

Curriculum Vitae

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Mark S. Demarest

Texas Christian University
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Education

2009 Ph.D., Marine Science, University of California, Santa Barbara, California.

2000 M. S., Biological Sciences, California Polytechnic State University, San Luis Obispo, California.

1997 B. S., Biological Sciences, California State University, Sacramento, California.

Selected Teaching Interests

General Biology, Marine Science, Philosophy and History of Science

Relevant Work Experience

2020-Pres. Instructor II, Department of Biology, Texas Christian University, Texas.

BIOL 10513/10511 Introductory Biology II/Lab; BIOL 30324 Introduction to Marine Science; BIOL 40320 Teaching of Introductory-Level Biology; BIOL 50803 Marine Biology of the Tropics; BIOL 60111 Graduate Teaching in Biology (team-taught)

2015-2020 Instructor I, Department of Biology, Texas Christian University, Texas.

BIOL 10513/10511 Introductory Biology II/Lab; BIOL 30324 Introduction to Marine Science; BIOL 40320 Teaching of Introductory-Level Biology; BIOL 60111 Graduate Teaching in Biology (team-taught)

2011-2015. Lecturer and Undergraduate Advisor, Department of Biological Sciences, University of North Texas, Texas.

BIOL 1710 Biology for Science Majors I; BIOL 1720 Biology for Science Majors II; BIOL 2140 Principles of Ecology; BIOL 3500 Medical Terminology

2008-2011 Adjunct Professor, Department of Biological Sciences, University of North Texas, Texas.

BIOL 1132 Environmental Science; BIOL 2140 Principles of Ecology; BIOL 3500 Medical Terminology; BIOC 4560/5560 Biochemistry Laboratory (Recitation)

2007-2011 Instructional Laboratory Supervisor, Department of Biological Sciences, University of North Texas, Texas.

BIOL 3520 Cell Biology Laboratory; BIOL 4504 Plant Physiology Laboratory; BIOC 3622 Elementary Biochemistry Laboratory; BIOC 4560/5560 Biochemistry Laboratory

2006-2007 Adjunct Professor, Department of Science, North Central Texas College, Corinth, Texas.

BIOL 2406 Environmental Biology; CHEM 1413L Chemistry for the Health Sciences: Laboratory

2000-2007 Graduate Research Assistant, Marine Science Institute and the Institute for Computational Earth System Science, University of California, Santa Barbara, California

2002-2006 Teaching Assistant, Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara, California.

EEMB 142CL Methods in Aquatic Biology; EEMB 149 Mariculture (recitation)

1998-2000 Teaching Associate/Assistant, Biological Sciences Department, California Polytechnic State University, San Luis Obispo, California.

BIO 105 General Biology Laboratory; BIO 151 Introduction to Biology (laboratory); BOT 437 Phycology (laboratory assistant)

Theses, Dissertations, and Texts

- Demarest, M. S. **2010**. Biochemistry Laboratory Manual: BIOC 3622/4560. Kendall Hunt Publishing Co., Dubuque, Iowa. 256 pp.
- Demarest, M. S. **2010**. BIOL 3520: Cell Biology Laboratory Manual. Kendall Hunt Publishing Co., Dubuque, Iowa. 276 pp.
- Demarest, M. S. **2009**. Investigation of biogenic silica dissolution and silicon cycling in the ocean. Doctoral dissertation, University of California, Santa Barbara, California. 233 pp.
- Demarest, M. S. **2000**. Bacterial community heterogeneity across surface waters of the Pacific Ocean. Master's thesis, California Polytechnic State University, San Luis Obispo, California. 152 pp.

Research Publications

- Demarest, M. S., M. A. Brzezinski, D. M. Nelson, J. W. Krause, J. L. Jones, and C. P. Beucher. **2011**. Net biogenic silica production and nitrate regeneration determine the strength of the silica pump in the Eastern Equatorial Pacific. *Deep-Sea Research II* 58: 462-476.
- Demarest, M. S., M. A. Brzezinski, and C. P. Beucher. **2009**. Fractionation of silicon isotopes during biogenic silica dissolution. *Geochimica et Cosmochimica Acta* 73: 5572-5583.
- Brzezinski, M. A., J. L. Jones, C. P. Beucher, M. S. Demarest, and H. L. Berg. **2006**. Automated determination of silicon isotope natural abundance by the acid decomposition of cesium hexafluosilicate. *Analytical Chemistry* 78: 6109-6114.
- Christiansen, S. C., N. Hedin, J. D. Epping, M. T. Janicke, Y. del Amo, M. Demarest, M. Brzezinski, and B. F. Chmelka. **2006**. Sensitivity considerations in polarization transfer and filtering using dipole-dipole couplings: implications for biomineral systems. *Solid State Nuclear Magnetic Resonance* 29: 170-182.
- Brzezinski, M. A., J. L. Jones, and M. S. Demarest. **2005**. Control of silica production by iron and silicic acid during the Southern Ocean Iron Experiment (SOFeX). *Limnology and Oceanography* 50: 810-824.
- Armbrust, E. V., and 44 others (including M. S. Demarest). **2004**. The genome of the diatom *Thalassiosira pseudonana*: ecology, evolution, and metabolism. *Science* 306: 79-86.
- Coale, K. H., and 47 others (including M. Demarest). **2004**. Southern Ocean iron enrichment experiment: carbon cycling in high- and low-Si waters. *Science* 304: 408-414.

Conference Presentations (first author)

- Demarest, M. S., M. A. Brzezinski, and C. P. Beucher. **2010**. Fractionation of silicon isotopes during the dissolution of diatom silica. *Eos Trans. AGU*, 91(26), Ocean Sci. Meet. Suppl., Abstract PA21A-02. Oral presentation, AGU Ocean Sciences Meeting, Portland, Oregon
- Demarest, M. S., M. A. Brzezinski, and D. M. Nelson. **2006**. The abundance and net production of biogenic silica along 140°W longitude in the Equatorial Pacific. *Eos Trans. AGU*, 87(36), Ocean Sci. Meet. Suppl., Abstract OS43D-02. Oral presentation, AGU Ocean Sciences Meeting, Honolulu, Hawaii
- Demarest, M., M. Moline, C. Kitts, and A. Schaffner. **2000**. Marine prokaryote diversity and spatial scale of community heterogeneity across surface waters of the Pacific Ocean. Oral presentation, ASLO Aquatic Sciences Meeting, Copenhagen, Denmark

Online educational content

- 2015-present** Lessons in general biology and marine science at <http://personal.tcu.edu/mdemarest>
- 2007-2008** Developed a 3-part learning activity on coastal upwelling for the Satellite Observations in Science Education project (www.ssec.wisc.edu/sose; under the direction of Dr. Ali Whitmer)

Professional Memberships (current)

2009-Pres. National Science Teachers Association

2000-Pres. Association for the Sciences of Limnology and Oceanography

Academic and Professional Service

2020-Pres. Member, graduate thesis committee (D. Allen)

2020-Pres. Member, honors thesis committee (x4)

2019-Pres. Member, Pre-Health Advisory Committee, TCU

2019-Pres. Member, Pre-Health Scholarship Committee, TCU

2018-Pres. Transfer and ROTC Student Advisor, Pre-Health Professions Institute, TCU

2016-Pres. Chair, Biology Assessment Committee, TCU

2016-Pres. Contributor, Biology Graduate Student Orientation, TCU

2015-Pres. Member, Health Professions Advisory Committee, TCU

2019: Member, Biology faculty member teaching review committee (x 2), TCU

2019: Member, Biology faculty member service review committee, TCU

2019: Mentor, Connections program, TCU

2019 Mentor, College 101, TCU

2018 Presenter, Koehler Center Teaching and Learning Conversations: *Flipping with iSpring*, TCU

2018 Faculty leader, Frog Forum 2018 (Academy of Tomorrow), The Global Challenge: Oceans in Crisis, TCU

2012-2017 Poster Judge, Research Appreciation Day, UNT Health Science Center

2013-2015 Member, College of Arts and Sciences Undergraduate Curriculum Committee, UNT

2013-2015 Member, Advising System (formerly Advising Technology / Documenting Student Contact) Task Force, UNT

2013-2015 Member, Advising Syllabus Task Force, UNT

2013-2015 Member, Pre-Professional Advisory Committee, UNT

2012-2015 NextGen Faculty Fellow, UNT

2012-2015 Member, Integrative Studies (formerly General Studies) Faculty Advisory Committee, UNT

2012-2015 Member, Undergraduate Scholarships/Curriculum Committee (Biology), UNT

2011-2015 Member, Council of Advisors, College of Arts and Sciences, UNT

2010-2015 Advisor, Tri-Beta Biological Honor Society, Delta Zeta Chapter, UNT

2011-2013 Member, North Texas Research Symposium Steering Committee, UNT Health Science Center

2008-2012 Mentor, Emerald Eagle Scholars program, UNT

2011 Member, Instructional Laboratory Supervisor Search Committee, Biological Sciences, UNT

2002-2006 Mentor, Women in Science and Engineering (WISE), UCSB

2002-2005 Grad. Student Assoc. Representative, Alcohol and Other Drug Task Force, UCSB

2004 Member, Student Advisory Committee for Marine Science, UCSB

2002-2003 Coordinator, Marine Science Winter Colloquium, UCSB

Community Service and Outreach

2012-2016 Volunteer, Big Brothers Big Sisters, Denton, TX

2011-2015 Volunteer, UNT Big Event annual day of service

- 2013** Co-instructor (with the home instructor, Laura Lester), Biology Enrichment Cluster for K-3 students at MST (Math/Science/Technology) Elementary School in Richardson, TX
- 2011** Instructor, Grandparents University, UNT
- 2001-2007** Volunteer Answerer, ScienceLine (www.scienceline.ucsb.edu), UCSB
- 2003-2006** Member, Isla Vista Alcohol and Other Drug Council
- 2003-2006** Member, Isla Vista Conditional Use Permit Work Group

Honors and Awards

- 2017** Instructional Development grant (\$3550 joint award with Dr. Mike Misamore) for identification of a biological research station for a new course in tropical marine biology, TCU
- 2015** Two Thank a Teacher program student recognitions, UNT
- 2014** Three Thank a Teacher program student recognitions, UNT
- 2013** Three Thank a Teacher program student recognitions (two bestowed January 2014), UNT
- 2013** College of Arts and Sciences Excellence in Advising Award (bestowed January 2014), UNT
- 2012** Next Generation Course Redesign Grant (\$7,500 joint award with Dr. Lee Hughes) for blended redesign of BIOL 1720 Biology for Science Majors II, UNT
- 2011** Thank a Teacher program student recognition, UNT
- 2011** 2011-2012 Learning Enhancement Grant (\$5,000) for blended redesign of BIOL 3500 Medical Terminology, UNT
- 2006** Outstanding Student Paper Award, 2006 Ocean Sciences Meeting, American Geophysical Union
- 2004** Marine Science Program Fellowship, UCSB
- 2003** ScienceLine Award for Outstanding Contribution to Promoting Science Education in K-12 Schools, UCSB
- 2000** Dean's Fellowship, UCSB
- 2000** Biological Sciences Outstanding Graduate Student Award, Cal Poly
- 1992-1997** Dean's Honor List, CSUS
- 1997** Honor Society of Phi Kappa Phi
- 1996** Golden Key National Honor Society