

**Thomas M. McCabe, Ph.D.**  
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## **Curriculum Vitae**

A higher education professional who is dedicated to improving and implementing evidence-based practices in post-secondary environments to improve the outcomes for learners. As a reliable and industrious team-player, I excel at organizational management and wholesale and project development. Core competencies include:

- **Project management** specializing in team leadership and coordination, logistic planning, and data management and processing.
- **Inclusive excellence** working with individual learners to establish personal goals, leverage resources that will aid their progress and success, and provide support and guidance for all learners until they have accomplished what they have set out to do.
- **Outcome-oriented collaboration with diverse teams** of faculty, students, and administrators.

### **Education**

2012-2018	<b>University of Northern Colorado (UNCO)</b> Ph.D. Biological Education Dissertation: "An Analysis of Prey Resistance and Long-Term Temporal Changes in Venom Composition within Rattlesnake Populations."	Greeley, CO
2010-2012	<b>San Francisco State University (SFSU)</b> M.A. Comparative and World Literature Thesis: "Evolution, Literature, and Critical Theory."	San Francisco, CA
2005-2009	<b>University of California, Davis (UCD)</b> B.S. Cell Biology and A.B. Japanese	Davis, CA

### **Work Experience**

#### **Assistant Professor The University of Texas at El Paso**

El Paso, TX

September 2020 - Current

- Assistant Professor in the Department of Biological Sciences
- Conduct research in Biology Education leading to a number of conference presentations
- Teach courses from introductory to upper division Biology
- Serve on departmental, college, and university level committees
- Mentor undergraduate and graduate students in research projects; also served as a committee member to several graduate students.

## **Postdoctoral Scholar**

### **The University of Texas at El Paso**

El Paso, TX

August 2019 - August 2020

- Postdoctoral Scholar for the Building Infrastructure Leading to Diversity: Southwest Consortium of Health-Oriented Education Leaders and Research Scholars (BUILDing SCHOLARS) and the Biology Education Research Group (BERG; PI: Dr. Jeffrey Olimpo)
- Served as an instructor for two sections of an Interdisciplinary Science Course (SCI 1301), a research foundations course available to all university students. Additionally, served as the instructor for one section of BIOL 3192, the Professional Development Seminar for major students.
- Attended and contributed to meetings of the BUILDing SCHOLARS Leadership Team.
- Developed, submitted, and received approval on two IRB applications for Science Education related projects.
- Lead weekly laboratory meetings for the Biology Education Research Group.
- Served as an interim instructor for General Biology (BIOL 1305) while Dr. Olimpo was away on leave.
- Mentored a team of five undergraduate research assistants to collect and analyze project data.
- Worked collaboratively to develop and initiate several new Biology Education Research projects focused around issues of inclusion and equity in laboratory classrooms, the assessment of educational materials, and the evaluation of our redevelopment of the SCI 1301 research foundations course.

## **Chief Scientific Officer**

### **ZooToxins, LLC**

Thousand Oaks, CA

August 2017 - August 2019

- Chief Scientific Officer and ongoing Partner
- Developed, tested, and prepared for commercial sale a toxoid vaccine for domestic dogs and horses against rattlesnake envenomation.
- Care and management of population of native rattlesnakes for venom extraction.
- Responsible for marketing, promotion, and education regarding the vaccine.
- Responsible for regulatory affairs including but not limited to IACUC approval and USDA licensure.

## **Graduate Teaching Assistant**

University of Northern Colorado

Greeley, CO

August 2012 - August 2017

- Served as a graduate teaching assistant for the University of Northern Colorado's School of Biological Sciences.
- Taught as a laboratory instructor, lecture instructor, lecture teaching assistant, laboratory prep and coordinator, and teaching mentor to undergraduate teaching assistants.

**Japanese Translator**  
**Dropbox Inc.**

San Francisco, CA

June 2011 - July 2012

- Text translator for Customer Support for Japanese customers.
- Working closely with the Customer Support Engineers I translate for both customers and engineers to resolve IT issues, mediate business propositions made by Japanese companies, and address suggestions and feedback.

**Staff Research Associate**

**UCD Mouse Biology Program- Mouse Stem Cell Lab**

Davis, CA

June 2008- July 2012

- Staff Research associate in lab.
- Responsible for lab stocking, maintenance, organization.
- Manage autoclave usage for department.
- Helped to inventory entire cell database and liquid nitrogen tank organization.
- In charge of media services for lab.
- Cell culture/manipulation.
- In charge of fluorescence microscopy for lab.

**Publications**

McCabe, James and **Thomas McCabe**. (2022). *The Reptiles Coloring Book*. New York: Collins Reference.

**McCabe, Thomas**, and Jeffrey Olimpo. (2020). Advancing metacognitive practices in experimental design: A suite of worksheet-based activities to promote reflection and discourse in laboratory contexts. *Journal of Microbiology and Biology Education* 21(1).

Olimpo, Jeffrey, Pevey, Ryan, and **Thomas McCabe**. (2018). Incorporating an interactive statistics workshop into an introductory biology course-based undergraduate research experience (CURE) enhances students' statistical reasoning and quantitative literacy skills. *Journal of Microbiology and Biology Education*, 19(1).

Fisher, Ginger, Olimpo, Jeffrey, **McCabe, Thomas**, and Ryan Pevey. (2018). The *Tigriopus* CURE – A course- based undergraduate research experience with concomitant supplemental instruction. *Journal of Microbiology and Biology Education*, 19(1).

Cleveland, Lacy, **McCabe, Thomas**, and Jeffrey Olimpo. (2018). A call for programmatic assessment of undergraduate students' conceptual understanding and higher-order cognitive skills. *Journal of Microbiology and Biology Education*, 19(1).

**McCabe, Thomas** and Stephen Mackessy. (2016). Evolution of resistance to toxins in prey. In P. Gopalakrishnakone, *Toxinology: Evolution of venomous animals and their toxins*. New York:

Springer.

**McCabe, Thomas** “The Choice of Identity.” *Portals* (2011): portalsjournal.com.  
*Portals* is San Francisco State University’s online journal for comparative and world literature.

### **Patent**

McCabe, James, Brockett, Jim, & **Thomas McCabe**. Polyvalent venom vaccines. U.S. Patent 10286048B2, filed July 28, 2017, and issued May 14, 2019.

### **Presentations**

**McCabe, Thomas**. “Using an internal Course Narrative to Improve Student Outcomes in Introductory Organismal Biology. *Ecological Society of America*. Life Discovery Conference. Was also awarded \$1200.00 travel grant to participate and present.

**McCabe, Thomas**, Lazos, Antonio, Perez, Isabela, Wilson, Kristy and Jeffrey Olimpo. “Evaluating Representations of Scientific Process and Ethics and Responsible Conduct of Research in Common Introductory Collegiate Biology Textbooks.” *Society for the Advancement of Biology Education Research*. Annual Meeting. Virtual Meeting (TM Presenting). July 2020.

**McCabe, Thomas**, D’Arcy, Christina and Jeffrey Olimpo. “Contributions of a Non-Laboratory-Based Research Foundations Course to Students’ Conceptions of a Scientific STEM Career Interest.” *Society for the Advancement of Biology Education Research*. Annual Meeting (Poster). Minneapolis, MN. Accepted, but not presented because of Covid-19.

**McCabe, Thomas** and James McCabe. “Comparison of the Protective Effect of a Novel Rattlesnake Toxoid Vaccine for Dogs Against Venom from Six Common Species of North American Rattlesnake in a Mouse Model.” *American Veterinary Medical Association*. National Meeting (Poster). Denver, CO. July 13-17, 2018.

Cleveland, Lacy and **Thomas McCabe**. “Mitosis and Meiosis in Motion: Students Playing the Part of Chromosomes, Spindle Fibers, and Nuclear Envelopes.” *American Society for Microbiology Conference for Undergraduate Education*. Denver, CO. July 27-30, 2017.

Cleveland, Lacy and **Thomas McCabe**. “Considering Students’ Spatial Reasoning (2D vs. 3D) When Deciding the Types of Models (2D vs 3D) to Teach Molecular-Level Processes.” *American Society for Microbiology Conference for Undergraduate Education*. Denver, CO. July 27-30, 2017.

Pevey, Ryan, **McCabe, Thomas**, and Jeffrey Olimpo. “Implementation of an Interactive Statistics Workshop within the Context of an Introductory Biology Course-Based Undergraduate Research Experience: Impacts on Novices’ Quantitative Reasoning and Literacy Skills.” *American Society for Microbiology Conference for Undergraduate Education*. Denver, CO. July 27-30, 2017.

Olimpo, Jeffrey, **McCabe Thomas**, and Patricia Shields. "Characterization of Undergraduate Teaching and Learning Assistant Instructional Practices in the Context of an Introductory Cell and Molecular Biology Course." *American Society for Microbiology Conference for Undergraduate Education*. Denver, CO. July 27-30, 2017.

Olimpo, Jeffrey, **McCabe, Thomas**, et al. "Development, Implementation, and Assessment: Designing Course-based Undergraduate Research Experiences that Effectively Maximize Learning for All Students." Pre- Conference Workshop at *American Society of Microbiology Conference for Undergraduate Education*. Denver, CO. July 27-30, 2017.

Rudolph, Heather and **Thomas McCabe**. "'We Can't Persist in this Way Forever': Enhancing Interdisciplinary Learning to Support Rural Community Sustainability." *International Conference for Qualitative Inquiry*. University of Illinois at Urbana-Champaign. May 17-20, 2017.

**McCabe, Thomas**. "Classroom Basics: Creating an Effective Learning Space" *University of Northern Colorado 2016 Graduate Teaching Assistant Conference*. Greeley, CO. August 17, 2016.

Olimpo, Jeffrey, **McCabe, Thomas**, and Patricia Shields. "The Impact of Structured Professional Development Experiences on Biology Undergraduate Teaching Assistants' Pedagogical Beliefs and Attitudes: A Multi-Institutional, Comparative Study." *American Society for Microbiology Conference for Undergraduate Education*. North Bethesda, MD. July 21-24, 2016.

**McCabe, Thomas**, Brown, Matthew, Hansen, Conner, Brown, Corina, and Richard Hyslop. "Anticancer activity of a specific component of *Cannabis sativa*". Faculty Research Presentation (Poster) at *Academic Excellence Week 2016*. University of Northern Colorado. April 4-10, 2016.

**McCabe, Thomas** and Stephen Mackessy. "Venom Composition Variation in a Population of Desert Massasauga (*Sistrurus catenatus edwardsii*)." *UNCO Academic Excellence Week 2016*. April 4-10, 2016.

**McCabe, Thomas** and Stephen Mackessy. "Assessing Population Level Venom Variation in a Single Population of Desert Massasauga (*Sistrurus catenatus edwardsii*)." *Colorado Partners in Amphibian and Reptile Conservation: Annual Meeting*. Boulder County Parks and Open Space, Longmont, CO. February 5, 2016.

**McCabe, Thomas** and Stephen Mackessy. "Evidence for the presence of an endogenous venom resistance molecule in a local population of Deer Mouse (*Peromyscus maniculatus*)." *International Society of Toxinologists World Congress 2015*. University of Oxford. September 25-30, 2015.

**McCabe, Thomas** and Stephen Mackessy. "Venom-Resistance in a local population of Deer Mouse (*Peromyscus maniculatus*): Probing prey defenses in a chemical arms race." *Academic*

*Excellence Week 2015*. University of Northern Colorado. April 6-12, 2016.

**McCabe, Thomas** and Stephen Mackessy. "Evidence for the presence of an endogenous venom resistance molecule in a local population of Deer Mouse (*Peromyscus maniculatus*)."  
*Front Range Student Ecology Symposium*. Colorado State University, February 24-5, 2015.

**McCabe, Thomas** and Stephen Mackessy. "Evidence for the presence of an endogenous venom resistance molecule in a local population of Deer Mouse (*Peromyscus maniculatus*)."  
*Colorado Partners in Amphibian and Reptile Conservation: Annual Meeting*. University of Northern Colorado. January 31, 2015.

**McCabe, Thomas** and Stephen Mackessy. "Efficacy of venoms stored long-term: Probing for longitudinal shifts in local rattlesnake venom composition." *Biology of the Pitvipers 2*. Tulsa, OK. June 4-7, 2014.

Cleveland, Lacy and **Thomas McCabe**. "A model for assessing critical thinking in an undergraduate biology program." *Society for the Advancement of Biology Education Research*. University of Minnesota, Twin Cities. July 14-7, 2014.

**McCabe, Thomas** and Stephen Mackessy. "Efficacy of enzymatic assays in probing for longitudinal shifts in local rattlesnake venom composition." *Academic Excellence Week 2014*. University of Northern Colorado. April 6-12, 2014.

**McCabe, Thomas** and Stephen Mackessy. "Prey resistance and venom composition in the Desert Massasauga (*Sistrurus catenatus edwardsii*)."  
*Academic Excellence Week 2013*. University of Northern Colorado. April 8-12, 2013.

**McCabe, Thomas**. "Minding the Human Species." *Minding the Body: Dualism and its Discontents*. CUNY Graduate Center, New York, New York. February 28-March 1, 2013.

### **Teaching Experience UTEP**

Inquiry in Science and Mathematics (12 sections; Fall 19, Spring 20, Fall 21, Fall 22)

Professional Development Seminar (Fall 19, Fall 21, Fall 22)

Organismal Biology (Summer 22, Fall 22)

Mammalian Physiology (Spring 21, Spring 22)

Genetics (Spring 2023)

Postsecondary Mentoring Seminar (Spring 2022)

### **Temporary Instructor Experience**

**Workshop Host for Avian and Reptilian Veterinary Treatment** Fall 2018-Fall 2019

I served as the lecturer and provide hands-on experiences to Registered Veterinary Technician (RVT) training programs across Southern California. These workshops provide information and contact time with examples of avian and reptilian patients to train RVT students in the care and management of these organisms in clinical settings, restraint and manipulation of

patients, common sites of injection and venipuncture, common veterinary issues and their interventions, among others.

### **Rattlesnake Safety Training**

Fall 2018-2019

I served as the instructor for rattlesnake safety training for local agencies including fire departments, animal control services, and national and state park land managers and volunteers. These training sessions provide information on the natural history and management of rattlesnakes in urban and wild spaces. First responders receive additional training in the manipulation and transport of nuisance rattlesnakes using common snake handling equipment.

### **Academic Service Activities (UTEP)**

#### **UTEP Student Organization Faculty Advisor:**

December 2021-Present

I have served as the Faculty Advisor for two student-directed pre-professional organizations on the UTEP campus, the Pre-Dental Society and Pre-Veterinary Association. I have supported these organizations beyond administrative duties to help manage the leadership and governance of the organizations, and provided my insight and advice towards organizational activities. As often as possible, I have offered one-on-one advising to students in the organizations regarding their academic performance and preparation for the application processes related to these two respective professional schools.

#### **BUILDing SCHOLARS Journal Club:**

August 2021- Present

Development and implementation of journal club and other professional development activities for BUILDing SCHOLARS students. Building Infrastructure Leading to Diversity: Southwest Consortium of Health-Oriented Education Leaders of Health-Oriented Education Leaders and Research Scholars is an NIH-funded program at The University of Texas at El Paso that serves to support students from underrepresented backgrounds in STEM conduct extracurricular research and mentor them towards careers in biomedical research. These sessions began out of a student-directed desire for practice in reading and evaluating scientific literature. At the request of the BUILD leadership team, these meetings were transformed into professional development seminars. Students help to direct the topics and have given positive responses to the sessions held.

#### **BUILDing SCHOLARS Leadership Team Member:**

September 2020-Present

I served as the representative for the Research Foundations Course (SCI 1301) that is sponsored by the BUILD program as well as a contributing member to the leadership team. Currently I serve to represent the Journal Club.

#### **BUILDing SCHOLARS Annual Scholarship Recipient Selection Process:**

September 2023-Present, annually

For the past several years I have served as an evaluator for students applying to the scholarship program. Evaluated applications and served as an interviewer for finalist candidates.

**UTEP Reimagining the Core:**

February 2022-May 2023

Participated in the redesign of our Organismal Biology Laboratory as a part of UTEP's strategic plan directive to update and improve core curricula. The team including myself, two other faculty, and a doctoral candidate made major rearrangements, edits, and addendums to the laboratory manual used for BIOL 1108. These activities were sponsored by the Office of the Provost as a part of a campus-wide initiative.

**UTEP College of Science Curriculum Task Force:**

January-June 2022

I was asked to serve as a member of the Department of Biological Sciences for this college task force to examine high impact courses and identify areas in need of improvement. The task force met regularly to discuss possible changes to courses that impact a large number of students or are critical in program curricula. I was able to provide ideas and examples from Biology to other members of the task force. As well, I was able to provide insight to the College of current and ongoing effort in Biology to improve core curricula.

**New Student Orientation Recruiting Events:**

Summer 2021

I was asked to present new students with information about the First Year Research Intensive Sequence (FYRIS) at UTEP. I presented at several orientation sessions throughout the summer.

**Research Symposium and Science Fair Judge:**

September 2020-Present

Over the past several years I have served as a judge for numerous research showcases for middle and high school and undergraduate research students. This has included: Sun Country Regional Science Fair, Isleta School District Science Fair, Regeneron International Science and Engineering Fair, UTEP BUILDing SCHOLARS Symposium, UTEP Campus Office for Undergraduate Research Initiatives (COURI) Symposium.

**Languages**

**Japanese:** Proficient spoken, intermediate level reading and writing.

**Spanish:** Conversational spoken, proficient in reading and writing.