/9783030335991>
- Slater, T. F. (2014). INVITED BOOK CHAPTER: Chapter 3: Astrobiology Education and Public Outreach. In Astrobiology: An Evolutionary Approach (Edited by Vera M. Kolb), CRC Press, 978-1466584617, pp. 49-62. <https://amzn.to/3HuXyv0>
- Slater, T. F. (2013). Revising Astronomy Class from Teacher-Centered Instruction to Student-Centered Learning. In Teaching of Astronomy in school - interfaces between research and practice pedagogical, (Marcos Daniel Longhini, Ed.) published by FAPEMIG - Fundação de Amparo à Pesquisa do Estado de Minas Gerais (Processo nº SHA-APQ-01879-10).
- Slater, T. F. (2011). Creating Worlds People Where People Want to Be: Academic Leadership in Scholarly Research Groups. In Discussions in Leadership Theory, (Helen Barker and Michael Gibbs, *Editors*), published by Capital College Innovation and Leadership Institute. ISBN: 9780984579624. <https://amzn.to/3J21Om7>
- Mayes, R., McClurg, P., & Slater, T. F. (2011). Complexity and Uncertainty as Drivers for a Ph.D. In Mathematics Education and Science Education, in Callejo Pérez, D., S.M. Fain & J.J. Slater (Eds.). Higher Education and Human Capital: Re/thinking the Doctorate in America. Rotterdam: Sense Publishers. <https://amzn.to/3slD5SO>

EXAMPLES OF RECENT PUBLICATIONS (141)

> 400 GoogleScholar Entries @ <http://tinyurl.com/oyqld7t> with >2,800 citations, h-index 28, i10-index 68

NOTE: Student co-authors listed in **ALL CAPS**

- SCHULTZ, S. J.** & Slater, T. F. (2021). Use of formative assessment-based active learning by astronomy educators teaching in live planetarium learning environments. *Journal of Astronomy & Earth Sciences Education*, 8(1).
- BERRYHILL, K. J.**, & Slater, T. F. (2021). Better interactive astronomy lectures using the Laser-Assisted Student Engagement Routine. *The Physics Teacher*, 59(6), 502-503., <https://doi.org/10.1119/10.0006144>
- Slater, T. F. & Sanchez, R. L. (2021, submitted). Instituting drone racing to better engage K-16 STEM students. *Journal of Astronomy & Earth Sciences Education* (in review).
- Slater, T. F., Biggs, C. N., & Sanchez, R. L. (2021, submitted). Using careers in drone technology as a raison d'être to leverage robust symbiotic partnerships to fulfill promises of an interdisciplinary STEM education framework. *Education Sciences* (in review).
- Slater, T. F., Biggs, C. N., & Sanchez, R. L. (2021, submitted). Building education partnerships to teach integrated STEM through drone competitions. *Journal of Astronomy & Earth Sciences Education* (in review).
- GUFFEY, S. K.**, & Slater, T. F. (2020). Geology misconceptions targeted by an overlapping consensus of US national standards and frameworks. *International Journal of Science Education*, 42(3), 469-492. <https://doi.org/10.1080/09500693.2020.1715509>. *This is a Q1 Journal*.
- SCHULTZ, S. J.** & Slater, T. F. (2020). Who are the Planetarians?: A demographic survey of planetarium-based astronomy educators. *Journal of Astronomy & Earth Sciences Education*, 7(1), 25-30. <https://eric.ed.gov/?id=EJ1271013>
- Slater, T. F. (2020). Exploring science fiction, science, culture and science education with a drone film festival at the HawaiiCon Fan Convention. In *Proceedings of the 2020 Science Fictions, Popular Cultures Academic Conference*

(Slater, Cole & Littmann, Eds). Hilo: Pono Publishing, pp. 153-161. ISBN: 979-8689344874.

<https://www.academia.edu/70280373>

9. Slater, T. F. (2020). Book Review for ‘Celestial Calculations: A gentle introduction to computational astronomy.’ J. L. Lawrence. 390 pp. MIT Press.’ *American Journal of Physics*, 88(1), 81. <https://doi.org/10.1119/10.0000284>
10. **UZPEN, B.**, & Slater, T. F. (2020). Photometric determination of the distance to the RR Lyrae LP Cam. *Astronomy Theory, Observations and Methods Journal*, 1(1), 54-60. DOI: <https://doi.org/10.32374/atom.2020.1.6>
11. Slater, T. F. (2019). Improving Hawaiian science education by leveraging science fiction conventions. *Science Fiction Research Association Review*, 330, 70-74.
12. Slater, T. F. (2019). Tsunamis in Science Fiction. *Proceedings of the 2019 Science Fictions, Popular Cultures Academic Conference*, pp. 125-134.
https://www.researchgate.net/publication/337719364_Tsunami's_in_Science_Fiction
13. Slater, T. F. (2019). Yes, your methods section is boring, but critically important. *Journal of Astronomy & Earth Sciences Education*, 6(2), i-ii.
14. **UZPEN, B.**, Houseal, A. K., Slater, T. F., & Neuffer, E. B. (2019). Scientific and quantitative literacy: A comparative study between STEM and non-STEM undergraduates. *European Journal of Physics*, 40, 1-15.
<https://doi.org/10.1088/1361-6404/ab07d4>
15. Slater, T. F. (2019). Your article benefits from a compelling conclusion. *Journal of Astronomy & Earth Sciences Education*, 6(1), i-ii.
16. Slater, T. F. (2018). Recent evolution and status of online homework systems for teaching introductory astronomy. *Robotic Telescopes, Student Research and Education (RTSRE) Conference Proceedings*, 2(1), Hilo, Hawai'i, USA, July 23-25, 2018. Fitzgerald, M., et al., Eds., <https://tinyurl.com/rszdkw4>
17. Slater, T.F. (2018). Does your article need a methods or methodology sub-section? *Journal of Astronomy & Earth Sciences Education*, 5(2), i-ii, <https://doi.org/10.19030/jaese.v5i2.10220>
18. **KATTNER, S.**, Burrow, A.C., & Slater, T.F. (2018). Relationship between students' spatial ability and effectiveness of two different eclipse teaching pedagogies. *Latin American Journal of Astronomy Education*, 26(2), 7-33.
<http://www.relea.ufscar.br/index.php/relea/article/view/405>
19. Slater, T.F. (2018). To Telescope or Not To Telescope? Invited Paper for the *Robotic Telescopes, Student Research and Education (RTSRE) Conference Proceedings*, 1(1), 41-46, 2018, Fitzgerald, M., James, C.R., Buxner, S., White, S., Eds., San Diego, California, USA, Jun 18-21, 2017, ISBN 978-0-6483996-0-5, doi : 10.32374/rtsre.2017.004,
<https://rtsre.net/ojs/index.php/rtsreconfproc/article/view/25>
20. Slater, T. F. (2018). Improving your argument by identifying a literature gap. *Journal of Astronomy & Earth Sciences Education*, 5(1), i-ii., <https://doi.org/10.19030/jaese.v5i1.10194>

RECENT PROFESSIONAL PRESENTATIONS

I: INVITED PLENARY AND KEYNOTE LECTURES

1. Slater, T. F. (2021, January). *AstroNotes: Where Astronomy is a Verb*. Invited lecture to the American Association of Physics Teachers Winter Conference, Virtual, January 5, 2021.
2. Slater, T. F. (2020, November). *The Planetarium as an Interactive Classroom*. Invited lecture to the Carolina Association of Planetarium Educators, *Canceled due to Covid19*.
3. Slater, T. F. (2019, October). *Time Management Strategies for Busy Professors and Graduate Students*. Presented to the International Business Education Conference, Las Vegas, NV, October 14, 2019.
4. Slater, T. F. (2019, June). How to Teach Effectively in American-style Universities. Featured Workshop at the International Business & Education Conference, Dublin, June 3, 2019.
5. Slater, T. F. (2019, June). Zooming in on the Dome: Enhancing Learning in the Planetarium and Museum. Keynote Talk Presented at the Joint Meeting of the Ecsite European Science Centre & Museum Association and the Euromax Giant Screen Cinema Conference, Tycho Brahe Planetarium, Copenhagen, June 5, 2019.

6. Slater, T. F. (2018, June). *Strategies to Publish More for Busy Professors*. Presented at the International Science Education Conference, June 6, 2018, Barcelona, Spain.
7. Slater, T. F. (2018, March).: *Galileo's 21st Century Syllabus*. Presented at the University of Hawaii Institute for Astronomy, March 23, 2018, Maui, Hawai'i. <https://youtu.be/SUTgGx032Ew>
8. Slater, T. F. (2018, January). *Notable AstroNotes Notes for Novice Astronomy Instructors*. Talk presented to the American Association of Physics Teachers Annual Winter Meeting, January 9, 2018, San Diego, CA
9. Slater, T. F. (2017). *Proposing Preposterous Propositions for imProving Pedagogy*. International Conference on Technology in Education. October 9, 2017. Las Vegas, NV.
10. Slater, T.F. (2017, June). *To Telescope or Not To Telescope-That is the Next Question for Astronomy Educators*. Presented to the International Robotic Telescopes, Student Research, and Education Conference, June 21, 2017, San Diego, CA (<https://youtu.be/XNoDcXXR-XY>)
11. Slater, T. F. (2017). *What's So Hard about Understanding Eclipses?* Astronomical League AstroCon Solar Eclipse Conference, August 17, 2017, Casper WY.
12. Slater, T. F. (2017). *Practical Strategies to Use Popular Media in Your Teaching Effectively*. American Association of Physics Teachers Conference, July 24, 2017, Cincinnati, OH
13. Slater, T. F. (2017, March). *The modern professor's teaching toolkit*. Presented at the Joint Meeting of the Texas Section of the American Physical Society & Texas Section of American Association of Physics Teachers, March 10, 2017, San Antonio College, San Antonio, TX.
14. Slater, T. F. (2017, February). *New Lessons from the Last 200 Planetarium Education Research Dissertations*. Invited presentation GA01 at the American Association of Physics Teachers Conference, February 21, 2017.
15. Slater, T. F. (2017). *The modern professor's new toolkit for interactive teaching*. Plenary at International Science Education Conference, January 1-5, 2017, Maui, Hawaii.

II: RECENT PROFESSIONAL CONFERENCE CONTRIBUTIONS

1. Slater, T. F. (2021, January). *Evolution of the Journal of Astronomy & Earth Sciences Education JAESE*. Poster presentation to the American Association of Physics Teachers Winter Conference, January 5, 2021, Virtual.
2. Slater, T. F. & **UZPEN, B.** (2020, December). *What is Learned by Undergraduates in Dispersed Remote Telescope Observing Teams: Preliminary Results*. Poster ED048-01 presentation at the American Geophysical Union Winter Conference, December 15, 2020, Virtual.
3. Slater, T. F. (2020, December). *Creating Drone STEAM Challenges to Engage Students & Teachers*. Presented to the Northwest Association of Science Teacher Educators, December 15, 2020, Virtual.
4. Slater, T. F. (2020, November). *Drone STEAM Challenges for Teaching Integrated STEM*. Presented to the National Science Teachers Association Virtual Engage Conference, November 15, 2020, Virtual.
5. Slater, T. F. (2020, November). *Integrating STEAM Concepts in the Sky Using Drones*. Presented to the Far West Association of Science Teacher Educators, November 13, 2020, Virtual.
6. Slater, T. F. (2020, September). *Using Drones to Teach Integrated Science*. Presented to the Science Fictions, Popular Cultures Academic Conference, September 25, 2020, Virtual.
7. Slater, T. F. & **UZPEN, B.** (2020, July). *Preliminary Results on Students in Dispersed Remote Telescope Observing Teams*. Presented to the American Association of Physics Teachers Summer Conference, July 20, 2020, Virtual.
8. **SCHULTZ, S. J.** & Slater, T. F. (2020, July). *Extent of Formative Assessment-Based Active Learning in Interactive Planetarium Shows*. Presented to the American Association of Physics Teachers Summer Conference, July 19, 2020, Virtual.
9. **UZPEN, B.**, Slater, T. F. & Fitzgerald, M. (2020, March). *An Investigation into the Faculty Mentors of an International Online Astronomy Science Research Experience for Undergraduates*. Presented at the 1st Annual University of Wyoming Education Summit, March 6, 2020, Laramie, WY
10. Slater, T. F. (2020, March). *Leveraging Science Fiction Conventions as an Opportunity for Improving STEM Education*. Presented at the 1st Annual University of Wyoming Education Summit, March 6, 2020, Laramie, WY

11. Slater, T. F. (2019, May). *Preposterous Propositions for imProving Pedagogy*. Talk presented at the Western Region NSF Noyce Alliance Conference, University of Wyoming, May 19, 2019.
12. Slater, T. F. (2019, June). *Improving Hawaiian Science Education by Leveraging Science Fiction Conventions*. Talk presented at the Science Fiction Research Association International Meeting, Honolulu, June 21, 2019.
13. Slater, T. F. (2019, July). *Best Weapons for Killing Zombies*. Talk presented at the Shoreleave Science Fiction, Science, and Culture Conference. Baltimore, July 12, 2019
14. Slater, S. J., & Slater, T. F. (2019, July). *Tidal Waves & Tsunamis in Science Fiction*. Talk presented at the Shoreleave Science Fiction, Science, and Culture Conference. Baltimore, July 14, 2019.
15. Slater, T. F. (2019, July). *Teaching with Lecture-Tutorials and Small Group Activities*. Workshop at the International Astronomy Teaching Summit, Loyola University Maryland, Baltimore, July 17, 2019.
16. Slater, T. F. (2019, July). *Proposing Preposterous Propositions for imProving Teaching & Learning*. Workshop at the International Astronomy Teaching Summit, Loyola University Maryland, Baltimore, July 17, 2019.
17. Slater, T. F. (2019, August). *The Busy Professor's Interactive Teaching Toolkit for Adapting to a Quickly Changing Student Body*. CI International Education Conference, New York, August 6, 2019.
18. Slater, T. F. (2019, September). *Teaching Tsunami's & Tidal Waves through Science Fiction*. Presentation to the Pacific-basin STEAM Teaching Conference, Kona, HI, September 28, 2019.
19. Morgan, W. A., & Slater, T. F. (2019, January). *Peer Instruction in Introductory Astronomy*. 223rd Meeting of the American Astronomical Society, Seattle, WA, January 7, 2019.
20. Slater, T. F. (2019, January). A Dispassionate, Historical Context of Guns on College Campuses. CI International Conference on Education, 114 (#310), Maui, HI, January 2, 2019.
21. Slater, T.F. (2018, October). Strategies for Busy Professors to Publish More. A professional development workshop at the *CI International Technology Education Conference*, Las Vegas, NV, October 7-9, 2018
22. Slater, T. F. (2018, October). Searching for Comets. Contributed session at NESTA Earth System Science Share-a-Thon coordinated by Richard Jones at *National Science Teachers Association Conference*, Reno, NV, October 12, 2018
23. Slater, T.F. (2018, October). Teaching science literacy using science fiction. Contributed talk at the *MileHiCon Science Fiction Convention*, Denver, CO, October 20, 2018
24. Slater, T.F. (2018, October). Most important scientific advancements of the year. Panel discussant at the *MileHiCon Science Fiction Convention*, Denver, CO, October 20, 2018
25. Slater, T. F. (2018, September). Emphasizing digital literacy for modern STEAM education. Talk presented at the *2018 Pacific-basin STEAM Teaching Conference*, Kohala Coast, Big Island of Hawai'i, USA, September 13-16, 2018.
26. Slater, T. F. (2018, September). Talking About the Weather: Using Martian SciFi to Teach Meteorology. Talk presented at the *2018 Pacific-basin STEAM Teaching Conference*, Kohala Coast, Big Island of Hawai'i, USA, September 13-16, 2018.
27. Slater, T. F. (2018, September). Talking About the Weather: Using Martian SciFi to Teach Meteorology. Talk presented at the *2018 Pacific-basin STEAM Teaching Conference*, Kohala Coast, Big Island of Hawai'i, USA, September 13-16, 2018.
28. Slater, T. F. (2018, September). Best firearms for surviving the imminent zombie apocalypse. Talk presented at the *2018 Science Fictions, Popular Cultures Academic Conference*, Kohala Coast, Big Island of Hawai'i, USA, September 13-16, 2018.
29. Slater, T. F. (2018, September). Unresolved moral questions about Black Panther. Panel discussion moderated at the *2018 Science Fictions, Popular Cultures Academic Conference*, Kohala Coast, Big Island of Hawai'i, USA, September 13-16, 2018.
30. Fitzgerald, M., Bretones, P. S., Cutts, K. R., McKinnon, D., Slater, S. J., Slater, T. F., **TATGE, C.** Schleigh, S. (2018, August). International Studies of Astronomy Education Research Database (*iSTAR*): Reaching Critical Mass. Presented at the *International Astronomical Union General Assembly Meeting*, Vienna, Austria, August 20-31, 2018.

31. Slater, T. F. (2018, July). Galileo's Universe: Seeing the Universe Through Galileo's Eyes. Presented at the 71st WesterCon Science & Science Fiction Convention, Denver, CO, July 5-8, 2018.
32. Slater, T. F. (2018, July). Best Firearms for the Imminent Zombie Apocalypse. Presented at the 71st WesterCon Science & Science Fiction Convention, Denver, CO, July 5-8, 2018.
33. Slater, T. F. (2018, July). Teaching with Lecture-Tutorials and Small Group Activities. Session THU04b presented at the International Astronomy Summit and Robotic Telescopes in Education Conference, Hilo, Hawai'i, July 22-27, 2018.
34. Salimpour, S., Fitzgerald, M., Slater, S. J., & Slater, T. F. (2018, July). *The iSTARdatabase.org & Astronomy Education Research*. Session FRI02b-3 presented at the International Astronomy Summit and Robotic Telescopes in Education Conference, Hilo, Hawai'i, July 22-27, 2018.
35. Slater, T. F. (2018, July). Are Online Homework Systems Advanced Enough for You Yet? Session FRI03b presented at the International Astronomy Summit and Robotic Telescopes in Education Conference, Hilo, Hawai'i, July 22-27, 2018.
36. Slater, T. F. (2018, June). Workshop: How to Get Published Faster. *International Conference on Education*, Barcelona, Spain, June 3-7, 2018.

VI: OTHER RECENT PRESENTATIONS

37. Slater, T. F. (2021, Nov 12). Being a Productive Busy Professor: Time Management Steps for Getting Your Academic Life Under Control. Colloquium presented to the Eastern Academy of Management and the Alabama Culverhouse College of Business at The University of Alabama. (Virtual). <https://youtu.be/gjhBUopNGAU>
38. Slater, T. F. (2021, Oct 7). Bringing Drones to Schools for Interdisciplinary STEM+Arts Teaching. Colloquium presentation to the University of Wyoming WyGIS Geographic Information Science Center, Laramie, WY. <https://youtu.be/Gd9ipwtZL6E>
39. Slater, T. F. (2021, September 30). Why Teach with Drones. Competitively selected presentation for 2021 Wyoming Innovations Virtual Showcase. https://youtu.be/1MZdbBhsU_Y
40. Slater, T. F. (2021, July 11). Drones in Science Fiction. Invited talk presented to the Shoreleave Science & Science Fiction Conference (Virtual), Baltimore, MD. https://youtu.be/Bkkw_aZlqHw
41. Slater, T. F. (2020, November). *Using Discipline-Based Education Research to Focus and Improve Teaching and Learning*. Talk to the Texas Tech University-Science Education Colloquium, Virtual, November 23, 2020.
42. Slater, T. F. (2020, November). ~~INVITED LECTURE: The Planetarium as Interactive Teaching Classroom. To have been presented at the Carolina Association of Planetarium Educators Conference, November 7, 2020. —canceled due to COVID19.~~
43. Slater, T. F. & Slater, S. J. (2020, May). ~~Embedding STEM+Arts Teaching within Science Fiction Fan Conventions. To have been presented at the Oceanic Popular Culture Association Conference held May 22-23, 2020 —canceled due to COVID19.~~
44. Slater, T. F. (2020, March). ~~*Motions of the Night Sky: Astronomy Explained*. To have been presented at the Wisconsin Science Teachers Association Meeting held March 21-23, 2020 in Wisconsin Dells, WI —canceled due to COVID19.~~
45. Slater, T. F. (2020, March). ~~*Sky Objects & Motions for Enhanced DM Storytelling*. To have been presented at the GaryCon National Gaming Convention, March 27-29, 2020 in Lake Geneva, WI —canceled due to COVID19.~~
46. Slater, T. F. (2020, March 5). Invited Speaker for Ellbogen Center for Teaching and Learning and the Outreach School Teaching 'n Technology TNT" Program: *Proposing Preposterous Propositions for imProving Pedagogy*

VII: CURRENT YEAR'S PROPOSALS SUBMITTED

1. National Science Foundation Proposal Number: 20-43888: Title: First Steps Toward Improving the Quality and Effectiveness of SCI 101 Teaching on Nature of Science & Scientific Inquiry (\$68,068, *declined*)

2. UW CoED 2021 Lantz Professorship Application: Establishing a Statewide Drone Education Program to Study and Support Innovative STEAM Education (\$50,000, *declined*)
3. UW Provost's Office 2021 Grand Challenges Initiative Proposal: Initiating a Self-Sustaining, Statewide Drone Education Program (\$20,000, *declined*)
4. UW CoED Dean's Discretionary Fund Proposal: Establishing a UWYO CoED Drone Education Program (\$6,750, *funded*)

VIII: RECENT NEWS MEDIA AND OUTREACH APPEARANCES

1. Gillette News Record, April 16, 2021. *Area 59 to host drone flying workshop for educators.* https://www.gillettenewsrecord.com/news/local/article_6c4d47ec-e3fd-5b6a-8c46-59ea71e08dc4.html
2. Gillette News Record, April 19, 2021. *Drone workshop touches down in Gillette.* https://www.gillettenewsrecord.com/news/local/article_17c62ff6-3e62-5de2-87e9-44b51fc2c9b7.html
3. Sheridan Press, June 28, 2021. *Taking Off: Program places drones in hands of Girls School students.* <https://tinyurl.com/yckjpjjs>
4. UWYO Magazine, September 2021, v23(1), p. 46. *Inspiring the Next Generation*, <https://tinyurl.com/3k3bfex4> and <http://www.uwyo.edu/UWYO/current/23-1/features/data-across-disciplines.html>
5. Powell (WY) Tribune, February 3, 2022. *Drone expo challenges students' skills in emerging technology.* <https://www.powelltribune.com/stories/drone-expo-challenges-students-skills-in-emerging-technology.38018> (accompanying YouTube News Video: https://youtu.be/zs7-r_dQcs8)

UW College of Education Facebook Posts Featuring Dr. Tim Slater:

6. July 14, 2021 – Drone Education at Wyoming Girls School, <https://www.facebook.com/WyoCollegeOfEd/posts/10165977314890160>
7. July 12, 2021, Wyoming Association for Career and Technical Education <https://www.facebook.com/WyoCollegeOfEd/posts/10165971778580160>
8. July 12, 2021, Wyoming Association for Career and Technical Education <https://www.facebook.com/WyoCollegeOfEd/posts/10165971752890160>
9. April 22, 2021, SkillsUSA Drone Competition in Casper <https://www.facebook.com/WyoCollegeOfEd/posts/10165645079015160>

VIII: NON-REFEREED & COMMISSIONED ACADEMIC WRITING

Dr. Slater serves as lead senior columnist for *Society of College Science Teachers* blog at <http://www.scst.org/blog>

1. Slater, T. F. (2020, August). Why grading is more important than teaching. *Society of College Science Teachers Blog*, 6(1), <http://www.scst.org/blog>
2. Slater, T. F. (2019, August). a collection of great college science teaching ideas from the Society of College Science Teachers Blog. *Society of College Science Teachers Blog*, 5(1), <http://www.scst.org/blog>
3. Slater, T. F. (2019, May). Posing questions for class discussion. *Society of College Science Teachers Blog*, 4(10), <http://www.scst.org/blog>
4. Slater, T. F. (2019, April). Using science fiction to teach science. *Society of College Science Teachers Blog*, 4(9), <http://www.scst.org/blog>
5. Slater, T. F. (2019, March). Teaching science to American students. *Society of College Science Teachers Blog*, 4(8), <http://www.scst.org/blog>
6. Slater, T. F. (2019, February). How to increase your SOTL publication citation rates, *Society of College Science Teachers Blog*, 4(7), <http://www.scst.org/blog>

7. Slater, T. F. (2019, January). How much math should I use in my Science 101 course? *Society of College Science Teachers Blog*, 4(6), <http://www.scst.org/blog>
8. Slater, T. F. (2018, December). Best practices for teaching with images in class. *Society of College Science Teachers Blog*, 4(5), <http://www.scst.org/blog>
9. Slater, T. F. (2018, November). Finding the best images for my PPT-lectures. *Society of College Science Teachers Blog*, 4(4), <http://www.scst.org/blog>
10. Slater, T. F. (2018, October). Is it possible to motivate non-science students? *Society of College Science Teachers Blog*, 4(3), <http://www.scst.org/blog>
11. Slater, T. F. (2018, September). What are realistic goals for the non-majors general science survey course? *Society of College Science Teachers Blog*, 4(2), <http://www.scst.org/blog>
12. Slater, T. F. (2018, August). Get better teaching evaluations by changing your attitude. *Society of College Science Teachers Blog*, 4(1), <http://www.scst.org/blog>
13. Slater, T. F. (2018, February). Is it time to take advantage of automatic grading? *Society of College Science Teachers Blog*, 3(7), <http://www.scst.org/blog>
14. Slater, T. F. (2018, January). Students benefit from structured a structured syllabus. *Society of College Science Teachers Blog*, 3(6), <http://www.scst.org/blog>
15. Slater, T. F. (2017, December). Be responsive to get into print faster. *Journal of Astronomy & Earth Sciences Education*, 4(2), v-vi.
16. Slater, T. F. (2017, September). Invited Guest Blogger for “Norman Eng’s 10X College Teaching Blog,” September 21, 2017, <http://normaneng.org/feeling-overwhelmed-professors-lets-fix-that>
17. Slater, T. F. (2017, September). Where to publish your teaching innovations. *Society of College Science Teachers Blog*, 3(2), <http://www.scst.org/blog>
18. Slater, T. F. (2017, Aug). Engaging students with preposterous propositions. *Society of College Science Teachers Blog*, 3(1).
19. Slater, T. F. (2017, April). Should you assign readings from free web pages or an expensive textbook? *Society of College Science Teachers Blog*, 2(9).
20. Slater, T. F. (2017, May). Advice to a new journal editor. *Journal of Astronomy & Earth Sciences Education*, 4(1), v-vi.

EXAMPLES OF PROFESSIONAL DEVELOPMENT WORKSHOPS

1. Slater, T. F. & Burrows, A. C. (2022, Feb 5). *Drones for Teaching Integrated STEAM: 1 ½ Day Workshop for the NSF Noyce Fellows Program*, University of Wyoming Campus, Laramie, WY.
2. Slater, T. F. & Sanchez, R. L. (2021, Nov 1). *Let’s Fly Drones: A ½ Day “How To” Workshop for the Wyoming Mining Association*, Ramkota Hotel, Casper, WY.
3. Slater, T. F. (2021, Nov 9). *Introduction to the SkillsUSA Precision Drone Flight Competition (1-day workshop)*. Gillette College, Gillette, WY.
4. Slater, T. F. & Sanchez, R. L. (2021, Oct 1). *The “A” in STEAM is for “a drones in the K-12 Classroom” (1-Day PTSTB PD Workshop)*, STEAM Ahead Conference, Casper College, Casper, WY.
5. Slater, T. F. (2021, June 23-24). *Teaching with Drones WithOUT Drones: Teaching STEAM Concepts with Drones in Your Classroom When You Don’t Have Drones (6-hr Virtual PD Workshop)* hosted by the Pre-College Engineering Education division of the American Society of Engineering Education and the NSF Noyce Scholars Program.
6. Slater, T. F., Sanchez, R. L., Northrup, A. (2021, June 19). *Computer Science: Coding Drones for Autonomous Flight (1-Day PD Workshop)*, Northwest College, Powell, WY.
7. Slater, T. F. & Sanchez, R. L. (2021, June 17-18). *Drones in the K-12 Classroom (2-Day PTSTB PD Workshop)*, Powell High School, Powell, WY.

8. Slater, T. F. & Sanchez, R. L. (2021, June 14/15). *Drones in the K-12 Classroom (2-Day PTSB PD Pre-Conference Workshop)* for Wyoming Association of Career and Technical Education. Buffalo High School, Johnson County School District #1, Buffalo, WY.
9. Slater, T. F., Petersen, E. & Sanchez, R. L. (2021, April 17). *Drones in the K-12 Classroom (1-Day PTSB PD Workshop)*. Gillette College, Gillette, WY.
10. Slater, T. F. (2020, August). Virtual PD Workshop: *Flexible Teaching Systems for Resilient Faculty*. Miami Dade College, Miami, FL, August 26, 2020.
11. Slater, T. F. (2020, August). Virtual PD Workshop: *The Future is Bright for Resilient Faculty and Passionate Students*. Miami Dade College, Miami, FL, August 25, 2020.
12. Slater, T. F. (2020, May). Virtual PD Workshop: *Teaching Relevant Science*. Presentation to NSF Noyce Scholars Spring Conference, May 2, 2020, Virtual.
13. Slater, T. F. (2020, April). Virtual PD Workshop: *An Academics' Emergency Guide to Working from Home and Teaching Online*. Miami Dade College, Miami, FL, April 22, 2020.
14. Slater, T. F. (2020, January). Workshop: *Strategies to Publish More for Busy Professors*. Competitively selected for presentation at the Association for Science Teacher Education International Conference, San Antonio, TX, January 10, 2020.
15. Led a 2-day K-12 teacher professional development workshop in Shoshoni (Freemont #24): *Using Drones in K-12 Education*, October 19 & 20, 2019.
16. Slater, T. F. & **NORTHRUP, A.** (2018, August). *Teaching Astronomy in the Astronomical Observatory*. ½ day public outreach program at Northwest Wyoming College, Powell. August 24, 2018.
17. Slater, T. F. & **NORTHRUP, A.** (2018, June). *Teaching Astronomy Standards with a Portable Planetarium*. 2-day professional development workshop at Northwest Wyoming College, Powell and Park County School District #1. June 26-27, 2018.
18. Slater, T. F. (2017, December). *Teaching Astronomy as a Verb*. A 2-Day Teaching Excellence Professional Development Workshop at the University of New Orleans, December 9-10, 2017, New Orleans, LA.
19. Slater, S. J., Morgan, W., & Slater, T. F. (2017, February). Faculty Professional Development Workshop: *Teaching Introductory Astronomy Using Quantitative Reasoning Activities* (4 hrs). Presented at the American Association of Physics Teachers Conference at Georgia Tech, February 17, 2017.
20. Co-organized Cincinnati Solar Fest as a 1,000-attendee public community education event for the American Association of Physics Teachers, July 24, 2017, Covington, KY
21. Slater, T. F. (2017, July). Presented a day-long teaching workshop, "Revitalizing Introductory Astronomy Teaching," for the Live Interactive Planetarium Symposium at Ball State University, July 21, 2017, Muncie, IN
22. Slater, T. F. (2017, July). Presented a day-long teaching workshop, "The Perplexed Physicists' Primer on Astronomy Pedagogy," for the American Association of Physics Teachers Summer Conference, July 22, 2017, Covington, KY
23. Slater, T. F. (2017, August). Presented a half-day teaching workshop, "First Steps to Getting Out from Behind the Lectern" at the 2017 National Astronomy Teaching Conference, August 9, 2017, Ft. Myers, FL
24. Slater, T. F. (2017, March). *Implementing Small Group Learning Activities to Teach Astronomy*. Professional development workshop conducted at the Joint Meeting of the Texas Section of the American Physical Society & Texas Section of American Association of Physics Teachers, March 10, 2017, San Antonio College, San Antonio, TX.
25. Slater, S. J., Morgan, W., & Slater, T. F. (2017, February). *Faculty Professional Development Workshop: Teaching Introductory Astronomy Using Quantitative Reasoning Activities* (4 hrs). Presented at Georgia Tech, February 17, 2017.

RECENT GRADUATE LEVEL TEACHING EXPERIENCE

ESCI 5600 – History & Philosophy of STEM Education
(F 18 Sp 20 F21)

ESCI 5250 – Cognition & Learning in STEM (F 19)

ESCI 5350 – Advanced Science Education Research
Methods II (F 18, F21)

ESCI 5300 – Advanced Science Education Research
Methods I (Sp 21)

ESCI 5100 – Science Education Colloquium (F 18, F 20)

ESCI 5250 – Cognition & Learning in STEM (F 17)

EDCI 5730 – Cognition & Learning (Sp 19)

EDCI 5400 – MidPoint Portfolio Reflection (F 20)

EDCI 5560 – Seminar in Assessment (F 20)

EDCI 5790 – Learning Theories & Instructional Principles
(Sp 17, Sp 18)

**Consistently maintains a high end-of-course evaluation average of 4.5/5.0 and higher*

PROFESSIONAL SERVICE**(I) UNIVERSITY OF WYOMING**

1. UW College of Education External Awards Committee (Chair, 2018-2020)
2. UW Research Advisory Committee (2019-2020, 2021-2022)
3. UW College of Education Senior Faculty Mentoring Program (2017-2018, 2020-2021)
4. UW College of Education –Member of Numerous Search Committees
5. UW Faculty Senate (Senator, 2014-2017, Full-Time Alternate F2021)
6. UW UWYO Faculty Dispute Resolution Panel
7. UW Faculty Grant in Aid Proposal Peer Reviewer
8. UW CoED AAEQIOP Proposal Draft Internal Reviewer
9. UW CoED Faculty Mentoring Program
10. C&I Graduate Admissions Committee (Chair, 2012-2016)
11. UW Academic Council Graduate Education

(II) RECENT PROFESSIONAL CONFERENCE SESSIONS ORGANIZED AND CONVENED

- Conference Co-Chair for the 2020 *Science Fiction, Popular Cultures Academic Conference*, Virtual, September 24-27, 2020, <http://www.caperteam.com/sfpc>
- ~~Organized and chaired the 2020 *International Astronomy Teaching Summit* held at Long Beach City College, Long Beach, California, August 9-11, 2020, <http://www.caperteam.com/astro101summit>, canceled due to Covid-19.~~
- Conference Co-Chair for 2019 *Pacific-basin STEM Teaching Conference*, held September 26-29, 2019 in Kona, Hawaii, <http://www.caperteam.com/pstc>
- Organized and chaired the 2019 *International Astronomy Teaching Summit* held at Loyola University, July 16-18, 2019, <http://www.caperteam.com/astro101summit>
- Organized and chaired the 2018 *Wyoming Society of College Science Teachers* annual meeting, as part of the Wyoming Math & Science Teaching Conference, Casper College, Casper, WY, Oct 15, 2018, <http://www.caperteam.com/wyscst>
- Conference Co-Chair for 2018 *Pacific-basin STEM Teaching Conference*, held September 13-16, 2018 in Kona, Hawaii, <http://www.caperteam.com/pstc>

- AstroBaseCamp – *the National Astronomy Faculty Meeting*. A virtual faculty-meeting, held weekly, using desktop video-teleconferencing, for college teaching faculty. Chaired by T. Slater
- American Public University System – Space Studies Program Board of Visitors, Charles Town, WV, 2017-present.
- Conference Chair for Science Track Organizing Committee. *WesterCon71 Science Fiction Convention*, Denver, CO – July 5-8, 2018.
- Conference Co-Chair for *Robotic Telescopes in Education Conference and International Astronomy Teaching Summit*, Hilo, Hawai'i – July 22-27, 2018.
- Conference Chair for the *National Astronomy Teaching Summit* at Florida Gulf Coast University, August 7-9, 2017, Ft. Myers, FL
- Conference Chair for *Wyoming Society of College Science Teachers Conference* as part of the Wyoming Science & Math Teaching Conference, October 16-17, 2017, Casper, WY
- *Pacific-basin Science Teaching Conference* at Kona, Hawai'i, September 13-17, 2017. Conference Organizer, Tim Slater

(III) RECENT OUTREACH EVENT COORDINATION

- Slater, T. F. (2021, April 15). Coordinated Wyoming SkillsUSA Precision Drone Flight Competition, Casper College, Casper, WY. <https://www.facebook.com/WyoCollegeOfEd/posts/10165645079015160>
- Slater, T. F. (2021, April 10). Coordinated Wyoming Science Olympiad Drone Racing Competition, Casper College, Casper, WY.
- Slater, T. F. & Sanchez, R. L. (2021, June 21-25). Let's Fly Girls! 5-day Drone Flight Education Program for Wyoming Girls School, Sheridan, WY. <https://tinyurl.com/yckjpijs>
- Sanchez, R. L., Petersen, E., & Slater, T. F. (2021, August 21). Coordinated Area59@Gillette College Drone Fly-In Racing Competition, Gillette College, Gillette, WY.
- Sanchez, R. L. & Slater, T. F. (2021, Sept 11). The World of Modern Drones. Hosted exhibit for the Cheyenne Air National Guard, Cheyenne, WY.
- Slater, T. F. & Sanchez, R. L. (2021, Sept 25). Coordinated WyoTech Drone Festival & Exp, Laramie, WY (*unexpectedly canceled due to pandemic*)
- Slater, T. F. & Sanchez, R. L. (2022, Jan 29). Coordinated Big Horn Basin Drone Festival and Competition, Powell, WY

(IV) EDITOR/REFEREE/REVIEWER

- Slater, T.F., Editor-in-Chief, *Journal of Astronomy & Earth Sciences Education*, www.JAESE.org
- Slater, T.F., & Burrows, A.C., Co-Editors, Science Education Section of *Contemporary Issues in Technology and Teacher Education (2018-2021)*
- NSF & NASA grant proposal reviewer (ongoing)
- *Journal of College Science Teaching*, *Journal of Geoscience Education*, *The Physics Teacher Journal* reviewer
- External Reviewer for American Public University System – Undergraduate Degree Program in Space Sciences

(V) OTHER

- Earned formal certification as *Certified CASE Agribusiness Course Instructor*, November 30-December 1, 2020, Virtual.
- National Association of Agricultural Educators – National Finance Committee Member (2020-2022)

External Referee:

- External Referee for 2020 Tenure and Promotion Package at University of Colorado
- External Referee for 2019 Tenure and Promotion package at Auburn University

- External Referee for 2019 Tenure and Promotion package at University of Houston
- External Referee for 2018 Tenure and Promotion package at University of Nebraska Lincoln
- External Referee for 2017 Tenure and Promotion package at University of Minnesota Rochester
- External Referee for 2017 Tenure and Promotion package at Charles Sturt University, Australia

Recent International Dissertation Reader

Slater, T. F. (2021, October 11). Slater serves as International External Dissertation Committee member at Ireland's National University of Ireland Galway for Ph.D. candidate Adriana Ferreira de Souza Cardinot, *Astronomy Education in Secondary School: An Evaluation of Conceptual and Affective Learning Experiences with Game-Based Learning*

Slater, T. F. (2021, June). Slater serves as International External Dissertation Committee member at Australia's Deakin University for Ph.D. candidate Saeed Salimpour, *Visualizing the Cosmos: Teaching Cosmology in High School in the Era of Big Data*

Other Notable Service

Served on National Advisory Council for Earth & Space Science Praxis Test at ETS Educational Testing Service, Princeton, NJ, November 10-12, 2019.

NSF Proposal Reviewer: AISL Advancing Informal STEM Learning Program

Served on Blue Ribbon Editorial Board for *Active Learning Theory and Methods*, an edited collection edited by Joel Mintzes, for publication in spring 2019 by Springer, Berlin, along with: Lori Breslow (Massachusetts Institute of Technology), Brian Coppola (University of Michigan), Diane Ebert-May (Michigan State University), Eugenia Etkina (Rutgers University), Eric Mazur (Harvard University), Joseph D. Novak (Cornell University), Timothy Slater (University of Wyoming), Mary Pat Wenderoth (University of Washington)

International Planetarium Society – Committee on Education (2015-2018)

American Physical Society – National Education Committee (2013-2015)

National Academy of Sciences – Board on Science Education – Discipline Based Educ. Research Committee (2010-11)

American Institute of Physics – Liaison Committee on Physics Education, Chair, (2010-2011)

National Academy of Sciences – Board on Science Education – Core Ideas Commissioned Presenter (2009)

(VI) CURRENT GRADUATE STUDENT SUPERVISION

GRADUATE CHAIR OF ACTIVE PH.D./ED.D. STUDENTS (7):

Ashley Armstrong; Kenneth C. Brandt; Sara K. Schultz; Coty B. Tatge; W. Keith Turner; Brian Uzpen; Richard Willey, Ray Paul Zeleski

This list does not include Committee Service as a Contributing Member for numerous masters and doctoral committees, within and beyond the UW College of Education.