CURRICULUM VITAE

Richard A. Cardullo, Ph.D.
Professor of Biology and Biophysics
The University of California
Riverside, California 92521
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ACADEMIC POSITIONS

07/2022 – 06/2024	Associate Dean, Undergraduate Education, University of California, Riverside
02/2017 – 08/2018	Interim Vice Provost, Undergraduate Education, University of California, Riverside
07/2014 – 02/2017	Associate Vice Provost, Undergraduate Education, University of California, Riverside
07/2014 – 06/2024	Howard H Hays Jr. Endowed Chair and Faculty Director of University Honors, University of California, Riverside
01/2014 – 06/2014	Visiting Professor of Molecular Biology and Genetics, Cornell University
07/2012 – 06/2014	University Honors Faculty Fellow, University of California, Riverside
11/2009 – 07/2012	Divisional Dean of Life Sciences, College of Natural and Agricultural Sciences, University of California, Riverside
07/2004 – 11/2009	Chair, Department of Biology, University of California, Riverside
07/2006 - present	Distinguished Teaching Professor of Biology, University of California, Riverside
07/2002 - present	Professor of Biology, University of California, Riverside
01/2000 – 09/2000	Visiting Research Scientist, Scripps Institution of Oceanography
07/1996 – 06/2002	Associate Professor of Biology, University of California, Riverside
07/1991 – 06/1996	Assistant Professor of Biology, University of California, Riverside
10/1987 – 06/1991	Senior Research Associate, The Worcester Foundation for Experimental Biology, Shrewsbury, MA
07/1985 – 09/1987	Postdoctoral Fellow, Department of Anatomy and Cellular Biology, Harvard Medical School

EDUCATION

1981 - 1985	**Ph.D. Biophysics, May 1985** The Johns Hopkins University, Baltimore, MD Advisor: Dr. Richard Cone
1979 - 1981	**M.S. Physics, May 1981** University of Massachusetts, Amherst
1976 - 1979	**B.S. Physics (concentration in Biophysics), April 1979** University of Michigan, Ann Arbor

AWARDS, FELLOWSHIPS, AND HONORS

1981 - 1985	NIH predoctoral fellowship at Johns Hopkins
1984 - 1985	Dean's fellowship at Johns Hopkins
1987	NIH training grant at Harvard in Reproductive Biology
1987 - 1988	NIH training grant at the Worcester Foundation in Cell Biology
1988 - 1990	NIH National Research Service Award recipient
1991	James Shannon Award (NIH)
1998	Organizer and International Advisor for VIII International Congress of Spermatology
1999	UCR Academic Senate Distinguished Teaching Award
1999-2001	President, UCR Chapter of Sigma Xi
1999	Robert Day Allen Fellowship, Marine Biological Laboratories
2003	Vice Chair, Gordon Conference on *Fertilization and Activation of Development*
2005	Chair, Gordon Conference on *Fertilization and Activation of Development*
2006	HHMI/National Academy of Sciences Teaching Fellow in the Life Sciences
2006	Awarded title of Distinguished Teaching Professor at UC-Riverside
2006-present	Member, Academy of Distinguished Teaching, UC-Riverside
2007	HHMI/National Academy of Sciences Teaching Mentor in the Life Sciences
2009 - 2015	Chair, Board of Directors, Biological Sciences Curriculum Study
2012 - present	AAAS Vision & Change Fellow
2012 - 2016	Executive Committee and Council, AAAS - Pacific Division
2013 - 2015	President, American Association for the Advancement of Science - Pacific Division
2014 - present	Howard H Hays Jr. Endowed Chair in University Honors, UC-Riverside
2016 - 2017	President, Western Regional Honors Council
2018 – 2023	Chair, Board of Directors, Biological Sciences Curriculum Study, Science Learning
2024	UCR Academic Senate Distinguished Campus Service Award

EXTRAMURAL GRANT AND AWARD HISTORY

Glycoslylation events during spermatogenesis in the mouse, R.A. Cardullo, Principal Investigator
National Institutes of Health, National Research Service Award, April 1988 - May 1990.

James Shannon Award, R.A. Cardullo, Principal Investigator
National Institutes of Health (NICHD), R55 HD27244, $100,000, October 1991 - July 1992.

Receptor dynamics during fertilization in the mouse, R.A. Cardullo, Principal Investigator
National Institutes of Health (NICHD), RO1 HD27244, $527,834, August 1992 – July 1997.

Development of an optical microscope for the simultaneous measurement of ligand-receptor dynamics and signal transduction pathway in living cells, R.A. Cardullo, Principal Investigator
The Whitaker Foundation, Biomedical Research Grant, $234,388, June 1992 - May 1995.

Biophysical and biochemical characterization of sperm-egg binding, R.A. Cardullo, Sponsor for Dr. Catherine Thaler, The Lalor Foundation, Postdoctoral Fellowship, $20,000, July 1 1994 - June 30 1995.

Carbohydrate determinants during fertilization. R.A. Cardullo, Principal Investigator
National Institutes of Health (NICHD), RO3 HD36234, $147,321, March 1998 - February 2000.

Graduate Assistance in Areas of National Need. R.A. Cardullo, Program Director

The U.S. Department of Education, Biology Training Grant, $721,321, October 1998 – September 2001.

Mathematical Achievement through Collaboration with Teachers and Students, R.A. Cardullo, Principal Investigator, National Science Foundation, $5,200,000, November 2002 – October 2007.

Graduate Assistance in Areas of National Need, R.A. Cardullo, Program Director (K.A. Hammond, co-Program Director). The U.S. Department of Education, Biology Training Grant, $809,000, October 2003 - September 2008.

Mathematical Achievement through Collaboration with Teachers and Students, R.A. Cardullo, Principal Investigator, National Science Foundation, $199,000, November 2007 – October 2009.

Partners in Outstanding Science Education (POSE), R.A. Cardullo, Principal Investigator, California Math Science Partnerships, U.S. Department of Education, $2,500,000, July 2009 - June 2012.

California Alliance for Minority Participation in STEM Fields, R.A. Cardullo, co-Principal Investigator, National Science Foundation, $450,000, July 2011 – June 2017.

LSAMP Bridge to the Doctorate Training Grant, R.A. Cardullo, Principal Investigator, National Science Foundation, $987,000, July 2011 – June 2014.

California Science Project, R.A. Cardullo, Principal Investigator, University of California, $982,400, July 2011 – June 2018.

Enhancing STEM Transfer and Success Through the STEM Pathways Program, R.A. Cardullo, co-Principal Investigator, U.S. Department of Education, $3,800,000, October 2011 – September 2016.

Raising the Awareness of PULSE: A Targeted Public Awareness Campaign to Engage Life Science Departments in Implementing Vision and Change, R.A. Cardullo, co-Principal Investigator, $55,518, September 2013 – August 2017.

Phenotypic Responses of the Lung to Hypoxia in Deer Mice Living at High Altitude, R.A. Cardullo, co-Principal Investigator (K.A. Hammond, Principal Investigator), National Science Foundation, $463,714, January 2015 – December 2019.

California Alliance for Minority Participation in STEM Fields, R.A. Cardullo, co-Principal Investigator, National Science Foundation, $30,000, July 2017 – June 2018.

A Southern California PULSE Vision and Change Institute, R.A. Cardullo, co-Principal Investigator, National Science Foundation, $49,180, January 2018 – December 2019.

Louis Stokes STEM Pathways and Research Alliance: California Louis Stokes Alliance for Minority Participation, R.A. Cardullo, Project Director/co-Principal Investigator (Chancellor K. Wilcox, Principal Investigator), National Science Foundation, $4,000,000, July 2018 – March 2025.

PUBLICATIONS

Cardullo, R.A., and Cone, R.A. 1986. Mechanical immobilization of rat sperm does not change their oxygen consumption rate. *Biol. Reprod.* 34:820-830.

Djakiew, D., and **Cardullo, R.A.** 1986. Lower temperature of the cauda epididymis facilitates the storage of sperm by enhancing oxygen availability. *Gamete Res.* 15:237-245.

Cardullo, R.A., Armant, D.R., and Millette, C.F. 1987. Quantitation of macromolecular binding using size exclusion filters: Application to a fucosyltransferase assay. *Anal. Biochem.* 161:57-63.

Cardullo, R.A., Agrawal, S., Flores, C., Zamecnik, P.C., and Wolf, D.E. 1988. Detection of nucleic acid hybridization using nonradiative fluorescence resonance energy transfer. *Proc. Natl. Acad. Sci. USA* 85:8790-8794.

Cardullo, R.A., Armant, D.R., and Millette, C.F. 1988. Characterization of fucosyltransferase activity during mouse spermatogenesis: Evidence for a cell surface fucosyltransferase. *Biochemistry*. 28:1611-1617.

Ram, P.A., **Cardullo, R.A.**, and Millette, C.F. 1988. Expression and topographical localization of cell surface fucosyltransferase activity during epididymal sperm maturation in the mouse. *Gamete Res.* 22:321-332.

Millette, C.F., **Cardullo, R.A.**, Armant, D.R., and Gerton, G.L. 1988. Fucosylation events during mammalian spermatogenesis. In Cell Biology of the Testis and Epididymis (M.-C. Orgebin-Crist and B.J. Danzo, eds.). *Annals of the New York Academy of Sciences,* 513:58-73.

Baltz, J.M. and **Cardullo, R.A.** 1989. On the number and rate of formation of sperm zona bonds in the mouse. *Gamete Res.* 24:1-8.

Cardullo, R.A., Agrawal, S., Bocian, K.M., McKinnon, C.A., and Wolf, D.E. 1990. Synthesis, purification, and characterization of 2,4,6-Trinitrophenyl-UDP-galactose: A fluorescent substrate for galactosyltransferase. *Anal. Biochem.* 188:305-309.

Wolf, D.E., Mungovan, R.M., and **Cardullo, R.A.** 1990. Using quantitative microscopy to study mammalian sperm. In: Optical Microscopy for Biology (B. Herman and K. Jacobsen, eds.), Wiley-Liss, New York, pp. 373-382.

Cardullo, R.A., and Baltz, J.M. 1991. Metabolic regulation in mammalian sperm: mitochondrial volume determines sperm length and flagellar beat frequency. *Cell Motil. Cytoskel.* 19:180-188.

Cardullo, R.A., and Wolf, D.E. 1991. The sperm plasma membrane: A little more than mosaic, a little less than fluid. In: Ciliary and Flagellar Membranes (R. Bloodgood, ed.). Plenum Press, New York, pp. 305-336.

Cardullo, R.A., Mungovan, R.M., and Wolf, D.E. 1991. Imaging membrane organization and dynamics. In: Biophysical and Biochemical Aspects of Fluorescence Spectroscopy (G. Dewey, ed.). Plenum Press, New York, pp. 231-260.

Cardullo, R.A. 1992. Nonradiative fluorescence resonance energy transfer. In: Nonradiative detection and labeling of macromolecules (T. Kessler, ed.) Springer-Verlag, pp. 414-423.

Cardullo, R.A. and Wolf, D.E. 1992. Biophysical determinants of cell surface events leading to sperm-zona adhesion and induction of the acrosome reaction. In: Comparative Spermatology (B. Baccetti, ed.). Raven Press, pp. 547-553.

Wolf, D.E., and **Cardullo, R.A.** 1992. Physical properties of the mammalian sperm plasma membrane. In: Comparative Spermatology (B. Baccetti, ed.). Raven Press, pp. 559-604.

Cardullo, R.A., and Florman, H.M. 1993. Strategies and methods for evaluating acrosome reactions. *Meth. Enzymol.* 225:136-153.

Cardullo, R.A., Herrick, S.B., Peterson, M.J., and Dangott, L.J. 1994. Speract receptors are localized on sea urchin flagella using a fluorescent peptide analog. *Dev. Biol.* 162:600-607.

Thaler, C.D., and **Cardullo, R.A.** 1995. Biochemical characterization of a glycosylphosphatidylinositol-linked hyaluronidase on mouse sperm. *Biochemistry.* 34:7788-7795.

Cardullo, R.A., and Wolf, D.E. 1995. Distribution and dynamics of mouse sperm surface galactosyltransferase: Implications for mammalian fertilization. *Biochemistry*. 34:10027-10035.

Cardullo, R.A., and Thaler, C.D. 1995. The mammalian sperm surface: molecular and cellular aspects. In: Cambridge Reviews in Human Reproduction: The Spermatozoon (J. Gruzinkas, ed.). Cambridge Press, London, pp. 20-44.

Thaler, C.D., and **Cardullo, R.A.** 1996. The initial interaction between mouse sperm and the zona pellucida is a complex binding event. *J. Biol. Chem.*, 45:535-546.

Thaler, C.D., and **Cardullo, R.A.** 1996. Defining oligosaccharide specificity for initial sperm-zona pellucida adhesion in the mouse. *Molec. Reprod. Devel.*, 45:535-546.

Arnoult, C., **Cardullo, R.A.**, Lemos, J.R., and Florman, H.M. 1996. Activation of mouse sperm T-type Ca^{2+} channels by adhesion to the zona pellucida. *Proc. Natl. Acad. Sci. USA*, 93:13004-13009.

Cardullo, R.A. and Alm, E.J. 1998. Introduction to Image Processing. *Meth. Cell Biol.*, 56:91-115.

Cardullo, R.A., and Dandala, S.R. 1999. Correcting for artifacts in complex aqueous solutions when using the pH-sensitive dye 2',7'-bis-(2-carboxyethy)-5-(and-6)carboxyethylfluorescein. *Anal. Biochem.*, 266, 351-356.

Cardullo, R.A.., and Thaler, C.D. 1999. The Mammalian Egg's Extracellular Matrix, In: Fertilization (D. Garbers and D. Hardy, eds), Academic Press, pp. 119-152.

Cardullo, R.A. 1999. Characteristics of the sperm-zona interaction: Identifying key issues for determining receptors for ZP3, In: The male gamete: basic biology and clinical applications (C. Gagnon, ed.,), Cache River Press, pp. 237-247.

Hammond, K.A., Chappell, M.A., **Cardullo, R.A.,** Lin, R., and Johnsen, T.S. 2000. The mechanistic basis of aerobic performance variation in red junglefowl. *J. Exp. Biol*., 203:2053-2064.

Kingan, T.G., **Cardullo, R.A.**, and Adams, M.E. 2001. Signal transduction in eclosion hormone-induced secretion of ecdysis-triggering hormone. *J. Biol. Chem.* 276:25136-25142.

Hutt, D.M., **Cardullo, R.A.,** Baltz, J.M., and Ngsee, J.K. 2002. Synaptotagmin VIII is localized to the mouse sperm head and may function in acrosomal exocytosis. *Biol. Reprod.* 66:50-56.

Baker, S.S., **Cardullo, R.A.**, and Thaler, C.D. 2002. Sonication of mouse sperm membranes reveals distinct protein domains. *Biol. Reprod.*, 66:57-64.

Thaler, C.D., and **Cardullo, R.A.** 2002. Distinct membrane fractions from mouse sperm bind different zona pellucida glycoproteins. *Biol. Reprod.*, 66(1):65-69.

Cardullo, R.A. 2003. Fundamentals of image processing in light microscopy. *Meth. Cell Biol.*, 72:217 – 242.

Cardullo, R.A., and Parpura, V. 2003. Fluorescence resonance energy transfer microscopy: theory and instrumentation. *Meth. Cell Biol.*, 72:415-430.

Herrick, S.B., Schweissinger, D.L., Kim, S.W., Bayan, K.R., Mann, S., and **Cardullo, R.A.** 2005. The acrosomal vesicle of mouse sperm is a calcium store. J. Cell Physiol. 202:663-671.

Blackledge, T.A., **Cardullo, R.A**., and Hayashi, C. Y. 2005. Polarized light microscopy, variability in spider silk diameters, and the mechanical characterization of spider silk. *Invertebrate Biol.* 124: 165-173.

Hammond, K.A., **Cardullo, R.A.,** Ghalamboor, C. K. 2006. The role of developmental plasticity in comparative physiology: mechanism and process, In: Comparative Developmental Physiology. Contributions, Tools, and Trends (S. J. Warburton, W. W. Burggren, B. Pelster, C. L. Reiber, and J. Spicer, eds.,), Oxford University Press, New York, pp. 58–70.

Chappell, M.A., Hammond, K.A., **Cardullo, R.A.**, Russell, G.A., Rezende, E. L., and Miller, C. 2007. Deer mouse aerobic performance across altitudes: effects of developmental history and temperature acclimation. *Physiol. Bioch. Zool.* 80:652-662.

Cardullo, R.A., and Hinchcliffe, E.H. 2007. Digital manipulation of brightfield and fluorescence images: noise reduction, contrast enhancement, and feature extraction. *Meth. Cell Biol.* 81:285-314.

Cardullo, R.A. 2007. Theoretical principles and practical considerations for fluorescence resonance energy transfer microscopy. *Meth. Cell Biol.* 81:479-494.

Bryant, M.J., Hammond, K.A., Bocian, K.M., Rettig, M.F., Miller, C.A., and **Cardullo, R.A.** 2008. School performance will fail to meet legislated benchmarks. *Science.* 26:1782-1782.

Fast, L.A., Lewis, J.A., Bryant, M.J., Bocian, K.M., Rettig, M.A., **Cardullo, R.A.**, and Hammond, K.A. 2010. Does math self-efficacy mediate the effect of the perceived classroom environment on standardized math test performance? *J. Educ. Psych.* 102:729-740.

Fraire-Zamora and **Cardullo, R.A.** 2010. The physiological acquisition of amoeboid mobility in nematode sperm. Is the tail the only thing the sperm lost? *Molec. Reprod. Dev.* 77:739-750.

Miyata, H., Noda, N., Fairbairn, D.J., Oldenbourg, R., **Cardullo, R.A.** 2011. Assembly of the fluorescent acrosomal matrix and its fate in fertilization in the water strider, *Aquarius remigis. J. Cellular Physiol.* 226:999-1006.

Fraire-Zamora, J.J., Broitman-Maduro, G., Maduro, M.F., **Cardullo, R.A.** 2011. Evidence for phosphorylation in the MSP cytoskeletal filaments of amoeboid spermatozoa. *Int, J. Biochem. and Molec. Biol.* 2:263-273.

Lewis, J.L., Ream, R.K., Bocian, K.M., **Cardullo, R.A.**, Hammond, K.A., Fast, L.A. 2012. Con Cariño: Teacher caring, math self-efficacy and math achievement among Hispanic English learners. *Teachers College Record.* 114(7):37-42.

Miyata, H., Thaler, C.D., Haimo, L.T., **Cardullo, R.A.** 2012. Protease activation and the signal transduction pathway regulating motility in sperm from the water strider *Aquarius remigis*. *Cytoskeleton,* 69:207-220.

Fraire-Zamore, J.J., Tran, T., and **Cardullo, R.A.** 2012. Cholesterol-enriched microdomains regulate pseudopod extension in the MSP-based cytoskeleton of amoeboid sperm. *Biochem. Biophys. Res. Comm.* 427:478-484.

Thaler, C.D., Miyata, H., Haimo, L.T., and **Cardullo, R.A.** 2013. Waveform generation is controlled by phosphorylation and swimming direction is controlled by Ca^{2+} in sperm from the mosquito *Culex quinquefasciatus. Biol. Reprod.* 89:135: p.1-11.

Cardullo, R.A., and Hinchcliffe, E.H. 2013. Post-processing for statistical image analysis in light microscopy. *Meth. Cell Biol.* 114:285-315.

Cardullo, R.A. 2013. Theoretical principles and practical considerations for fluorescence resonance energy transfer microscopy. *Meth. Cell Biol.* 114:441-456.

Ott, G., Shirkey, N., Haimo, L.T., **Cardullo, R.A.**, and Thaler, C.D. 2015. Spermatogenesis and elaborate sperm bundles. *Molec. Reprod. Dev.*, 82:295-304.

De Los Santos, C., Chang, W-C., Mycek, M-A, and **Cardullo, R.A.** 2015. FRAP, FLIM, and FRET**:** Detection and analysis of cellular dynamics on a molecular scale using fluorescence microscopy. *Molec. Reprod. Dev.*, 82:587-604.

Cardullo, R. A. and Wong, J. L. (2015), Beyond the limits of sight. *Mol. Reprod. Dev.*, 82: Fmi. doi: 10.1002/mrd.22520

Stephens, K., Thaler, C.D., and **Cardullo, R.A.** 2015. Characterization of plasma membrane associated type II α-D-mannosidase and β-N-acetylglucosaminidase of *Aquarius remigis* sperm. *Insect Bioch. Mol. Biol.* 60:78-85.

Morrison, K. Ngo, V., **Cardullo, R.A.,** and Reznick, D. 2017. How fish eggs are preadapted for the evolution of matrotrophy. *Proc. Royal Soc. B*, 284:20171342. http://dx.doi.org/10.1098/rspb.2017.1342.

Stephens, K., **Cardullo, R.A.**, and Thaler, C.D. 2018. Sperm motility from the mosquito *Culex pipiens* is initiated by a trypsin-like protease from male accessory glands. *Molec. Reprod. Dev.*, 85:440-448.

Gerton, G., and **Cardullo, R.A.** 2022. In memoriam: Clarke F. Millette, PhD 1947-2021. *Molec. Reprod. Dev.*, 89:127-128.

Thaler, C.D., Carstens, K., Martinez, G., Stephens, K., and **Cardullo, R.A.** 2023. Using the *Culex pipiens* sperm proteome to identify elements essential for mosquito reproduction. *PLoS ONE,* https://doi.org/10.1371/journal.pone.0280013 .

Thaler, C.D., Martinez, G., and **Cardullo, R.A.** 2025. Biophysical characterization of flagellar waveforms from the northern house mosquito, *Culex pipiens*. In preparation.

Carstens, K., Thaler, C.D., and **Cardullo, R.A.** 2025. Bioenergetic control of sperm motility from the northern house mosquito, *Culex pipiens*. In preparation.

PATENTS

Agrawal, S., **Cardullo, R.A.**, and Wolf, D.E., 1992, 5'[2'(3')-O-(2,4,6-Trinitrophenyl)pyrimidine nucleoside]diphosphate 1-glycosides, U.S. Patent #5,109,126.

Chick, W.L.., Wolf, D.E., and **Cardullo, R.A.**, 1994. Method and device for detecting and quantifying glucose in body fluids, U.S. Patent #5,342,789.

Chick, W.L., Wolf, D.E., and **Cardullo, R.A.**, 2000. Method and device for detecting and quantifying glucose in body fluids, U.S. Patent # 6,040,194

TEACHING

Undergraduate

Biochemistry 100 (Introductory Biochemistry), 2015, 2016
Biology 2 (Cellular Biology for non-majors), 2005, 2008-2010
Biology 5A (Introduction to Cell and Molecular Biology), 1992-2001, 2004 -2007, 2009-2012
Biology 5B (Introduction to Organismal Biology), 2003-2007, 2010-2013
Biology 110 (Biology of Human Problems), 2001, 2003, 2004
Biology 111 (Cell Biology), 1997-1999
Biology 114 (Advanced Cell Biology), 2000, 2001, 2002, 2004, 2007, 2010
Biology 171 (Human Physiology), 2008, 2009, 2011, 2012, 2013, 2015, 2016, 2019, 2020
Biology 171B (Human Physiology), 2021 – 2023
HNPG 1A (Transition of an Honors Student), 2014
HNPG 1B (Motivation of an Honors Student), 2015, 2016, 2017, 2018
HNPG 2A (Principles of Civic Engagement), 2016 - 2019
HNPG 2W (Principles of Civic Engagement), 2020 - 2023
HNPG 15 (Honors Ignition Seminar on the Nature of Discovery and Creativity), 2012, 2013
HNPG 15 (Honors Ignition Seminar on Drivers of Change), 2014
HNPG 15 (Honors Ignition Seminar on the Anthropocene), 2015
HNPG 15 (Honors Ignition Seminar on The Cost of Human Survival), 2017
HNPG 15 (Honors Ignition Seminar on Uncovering Hidden Figures), 2018
HNPG 16 (Honors Ignition Seminar on Dystopian Literature as Future Predictors), 2020, 2023
HNPG 150 (Introduction to Research), 2012, 2013, 2015 - 2024
HNPG 151 (Honors Research Seminar), 2013, 2015, 2016, 2017-2020
NASC 93 (Freshman Advising Seminar), 2010, 2011

Graduate

Biology 200A (Graduate Course in Cellular Biology), 1995
Biology 203 (Cellular Biophysics), 1993, 1994, 1996, 1995, 1998, 2004, 2021, 2022
Biology 303 – (Philosophy and Pedagogy of Teaching Undergraduate Life Science) 2010 - 2015
Various topical graduate seminars, approximately 1 per year

Postgraduate

Analytical and Quantitative Light Microscopy at MBL (Woods Hole), 1990 - 2010.
HHMI/National Academy of Life Sciences Summer Institute (Madison, WI), 2007.
Mobile Summer Institutes (Pullman, WA; Claremont, CA; Riverside, CA), 2015, 2016
Southern California PULSE Institute; Loyola Marymount University (Los Angeles), 2018

COMPLETED GRADUATE AND POSTGRADUATE STUDENT TRAINING

Graduate Students:
Eric Alm, M.S (Biology)
Kaira Carstens, M.S. (Biochemistry)
Cathrine Castillo, M.S. (Cell, Molecular, and Developmental Biology)
Qin Chen, M.S. (Biology)
Alejandro Cortez, M.S. (Biology)
Juan Fraire-Zamora, Ph.D. (Evolution, Ecology, and Organismal Biology)
Scott Herrick, Ph.D. (Biology)
Ruei-Shuian Lin, Ph.D. (Biology)

Gabrielle Martinez, Ph.D. (Entomology)
Haruhiko Miyata, Ph.D. (Evolution, Ecology, and Organismal Biology)
Joya Paul, M.S. (Biology)
Carla del Los Santos, M.S. (Bioengineering)
Kimberly Stephens, Ph.D. (Entomology)

In addition, I have served on 67 Ph.D. qualifying examination committees, 42 Ph.D. student advisory committees, 24 Ph.D. dissertation committees, and 18 M.S. thesis committees in various graduate programs.

Postdoctoral Fellows:
Lisa A. Fast, Ph.D.
Juan Fraire-Zamora, Ph.D.
Catherine D. Thaler, Ph.D.

PROFESSIONAL SERVICE
Member, Organizing Committee for International Congress on Spermatology, 1998
Vice Chair, Gordon Research Conference on Fertilization and the Activation of Development, 2003
Chair, Gordon Research Conference on Fertilization and the Activation of Development, 2005
Associate Editor, *Molecular Reproduction and Development*, 2009 – 2017
Editor, *International Journal of Biochemistry and Molecular Biology*, 2010 – 2017
Editor, *American Journal of Molecular Biology*, 2011-present
Teaching Fellows Selection Committee, Knowles Scientific Teaching Foundation, 2010 - 2018
Organizer, AAAS Pacific Division Annual Meeting in Riverside, CA, 2014
Organizer, Western Regional Honors Council Annual Meeting in Riverside, CA, 2016
Member, Program Committee for the Society for the Study of Reproduction, 2016 – 2017
Editor, *Molecular Reproduction and Development*, 2018 – present
Member, Executive Programs Committee, Society for the Study of Reproduction, 2018 – present
Inaugural Member, NSF College of Reviewers for Undergraduate Education, 2018 – 2021
Reviewer, Western Assoc. for Colleges & Universities, Kaiser Permanente Medical School, 2018, 2024
Reviewer, Western Assoc. for Colleges & Universities, Qatar University, 2023
Reviewer, Western Assoc. for Colleges & Universities,

Scientific Society Membership
American Association for the Advancement of Science, American Society for Cell Biology, Biophysical Society, Sigma Xi, Society of General Physiologists, Society for the Study of Reproduction.

Manuscript Reviews
Biochemical Journal, Biochemistry, Biology of Reproduction, Biophysical Journal, Contraception, Development, Developmental Biology, Journal of the American Optical Society, Journal of Andrology, Journal of Biological Chemistry, Journal of Cell Biology, Journal of Cell Science, Journal of Cellular Physiology, Molecular Reproduction and Development, Nature, PLoS One, PNAS USA, Science, Sensor.

Grant Reviews/Panels
Reviewer, Jeffress Research Grant (1993)
Outside Reviewer, NSF (1994 - 2011, 2015)

Reviewer, Lalor Foundation (1992, 1994, 1995, 1997, 2004, 2005, 2006)
Reviewer, South Plains Foundation (1996)
Panel Member, Cellular and Molecular Biology, NASA Division Wide Research Grants (1995, 1996, 1997)
Panel Member, Shared Instrumentation Grants for Confocal Microscopy, NIH (1996)
Site Visit Member, Program Project Grant in Reproductive Biology at Stanford, NIH (1996)
Panel Member, Biomedical Engineering, NSF (2002, 2003, 2004)
Panel Member, Cellular and Molecular Imaging Study Section, NIH (2003)
Panel Member, Novel Contraceptive Methods, NIH (2003)
Site Visit Member, Comprehensive Math Science Partnerships, NSF (2003)
Panel Member, Targeted Math Science Partnerships, NSF (2003, 2004)
Panel Member, Science Education Partnership Awards, NIH (2005, 2006, 2007, 2009)
Panel Member, Wallenberg Foundation Global Learning Network (2005, 2006, 2007, 2008, 2009)
Panel Member, Cellular, Molecular and Integrative Reproduction Study Section, NIH (2011, 2013, 2016)
Panel Member, Louis Stokes Alliance for Minority Participation Centers, NSF (2011)
Panel Member, R15 Special Emphasis Panel, NIH (2013)
Panel Member, Improving Undergraduate STEM Education (IUSE), NSF (2014)
Panel Member, Inclusive Excellence Awards, HHMI (2017)

Selected Invited Talks

1985 Department of Anatomy and Cellular Biology, Harvard Medical School
1986 Department of Biophysics, Johns Hopkins University
Boston Area Cell Motility Club, Harvard University
1987 Department of Biology, Boston University
Laboratory of Human Reproduction and Reproductive Biology, Harvard Medical School
Beth Israel Hospital, Boston
Department of Anatomy and Cell Biology, Duke University
Department of Anatomy, Yale University
1989 American Society of Cell Biology, Subgroup meeting on *Ligand -induced exocytosis*
1990 Department of Physiology, The University of Texas Southwestern at Dallas
VI International Congress on Spermatology, Siena, Italy
1991 Department of Biochemistry, Georgetown University
Department of Cell and Developmental Biology, Harvard University
Department of Biology, The University of California - Riverside
Division of Reproductive Biology, The University of Pennsylvania Medical School
Gordon Conference on *Fertilization and the Activation of Development*
1992 Loeb Biomedical Research Institute, Ottawa, Canada
Boston Biomedical Research Institute
1993 Department of Biophysics and the Beckman Laser Institute, Univ. of California - Irvine
Symposium, annual meeting of the Society for the Study of Reproduction, Fort Collins
Genetics Program, University of California - Riverside
1994 Department of Biology, Pomona College
Department of Chemistry, University of California - Riverside
Department of Cell and Molecular Biology, Loma Linda University Medical School
1995 Department of Cellular Biology, The University of California - Davis
Department of Cell and Molecular Biology, Loma Linda Medical Center

Gordon Conference on *Fertilization and the Activation of Development*
Department of Biology, California State University, Fullerton
1996 Department of Cellular and Developmental Biology, University of California - Santa Barbara
Department of Biochemistry, The University of California - Riverside
1998 Department of Physics, University of California - Riverside
NSF Conference on Computing in Life Sciences, Claremont, CA
Department of Anatomy and Cell Biology, Tufts University Medical School, Boston, MA
VIII International Congress on Spermatology, Montreal, Canada
Department of Biomedical Sciences, University of California-Riverside
1999 Departments of Biology and Physics, Occidental College
2000 Department of Biochemistry, Texas Tech University, Lubbock
2002 Department of Molecular Biology and Biochemistry, Johns Hopkins University
Department of Veterinary and Animal Sciences and Biology, University of Massachusetts
Department of Biology, University of California, Riverside
2003 Gordon Conference on *Fertilization and Activation of Development*
"*How People Learn for developing courses and curricula"* National Research Council, Washington, D.C.
2004 Department of Biological Sciences, Notre Dame University
2005 Gordon Research Conference on *Fertilization and Activation of Development*
2007 Center for Conservation and Research for Endangered Species, San Diego
2008 Keynote speaker, Math Science Partnership Conference (NSF), Washington, D.C.
2009 Annual Meeting for the American Society for Cell Biology, San Diego, CA
National Evolutionary Synthesis Center, Durham, NC
2010 College of Science and Mathematics, Wright State University, Dayton, OH
Cellular Dynamics Program, Marine Biological Laboratory, Woods Hole, MA
2011 Gordon Conference on *Fertilization and Activation of Development*
Beckman Center, City of Hope, Duarte, CA
International Relations, California State University, Fullerton, CA
Molecular Genetics Graduate Program, Loma Linda University
2012 American Society for Andrology Annual Meeting, Tucson, CA
2013 Department of Biology, California Lutheran University, Thousand Oaks, CA
Department of Veterinary and Animal Sciences, University of Massachusetts, Amherst, MA
2014 Department of Cell Biology and Biochemistry, Texas Tech University, Lubbock, TX
Department of Anatomy and Cell Biology, Kansas University Medical Center, Kansas City, KS
UCR Citizens University Committee, Riverside, CA
Department of Molecular Biology and Genetics, Cornell University, Ithaca, NY
Department of Biological Sciences and the RNA Institute, University of Albany, NY
2015 Keynote Speaker, AAAS Pacific Division meeting, California Academy of Sciences, San Francisco, CA
2016 Presenter, White House Hispanics Initiative Webinar, Washington, D.C.(virtual)
2017 Keynote Speaker, Irvine Valley and Saddleback College Annual Research Conference, Irvine, CA
2017 Keynote Speaker, Riverside City College Annual Research Conference, Riverside, CA
2018 Keynote Speaker, Annual CAMP Symposium, University of California, Irvine
2018 Welcome Speaker, 3rd Annual California Collaborative Advising Conference, Riverside, CA
2021 Presenter, *Gametes Meet in the Time of Covid-19* (virtual)

DEPARTMENTAL COMMITTEES
Member, Electron Microscopy Committee, 1992 – 1994
Co-chair, Seminar Committee, Winter, 1993; Fall, 1993; Fall, 1994; Fall 1995, Fall, 1997, Fall, 1998
Chair, Computer Committee, 1991 – 2002
Member, Graduate Advisory Committee, 1993 – present
Editor, Graduate Brochure, 1994 – 1995
Graduate Poster in Cell and Molecular Biology, 1995
Faculty Advisor, Cell and Molecular Ph.D. Qualifying Examination, 1995
Graduate Advisor, Department of Biology (Recruitment), 1996 – 1999
Chair, Space Committee, 1998-2003
Co-organizer, *John A. and Betty C. Moore Science As A Way of Knowing* Public Lecture, 1998 - present
Graduate Advisor, Department of Biology (Continuing Students), 2001 – 2003
Chair, Faculty Search Committee in Developmental Biology, 2001
Chair, Department of Biology, 2004 – 2009
Editor, Biology Department Newsletter, 2006 - 2010
Faculty Advisor, Physiology Ph.D. Written Qualifying Examination, 2007
Chair, Development Committee, 2008 – 2010
Chair, EEOB Graduate Program Teaching Committee, 2010 – 2013
Chair, Biology Curriculum Committee, 2014 – 2017
Chair, Academic Coordinator in Biology Search Committee, 2014
Chair, Academic Coordinator in EEOB Search Committee, 2021
Chair, EEOB Curriculum Committee, 2021 - 2022

ACADEMIC SENATE COMMITTEES
Member, Academic Computer Committee, 1992 – 1994
Chair, Academic Computer Committee, 1995 – 1996
Member, Educational Policy Committee, 1997 - 2000
Vice Chair, Academic Senate Educational Policy Committee, 1998 - 2000
Member, Distinguished Teaching Committee, 2002 – 2005
Member, Committee on Committees, 2006 – 2008
Member, Academic Senate Reorganization Committee, 2007 - 2010
Member, Academic Senate General Education Committee, 2007 – 2011
Member, Executive Council, 2008
Chair, Committee on Committees, 2008 – 2009
Member, UC Academic Senate System-wide Committee on Committees, 2008 - 2009
Member, Committee on Academic Personnel, 2014
Member (*Ex Officio)*, Committee on International Education, 2014 – 2015
Member, Student Fee Committee, 2016 – 2018
Member (*Ex Officio)*, Educational Policy, 2017 – 2018
Member (*Ex Officio),* Ad Hoc Committee on Evaluation of Teaching, 2017 – 2020
Member, General Education Committee, 2019 – 2022
Member, Distinguished Campus Service Award Committee, 2025 - present

COLLEGE OF NATURAL AND AGRICULTURAL SCIENCES COMMITTEES
Member, Institute for Molecular Biomedical Research Planning Committee, 1993 – 1995
Member, Strategic Planning Subcommittee for College of Natural and Agricultural Sciences, 1994
Member, Scholarship Committee, 1996 - 1999

President, Riverside Chapter of Sigma Xi, 1998 - 2000
Member, Graduate Program Reorganization Committee, 1996 - 1997
Member, Life Science Council of Chairs, 2004 – 2009
Member, College Budget Committee, 2009 – 2012
Member, Dean's Academic Personnel Committee, 2009 - 2012
Chair, Life Science Council of Chairs, 2009 – 2012
Chair, Undergraduate Life Science Course Redesign Committee, 2015 - 2017

UNIVERSITY COMMITTEES
Representative, Information Technology and Telecommunication Policy, 1995 - 1996
Member, Teaching and Learning Technologies and the Future of the University, 1997
Innaugural Member, Academy of Distinguished Teachers, 2006 - present
Member, School of Medicine Curriculum Planning Committee, 2007
Member, Western Association of Schools and Colleges Accreditation Planning Committee, 2008
Co-Chair, Search Committee for Endowed Chair in Innovative Teaching Across Disciplines, 2007
CNAS Faculty Representative, Campus Budget Advisory Committee, 2009 - 2010
Member, University Strategic Planning Committee on Community Engagement, 2009 – 2010
Faculty Director, California Alliance for Minority Participation (CAMP), 2012 - 2017
Member, Undergraduate Minigrant Committee, 2015 – 2017
Chair, Search Committee, Cluster Hire in STEM Education, 2015-2016
Chair, Search Committee, Assistant Vice Provost, Undergraduate Education, 2016
Member, Search Committee, Lecturer for Security of Employment in Biochemistry, 2016
Member, Search Committee, Lecturer for Security of Employment in Physics, 2016
Chair, Search Committee, Cluster Hire in STEM Education, 2016-2017
Member, Search Committee, Assistant Vice Provost, Undergraduate Education, 2016
Member, Dean's Advisory Council, 2017 - 2019
Member, Provost's Cabinet, 2017 – 2022
Member, Campus Leadership Council, 2017 – 2021
Chair, Western Association of Schools and Colleges Accreditation Planning Committee, 2017 – 2019
Member, Search Committee, Dean of Students, 2017
Campus Liaison, University Innovation Alliance, 2017
Accreditation Liaison Officer, Western Association of Schools and Colleges, 2017 – 2019
Project Director, California Alliance for Minority Participation (CAMP), 2017 - present
Member, UC Systemwide Council for Outreach Counselors, 2017 – 2019
Member, UC Systemwide Academic Advisory Committee, 2017 – 2018
Member, Campus Executive Committee for Long Range Planning, 2018 – 2019
Chair, Search Committee, Academic Coordinator, EEOB, 2020

PUBLIC SERVICE AND OUTREACH
Provider, School University Partnership Teacher In-service, Alvord Unified School District, 1997-2001
Member, Board of Directors, Inland Empire Chapter Juvenile Diabetes Research Foundation, 1998 - 2001
Coordinator, Riverside Unified School District Science Fair, 1999 - 2002
Judge, Riverside Unified School District Science Fair, 1995 - 2020
Coordinator, Weekly Summer Science Institute for Teachers and Students at UCR, 1999 - 2008 (Project ALIAS)
Judge, Alvord Unified School District Science Fair, 1998 - 2001
Judge, Jurupa Unified School District Science Fair, 2002 - 2007

Judge, California State Science Fair (Biochemistry), 2004, 2006
Judge, California State Science Fair (Zoology), 2005
Coordinator, 2-week Summer Science Institute for Teachers and Students in Ontario-Montclair Unified School District (Project POSE), 2009 – 2012
Coordinator, 2-week Summer Science Institute for Teachers in Riverside County (Project SCAN), 2011-2014
Coordinator, 2-week Summer Science Institute for Teachers in Riverside Unified School District (Project Renaissance), 2014-2017.
Member, Board of Directors, Dollars for Scholars, Riverside Chapter, 2015 - 2022
Judge, Intel International Science and Engineering Fair, Los Angeles, 2017
Planning Committee, Riverside Long Night of Arts and Innovation, 2016 – 2022
Member, Board of Directors, Riverside Arts Academy, 2021 – present
City Commissioner, Museum Board of Riverside, 2022 - present