HUI-HUI WANG

Curriculum Vitae
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EDUCATION

Doctor of Philosophy, University of Minnesota, 2012, Major: Curriculum and Instruction in Science Education; Specialty: STEM Integrated Education

Master of Science, Southern Oregon University, 2005, Major: Environmental Education; Specialty: Non-formal Education

Bachelor of Science, National Pingtung University of Science and Technology, 2001, Major: Biology and Wildlife Conservation

PROFESSIONAL EXPERIENCE

- Assistant Professor, Department of Agricultural Sciences Education and Communication (75%) and Department of Curriculum and Instruction (25%), Purdue University, 2015-current
    - The Center for Advancing the Teaching and Learning of STEM (CATALYST), Affiliate.
- Assistant Professor (Non Tenure Track), Center for Youth Development, University of Minnesota, 2012-2015

AWARDS AND HONORS

2019 Excellence in Research Award, Purdue University.
2019 Teaching Leadership Award, Purdue University.
2018 Scholarship of Engagement Fellows Program
2018 PK-12 Outreach and Engagement for Emerging Faculty Impact Award
2016 Purdue Cooperative Extension Specialists' Association (PUCESA) Leadership Scholarship Award
2015 REVERE award (Pre K-12 Learning), Category: Magazines – Feature Article, Association of American Publishers.

REFEREED PUBLICATIONS ($N = 17$)

1. Wang, H. H., & Knobloch, N. A. (2020). Preservice informal educators' beliefs and practices of teaching STEM through AFNR. *Journal of Agricultural Education*, 61(2), 57-76. https://doi.org/10.5032/jae.2020.02057
2. Barrett, T., Feng, B., & Wang, H. H. (2020). Food safety in the classroom: Evaluation of curriculum alignment to state standard using Delphi technique. *Journal of Food Science Education*. https://doi.org/10.1111/1541-4329.12198
3. Wang, H. H., Charoenmuang, M., Knobloch, N. A., & Tormoehlen, R. L. (2020). Defining interdisciplinary collaboration at high school settings through teachers' beliefs and practices of STEM integration by using a complex designed system. *International Journal of STEM Education*, *7*:3. https://doi.org/10.1186/s40594-019-0201-4
4. Wang, H. H., Bhattacharya, D., & Nelson, B. (2019). Secondary agriculture teachers' knowledge, beliefs and teaching practices of climate change. *Journal of Agricultural Education and Extension*, https://doi.org/10.1080/1389224X.2019.1699126
5. Wang, H. H. (2019). Examining patterns in teacher-student classroom conversation during STEM lessons. *Journal of STEM Education Research*. https://doi.org/10.1007/s41979-019-00022-x
6. Wang, H. H., Furrer, M., Orick, J., & Mitchell, K. (2019). Motivating Master Gardeners to teach STEM and agricultural concepts to youth. *North American Colleges and Teachers of Agriculture Journal*, *63*, 225-230.
7. Scherer, H. H., McKim, A. J., Wang, H. H., DiBenedetto, C. A., & Robinson, K. (2019). Making sense of the buzz: Providing a taxonomy of "STEM" in agriculture, food, and natural resources education. *Journal of Agricultural Education*, *60*(2), 28-53. https://doi.org/10.5032/jae.2019.02028
8. Wang, H. H., & Knobloch, N. A. (2018). Levels of STEM integration through Agriculture, Food, and Natural Resources, Journal of Agricultural Education, 59(3), 258-277.
9. Wang, H.H., Bhattacharya, D., Evans, E., & Jirik P. (2017). Building bee houses: Designing and conducting solitary bee houses for scientific investigations, Science Scope, 41(3), 41-49.
10. Wang, H.H. & Billington B. (2016). Economically disadvantaged minority girls' knowledge and perceptions of science and engineering and related careers. *The Journal of Extension*, 54 (6). https://joe.org/joe/2016december/rb8.php
11. Wang, H. H., & Nam, Y. (2015). Exploring the impact of a STEM integration teacher professional development program on secondary science and mathematics teachers' perceptions of engineering and their attitude toward engineering integrated teaching. *Journal of Korean Earth Science Society*, *36*(5), 484-499.
12. Wang, H. H., Billington, B., & Chen, Y. C. (2014). STEM in a hair accessory. Science and Children, *52*(3), 54-59.
13. Chen, Y.C., Moore, T. J., & Wang, H. H. (2014). Construct, Critique, and Connect: Engineering as a vehicle to learn science. Science Scope, *38*(3), 58-69

14. Guzey, S.S., Tank, K.M., Wang, H. H., Roehrig, G. H., & Moore, T. J. (2014). A high-quality professional development for teachers of grades 3-6 for implementing engineering into classrooms. *School Science and Mathematics*, *114*(3), 139-149.
15. Roehrig, G. H, Moore, T. J., Wang, H. H., & Park, M. S. (2012). Is adding the E enough? Investigating the impact of K-12 engineering standards on the implementation of STEM integration, *Journal of School Science and Mathematics*, *112*(1), 31-44.
16. Wang, H. H., Moore, T., Roehrig, G., & Park Mi-sun. (2011). STEM integration: Teacher perception and practice. *The Journal of Pre-College Engineering Education Research*, *1*(2), 1-13.
17. Wang, H. H. & Carlson, S. (2011). Factors that influence student's satisfaction in an environmental field day experience. *The International Electronic Journal of Environmental Education*, *1*(2), 129-139.

BOOKS AND BOOK CHAPTERS (*N*= 3)

1. Wang, H. H., & Knobloch, N. A. (Invited Manuscript). Teacher beliefs and practices in STEM integration. In X. F. Liu & L. Wang (Eds.). International Encyclopedia of Education, 4th Edition. Elsevier.
2. Rebello, C. M., Wang, H. H., Asunda, P. A., & Conner, A. (In-press). Infusing evidence-based reasoning in integrated STEM. In C. Johnson, M. Margaret, T. Moore, & L. English (Eds.) Handbook of Research on STEM Education. Purdue University Press, Indiana: West Lafayette.
3. Moore, T.J., Stohlmann, M.S., Wang, H. H., Tank, K.M., Glancy, A.W. & Roehrig, G.H. (2014). Implementation and integration of engineering in K-12 STEM education. In S. Purzer, J. Strobel, & M.E. Cardella (Ed.) Engineering in pre-college settings: Synthesizing research, policy, and practices. Purdue University Press, Indiana: West Lafayette.

INVITED PRESENTATION (*N*=7)

A. International:
   1. *From wildlife conservation to STEM integration*, Institute of Wildlife Conservation, National Pingtung University of Science and Technology, Pingtung, Taiwan, November, 2019. (15 attendees)
   2. *Lessons Learned from a STEM Integrated Program*, (2018, November). University of New England, Armidale, Australia, November, 2018. (13 attendees).
   3. *STEM pollinator friendly program.* (2016, November). The International Forum on Elementary Science Education Reform in New Media Era, Nanjing, China. (65 attendees).

B. State and regional:
   1. *Embedding science inquiry into transmedia components*, STEM Transmedia workshop, Indianapolis, IN, July 2019. (12 attendees).
   2. *Preservice informal educator's beliefs and practices of teaching STEM through AFNR*, EDCI Research Seminar, IN, April 2019. (9 attendees).

3. *Integrating STEM into informal educational programs*. (2017, Oct.). Invited keynote speaker for the Marshall County Extension Board. Plymouth, IN (45 attendees).
4. *Using a hydroponic curriculum to demonstrate different models of STEM integration*. (2016, October). North Central American Association Agricultural Education Conference, West Lafayette, IN. (18 attendees).

RESEARCH AND PROGRAM GRANTS (*N*= 8)

1. Wang, H. H., Knobloch, N. A., Tormoehlen, R. L., Feng, Y. H., & Langenhoven, P. Industry-Driven Integrated STEM and Systems Approach to Innovative Incubation (IN-VISION), USDA/NIFA Agriculture and Food Research Initiative, Professional Development for Agricultural Literacy (PDAL). May 1st, 2020 to April 30th, 2023, $ 300,000
2. Oliver, H., Worobo, R., Chaubey, I., Wiedmann, M., Deering, A., Ebner, P., Ricker, J., Wang, H.H., Stinson, B., Leighton S., Groth, G., Sykes, C., Sathguru, K.V., Burniske, G., & Kramer, J.M. Feed the future innovation lab for food safety (FSIL), USAID. July 1st, 2019 to June 30th, 2023, $9,989,774.
3. Forbes, C., Scherer, H., Wang, H.H., & Sintov, N. INFEWS RCN: Cultivating a national collaborative for research on food, energy, and water education, RCN, NSF. Sept, 2019-Aug, 2023, $749,964.
4. Wang, H. H., Knobloch, N. A., Tormoehlen, R. L., Feng, Y. H., & Langenhoven, P. Wabash Heartland Innovation Network Graduate Research Assistant Funds. Awarded in May 2019-2021, $65,649.
5. Forbes, C., Scherer, H., Wang, H. H., & Sintov, N. Innovating Teaching and Learning in the Nexus: Capacity-building for undergraduate food, energy, & water education. USDA NIFA Higher Education Challenge (HEC). Grant from USDA/NIFA. March 1st, 2018 to Feb. 28th, 2019. $30,000.
6. Knobloch. N.A., Wang, H.H., Guzey,S.S., & Tormoehlen R.L. *Land-Grant Outreach for Community-Based Agricultural Learning for Science Technology, Engineering and Mathematics Education* (LOCAL STEM). USDA NIFA Agriculture and Food Research Initiative, Educational Literacy Initiative's Professional Development for Secondary School Teachers and Educational Professionals (PD-STEP). Grant from USDA/NIFA. October 1st, 2016 to September 30th, 2019. $144,150.
7. Wang, H. H., Orick, J., & Mitchell, K. *I Say Bee, You Say Science, Technology, Engineering and Mathematical (STEM): A Native Pollinator STEM Integrated Youth Program.* Agricultural Research and Extension Leading to Economic Development in Indiana Agriculture and Rural Communities (AgSEED). Grant from Purdue University College of Agriculture. March 1st, 2016 to September 30th 2017. $50,000.
8. Wang, H. H., & Jirik P. *Save Native Pollinators, Secure Food Production, and Safeguard Our Environment: A Science, Technology, Engineering, and Mathematic (STEM) Integrated Youth Program.* Issue Area Grant. Grant from the University of Minnesota Extension. September 1st, 2014 to August 31, 2016. Funded, $ 50,000.

PEER-REVIEWED RESEARCH PAPER PRESENTATION (selected of *N* = 10)

1. Rebello, C., Wang, H. H., & Asunda, P. (2020). *A model for argumentation in integrated STEM curriculum*. Paper presented at the virtual National Association for Research in Science Teaching International Conference.
2. Wang, H. H., Bhattacharya, D., Nelson, B. (2019). *Secondary agriculture teachers' knowledge, beliefs, and teaching practices of climate change*. Paper present at North Central Region American Association of Agricultural Education Conference (NC-AAAE), East Lansing, Michigan.
3. Wang, H. H., Charoenmuang, M., Knobloch, N. A., & Tormoehlen, R. (2019). *Teachers' beliefs and practices of STEM integration in a complex system through interdisciplinary collaboration*. Paper presented at the National Association for Research in Science Teaching, Baltimore, MD, and the American Association for Agricultural Education Conference (2019), Des Moines, IA.
4. Wang, H. H., & Furrer, M. E. (2018). *A non-formal integrated STEM learning experience through native solitary bee for 4th to 6th grade students*. Paper presented at the International STEM in Education Conference, Brisbane, Australia.
5. Charoenmuang, M., Wang, H. H., Knobloch, N. A., & Tormoehlen, R. (2018). *A land-grant model: Connecting university and high school teachers through STEM adventure*. Paper presented at the North American Colleges and Teachers of Agriculture conference, Ames, IA.
6. Charoenmuang, M., Wang, H. H., & Knobloch, N. A. (2018). *Teaching integrated STEM through agricultural context by using interdisciplinary approach*. Paper presented at the Indiana STEM Education Conference, West Lafayette, IN.
7. Wang, H.H., & Knobloch, N.A. (2017). *Developing a rubric for describing levels of integrated STEM*. Paper presented at the 2017 National STEM Education Research and Practice Summit, West Lafayette, IN.
8. Wang, H. H., Furrer, M.E., Orick, J., & Mitchell, K. (2017). *Increasing Master Gardener volunteers' motivations and willingness to teach a STEM integrated agricultural youth program*. Paper presented at the North Central Region American Association of Agricultural Educators Conference (NC-AAAE), Ames, IA.
9. Scherer, H.H., McKim, A.J., Wang, H.H., & DiBenedetto, C., Robinson, K. (2017). *Making sense of the buzz: Providing a taxonomy of "STEM" in Agriculture, Food, and Natural Resources Education*. Paper presented at 2017 the American Association of Agricultural Education Conference, San Luis Obispo, CA.
10. Wang, H.H., & Knobloch, N.A. (2017). *Graduate students' knowledge and beliefs of teaching and learning STEM by integrating STEM through Agriculture, Food, and Nature Resource*. Paper presented at 2017 the National Association for Research in Science Teaching, San Antonio, TX.

PEER-REVIEWED RESEARCH POSTER AND ABSTRACT PRESENTATION

(selected of *N*= 5)

1. LaRose, S. E. & Wang, H. H. (2020). Cultivating scholarship of teaching and learning in agricultural sciences education and communication faculty. Virtual North American Colleges and Teachers of Agriculture conference.

2. Forbes, C., Scherer, H., Wang, H. H., & Sintov, N. (2020). National collaborative for research on food, energy, and water education (NC-FEW). Poster presented virtually at the Network of STEM Education Centers.
3. Wang, H., Bhattacharya, D. & Nelson, B. (2020, Apr) *Secondary Agriculture Educators' Knowledge, Beliefs, and Teaching Practices About Global Climate Change*. AERA Annual Meeting San Francisco, CA http://tinyurl.com/yx3wtcho.
4. Scherer, H. H., McKim, A. J., Wang, H. H., DiBenedetto, C. (2019). Making sense of the buzz: A systematic review of "STEM" in AFNR education literature. Abstract presented at the North American Colleges and Teachers of Agriculture conference, Twin Falls, ID.
5. Nelson, B., Wang, H. H., & Tucker, M. (2019). Teachers' perceptions and practices of inquiry-based teaching and learning using CASE curriculum. Poster presented at the American Association for Agricultural Education National Conference, Des Moines, IA.

PEER-REVIEWED WORKSHOP, SHOWCASE, AND SYMPOSIUM PRESENTATION (selected of *N*= 5)

1. Forbes, C., Scherer, H., Sintov, N. & Wang, H. H. (2020). *STEM education centers and the food-energy-water-nexus: Building capacity for education and research through transdisciplinary networks*. Showcase presented virtually at the Network of STEM Education Centers.
2. Wang, H. H., Nelson, B., Knobloch, N., LaRose, S. (2019). *All Aboard! The STEM connection*. Workshop presented at the 92nd annual National FFA Convention, Indianapolis.
3. Charoenmuang, M., Wang, H. H., & Knobloch, N. A. (2018). Teaching integrated STEM through agricultural context by using an interdisciplinary approach. Workshop presented at the Indiana STEM Education Conference, West Lafayette, IN.
4. Wang, H. H., Furrer, M. E., Orick, J., & Mitchell, K. (2017). Engineering design is inspired by scientific inquiry: a native pollinator integrated STEM curriculum. Workshop presented at the Indiana STEM Education Conference, West Lafayette, IN.
5. Wang, H. H., & Rebello, S. N. (2016). Using a hydroponic curriculum to teach science by using STEM integrated approach. Workshop presented at the Indiana STEM Education Conference, West Lafayette, IN.

TEACHING & COURSES (*N* =3)

1. YDAE 540, *Program Development in Agriculture and Extension Education*. YDAE 540 is a graduate course in Agricultural and Extension Education that concentrates on the principles and practices of developing community-based educational program for youth and adults in non-formal education settings.
2. ASEC 545/EDCI 545-01, *Teaching STEM Through Agriculture, Food and Natural Resources*. The goal of the course is to help students develop knowledge about STEM integration and equip them with teaching knowledge and skills for designing lesson plans by using agriculture, food and natural resources (AFNR). The unique component of this course is developing STEM and AFNR integrated lesson plans and teach them to local non-formal settings.

3. EDCI 558, Methods of Integrated STEM Education, EDCI 558 is a graduate course that focuses on operationalizing the theoretical pedagogical approaches to integrated Science, Technology, Engineering and Mathematics (STEM) education.

Course	Title	Cr	% of teaching	Semester	# of student evaluation/ # of students	University Criteria	
						Course	Instructor
ASEC 591/545 EDCI 591/545-1	Teaching STEM Through AFNR	3	51 80 51 51 51	Spring 20 Spring 19 Spring 18 Spring 17 Spring 16	3/7 3/7 3/3 8/10 3/5	COVID 5.0 4.8 *3.8 4.3	COVID 5.0 5.0 *4.2 4.8
ASEC 540	Program Development in Agriculture and Extension Education	3	100 100	Fall 18 Fall 16	5/8 6/9	4.3 4.3	4.7 4.8
EDCI 558	Methods of Integrated STEM Education	3	50 50	Fall 19 Fall 18	27/27 7/11	3.5 4.0	4.1 4.6

(* denotes co-instructor's evaluation score due to the course deputy failed to set up individual course evaluation)

CURRICULUM DEVELOPMENT (*N*= 2)

- You Say Bee, I Say STEM. Wang, H.H., Furrer, M., Bhattacharya, D., Orick, J., Mitchell, K., Ayer, D., Appold, M., & Taylor K. (2018).
- Wang, H.H., Cole, D., Haugen, M.D., & Lin, J.L. (2016). Engineering a Rube Goldberg! Curriculum Development. http://www.extension.umn.edu/youth/mn4-H/events/engineering-design-challenge/ideas-resources/rg-curric/index.html

OUTREACH & SERVICE ACTIVITIES

- Editing-Managing Board. Journal of Agricultural Education, 2019 - current
- Editorial Review Board. *Journal of Agricultural Education*, 2018-current
- Research Committee Chair. North Central American Association for Agricultural Education representative on the national AAAE research committee, 2019-2020.
- Research Committee Vice Chair. North Central Region American Association for Agricultural Education, 2017-2020.
- Research Committee. North Central American Association for Agricultural Education, 2016-2019.
- Reviewer. SAGA OPEN, 2016-current.
- Reviewer. School Science and Mathematics, 2013-current.
- Reviewer. International STEM Education, 2014-current.

CURRENT PROFESSIONAL & ACADEMIC MEMBERSHIPS

- National Association for Research in Science Teaching (NARST), 2008-current
- National Science Teacher Association (NSTA), 2013-current

- Purdue University Cooperative Extension Specialists Association (PUCESA), 2015-current
- American Educational Research Association (AERA), 2016-current
- American Association for Agricultural Education (AAAE), 2016-current
- American Society for Engineering Education (ASEE), 2010-2012