

Caroline H. Wilson, PhD

Chapman University, Crean College of Health and Behavioral Sciences
Department of Health Sciences
1 University Drive, Orange, CA 92866 | cawilson@chapman.edu | (714) 516-5617

Current Positions

- Instructional Associate Professor of Health Sciences, Director Neuroscience Minor and Interdisciplinary Programs, [Chapman University, Crean College of Health & Behavioral Sciences](#), Orange CA; 6 Years
- [Team-Based Learning™ Collaborative \(TBLC\) Trainer Consultant](#); Self-employed, 5.5 Years
- Medical Education Curriculum Consultant, Rose International for [Kaiser Permanente Bernard J. Tyson School of Medicine](#), Pasadena, CA; 3.5 Years

Education and Training

Degree Programs

BS Neuroscience (cum laude) & Minor in Philosophy, Allegheny College, Meadville, PA 2000
PhD Neuroscience & Minor in Cellular & Molecular Biology, University of Arizona, Tucson, AZ 2006

Post-Doctoral Fellow

Post-doctoral research, University of Hawai'i, Mānoa, HI, 2008
Supervisor: Dan Hartline, PhD

Academic Activities: Appointments and Educational Roles

Academic Appointments

Teaching Assistant, University of Arizona, Tucson, AZ 2001
Lecturer & Adjunct Professor, Department of Biology, Leeward Community College, Pearl City, HI 2007-2008
Visiting Assistant Professor, Department of Biological Sciences, Denison University, Granville, OH 2008-2010
Term Instructor (non-tenure), Department of Biological Sciences, University of Alaska Anchorage (UAA), Anchorage, AK 2010-2015
Adjunct Professor, WWAMI School of Medical Education, Anchorage, AK 2011
Term Assistant Professor (non-tenure), WWAMI School of Medical Education, Anchorage AK 2015-2017
Affiliate Instructor Creighton University Occupational Therapy Program, Anchorage, AK 2015-2017
Affiliate Assistant Professor, University of Washington Physiology Department, Seattle, WA 2016-2017
Associate Instructional (Teaching, non-tenure) Professor, Health Sciences, Chapman University Orange, CA 2017 – Present

Academic Committee Service

Neuroscience Bridge Scholar, Biological Sciences & Psychology, Denison University, Granville, OH 2008-2010
Collaborated with Neuroscience faculty to organize Neuroscience labs for the concentration.
Molecular & Cellular Basis of Disease Curriculum Committee, University of Washington School of Medicine, Seattle, WA 2014-2017
Developed syllabi, learning objectives, and assessment questions, designed Canvas learning web platform for course; developed active learning in-class activities; collaborated with colleagues from 5 states using virtual meetings to create curriculum
Premedical Advisor Committee Member, WWAMI School of Medical Education, Anchorage AK 2016-2017
Faculty Senator, Crean College, Chapman University, Orange, CA 2018-2020
Institute for Excellence in Teaching and Learning Faculty Ambassador, Chapman University 2018-2021
Assisted Chapman instructors in pedagogical techniques, learning management system (Canvas), and online best practices
[Information Technology- Faculty Advisory Group](#), Crean College Representative, Chapman 2019-present

University, Orange, CA <i>Review technology adoptions (Canvas, Adobe Creative Suite, Proctoring software, Interfolio) and assists with Classroom Technology Focus Group</i>	
Premedical / Pre-Health Committee, Doctor of Osteopathy Advisor, Chapman University <i>Advises students, attends information sessions, reviews application materials, writes letters of reference</i>	2019-present
Neuroscience Minor Council Director, Chapman University, Orange CA <i>Develops and reviews Neuroscience Minor Curriculum, Advises Neuroscience students</i>	2019-present
Internal Communication Working Group, Faculty representative, Chapman University, Orange, CA	2020
Hiring Committee, Public Health tenure track faculty search for Health Sciences	Spring 2021
Advisor, Leukemia & Lymphoma Society Club, Student Club at Chapman University, Orange, CA	2021-present
Advisor, Faculty Manual Updates, Non-tenure Track faculty ad hoc representative	Spring 2021
Neuroscience Masters in Science Council Director, Chapman University, Orange CA	2021-present
Hiring Committee, Center for Excellence in Teaching & Learning, Assistant / Executive Directors	2022
Non-tenure track Promotional Guidelines ad hoc Committee, Crean College, Chapman University Orange, CA	Spring 2022
Hiring Committee, Department of Chemistry, Instructional Assistant Professor search	Fall 2022
External reviewer, Term Instructional Faculty promotion review, University of Alaska Anchorage	Summer 2023

Academic Leadership and Administration

Course Director, Cellular Physiology, WWAMI School of Medical Education, Anchorage AK	2012-2014
Course Director, Musculoskeletal Anatomy, WWAMI School of Medical Education, Anchorage AK	2014
Alaska Brain Bee High School Neuroscience Competition, University of Alaska Anchorage, with community partnership of the Anchorage Museum, Anchorage AK <i>This regional competition is part of the International Brain Bee, a high school competition developed by Norbert Myslinski, of University of Maryland, Baltimore. The AK Brain Bee encouraged Alaskan high school students to become interested in careers in neuroscience. The AK Brain Bee is currently being run by Dr. Rachael Hannah, UAA Biological Sciences.</i>	2011-2017
Course Co-Director Molecular & Cellular Basis of Disease, WWAMI School of Medical Education, Anchorage, AK	2015-2017
Instructor of Record, Clinical Gross Anatomy, Creighton University Occupational Therapy Program	2015-2017
Director, Neuroscience Minor, Chapman University, Orange, CA	2019-present
Director, Interdisciplinary Programs, Chapman University, Orange, CA <i>Manage small budget and student worker; plan MS in Neuroscience program; attend Dean's Leadership Council meetings monthly; update course catalog; training in Program Assessment</i>	2021-present
Participant, Health Science and Applied Human Physiology Program Review, Chapman University, Orange, CA <i>Created departmental survey, authored sections of program review</i>	2021
External Program Reviewer, Doctoral of Anatomical Sciences Program Proposal, University of Idaho, WWAMI Medical Education program, Moscow, ID	Fall 2022
Member, Faculty Review Committee, Crean College <i>Reviewed promotion files of non-tenure track faculty</i>	2022-present

Teaching in Programs and Courses

Molecular & Cellular Neurobiology recitation, University of Arizona, Tucson, AZ 1 semester 3 credit course, 50 undergraduates	2001
Tide Pool Marine Life, Marine Biology Summer Camp Center for the Study of Deserts and Oceans Puerto Peñasco, Mexico 40 contact hours, 10 middle school students	2003
Utilizing confocal microscopy in molecular biology research, NSF workshop, University of Hawai'i, Mānoa, HI	2008

3 contact hours, 10 graduates, professors	
Olfaction/chemoreception lectures for Comparative Animal Physiology, Graduate Neurophysiology, Intro to Neuroscience courses, University of Hawai'i, Mānoa, HI	2007-2008
6 contact hours, 150 undergraduates & graduates	
Anatomy & Physiology I, Lecture & Laboratory, Leeward Community College, Pearl City, HI	2007
1 semester 4 credit courses, 24 undergraduates / course	
Anatomy & Physiology II, Lecture & Laboratory, Leeward Community College, Pearl City, HI	2008
1 semester 4 credit courses, 24 undergraduates / course	
Neurophysiology Lecture & Laboratory, Denison University, Granville OH	2008
1 semester 4 credit course, 30 undergraduates	
Molecular and Cellular Biology w/ Laboratory, Denison University, Granville OH	2007-2008
1 semester course, 24 undergraduates / spring course	
Introductory Neuroscience for Neuroscience Concentration students, Denison University, Granville OH	2007
1 semester 4 credit course, 30 undergraduates	
Advanced Neuroscience, Lecture & Lab for Neuroscience Concentration students, Denison University, Granville OH	2008
1 semester 4 credit course, 30 undergraduates	
Anatomy & Physiology I Lecture, University of Alaska Anchorage, Anchorage, AK	2010-2015
1 semester 3 credit course, 80-140 undergraduates / course, 3-4 courses / spring & fall semesters	
Nervous Systems Lecture & Laboratory, WWAMI School of Medical Education, Anchorage AK	2011
1 semester 4 credit course, 20 medical graduates, spring	
Anatomy & Physiology II Lecture, University of Alaska Anchorage, Anchorage, AK	2012-2015
1 semester course, 80-110 undergraduates / course, 1 course / semester	
Special Topics in Neuroanatomy & Neurophysiology, University of Alaska Anchorage, Anchorage AK	2012-2014
1 semester 3 credit course, 20-30 undergraduates & graduates / course, 1 course / spring	
Cell Physiology Lecture, WWAMI School of Medical Education, Anchorage AK	2012-2015
1 semester course 4 credit course, 20 medical graduates, spring or fall	
Musculoskeletal Anatomy Lecture & Laboratory, WWAMI School of Medical Education, Anchorage, AK	2014
1 semester course 4 credit course, 20 medical graduates, spring	
Clinical Gross Anatomy Lecture & Laboratory, Creighton University Occupational Therapy Program	2015-2017
1 semester 4 credit course, 20 graduates, 1 course / spring	
Neurophysiology Lecture, Service-Learning Course, Biological Sciences, University of Alaska Anchorage, Anchorage, AK	2015-2017
1 semester 3 credit course, 20-30 undergraduates & graduates, 1 course / spring	
Human Gross Anatomy, Lecture & Laboratory, WWAMI School of Medical Education, Anchorage AK	2015-2017
1 semester 3 credit course, 15 undergraduates, 1 course / spring	
Mind, Brain, Behavior, Small group instruction, WWAMI School of Medical Education, Anchorage AK	2016
3 contact hours / week for 1 unit, 20 medical graduates, Fall	
Cardiac, Pulmonary & Renal, Small group instruction, WWAMI School of Medical Education, Anchorage, AK	2016
3 contact hours / week for 1 unit, 20 medical graduates, Spring	
Molecular & Cellular Basis of Disease, active learning facilitator, WWAMI School of Medical Education, Anchorage AK	2015-2017
1 unit 4 credit course, 20 medical students, Fall	
Human Anatomy Laboratory, Chapman University, Orange, CA	2017-present
1 semester 1 credit course, 20-25 undergraduates, 1-2 courses / semester	
<i>Utilize Anatomage™ Virtual Cadaver tables, Complete Anatomy software, stereomicroscopy,</i>	

<i>and 3D Printing in coursework</i>	
Applied Human Neurophysiology lecture, Chapman University, Orange, CA 1 semester 3 credit course, 20 undergraduates, 1 course / spring <i>Utilize Anatomage™ Virtual Cadaver tables, Complete Anatomy software, stereomicroscopy, 3D Printing, and Virtual Reality Oculus Go goggles in coursework</i>	2020-present
Introduction to Neuroscience Lecture, Chapman University, Orange, CA 1 semester 3 credit course, 21 undergraduates, 1 course / fall	2020-present
Introduction to Neuroscience Laboratory 1 semester 1 credit course, 21 undergraduates, 1 course / fall <i>Utilize iWorx Physiological Psychology equipment, imageJ, Python and Allen Institute Educational Resources in coursework</i>	2020-present

Advising and Mentoring (Last 5 years)

Research Students

Austin Densmore, Valencia High School, Internship Advisor for 3D printing Attending college	2017-2018
Kinnera Reddy, Chapman University, Research advisor on project “Bringing 3D printed Knee models to the community” Graduated Chapman University Spring 2020	2018-2019
Johnny Altwal, Chapman University, Internship and Research Advisor on Veterinary Uses for 3D Model Printing Senior, Chapman University applying to Veterinary schools	2019-2021
Lexi Lee, Chapman University, Research Advisor for Case Study in Neuroscience Senior, Chapman University	2020-2021
Diane Kim & Matthew Kim, Research Advisor for Literature Review on Caffeine Juniors, Chapman University	Fall 2020

Undergraduate & Alumni Advising

Health Science student & alumni advising: 15-60 undergraduates in careers and coursework per year	2017-present
Neuroscience advising: advise Neuroscience minors in careers and coursework; Additional advising to post-graduate students regarding PhD programs Created advising, internship, career portal on Padlet	2020-present

Advising and Mentoring Peers (Last 5 years)

Improving the Quality of Your Multiple-Choice Questions, Institute for Excellence in Teaching & Learning Summer Institute, Chapman University, CA	2018
Digital Distractions in the Classroom, Institute for Excellence in Teaching & Learning Summer Institute, Chapman University, CA	2019
University Advancement Friday Coffee Guest, Chapman University, Orange CA Discussed best practices for online lab education to Advancement team members	Dec 4, 2020
Chapman University Institute for Excellence in Teaching & Learning (IETL) JanCon, Hybrid Teaching at Chapman Panelist & Creator of 2minute Lightning Talk, “Is Orientation the Key for HyFlex Success?”	Jan 19, 2021
Chapman University Institute for Excellence in Teaching & Learning (IETL) First Year Faculty Experience, Hybrid Teaching Panelist, Adobe Spark Presentation	Feb 26, 2021 Mar 5, 2021
Chapman University Institute for Excellence in Teaching & Learning (IETL) Open Educational Resources presentation	Apr 15, 2022
Team-Based Learning Social Hour, Facilitator, “Welcome to the TBLC Community!”	Aug 10, 2022
Chapman University Center for Excellence in Teaching & Learning (CELT) JanCon, “Introduction to Team-Based Learning and Backwards Design Principles”	Jan 13, 2023
Introduction to Team-Based Learning; Dominican University faculty, Online presentation	Feb 23, 2023
Team-Based Learning Collaborative: Fundamentals in TBL Training, Orlando, FL	Mar 11, 2023

Other Work Experience

Team Based Learning Consultant, Team-Based Learning Collaborative, Self-Employed, Silverado, CA	2017-present
Medical Education Curriculum Consultant, Rose International for Kaiser Permanente Bernard J. Tyson School of Medicine, Pasadena, CA	2020-present
Curriculum, assessment, and content writer for Gastrointestinal/Endocrine/Metabolism, Reproductive/Urinary, and Musculoskeletal/Dermatology Units (Histology, Anatomy, Embryology). Curriculum mapping using Elentra Learning Management System. Collate practice assessments using UWorld & Amboss learning systems. Collate NBME questions for unit exams.	

Professional Development Activities (last 5 years)

Team-Based Learning Collaborative Annual Meetings & Workshop Attendee	2018-2023
Anatomage Table User's Meeting, San Jose, CA	2017-2018
<i>Learned about updates for the Anatomage Virtual Cadaver Tables, InVivo Software for 3D printing with medical imaging</i>	
Chapman University IETL JanCon, Reach Everyone, Teach Everyone with Universal Design for Learning	2018
<i>Learned several techniques for universal course design, gamification, and developing feedback for neurodiverse learners</i>	
Society for Neuroscience Online Webinar: Undergraduate Neuroscience Pedagogy: Perspectives from Different Institutions	2018
<i>Learned ideas for program development for a minor / major in Neuroscience</i>	
Chapman University Institute for Excellence in Teaching & Learning (IETL) Summer Institute, Generation Z	2018
<i>Learned about the newest generation of college students & their needs</i>	
Chapman University IETL JanCon, Chapman University Technology Tools	2019
Society for Neuroscience Virtual Conference, "Mitigating Implicit Bias: Tools for the Neuroscientist"	2019
TBLC, Online Webinar "Getting Research Ideas with the Aim of Publication"	2019
Chapman University EduTech, "Virtual Reality / Augmented Reality"	2019
<i>Various faculty described how they were utilizing innovative tools in their courses</i>	
InstructureCon, IETL Crean Representative and workshop attendee.	2019
<i>This is the Canvas LMS Conference to help prepare for the LMS transition to Canvas; workshops on Canvas technology for GIF integration and anatomy videos</i>	
Occidental College lecture by Josh Medina "Photogrammetry: possible future use cases for 3D scanning and interaction with physical collections in virtual space".	2019
Chapman University Institute for Excellence in Teaching & Learning (IETL) Summer Institute, Technology at Chapman	2019
National Center for Case Study Teaching in Science Fall Conference, Buffalo, NY	2019
<i>Learned about creating case studies for teaching</i>	
Learning to use social media to promote Team-Based Learning virtual webinar (TBLC)	2019
Canvas Complete Course Redesign participant. Chapman University	2019
Mastery of Learning Management system, Canvas	
Learning to use virtual reality Oculus Go goggles with Jessie Rivera, Faculty Tech Hub, Chapman University	2020
Remote Proctoring Software (Proctorio & Respondus) Training, Chapman University	2020
Diversifying your syllabus, IETL Chapman University Faculty Training	2020
<i>Learned techniques for inclusive syllabi</i>	
Engage Remote Students Online Zoom training, Chapman University	2020
Foundation for Undergraduate Neuroscience Summer Virtual Meeting: Teaching, Learning, and Mentoring Across Distances	2020
<i>Learned techniques for online Neuroscience courses and laboratories</i>	
Panopto Video Recording Best Practices, Chapman University IETL & EduTech	Fall 2020
Using Proctorio in Canvas, Chapman University IETL & EduTech	Fall 2020

New Course Approval System Training, Chapman University Faculty Affairs	Fall 2020
Proctorio Roundtable Discussion, Chapman University IETL & EduTech	Fall 2020
Chapman University Institute for Excellence in Teaching & Learning (IETL) JanCon, Hypothesis Training & “Planning for the Unknowns (and Knowns) of Future Semesters”	2021
Nuts and Bolts of Tenure and Promotion Workshop, Chapman University	Mar 16, 2021
Canvas Anonymous Grading Training, Chapman University	Mar 18, 2021
Adobe Digital Literacy Café: The Impact of Creativity in STEM	Mar 24, 2021
Chapman University Institute for Excellence in Teaching & Learning (IETL) “Leveling Up Your Teaching” Attendee	Apr 6, 2021
Neuroscience Teaching Conference Attendee online conference	Jul 22-23, 2021
Inclusive Teaching Keynote & Workshop with Dr. Jose Antonio-Bowen, Chapman IETL Summer Institute	Aug 19, 2021
Editing Videos with Adobe Premiere Rush, Chapman IETL Summer Institute	Aug 20, 2021
“Fallacies in Neuroscience”. Society for Neuroscience Webinar	Feb 22, 2022
“Teaching Neuroscience: Reviving Neuroanatomy”. Society for Neuroscience Webinar	Apr 13, 2022
Open Educational Resources, Chapman IETL Happy Hours	Spring 2022
Faculty for Undergraduate Neuroscience, “FUN Faculty Friday” participant, once monthly	2021-current
“Introduction to Narrative Medicine”. Rita Basuray, University of Kentucky (online workshop).	July 11, 2023

Professional Honors and Awards

NIH/NIA Institutional Predoctoral Training Program in Neuroscience (3 T32 AG007434-05S2 Levine), University of Arizona	2002 – 2003
NIH/NIDCD Ruth L. Kirschstein Individual Predoctoral Fellowship (1 F31 DC006368-01A1), University of Arizona	2003 – 2005
Cades Postdoctoral Fellowship, Pacific Biosciences Research Center, University of Hawaii	2007 – 2008
Mount Desert Island Biological Laboratory New Investigator Award for “Identifying the novel formation of Copepod myelin” (\$8000 towards lab space & housing)	2009
UAA Center for Community Engagement and Learning Mini-grant for the Alaska Brain Bee (\$250-\$2700 / year)	2012 – 2016
Nominee, Chancellor’s Award for Excellence in the category of Excellence in Teaching, UAA Travel Award to attend TBL conference to become a TBL certified Trainer (San Diego & Ft. Worth)	2012
Named an Influential person by a first- or second-year student at UAA by Division of Student Access, Advising and Transition office, UAA	2013 – 2014
Chapman University Teaching Pedagogy Innovation Grant for “Utilizing 3D printing and 3D scanning to Train Future Health Care Professionals” \$5000	2015 – 2016
Chapman University Career Champion Nominee, Crean College	2019-2020 2021

Community Activities

Education, and Outreach

Community-Based Presentations

Presenter. UAA Planetarium, <i>Neurodome</i> and <i>Nanocam: A Trip into Biodiversity</i> planetarium Shows; led discussions 3-4 times a year about Biology to Anchorage public, STEM teacher training, and NSF EPScOR grant writers (Spring, 2013)	2011-2017
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Community-Based Mentorship

Sponsored a Community Engaged Student Assistant (CESA) each year to help with the Alaska Brain Bee and other Neuroscience Outreach community events (Elementary science nights at Huffman and Oceanview, Creative Activities Fair). CESAS: Sean Costello (2010-13), Sarah Johns (2014-15), Emily Rom (2015-16); Anchorage, AK	2010-2016
Alaska Brain Bee Regional Winner Mentor; Helped Tutor the Winner of AK Brain Bee to be prepared for the National Brain Bee competition.	2013-2017

Community Recognition

Community Builder Award, given to a member of the Anchorage Community for dedication to community service, Awarded by UAA Center for Community Engagement and Learning 2017

Other Community Activities

OH Yoga Voluntary Advisory Council, OH Yoga, Orange, CA 2020-current

Provided feedback on yoga protocols during the Covid-19 pandemic quarantine;

Gives feedback during instructor auditions

Canyon Community Garden Co-Leader, Silverado Modjeska Recreation and Park District 2018-current

Professional Association Activities

Professional Memberships

Society for Neuroscience 2001-present

Foundation for Undergraduate Neuroscience 2008-present

Team-Based Learning Collaborative 2013-present

Professional Association Leadership Positions or Committee Activities

Team-Based Learning Collaborative (TBLC)

- Steering Committee (member 2022-present)
- Membership Committee Chair (member 2018-2021, appointed chair 2022-present): 2018-present
Lead a 10-person committee to develop methods and programs for active membership recruitment and retention, edit/publish TBLC Connection Newsletter and monitor the website. Developed the New Mentor-Mentee program, Zoom Q & A for new members, and the TBL social hour. Attends Steering Committee Meetings as Chair
- Marketing Committee member: (appointed) 2018-2021
Reviewed and advised on the marketing activities of the TBLC. Developed and submitted annual marketing plan to the Steering Committee
- Nominating Committee member (elected): 2018-2020
This 5-person committee determined a suitable group of candidates for election to the Steering Committee
- Online TBL Certification Workshop Committee member (appointed) 2020
This 7-person informal committee meets to discuss best practice in teaching online TBL to begin developing a certification program in online TBL practice
- New Member Mentor 2021-current
Helps new members with questions related to their TBL journey
- TBL Practitioner Certification mentor 2021-current
Reviews 2-3 candidate portfolios and provides feedback towards their certification

Scholarship – Peer-Reviewed Published Research

Published and Forthcoming Research Articles – Print Journals

*Signifies undergraduate student

1. **Wilson CH**, Christensen TA, Nighorn AJ. (2007) Inhibition of nitric oxide and soluble guanylyl cyclase signaling affects olfactory neuron activity in the moth, *Manduca sexta*. J Comp Physio [A] 193(7): 715-728.
2. **Wilson CH**, Christie AE. (2010) Distribution of allatostatin C-like immunoreactivity in the central nervous system of the copepod crustacean *Calanus finmarchicus*. Gen Comp Endocrin. 1;167(2):252-60.
3. Kilpatrick H*, Christie AE, **Wilson CH**. (2010) Immunofluorescent localization of voltage-gated sodium channels to identify node-like structures in nerve fibers of the sand shrimp (*Crangon septemspinosa*). MDIBL Bulletin (49): 31.
4. Costello K*, Chung JS*, Skarke S*, Lenz P, **Wilson CH**. (2010) Identification of voltage-gated sodium ion channel genes in the copepods *Calanus finmarchicus*, *Bestiolina similis*, *Undinula vulgaris*, and *Parvocalanus crassirostris*. MDIBL Bulletin (49): 37.

5. **Wilson CH**, Hartline DK. (2011) The novel organization and development of copepod myelin II: non-glia origin. *J Comp Neurol* (519): 3281-3205. This article was selected by a member of the Faculty of 1000 (F1000), a service that places publications in a library of the top 2% of published articles in biology and medicine. See: <http://f1000.com/prime/11672956>
6. **Wilson CH**, Hartline DK. (2011) The novel organization and development of copepod myelin I: ontogeny. *J Comp Neurol* (519):3259-80.
7. Lei H, Reisenman C, **Wilson C**, Gabbur P, Hildebrand JG. (2011) Spiking patterns and their functional implications in the antennal lobe of the tobacco hornworm *Manduca sexta*. *PLOS ONE* 6(8): e23382. doi: 10.1371/journal.pone.0023382.
8. Altwal J*, **Wilson CH**, Griffon D. (2021) Applications of Three-Dimensional Printing in Small Animal Surgery: A Review of Current Practices. *Veterinary Surgery*; 1-18. doi: 10.1111/vsu.137399.

Scholarship – Non-Peer-Reviewed Published Research

Images

1. Honorable Mention, Copepod Nikon Small World Confocal Image Contest 2007
2. Cover of *Marine Biotechnology*: confocal image of a marine copepod, *Labidocera* species with previously uncharacterized presence of Green Fluorescent Protein; Image was also Figure 4 in: Mocz G. *Fluorescent Proteins and Their Use in Marine Biosciences, Biotechnology, and Proteomics*. *Mar Biotechnol* 9 (305-328). 2010
3. Cover of *Gen Comp Endocrin* for accompanying article 1;167(2):252-60.

Scholarship – Educational/Technological Development and Innovations

Curricula and Educational Materials

1. **Wilson CH**, Developer, Syllabus, Introductory Neuroscience, Denison University, OH 2007
Created interdisciplinary, service-learning course where students learned about neuroscience while volunteering in the local community foundations
2. **Wilson CH**, Developer, Syllabus, Advanced Neuroscience, Denison University, OH 2008
Created advanced neuroscience course with electrophysiology, physiological psychology and neuroanatomy lab exercises
3. **Wilson CH**, Developer, Syllabus, Special Topics in Neurophysiology / Neurophysiology Lecture University of Alaska Anchorage (UAA), Anchorage AK 2012-2017
Created neurophysiology course syllabus including service-learning module, human cadaver neuroanatomy lab module, Team-based learning modules (4), and Student-designed Team-based learning modules using a “blank syllabus” approach
4. **Wilson CH**, Developer, Anatomy & Physiology I & II, Instructional slide decks, UAA 2011-2015
Designed PowerPoint lecture slide decks still being used by faculty at UAA
5. **Wilson CH**, Elswick J. Developers, Clinical Gross Anatomy, recorded narrated lectures 2015-2017
6. **Wilson CH**, Ritter M. Developers, Introduction to Active Learning with HIPPA 2015-2016
First year medical student orientation to why active learning pedagogies are superior to traditional lectures; incorporated HIPPA basics for prework and application exercise
7. **Wilson CH**, Fuerst P, Hille B. Developers, Molecular & Cellular Basis of Disease, WWAMI School of Medical Education 2014-2017
Prework Readings for Physiology Content (Signal Transduction, Membrane Physiology, Somatosensation, Pain & Reflexes, Autonomic nervous system anatomy, physiology & disorders, Muscle physiology & disorders). Adapted versions still be used currently
7. **Wilson CH**, Fuerst P. Developer, Molecular & Cellular Basis of Disease, WWAMI School of Medical Education 2014-2017
Active learning, Team-based learning Modules for Physiology Content (Signal Transduction, Membrane Physiology, Somatosensation, Pain & Reflexes, Autonomic nervous system anatomy, physiology & disorders, Muscle physiology & disorders) Adapted versions still being used
8. **Wilson CH**, Fuerst P. Developer, Molecular & Cellular Basis of Disease, WWAMI School of Medical Education 2014-2017
Multiple-choice Assessment questions for Physiology Content (Signal Transduction,

- Membrane Physiology, Somatosensation, Pain & Reflexes, Autonomic nervous system anatomy physiology & disorders, Muscle physiology). Adapted questions still being used*
9. **Wilson CH**, Richards DR. Developer, Human Anatomy Lab Curriculum & Syllabus, Chapman University, CA 2017-current
Created updated assessment, syllabus, and curriculum to include virtual cadaver Anatomage Table, Complete Anatomy software, and 3D printing based on medical images
 10. **Wilson CH**, Densmore A, Bird D. 3D Printed Artic Fox, Elephant seal, and Wolverine skulls for educational purposes (BBC Video, conference presentations for D Bird) 2018-2019
 11. **Wilson CH**. Developer, Applied Human Neurophysiology Syllabus, Chapman University 2020
Developed flipped classroom approach with modules on virtual neuroanatomy/radiology, 6 modified TBL case studies; 3 student led TBL modules; modified curriculum for online TBL teaching after March 16 Covid lockdown
 12. **Wilson CH**, Belghasem M. Co-Developers, IS2 Genitourinary Reproductive Unit, Bernard J. Tyson School of Medicine, Pasadena, CA 2020
Prework, Modules, Assessment for: male and female genitourinary tract
 13. **Wilson CH**, Lopez-Ojeda W, Roehmholdt BF. Co-developers, IS5 Musculoskeletal_ 2020
Dermatology Prework, Modules for: musculoskeletal system Independent Learning Modules for musculoskeletal system
 14. **Wilson CH**. Developer, Syllabus Introduction to Neuroscience Lecture, Chapman University 2020
Created flipped-classroom curriculum exploring the history, present, and future of neuroscience research
 15. **Wilson CH**. Developer, Syllabus Introduction to Neuroscience Lab, Chapman University 2020
Created laboratories utilizing Neurophysiology simulation software, Allen Brain Institute open source databases, and iWorx physiopsychology experiments
 16. Lee L*, Kim D*, Sternlicht E, **Wilson CH**. Professor Eric Can't Hear: Vestibular Schwannoma Brain Imaging Teaching Case study. National Center for Case Study Teaching in Science (published); archived at National Science Teaching Association (case can be downloaded with a login). 2021
<https://www.nsta.org/ncss-case-study/professor-eric-cant-hear-0>

Pedagogical Innovations (last 5 years)

Invited Pedagogical Innovation Presentations

Local

1. **Wilson CH**. Online Active Learning. Remote Teaching Town Hall. Institute for Excellence in Teaching & Learning, Chapman University. [Presenter] 4/17/2020

National

1. **Wilson CH**, Ogilvie J, Watson T, Utilizing Case Studies in Online Neuroscience Courses, Moderated Social, Foundation for Undergraduate Neuroscience Virtual Meeting. [Presenter] 7/31/2020

International

1. **Wilson CH**, Integrating a "Blank Syllabus" with Team-Based Learning (TBL): Student designed TBL modules in a Neurophysiology course, Team Based Learning Collaborative 17th Annual Meeting. Round-Table Oral Presentation. San Diego, CA. [Presenter] 3/2/2018
2. Winter L and **Wilson CH**, Fundamental Principles and Practices of Team-Based Learning. 18th TBLC Annual Meeting, TBLC Practitioner Certification Workshop Tampa, FL [Planned Presenter but missed presentation due to flight delay] 3/14/2019
3. Clark M, Dolowitz A, Leonard B, **Wilson CH**. Experiences in Moving TBL Online. Team-Based Learning Collaborative Free Online Webinar. TBLC. [Presenter & Organizer] 5/12/2020
4. Clark M, Dolowitz A, McCarter R, **Wilson CH**, Winter L, The Essentials of Online

- Team-based Learning, TBLC Webinar, offered to TBL Committee members
[Presenter & Organizer] 8/13/2020
5. Clark M, Dolowitz A, McCarter R, **Wilson CH**, Winter L, The Essentials of Moving to Online Team-based Learning, TBLC International Webinar for TBLC Members. [Presenter & Organizer] 8/29/2020
 6. Dolowitz A, McCarter R, Moscova M, **Wilson CH**, Winter L, The Essentials of Moving to Online Team-based Learning, TBLC International Webinar for TBLC Members. [Presenter & Organizer] 11/13/2020
 7. McCarter R, **Wilson CH**, Winter L. The Essentials of Moving to Online Team-Based Learning; Group for Research in Pathology Education (GRIPE) Annual Conference. [Presenter & Organizer]
 8. Brooks M, Clark M, Dolowitz A, McCarter R, Moscova M, **Wilson CH**, Winter L. 4/13/2022
Create and Curate for Success: Designing Learner-Centred Pre-work. Team-Based Learning Collaborative Annual Meeting, Virtual Meeting. [Presenter & Organizer] 4/19/2022
 9. **Wilson C**. The TBLC Module Resource Portal: Explore its Hidden Treasures. Team-Based Learning Collaborative Annual Meeting, Orlando, FL. [Presenter & Organizer] 3/13/2023

Academic Posters, and Abstracts (last 5 years)

International

1. **Wilson CH**, Poster Presentation, Exploring neuroanatomy technologies: A “brain in hand” approach utilizing 3D models for undergraduate learning. Society for Neuroscience Meeting, San Diego, CA. 024.13SU [Presenter] 10/2018
2. **Wilson CH**, Clark M, Innovations in Recruitment and Retention for the Team-Based Learning Collaborative (TBLC). TBLC Annual Meeting^, Portland OR. #401 (^meeting canceled due to Covid-19). [Presenter] 3/12/2020
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