



Carissa R. Shipman

Science Teacher, Tutor, and Researcher

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ABOUT:

Experienced high school science teacher with a demonstrated history of working in secondary and higher education and research in the natural sciences. Skilled in teaching high school biology, AP biology, environmental science, chemistry, marine biology, creation, evolution, ecology, and Bible. I also have experience teaching college introductory biology for majors, experience in public museum engagement, and have conducted research in biodiversity, taxonomy, evolution, young earth creation, marine biology, marine biotechnology, and paleontology. I am a strong education professional with a Masters in Biology, with a concentration in Marine Biology from the California Academy of Sciences and San Francisco State University. I also possess a secondary science teaching certification from the University of West Florida. I am proficient in scientific grant writing and have successfully been awarded grants from the National Science Foundation including for high school research mentoring.

EDUCATION:

University of West Florida, TeacherReady Online Teaching Graduate Credential Program, Pensacola, FL
Florida State Secondary Science 6–12 Teaching Credential-Biology, June 2019

San Francisco State University, College of Science and Engineering, and the California Academy of Sciences, San Francisco, CA, Master of Science, Biology: Marine Biology, January 2014, GPA 4.0

Temple University, College of Science and Technology, Philadelphia, PA
Bachelor of Science, Biology, minor in Environmental Studies, May 2008, GPA 3.61

EXPERIENCE:

Formal Teaching Experience:

Science Tutor

April 2020-present

Varsity Tutors Online

- Tutor AP biology, college biology introductory and elective courses online.
- Created lesson plans and taught the Under the Sea: Ocean Explorations virtual course to thousands of elementary students all over the world.
- Created lesson plans and taught paleontology to a prodigy pre-kindergarten student.
- Assisted a 9th grade USA Biology Olympiad prepare for his Biology Olympiad exam, which contains undergraduate and graduate-level multiple-choice questions, which must be answered rapidly.
- Helped the youngest participant in the prestigious iResearch Institute Summer Camp dissect scRNA-seq and data science articles and provided her background articles on small cell lung carcinoma (SCLC).
- Received numerous positive reviews from clients I tutored and taught in all of the above subjects.

Science Tutor

October 2017-Present

Wyzant Online

- Tutor students virtually in science from elementary to high school, college and graduate school in biology, AP biology, physical science, AP environmental science, ecology, evolution, marine biology, Science Olympiad.
- Assisted graduate students with their thesis writing in entomology and physiology.
- Received numerous positive reviews from clients I tutored and taught in all of the above subjects which can be viewed on my Wyzant.com profile.
- Assisted students with achieving 4s and 5s on their AP biology and AP environmental science College Board exams.

Science Tutor

April-August 2019

American Straight A Academy (ASAA) Online

- Taught high school biology and chemistry utilizing the ClassIn platform to Chinese international students studying in the states and in China. Students take classes through ASAA to earn high school credit, improve their high school transcript grades, get ahead in a subject prior to taking it in a classroom, and to practice their English language skills through online subject discussions and answering of questions.
- Homework assignments administered to students to practice their skills, along with evaluation forms completed per session

(evaluating focus, discussion, quiz, and homework grades), and a midterm and final were given. Instruction is individually based, so the teacher can go at an instructional pace best suited for the student's needs.

High School Science and Middle School Bible Teacher **August 2018–June 2019**
International Academy of Suriname, Paramaribo, Suriname (ACSI Accredited and MSA-CESS Accredited)
~70 hours/week

- I was responsible for teaching biology, chemistry, environmental science, and middle school Bible. I was also the Senior Class Advisor assisting students with college applications and planned the 2019 Graduation by facilitating senior parent and student involvement.
- Developed a visual student project portfolio in all the above subjects by taking photographs of many of my students projects. All courses were highly project centered and incorporated virtual labs.

Elementary, Middle, and High School All Subjects Substitute Teacher **August 2017–June 2018**
Dock Mennonite Academy, Lansdale and Souderton, PA (ADVANCED Accreditation)

- Experienced the various positive and negative behaviors of different age groups within a classroom setting and verbally rewarded or disciplined students accordingly.
- Learned how to be innovative in adjusting the lesson plans left by the full-time teacher to best benefit the classroom learning environment and integrated my life experiences into the curricula.
- Conscientious towards time management when implementing 5th grade curriculum and lesson plans.

Biology Student Teacher, High School Science Substitute Teacher, Marine Biology Club **August 2017–May 2018**
West-Mont Christian Academy, Pottstown, PA (ACSI and MSA-CESS Accredited)

- Implemented engaging biology lessons on topics such as macromolecules, cycles of matter, energy and life, Gregor Mendel, meiosis etc. by emphasizing learning targets connected to the Next Generation Science Standards, learning tasks centered around the targets, student feedback by survey and constructive feedback from students on what works in their learning, structured formative assessment in class, as well as for homework, and summative assessments designed prior to lesson implementation.
- Emphasis placed on creating a classroom learning environment where students and teacher verbally share, think critically, and discuss about the biology concepts being taught.
- Incorporation of utilizing the scientific method within quick labs and making every lesson applicable to the real world and teach where this knowledge and skills would be utilized in a science career.
- Utilization of technology in the classroom via PowerPoint to implement structured notetaking in the form of graphic organizers and process grids.
- Built relationships with students through mentoring them in the more relaxed and creative marine biology club setting.

High School Biology and Advanced Placement Biology Teacher **August 2016–June 2017**
Fremont Christian School, Fremont, CA (ACSI and WASC Accredited), 70–80 hrs./week

- Taught culturally diverse and Chinese international students in grades 9–12, with varying levels of English proficiency and local students utilizing Guided Language Acquisition Design methods, including Cognitive Content Dictionary, Mind Maps, and Poster Pictorials for visual and linguistic learning.
- Planned and executed hands on lab activities, including “Visualizing DNA” from six different fruits and a vegetable, diffusion and osmosis, cellular respiration, photosynthesis, transpiration, and the frog dissection.
- Facilitated and directed lab and classroom group work and the turn and discuss engagement strategy for critical thinking and biological processes questions.
- Utilized motivational tactics to increase student focus, cooperation, and collaboration during classroom group work, including surprise notebook grade checks for completion of all in-class assignments/ notes in student notebooks/binders and playing the energizing review game “Race to the Board” to earn extra credit on quizzes and tests.

Glorious Design of Marine Invertebrates January Term Enrichment Course **January 3–10, 2017**
Fremont Christian School, Fremont, CA

- Created a colorful and musical video advertisement of me singing “Part of Your World” with a marine invertebrate photo slideshow to encourage students to enroll in my specialty course.
- Taught a 6-day intensive marine invertebrate anatomy, classification, and biodiversity course to 9–10 graders comprising squid and sea star dissections, marine invertebrate documentary footage, open note quizzes and tests, and classification collages using Scuba underwater photography magazine clippings.
- Planned and implemented a 2-hour naturalist lead tide-pooling fieldtrip to Fitzgerald Marine Reserve, where students recorded their field observations and marine invertebrate species seen with a dive slate/pencil and waterproof field guide.
- Required students to complete a taxonomic research display board of a single marine invertebrate from the Philippines or California.

Introductory Biology Graduate Teaching Assistant **August 2010–December 2012**
San Francisco State University, Biology Department, San Francisco, CA, 20–30 hrs./week

- Taught Introductory Biology 230 and 240 labs to culturally and socioeconomically diverse undergraduate biology majors, created and graded assessments, including practicals and quizzes, and homework assignments, such as lab reports and journal writing, see also Science Teaching for Science I in coursework.

- Attended instructional meetings every week to prepare for and discuss the week's lab sessions with the coordinator and graduate assistants and shared innovative instructional ideas with coworkers.
- Directed a diverse array of experiments and animal dissections for students to perform in the laboratory.
- Utilized technology, including the iLearn course management system for journal writing submission and posting of supplementary course material for study.
- Incorporated reading a few relevant scientific research papers published in journals to expose students to science literature early in their studies.
- Assigned topics to groups of students to create colorful, artistic posters for them to present to their fellow classmates, in rotation, to review important study material prior to practicals/exams.
- Took students to the San Francisco Zoo and Botanical Garden, to solidify their knowledge and understanding of animal and plant biodiversity/biology.

Informal Teaching Experience:

Graduate Assistant in Public Programs and Engagement

June 2011–December 2013

Project Lab, California Academy of Sciences, San Francisco, CA

- Taught museum visitors, including children and youth, about my research and the Academy's research using props and educational materials through the Science Discovery cart.
- Interviewed about my research by public programs presenters in the "Out of the Lab" museum program.
- Answered guest questions about the museum, my research, and the Project Lab research.
- Contributed a blog post on an interesting and relevant biodiversity/conservation topic for the Project Lab blog every 5 weeks (i.e. DNA and Its Importance in Taxonomy).

Research Experience:

Current Research Projects

- Pioneering Molecular Paleontology: Visualizing and Sequencing Dinosaur Ancient DNA Answers in Genesis Grant Proposal, collaborators Dr. Steve Taylor, Dr. Andrew Fabich, Dr. Kevin Anderson (deceased), and Dr. Art Chadwick, **Oct. 2021–Aug. 2022.**
- Evolutionary link within the nudibranch family Dotidae across the Atlantic and Pacific Oceans; a study of reproductive morphology and molecular phylogenetic systematics, collaborators college student Sneha Adayapalam, Dr. Terry Gosliner, and Lynn Bonomo. Funded under the National Science Foundation Collaborative Research: Arts: Understanding Tropical Invertebrate Diversity Through Integrative Revisionary Systematics and Training and Research Assistantship for High School Students, **Oct. 2021–present**

PhD Research Assistant, Marine Biotechnology

August 2014–May 2015

Philippine Mollusk Symbiont International Cooperative Biodiversity Group Marine Science Institute, University of the Philippines, Diliman, Philippines

- Marine Natural Products: reviving bacterial isolates from a sponge and shipworm, cultivating them on agar and in liquid media, bacterial isolate compound extraction, including HP-20 Diaion® fractionation, liquid-liquid partitioning, C18 reversed-phase and Sephadex LH-20® size exclusion column chromatography, C18 reversed-phase high performance liquid chromatography (HPLC), anti-microbial assay using resazurin, MCF-7 cell culturing and counting using a hemocytometer. DNA extraction of bacterial isolates from marine snails, amplification, and sequencing of 16S to identify bacteria.

Curatorial Assistant and Scuba Diver

April–May 2014 and April 2015

Verde Island Passage, Philippine Marine Biodiversity Expedition, National Science Foundation California Academy of Sciences, San Francisco, CA, 40 hrs./week

- Collected, identified, and processed marine invertebrates from shallow and deep waters near the Verde Island Passage.
- Became familiarized and comfortable with working with and preserving specimens, including marine algae and marine invertebrates, in alcohol and formalin.

Master's Graduate Assistant in Public Programs and Engagement

June 2011–December 2013

California Academy of Sciences, San Francisco, CA

- Performed DNA extractions, sequence alignment, phylogenetic analyses of sequences, and microscope digital imaging of specimens in the Project Lab to be observed by the general public for graduate research.
- Efficiently organized Dotidae nudibranch specimens, through detailed labeling of new species and species within a new genus (including type specimens) described for research prior to publication.

Conservation Experience:

Lead Marine Biologist

March 2016–April 2016

Coral Triangle Conservancy, Nasugbu, Batangas, Philippines

- Conducted high and low-resolution seagrass surveys along the Nasugbu coastline to obtain baseline seagrass data and to determine an optimal area to be designated a seagrass sanctuary.
- Wrote a detailed 20-page preliminary progress report of seagrass surveys completed for the municipality of Nasugbu for release of government funds.

Project Seahorse Scuba Diver

March–April 2013

Project Seahorse/Zoological Society of London, Cebu City, Philippines

- Assisted a team of marine biologists with the long-term monitoring of marine protected areas in Danajon Bank.
- Acquired scientific diving techniques by collecting fish diversity and coral cover data to assess the effectiveness of established marine protected areas.
- Tools utilized for scientific diving included: transect tape, a rolled-up metal chain to measure coral rugosity, and an underwater camera attached to a monopod.
- Completed seahorse surveys snorkeling at night with the use of a specially designed lamp attached to a small Philippine boat.

RESEARCH GRANTS:

- National Science Foundation (NSF) Department of Environmental Biology Research Assistantship for High School Students Grant, March 2022
- PhD National Institute of Health International Cooperative Biodiversity Group Research Assistantship Grant, August 2014
- Graduate Student Council in Biology Travel Grant, December 2013
- Graduate Student Council in Biology Travel Grant, January 2012
- Lerner Gray Marine Biology Research Award, American Museum of Natural History, July 2011
- COAST Summer Graduate Research Award, California State University, April 2011
- Research Experience for Undergraduates (NSF) Grant, Morphological Systematics of *Polistes*, American Museum of Natural History, Summer 2006

PUBLICATIONS, ORAL PRESENTATIONS, AND MANUSCRIPTS REVIEWED:

- The Fossilized Giant Fish *Leedsichthys problematicus* (Woodward, 1889): Congruency across natural and biblical history, Creation Matters/Creation Research Society, Fall 2021
- Drug Discovery and Design from Marine Organisms Such as Slugs: Implications for the Perception of an Omniscient Engineer, Creation Matters/Creation Research Society, Fall 2020.
- Jesus Ortea and Manuel Caballer, reviewed May 2017, Review of the taxonomical history of the Corambidae Bergh, 1871 in the Atlantic, with the description of a new species of Corambe Bergh, 1869 (Mollusca: Gastropoda: Nudibranchia) collected during the expedition KARUBENTHOS in Guadeloupe, Lesser Antilles, Caribbean Sea, coordinated by the Muséum national d'Histoire naturelle, Cahiers de Biologie Marine.
- Kendall Garabedian, Manuel A. E. Malaquias, Fabio Crocetta, Argyro Zenetos, Stefanos Kavadas and Ángel Valdés, reviewed July 2016, Haminoea orteai Talavera, Murillo and Templado, 1987 (Mollusca: Gastropoda: Heterobranchia: Cephalaspidea), a widespread species in the Mediterranean and northeastern Atlantic, Cahiers de Biologie Marine.
- Terrence Gosliner, Angel Valdes, & Dave Behrens, October 2015, Nudibranch and Sea Slug Identification Indo-Pacific (Carissa Shipman noted as a scientific collaborator for the Dotidae). New World Publications. 408 pp.
- Molecular and morphological systematics of Doto Oken, 1851 (Gastropoda: Heterobranchia), with descriptions of five new species and a new genus, 2015 International Workshop on Opisthobranchs, University of Porto, Portugal, July 2015
- June 2015, Molecular and morphological systematics of Doto Oken, 1851 (Gastropoda: Heterobranchia), with descriptions of five new species and a new genus, Zootaxa. 3973 (1): 57–101. **Cited by 25 publications worldwide.**

HONORS AND SCHOLARSHIPS:

- Philippine Mollusk Symbiont International Cooperative Biodiversity Group (National Institute of Health) tuition scholarship, University of the Philippines, Diliman, August 2014–May 2015
- Selected to write a feature for the Mission Blue/ Sylvia Earle Alliance website, June 2013
- Biology Department Graduate Scholarship, San Francisco State University, April 2011
- College of Science and Technology Dean's List, Temple University, Fall 2003–Spring 2008
- Temple University Merit Scholarship, Fall 2003–Spring 2007
- Andrea Broad Award in Biological Sciences, Temple University, Fall 2007
- Mammalian Anatomy Lab Undergraduate Teaching Assistant, Temple University, Spring 2006