

GARY MICHAEL WESSEL

Curriculum vitae

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BUSINESS ADDRESS

Brown University, Box G-SFH168
185 Meeting Street
Division of Biology and Medicine
Providence, Rhode Island 02912
Phone: (401)863-1051
Fax: (401)863-1182
e-mail: rhet@brown.edu
websites: <https://sites.brown.edu/wessel-lab/>
<https://vivo.brown.edu/display/gwessel>
Orchid ID: 0000-0002-1210-9279

EDUCATION and TRAINING

Undergraduate

University of Virginia, Charlottesville, Virginia
B.A. 1978; Biology and Environmental Sciences

Graduate

Duke University, Durham, North Carolina
Ph.D. 1986; Anatomy
Mentors: Drs. David R. McClay and Richard B. Marchase

Postgraduate

University of Texas M.D. Anderson Cancer Center, Houston, Texas
Department of Biochemistry and Molecular Biology
NIH Postdoctoral Fellow; May 1986 - April 1989
Mentors: Drs. William H. Klein and William J. Lennarz

Employment

Research Assistant, Department of Zoology, Duke University 1978-1981

APPOINTMENTS

- University of Texas M.D. Anderson Cancer Center; Assistant Professor of Biochemistry and Molecular Biology; May 1989 - July 1990
- Brown University, Division of Biology and Medicine; Assistant Professor of Biology; July 1990 - July 1996
- Brown University, Division of Biology and Medicine; Associate Professor of Biology; July 1996 – 2000
- Brown University, Division of Biology and Medicine; Professor of Biology; June 2000 – present

- Marine Biological Laboratory, Woods Hole, MA; Senior Scientist (Adjunct); Eugene Bell Center for Regenerative Biology and Tissue Engineering, December 2005 – present
- Professor (Adjunct), Health Biotechnology Unit, Institute of Biotechnology, Addis Ababa University, Ethiopia; February 2016 - present

HONORS

Graduate

- Research Assistantship, Department of Zoology, Duke University; 1981-1982, 1984-1986
- Graduate School Fellowship, Duke University Medical Center; 1983-1984
- Best Paper Award, Southeastern Regional Developmental Biology Conference, Lytchfield Beach, SC; 1984
- Outstanding Dissertation Award, American Association of Anatomists; 1987

Postdoctorate

- NIH Postdoctoral Fellowship; 1986-1989
- University of Texas M.D. Anderson Associates Travel Award; 1988

Professorial

- Fellow of the Marine Biological Laboratory, F.B. Bang Fellowship, Woods Hole, MA; 1991
- Basil O'Conner Starter Scholar Research Award, March of Dimes Birth Defects Foundation; 1992-1994
- Visiting Summer Scholar, Duke University Marine Laboratory; 1993, 1994, 1998-present
- NIH Research Career Development Award, 1997-2002
- Visiting Scientist, Asamushi Marine Lab, University of Tohoku, March 1999, 2003, 2005, 2015
- Astor Visiting Lectureship, University of Oxford, Oxford England, 2008
- Fellow of the American Association for the Advancement of Science (AAAS), Elected 2011

PUBLICATIONS: REFEREED JOURNALS

1. McClay, D.R., Wessel, G.M., and Marchase, R.B. (1981). Intercellular Recognition: Quantitation of Initial Binding Events. *Proc. Natl. Acad. Sci. USA*, **78**:4975-4979.
2. Wessel, G.M., Marchase, R.B., and McClay, D.R. (1984). Ontogeny of the Basal Lamina in the Sea Urchin Embryo. *Dev. Biol.*, **103**:235-245.
3. Wessel, G.M. and McClay, D.R. (1985). Sequential Expression of Germ-Layer Specific Molecules the Sea Urchin Embryo. *Dev. Biol.*, **111**:451-463.
4. Wessel, G.M. and McClay, D.R. (1986). Two Embryonic, Tissue-Specific Molecules Identified by a Double-Label Immunofluorescence Technique for Monoclonal Antibodies. *J. Histochem. Cytochem.*, **34**:703-706.
5. Wessel, G.M. and McClay, D.R. (1987). Gastrulation in the Sea Urchin Embryo Requires the Deposition of Collagen in the Extracellular Matrix. *Dev. Biol.*, **121**:149-165.

6. Wessel, G.M., Truschel, M.R., Chambers, S.M., and McClay, D.R. (1987). A Cortical Granule-Specific Enzyme, β -1,3-Glucanase in Sea Urchin Eggs. *Gamete Res.*, **18**:339-348.
7. Xiang, M., Bedard, P-A., Wessel, G.M., Filion, M., Brandhorst, B., and Klein, W.H. (1988). Tandem Duplication and Divergence of a Sea Urchin Protein Belonging to the Troponin C Superfamily. *J. Biol. Chem.*, **263**:17173-17180.
8. Decker, G.L., Valdizan, M.C., Wessel, G.M., and Lennarz, W.J. (1988). Developmental Distribution of a Cell-Surface Glycoprotein in the Sea Urchin *Strongylocentrotus purpuratus*. *Dev. Biol.*, **129**:339-349.
9. Wessel, G.M., Zhang, W., Tomlinson, C., Lennarz, W.J., Klein, W.H. (1989). Transcription of the Spec 1-like Gene of *Lytechinus* is Selectively Inhibited in Response to Disruption of the Collagenous Extracellular Matrix. *Development*, **106**:335-347.
10. Wessel, G.M. (1989). Cortical Granule-Specific Components are Present Within Developing Oocytes and Accessory Cells during Sea Urchin Oogenesis. *J. Histochem. Cytochem.*, **37**:1409-1420.
11. Wessel, G.M., Goldberg, L., Lennarz, W.J., and Klein, W.H. (1989). Gastrulation in the Sea Urchin Embryo is Accompanied by the Accumulation of an Endoderm-Specific mRNA. *Dev. Biol.* **136**:526-536.
12. Wessel, G.M., Zhang, W., and Klein, W.H. (1990). Myosin Heavy Chain Accumulates in Dissimilar Cell-Types of the Macromere Lineage in the Sea Urchin Embryo. *Dev. Biol.* **140**:447-454.
13. Gan, L., Wessel, G.M., and Klein, W.H. (1990). Regulatory Elements from Related Spec Genes of *Strongylocentrotus purpuratus* Yield Different Spatial Patterns with a *lac Z* Reporter Gene. *Dev. Biol.*, **142**: 346-359.
14. Gong, Z., Cserjesi, P., Wessel, G.M., and Brandhorst, B.P. (1991). Structure and Expression of the Polyubiquitin Gene in Sea Urchin Embryos. *Mol. Rep. Dev.* **28**:111-118.
15. Wessel, G.M., Etkin, M., and Benson, S. (1991). Primary Mesenchyme Cells of the Sea Urchin Require an Autonomously Produced, Nonfibrillar Collagen for Skeletogenesis. *Dev. Biol.* **148**:261-272.
16. Wessel, G.M. and Chen, S. (1993). Transient, Localized Accumulation of α -Spectrin during Sea Urchin Morphogenesis. *Dev. Biol.* **155**:161-171.
17. Laidlaw, M. and Wessel, G.M. (1994). Cortical granule biogenesis is active throughout oogenesis in sea urchins. *Development*. **120**: 1325-1333.
18. Wessel, G.M. (1995). A protein of the sea urchin cortical granules is targeted to the fertilization envelope and contains an LDL-receptor-like motif. *Dev. Biol.* **167**:388-397.

19. Holy, J., Wessel, G., Berg, L., Gregg, R., and Schatten, G. (1995). Molecular characterization and expression patterns of a B-type nuclear lamin during sea urchin embryogenesis. *Dev. Biol.* **168**: 464-478.
20. Wessel, G., Clark, F., and Berg, L. (1995). A diversity of enzymes involved in the regulation of reversible tyrosine phosphorylation in sea urchin eggs and embryos. *Comp. Biochem. Phys.* **110**:493-502.
21. Wessel, G.M. and Berg, L. (1995). A spatially restricted molecule of the extracellular matrix is contributed both maternally and zygotically in the sea urchin embryo. *Dev. Growth Diff.* **37**:517-527.
22. Chen, S.W. and Wessel, G.M. (1996). Endoderm differentiation in vitro identifies a transitional period for endoderm ontogeny in the sea urchin embryo. *Dev. Biol.* **175**:57-65.
23. Berg, L., Chen, S.W. and Wessel, G.M. (1996). An extracellular matrix molecule that is selectively expressed during development is important for gastrulation in the sea urchin embryo. *Development* **122**:703-713.
24. Berg, L. and Wessel, G.M. (1997). Cortical granules of the sea urchin translocate early in oocyte maturation. *Development*, **124**:1845-1850.
25. Conner, S., Leaf, D., and Wessel, G.M. (1997). Members of the SNARE hypothesis are associated with cortical granule exocytosis in the sea urchin egg. *Mol. Rep. Dev.* **48**:106-118.
26. Schulz, J., Wessel, G.M., and Vacquier, V. (1997). Syntaxin and VAMP are associated in sea urchin sperm and are shed in membrane vesicles during acrosomal exocytosis. *Dev. Biol.* **191**:80-87.
27. LaFleur, G.J., Horiuchi, Y., and Wessel, G.M. (1998). Ovoperoxidase is a member of the heme-dependent peroxidase family and is selectively expressed by developing oocytes. *Mech. Dev.* **70**:77-89.
28. Wessel, G. M., Berg, L., Adelson, D., Cannon, G., McClay, D.R. (1998). Molecular characterization of hyalin - a cell adhesion molecule of the hyalin layer. *Dev. Biol.* **193**:115-126.
29. Conner, S., and Wessel, G. W. (1998). Rab3 mediates cortical granule exocytosis in the sea urchin egg. *Dev. Biol.* **203**:334-344.
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31. Haley, S. and Wessel, G.M. (1999). A cortical granule serine protease CGSP1 of the sea urchin *Strongylocentrotus purpuratus*, is autocatalytic and contains a low-density lipoprotein receptor-like domain. *Dev. Biol* **211**:1-10.

32. Conner, S. and Wessel, G. M. (1999). Syntaxin is required for cell division. *Mol. Biol. Cell* **10**:2735-2743.
33. Moreno, R.D., Ramalho-Santos, J., Chan, E., Wessel, G.M. Schatten, G. (2000). The Golgi apparatus segregates from the lysosomal/acrosomal vesicle during Rhesus spermiogenesis: Structural alterations. *Dev. Biol.* **219**: 334-349.
34. Gross, V.S., Wessel, G.M., Florman, H.M., and Ducibella, T. (2000) A monoclonal antibody that recognizes mammalian cortical granules and a 32 kDa protein in mouse eggs. *Biology of Reproduction* **63**:575-81.
35. Conner, S. and Wessel, G.M. (2000). A rab3 homolog in the sea urchin functions in cell division. *FASEB J* **14**:1559-1566
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39. Conner, S. and Wessel, G.M. (2001) Syntaxin, VAMP, and Rab3 are selectively expressed during sea urchin embryogenesis. *Mol. Reprod. Dev* **58**:1-8.
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42. Ramalho-Santos J, Moreno RD, Wessel GM, Chan EK, Schatten G. (2001). Membrane trafficking machinery components associated with the mammalian acrosome during spermiogenesis. *Exp Cell Res.* **267**:45-60.
43. Voronina, E. and Wessel, G.M. (2001). Apoptosis in oocytes, eggs, and early embryos of the sea urchin. *Mol. Reprod. Dev* **60**:553-561.

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48. Brooks, J.M. and Wessel, G.M. (2003). Selective transport and packaging of the major yolk protein in the sea urchin. *Dev. Biol* **261**: 353-370.
49. Szule, J.A., Jarvis, S.E., Hibbert, J.E., Spafford, J.D., Braun, J.E., Zamponi, G.W., Wessel, G.M., Coorsen, J. (2003). Calcium-triggered membrane fusion proceeds independently of specific presynaptic proteins. *J. Biol. Chem.***278**: 24251-24254.
50. Wong, J., and Wessel, G.M. (2004). Major components in a sea urchin block to polyspermy are structurally and functionally conserved. *Evo. Dev.***6**: 134-152.
51. Voronina, E. and Wessel, G.M. (2004). Regulatory contribution of heterotrimeric G-proteins to oocyte maturation in the sea urchin. *Mech. Dev.***121**: 247-259.
52. Haley, S.A. and Wessel, G.M. (2004). Regulated proteolysis by CGSP1 at fertilization. *Mol. Biol. Cell* **15**: 2084-2092.
53. Brooks, J.M. and Wessel, G.M. (2004). The major yolk protein of sea urchins is endocytosed by a dynamin-dependent mechanism. *Biol. Reprod.* **71**: 705-713.
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55. Leguia, M. and Wessel, G.M. (2004). Selective expression of a *sec1/munc18* member in sea urchin eggs and embryos. *Gene Expr Patterns* **4**:645-657.
56. Covian-Nares F, Martinez-Cadena G, Lopez-Godinez J, Voronina E, Wessel G.M., Garcia-Soto J. (2004). A rho-signaling pathway mediates cortical granule translocation in the sea urchin oocyte. *Mech. Dev.* **121**:225-235.
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63. Roux, M.M. Townley, I.K., Raisch, M., Reade, A., Bradham, C., Humphreys, G., Gunaratne, H.J., Killian, C.E., Moy, G., Su, Y-H., Etensohn, C.E., Wilt, F., Vacquier, V.D., Wessel, G.M., and Foltz, K.R. (2006). A functional genomic and proteomic perspective of sea urchin calcium signaling and egg activation. *Dev. Biol.* **300**:416-433.
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65. Song, J., Wong, J., and Wessel, G.M. (2006). Oogenesis: single cell development and differentiation. *Dev. Biol.* **300**: 385-405.
66. Briggs, E. and G.M. Wessel (2006). In the beginning Animal fertilization and sea urchin development. *Dev. Biol.* **300**:15-26.
67. Weinstock, G., Gibbs, R., Sodergren, E., Davidson, E.H., Cameron, A., The Sea Urchin Genome Sequencing Consortium (2006). The Genome of the Sea Urchin *Strongylocentrotus purpuratus*. *Science* **314**: 941-952.
68. Wong, J. and Wessel, G.M. (2006). Rendezvin: an essential gene encoding independent, differentially secreted egg proteins that organize the fertilization envelope proteome after self-association. *Mol. Biol. Cell* **17**: 5241-5252.
69. Voronina E, Wessel GM. (2006). Activator of G-protein signaling in asymmetric cell divisions of the sea urchin embryo. *Dev Growth Differ.* **48**(9):549-57.
70. Wong, J., Koppel, D., Cowan, A, Wessel, G.M. (2007). Membrane Hemifusion Is a Stable Intermediate of Exocytosis. *Developmental Cell* **12**: 653-659.
71. Song, J. and Wessel, G.M. (2007). Genes involved in the RNA interference pathway are differentially expressed during sea urchin development. *Devel. Dyn.* **236**:3180-3190.

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73. Wong, J. and Wessel, G.M. (2008). Free-Radical Crosslinking of Specific Proteins Alters the Function of the Egg Extracellular Matrix at Fertilization. *Development* **135**:431-440.
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77. Wong, J. and Wessel, G.M. (2009). Extracellular Matrix Modifications at Fertilization: Regulation of Dityrosine Crosslinking by Transamidation. *Development* 136: 1835-1847. PMID: PMC2680108
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16. *Molecular Reproduction and Development* Vol 82, No. 11 (November 2015)
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GENBANK ENTRIES

- 1) SFE1 [Strongylocentrotus purpuratus]
gi|46947106|gb|AAB02256.2|[46947106]
- 2) extracellular matrix protein [Lytechinus variegatus]
gi|25990342|gb|AAA77050.2|[25990342]
- 3) hyalin [Lytechinus variegatus]
gi|3859492|gb|AAC72757.1|[3859492]
- 4) ECM 18
gi|1100979|gb|AAB03779.1|[1100979]
- 5) cortical granule protein with LDL-receptor-like repeats
gi|596090|gb|AAA85106.1|[596090]
- 6) cortical granule serine protease 1 [Strongylocentrotus purpuratus]
gi|47550925|ref|NP_999636.1|[47550925]
- 7) synaptotagmin I [Strongylocentrotus purpuratus]
gi|75854645|gb|AAB67801.3|[75854645]
- 8) histidine decarboxylase [Strongylocentrotus purpuratus]
gi|61807501|gb|AAX55897.1|[61807501]
- 9) vesicle-associated membrane protein [Lytechinus variegatus]
gi|61807499|gb|AAX55896.1|[61807499]

- 10) GTP-binding protein [Strongylocentrotus purpuratus]
gi|60653473|gb|AAB67800.2|[60653473]
- 11) histamine H1 receptor [Strongylocentrotus purpuratus]
gi|59611856|gb|AAW88352.1|[59611856]
- 12) syntaxin binding protein [Strongylocentrotus purpuratus]
gi|45024893|gb|AAS55000.1|[45024893]
- 13) syntaxin binding protein [Lytechinus variegatus]
gi|45024891|gb|AAS54999.1|[45024891]
- 14) p160 [Strongylocentrotus purpuratus]
gi|37030049|gb|AAQ88104.1|[37030049]
- 15) soft fertilization envelope protein 9 [Lytechinus variegatus]
gi|46561854|gb|AAT01144.1|[46561854]
- 16) soft fertilization envelope protein 1 [Lytechinus variegatus]
gi|46561852|gb|AAT01143.1|[46561852]
- 17) proteoliasin [Lytechinus variegatus]
gi|46561850|gb|AAT01142.1|[46561850]
- 18) proteoliasin [Strongylocentrotus purpuratus]
gi|46561848|gb|AAT01141.1|[46561848]
- 19) guanine nucleotide-binding protein G(q) alpha subunit short transcript
[Strongylocentrotus purpuratus]
gi|42725879|gb|AAS38586.1|[42725879]
- 20) guanine nucleotide-binding protein G(q) alpha subunit long transcript
[Strongylocentrotus purpuratus]
gi|42725865|gb|AAS38585.1|[42725865]
- 21) guanine nucleotide-binding protein G(q) alpha subunit [Lytechinus variegatus]
gi|42725849|gb|AAS38584.1|[42725849]
- 22) guanine nucleotide-binding protein G(s) alpha subunit [Lytechinus variegatus]
gi|42725833|gb|AAS38583.1|[42725833]
- 23) guanine nucleotide-binding protein G(s) alpha subunit [Strongylocentrotus
purpuratus]gi|42725818|gb|AAS38582.1|[42725818]
- 24) guanine nucleotide-binding protein G(i) alpha subunit [Lytechinus variegatus]
gi|42725806|gb|AAS38581.1|[42725806]

- 25) guanine nucleotide-binding protein G(i) alpha subunit [Strongylocentrotus purpuratus] gi|42725793|gb|AAS38580.1|[42725793]
- 26) guanine nucleotide-binding protein G(12) alpha subunit [Lytechinus variegatus] gi|42725783|gb|AAS38579.1|[42725783]
- 27) guanine nucleotide-binding protein G(12) alpha subunit [Strongylocentrotus purpuratus] gi|42725770|gb|AAS38578.1|[42725770]
- 28) cyclin B [Lytechinus variegatus] gi|29423697|gb|AAO73601.1|[29423697]
- 29) glyceraldehyde-3-phosphate dehydrogenase [Lytechinus variegatus] gi|29423699|gb|AAO73602.1|[29423699]
- 30) cortical granule serine protease 1 precursor [Strongylocentrotus purpuratus] gi|5002340|gb|AAD37426.1|AF149789_1|[5002340]
- 31) B-type nuclear lamin [Strongylocentrotus purpuratus] gi|11386011|gb|AAG35069.1|AF320295_1|[11386011]
- 32) hyalin [Strongylocentrotus purpuratus] gi|3420721|gb|AAC31909.1|[3420721]
- 33) syntaxin [Strongylocentrotus purpuratus] gi|2353157|gb|AAB69380.1|[2353157]
- 34) vesicle associated membrane protein [Strongylocentrotus purpuratus] gi|2353155|gb|AAB69379.1|[2353155]
- 35) syntaxin [Strongylocentrotus purpuratus] gi|2342664|gb|AAB67802.1|[2342664]
- 36) vesicle-associated membrane protein [Strongylocentrotus purpuratus] gi|2342658|gb|AAB67799.1|[2342658]
- 37) Extracellular matrix protein 3 precursor (FREM2 homolog) gi|73620904|sp|Q9GV77|FREM2_LYTVA[73620904]
- 38) syntaxin binding protein 1 [Strongylocentrotus purpuratus] gi|47551307|ref|NP_999834.1|[47551307]
- 39) Major yolk protein precursor (MYP) (Vitellogenin) gi|46397786|sp|P19615|MYP_STRPU[46397786]

- 40) 3 alpha procollagen [Strongylocentrotus purpuratus]
gi|47550915|ref|NP_999631.1|[47550915]
- 41) N1.2
gi|161323|gb|AAA30005.1|[161323]
- 42) Hyalin
gi|34922448|sp|O96530|HYAL_LYTVA[34922448]
- 43) Hyalin
gi|34922437|sp|O76536|HYAL_STRPU[34922437]
- 44) Calcium-binding protein LPS1-alpha
gi|1170824|sp|P09485|LPS1A_LYTPI[1170824]
- 45) Development-specific protein LVN1.2
gi|126578|sp|P15262|LVN1_LYTVA[126578]
- 46) major yolk protein [Strongylocentrotus purpuratus]
gi|47551123|ref|NP_999740.1|[47551123]
- 47) cyclin E1 [Mus musculus]
gi|6671698|ref|NP_031659.1|[6671698]
- 48) PTPLv15=protein tyrosine phosphatase [Lytechinus variegatus, prism stage, Peptide, 85 aa]gi|1195603|gb|AAB35759.1||bbm|377575|bbs|171589[1195603]
- 49) PTPSp8=protein tyrosine phosphatase [Strongylocentrotus purpuratus, ovary, Peptide, 85 aa]gi|1195602|gb|AAB35758.1||bbm|377570|bbs|171588[1195602]
- 50) PTKLv36=protein tyrosine kinase [Lytechinus variegatus, prism stage, Peptide, 62 aa]gi|1195601|gb|AAB35757.1||bbm|377566|bbs|171586[1195601]
- 51) PTKSP50(Lv18)=protein tyrosine kinase [Strongylocentrotus purpuratus, ovary, Peptide, 51 aa] gi|1195600|gb|AAB35756.1||bbm|377562|bbs|171585[1195600]
- 52) PTKSp36=protein tyrosine kinase [Strongylocentrotus purpuratus, ovary, Peptide, 54 aa] gi|1195599|gb|AAB35755.1||bbm|377558|bbs|171583[1195599]
- 53) PTKSp26=protein tyrosine kinase [Strongylocentrotus purpuratus, ovary, Peptide, 57 aa] gi|1195598|gb|AAB35754.1||bbm|377554|bbs|171581[1195598]
- 54) PTKSp15=protein tyrosine kinase [Strongylocentrotus purpuratus, ovary, Peptide, 51 aa] gi|1195597|gb|AAB35753.1||bbm|377550|bbs|171575[1195597]

- 55) B-type nuclear lamin [Lytechinus variegatus, Peptide, 456 aa]
gi|998563|gb|AAB34119.1||bbm|370604|bbs|166455[998563]
- 56) B-type nuclear lamin [Strongylocentrotus purpuratus, Peptide, 565 aa]
gi|998562|gb|AAB34118.1||bbm|370603|bbs|166452[998562]
- 57) from cDNA clone Spcoll [Strongylocentrotus purpuratus]
gi|238617|gb|AAB20270.1||bbm|162895|bbs|64573[238617]
- 58) guanine nucleotide-binding protein G(12) alpha subunit [Strongylocentrotus purpuratus]
gi|47825404|ref|NP_001001476.1|[47825404]
- 59) guanine nucleotide-binding protein G(i) alpha subunit [Strongylocentrotus purpuratus]
gi|47825400|ref|NP_001001475.1|[47825400]
- 60) guanine nucleotide-binding protein G(s) alpha subunit [Strongylocentrotus purpuratus]
gi|47825398|ref|NP_001001474.1|[47825398]
- 61) guanine nucleotide-binding protein G(q) alpha subunit [Strongylocentrotus purpuratus]
gi|47551303|ref|NP_999835.1|[47551303]
- 62) cell surface protein p160 [Strongylocentrotus purpuratus]
gi|47551293|ref|NP_999829.1|[47551293]
- 63) vesicle-associated membrane protein [Strongylocentrotus purpuratus]
gi|47551221|ref|NP_999795.1|[47551221]
- 64) TATA binding protein [Strongylocentrotus purpuratus]
gi|47551211|ref|NP_999786.1|[47551211]
- 65) syntaxin [Strongylocentrotus purpuratus]
gi|47551201|ref|NP_999785.1|[47551201]
- 66) ovoperoxidase [Strongylocentrotus purpuratus]
gi|47551145|ref|NP_999755.1|[47551145]
- 67) cyclin-dependent kinase 4 [Strongylocentrotus purpuratus]
gi|47551029|ref|NP_999689.1|[47551029]
- 68) nuclear intermediate filament protein [Strongylocentrotus purpuratus]
gi|47550983|ref|NP_999665.1|[47550983]
- 69) cyclin D [Strongylocentrotus purpuratus]
gi|47550981|ref|NP_999664.1|[47550981]

- 70) TATA-binding protein [*Lytechinus variegatus*]
 gi|3599497|gb|AAC35362.1|[3599497]
- 71) cyclin-dependent kinase 4 [*Lytechinus variegatus*]
 gi|17223707|gb|AAK95393.1|[17223707]
- 72) cyclin-dependent kinase 4 [*Strongylocentrotus purpuratus*]
 gi|17223705|gb|AAK95392.1|[17223705]
- 73) cyclin D [*Strongylocentrotus purpuratus*]
 gi|14280022|gb|AAK58848.1|AF318615_1|[14280022]
- 74) ovoperoxidase [*Lytechinus variegatus*]
 gi|2707260|gb|AAB92243.1|[2707260]
- 75) ovoperoxidase [*Strongylocentrotus purpuratus*]
 gi|2707258|gb|AAB92242.1|[2707258]
- 76) alpha-spectrin
 gi|161334|gb|AAA30008.1|[161334]
- 77) troponin C
 gi|161332|gb|AAA30007.1|[161332]
- 78) myosin heavy chain
 gi|161325|gb|AAA30006.1|[161325]

EXTRAMURAL GRANTS AS PRINCIPAL INVESTIGATOR

	Total Costs	Direct Costs
1. NIH-RO1 HD28152, 5/91-3/97 Ontogeny of the Sea Urchin Endoderm Lineage	\$580,525	\$350,000
2. NSF-DCB9208018, 9/92-12/96 Specific Compartmentalization of Proteins in Oogenesis	\$270,000	\$172,000
3. March of Dimes-5-1161, 9/92 - 6/95 Embryonic Cell Fate Determination Resulting from Interactions with their Environment	\$70,000	\$63,000
4. March of Dimes FY95-0853, 7/95-6/97 Formation of and Cell Interactions with the Early Embryonic Environment	\$71,284	\$64,155
5. NIH-RO1 HD28152, 4/97 - 3/01 Biogenesis of Cortical Granules	\$964,547	\$613,858
6. NIH-KO2 HD01170, 4/97 - 3/02	\$364,500	\$337,500

The Biology of Cortical Granules

7. NSF IBN-9816683, 5/99 - 4/02 Biogenesis of Cortical Granules	\$300,000	\$204,000
8. NIH-RO1 HD28152, 4/02 - 3/06 Biogenesis and Function of Cortical Granules	\$1,237,352	\$800,000
9. NIH-RO1 HD28152 -13S1, 06/05 - 03/06 Biogenesis and Function of Cortical Granules Supplement for minority student summer research	\$6,780	\$4,374
10. NIH-RR017942, 4/03 – 3/04 Confocal microscope	\$431,032	\$431,032
11. NSF IBN 0309278, 9/03 – 8/06 Modification of the Egg Extracellular Matrix at Fertilization	\$360,000	\$242,000
12. NSF IOB-0620607, 8/06 – 7/09 Primordial Germ Cell Determination in Echinoderms	\$494,673	\$369, 000
13. NIH-RO1 HD28152, 4/08 - 3/12 Cell Surface Changes During the Egg to Embryo Transition	\$1,237,643	\$800,000
14. 1 S10 RR027634-01, 04/10 – 03/11 Shared High-throughput DNA Sequencer for the Brown University Community	\$498,000	\$498,000
15. NSF IOS-1120972, 08/11 – 07/14 Primordial Germ Cell Determination in Echinoderms	\$465,000	\$324, 000
16. NIH 2R01HD028152, 04/12 – 03/17 Post-translational modification of germ line determinants	\$1,665,625	\$1,250,000
17. Rhode Island Research Alliance 05/13 – 04/14 The Pathogenic Cause of the Local Sea star Wasting Disease	\$40,000	\$40,000
18. NIH 1R21HD075561, 08/14 – 07/17 Single nucleotide genome modifications in oocytes	\$446,875	\$275,000
19. NIH 9RO1GM125071-23 08/17-07/21 <i>Mechanisms of quiescence in germ line stem cells</i>	\$848,000	\$1,358,800
20. NIH R01 GM5270721 08/2018 – 07/2019 <i>Mechanisms of quiescence in primordial germ cells</i> Equipment supplement	\$118,966	

- | | | |
|---|-------------|-----------|
| 21. WIH GM5223251 04/17-02/22
<i>Molecular mechanisms of Preeclampsia</i>
Mentor of Dr. Lynae Brayboy | \$20,147 | |
| 22. NIH 1R01GM132222-01 07/2019 – 06/2021
<i>Germ cell factor restriction by inductive mechanisms</i>
<i>(relinquished early to accept R35 mechanism)</i> | \$1,224,000 | \$800,000 |
| 23. NSF (PI of multi-PI grant) IOS-1923445
09/2019 – 08/2023
EDGE CT: Tools to advance functional
genomic studies in sea urchins. | \$1,295,266 | |
| 24. NIH 1R01GM132222-02S1 06-2020 – 05-2022
<i>Sequential restriction of germ line progenitors by induction</i>
<i>Administrative supplement for diversity Graduate Student</i>
<i>Stephany Foster</i> | \$247,584 | |
| 25. NIH 1R35GM140897-01; 07/01/2021 – 06/30/2026
<i>Mechanisms of specification, quiescence, and regeneration</i>
<i>of primordial germ cells</i> | | |
| 26. NIH 3R35GM140897-01S2 12-2021 – 12-2023
<i>Sequential restriction of germ line progenitors by induction</i>
<i>Administrative supplement for diversity Graduate Student</i>
<i>Gerardo Reyes</i> | | |

INTRAMURAL GRANTS AS PRINCIPAL INVESTIGATOR

- | | |
|---|----------|
| 1. University Biomedical Research Support Grant, 1991
Shared equipment for J.W. Wilson Labs;
Automatic X-ray film processor | \$7,250 |
| 2. BioMed Division Support for Imaging Facility, 1997 | \$20,000 |
| 3. Curriculum Development Grant, 2002
Bio 50, Cell and Molecular Biology course development award | \$3,000 |
| 4. Curriculum Development Grant, 2006
Bio 19, Research Intensive Freshman course development award | \$5,000 |
| 5. Brown University / Women & Infants Hospital National Center of Excellence in Women's
Health (CoE) Innovations in Women's Health Research Seed Grant, 2007 | \$20,000 |
| 6. Brown University Provost's Research Seed Grant, 2008 | \$80,000 |

7. Perinatal COBRE Seed grant 2015 and 2016 (\$50,000 each year) \$100,000
8. Brown University Provost's Research Seed Grant, with Professor Nick Fawzi 2022 \$40,000

TEACHING

Spring 1991

- Bio 232, Topics in Developmental Biology, Graduate Seminar
- Bio 196, Undergraduate Independent Study, (Frances Galvin)
- Bio 296, Graduate Independent Study, (Linnea Berg, Frederick Clark, Michael Laidlaw, Siming Chen)

Summer 1991

- Advanced Research Training in Marine Molecular Biology and Biotechnology, Duke University Marine Laboratory, Beaufort, NC. (Responsible for lectures and laboratories of one week of the five-week course). Dr. Rebecca Van Beneden, Director.

Fall 1991

- Bio 131, Analysis of Development, Lecture course taught with Professor John Coleman;
- Bio 201A, Introduction to MCB Faculty Research, Guest lecture.
- Bio 195, Undergraduate Independent Study, (Michael Fessler)
- Bio 295, Graduate Independent Study, (Frederick Clark, Michael Laidlaw, Siming Chen)

Spring 1992

- Bio 32, Vertebrate Embryology, Lecture and Laboratory course taught with professors John Coleman and Marge Thompson
- Bio 196, Undergraduate Independent Study, (Michael Fessler)
- Bio 296, Graduate Independent Study, (Frederick Clark, Eun Yong Shim, Michael Laidlaw, Siming Chen)

Summer 1992

- Advanced Research Training in Marine Molecular Biology and Biotechnology, Duke University Marine Laboratory, Beaufort, NC. (Responsible for lectures and laboratories of one week of the five week course). Dr. Rebecca Van Beneden, Director.

Fall 1992

- Bio 131, Analysis of Development, Lecture course taught with Professor John Coleman
- Bio 201A, Introduction to MCB Faculty Research, Guest lecture.
- Bio 195, Undergraduate Independent Study, (Michael Fessler)
- Bio 295, Graduate Independent Study, (Frederick Clark, Michael Laidlaw, Siming Chen)

Spring 1993

- Bio 32, Vertebrate Embryology, Lecture and Laboratory course taught with Professors Marge Thompson and Anne Fausto-Sterling
- Bio 196, Undergraduate Independent Study, (Michael Fessler, Honors; Kathryn Gavin - Tougaloo College Exchange Student)
- Bio 296, Graduate Independent Study, (Frederick Clark, Michael Laidlaw, Siming Chen)

Fall 1993

- Bio 131, Analysis of Development, Lecture and Laboratory course taught with Professor John Coleman
- Bio 201A, Introduction to MCB Faculty Research, Guest lecture.
- Bio 195, Undergraduate Independent Study, (Jacob Harrison, Sarah Paul)
- Bio 295, Graduate Independent Study, (Michael Laidlaw, Siming Chen)

Spring 1994

- Bio 232, Advanced Topics in Developmental Biology, Graduate Seminar, Brown University
- Bio 196, Undergraduate Independent Study, (Jacob Harrison, Honors; Sarah Paul, Jennifer Hsu)
- Bio 296, Graduate Independent Study, (Michael Laidlaw, Siming Chen)

Fall 1994

- Bio 131, Analysis of Development, Lecture and Laboratory course taught with Professor John Coleman
- Bio 201A, Introduction to MCB Faculty Research, Guest lecture.
- Bio 195, Undergraduate Independent Study (Sarah Paul, Jennifer Hsu)
- Bio 295, Graduate Independent Study (Michael Laidlaw, Siming Chen)
- Bio 131A, Analysis of Development, Lecture course taught with Professor John Coleman at Pfizer Corp.

Spring 1995

- Junior Sabbatical at Brown University, no formal coursework
- Bio 196, Undergraduate Independent Study (Sarah Paul, Honors; Jennifer Hsu, Honors)
- Bio 296, Graduate Independent Study (Michael Laidlaw, Siming Chen, Sean Conner, Minghua Zheng)

Fall 1995

- Bio 131, Analysis of Development, Lecture and Laboratory course taught with Professor John Coleman
- Bio 195, Undergraduate Independent Study (Anand Soni)
- Bio 295, Graduate Independent Study (Sean Conner)
- Bio 201A, Introduction to MCB Faculty Research, Guest lecture.

Spring 1996

- Bio 206, Ultrastructure, Guest lecture

- Bio 295, Graduate Independent Study (Sean Conner)

Fall 1996

- Bio 131, Analysis of Development, Lecture and Laboratory course taught with Professors John Coleman and Kristi Wharton
- Bio 195, Undergraduate Independent Study (Chan-Tran Phung)
- Bio 201A, Introduction to MCB Faculty Research, Guest lecture.
- Bio 295, Graduate Independent Study (Sean Conner, Sheila Haley, Jacqueline Brooks)

Spring 1997

- Bio 232, Topics in Developmental Biology
- Bio 196, Undergraduate Independent Study (Chan-Tran Phung)
- Bio 206, Ultrastructure, Guest Lecture
- Bio 296, Graduate Independent Study (Sean Conner, Sheila Haley, Jacqueline Brooks)

Fall 1997

- Bio 131, Analysis of Development, Lecture and Laboratory course taught with Professors John Coleman and Kristi Wharton
- Bio 195, Undergraduate Independent Study (Felipe Molina)
- Bio 201A, Introduction to MCB Faculty Research, Guest lecture.
- Bio 295, Graduate Independent Study (Sean Conner, Sheila Haley, Jacqueline Brooks)

Spring 1998

- Bio 232, Topics in Developmental Biology
- Bio 196, Undergraduate Independent Study (Felipe Molina)
- Bio 201B MCB Graduate Student Topics, Course Organizer, Guest Lecture
- Bio 206, Ultrastructure, Guest Lecture
- Bio 296, Graduate Independent Study (Sean Conner, Sheila Haley, Jacqueline Brooks, Ekaterina Voronina)

Fall 1998

- Bio 131, Analysis of Development, Lecture and Laboratory course taught with Professors John Coleman and Kristi Wharton
- Bio 195, Undergraduate Independent Study (Felipe Molina, Victor Zaydfudim)
- Bio 201A, Introduction to MCB Faculty Research, Guest lecture.
- Bio 293, Topics in Cell Biology, Graduate seminar course (core), taught with Professor Eduardo Nillni, Department of Medicine
- Bio 295, Graduate Independent Study (Sean Conner, Sheila Haley, Jacqueline Brooks, Ekaterina Voronina)

Spring 1999

- Bio 104, Developmental Neurobiology, Guest Lecture
- Bio 195, Undergraduate Independent Study (Victor Zaydfudim)
- Bio 201B, MCB Graduate Student Topics, Course Organizer, Participant and Guest Lecturer

- Bio 296 Graduate Independent Study (Sean Conner, Sheila Haley, Jacqueline Brooks, Ekaterina Voronina)

Fall 1999

- Bio 131, Analysis of Development, Lecture and Laboratory course taught with Professors John Coleman and Kristi Wharton
- Bio 195, Undergraduate Independent Study (Victor Zaydfudim)
- Bio 201A, Introduction to MCB Faculty Research, Guest lecture.
- Bio 293, Topics in Cell Biology, Graduate seminar course (core)
- Bio 295, Graduate Independent Study (Sheila Haley, Jacqueline Brooks, Ekaterina Voronina)

Spring 2000

- Bio 195, Undergraduate Independent Study (Victor Zaydfudim)
- Bio 201B, MCB Graduate Student Topics, Course Organizer, Participant and Guest Lecturer
- Bio 296 Graduate Independent Study (Sean Conner, Sheila Haley, Jacqueline Brooks, Ekaterina Voronina)

Fall 2000

- Bio 131, Analysis of Development, Lecture and Laboratory course taught with Professors John Coleman and Kristi Wharton
- Bio 201A, Introduction to MCB Faculty Research, Guest lecture.
- Bio 295, Graduate Independent Study (Sheila Haley, Jacqueline Brooks, Ekaterina Voronina, Mariana Leguia)

Spring 2001

- Bio 201B, MCB Graduate Student Topics, Guest Lecturer
- Bio 232, Topics in Developmental Biology
- Bio 296 Graduate Independent Study (Sheila Haley, Jacqueline Brooks, Ekaterina Voronina, Mariana Leguia)

Fall 2001

- Bio 131, Analysis of Development, Lecture and Laboratory course taught with Professors John Coleman and Kristi Wharton
- Bio 201A, Introduction to MCB Faculty Research, Guest lecture.
- Bio 295, Graduate Independent Study (Jacqueline Brooks, Ekaterina Voronina, Mariana Leguia, Julian Wong)

Spring 2002

- Bio 201B, MCB Graduate Student Topics, Guest Lecturer
- Bio 232, Topics in Developmental Biology
- Bio 296 Graduate Independent Study (Jacqueline Brooks, Ekaterina Voronina, Mariana Leguia, Julian Wong)

Fall 2002

- Bio 131, Analysis of Development, Lecture and Laboratory course taught with Professor John Coleman
- Bio 195, Undergraduate Independent Study (Audrey Howell)
- Bio 243, Topics in Ecology and Evolutionary Biology, Guest Lecture
- Bio 201A, Introduction to MCB Faculty Research, Guest Lecture.
- Bio 295, Graduate Independent Study (Ekaterina Voronina, Mariana Leguia, Julian Wong)

Spring 2003

- Bio 50, Cell and Molecular Biology, (38 lectures, 28 discussion sessions; 125 students)
- Bio 195, Undergraduate Independent Study (Audrey Howell)
- Bio 201B, MCB Graduate Student Topics, Guest Lecturer
- Bio 296 Graduate Independent Study (Ekaterina Voronina, Mariana Leguia, Julian Wong)

Summer 2003

- Embryology course, Marine Biological Laboratory, Woods Hole, MA

Fall 2003

- Bio 95; Science Writing (Alison Whitney and Ryan Heath)
- Bio 201A, Introduction to MCB Faculty Research, Guest Lecture.
- Bio 295, Graduate Independent Study (Mariana Leguia, Julian Wong)

Spring 2004

- Sabbatical

Summer 2004

- Embryology course, Marine Biological Laboratory, Woods Hole, MA

Fall 2004

- Bio 201A, Introduction to MCB Faculty Research, Guest Lecture.
- Bio 295, Graduate Independent Study (Celina Juliano, Mariana Leguia, Julian Wong)

Spring 2005

- Bio 50, Cell and Molecular Biology, Lecture course (37 lectures, 26 discussion sessions; 145 students)
- Bio 195, Undergraduate Independent Study (Laya Varghese)
- Bio 201B, MCB Graduate Student Topics, Guest Lecturer
- Bio 296 Graduate Independent Study (Celina Juliano, Mariana Leguia, Julian Wong)

Summer 2005

- Embryology course, Marine Biological Laboratory, Woods Hole, MA

Fall 2005

- Bio 201A, Introduction to MCB Faculty Research, Guest Lecture.
- Bio 295, Graduate Independent Study (Celina Juliano, Mariana Leguia)

Spring 2006

- Bio 50, Cell and Molecular Biology, Lecture course (37 lectures, 26 discussion sessions; 145 students)
- Bio 32, Comparative Vertebrate Embryology, Guest lecture
- Bio 195, Undergraduate Independent Study (Laya Varghese)
- Bio 296 Graduate Independent Study (Celina Juliano, Maryanna Aldrich)
- Phys 199: Topics in Molecular Biophysics, Guest lecture

Summer 2006

- Embryology course, Marine Biological Laboratory, Woods Hole, MA

Fall 2006

- Bio 195, Undergraduate Independent Study (Jamie Lemon; Victoria Lattanzi, Peter Goldstein, Brendan Hickey)
- Bio 201A, Introduction to MCB Faculty Research, Guest Lecture.
- Bio 295, Graduate Independent Study (Celina Juliano, Eric Gustafson)

Spring 2007

- Bio 50, Cell and Molecular Biology, Lecture course (37 lectures, 26 discussion sessions; 185 students)
- Bio 195, Undergraduate Independent Study (Jamie Lemon; Victoria Lattanzi, Natasha Barrett)
- Bio 296 Graduate Independent Study (Celina Juliano, Eric Gustafson)

Fall 2007

- Bio 194 (Bio 121 starting Fall 2008), Synthetic Biological Systems (26 classes plus Discussion sessions, 28 students)
- Bio 195, Undergraduate Independent Study (Annie Gao, Dan Weinberg)
- Bio 201A, Introduction to MCB Faculty Research, Guest Lecture.
- Bio 295, Graduate Independent Study (Celina Juliano, Eric Gustafson, Aron Gyuris)

Spring 2008

- Bio 50, Cell and Molecular Biology, Lecture course (37 lectures, 26 discussion sessions; 185 students, with Professors Heywood and Wharton)
- Bio 95, Independent Science Writing (Roxanne Palmer)
- Bio 193 (Bio 122 starting Spring 2009), Synthetic Biological Systems in Theory and Practice (13 Lectures, 13 Laboratories)
- Bio 195, Undergraduate Independent Study (Annie Gao, Dan Weinberg, Phil Kara)
- Bio 296 Graduate Independent Study (Celina Juliano, Eric Gustafson, Aron Gyuris)

Fall 2008

- Bio 0031, Developmental Biology; Guest laboratory on fertilization and early development.
- Bio 1210 (Bio 121 starting Fall 2008), Synthetic Biological Systems (26 classes plus 16 Discussion sessions, 14 students)
- Bio 195, Undergraduate Independent Study (Annie Gao, Katherine Jacobs, Neil Parikh, Rima Shah)
- Bio 201A, Introduction to MCB Faculty Research, Guest Lecture.
- Bio 295, Graduate Independent Study (Celina Juliano, Eric Gustafson, Adrian Reich, Zachery Swartz)

Spring 2009

- Bio 1220, Synthetic Biological Systems in Theory and Practice (21 Lectures, 13 Laboratories)
- Bio 1310, Analysis of Development; Guest laboratory on fertilization and early development.
- Bio 1950, Undergraduate Independent Study (Annie Gao)
- Bio 2960 Graduate Independent Study (Celina Juliano, Eric Gustafson, Adrian Reich)
- Designing and Delivering Effective Scientific Presentations, a module in the NIH-T32 Training Program, with Kim Sherwood, 5 three-hour sessions.

Fall 2009

- Bio 0031, Developmental Biology; Guest laboratory on fertilization and early development.
- Bio1050, Advanced Cell Biology (3 lectures)
- Bio 1950, Undergraduate Independent Study (Katherine Jacobs, Neil Parikh, Rima Shah; Michael Chang, Stephanie Cheung, Flora Ko, Will Allen, Eli Scheer, Ahmad Rana, Indu Voruganti, Minoo Ramanathan, Ashley Kim)
- Bio 2010A, Introduction to MCB Faculty Research, Guest Lecture.
- Bio 2950, Graduate Independent Study (Eric Gustafson, Adrian Reich, Zachery Swartz)

Spring 2010

- Bio 1220 Synthetic Biological Systems in Theory and Practice (21 Lectures, 13 Laboratories)
- Bio 1310 Analysis of Development, lab/lecture course with Professors Zervas and Freiman (6 lectures, 2 laboratory sessions)
- Bio 1940 Evolution of Multicellularity and Germ Line Determination, with Professor Dunn (16 classes of discussion based format)
- Bio 1960, Undergraduate Independent Study (Nicolas Gonzalez, Maria Schrieber, Alanna Beyojian)
- Bio 2950, Graduate Independent Study (Adrian Reich, Zachery Swartz)

Fall 2010

- Bio 1950, Undergraduate Independent Study (Julius Ho, Ethan Richman, James Weis, Jen Kao, Lily Chang, Tim Johnstone, Cecilia Bahamon)
- Bio 2010A, Introduction to MCB Faculty Research, Guest Lecture.

- Bio 1210 Synthetic Biological Systems (26 classes, 45 students)
- Bio 2950, Graduate Independent Study (Adrian Reich, Zachery Swartz)

Spring 2011

- Bio 1310, Analysis of Development; Guest laboratory on fertilization and early development.
- Bio 1941C, Biology of Reproduction
- Bio 1960, Undergraduate Independent Study (Cecilia Bahamon)
- Bio 2950, Graduate Independent Study (Adrian Reich, Zachery Swartz)

Fall 2011

- Bio 2010A, Introduction to MCB Faculty Research, Guest Lecture
- Bio 2030, Foundations in the Advanced Study of Life Sciences; 4 classes
- Bio 2980, Graduate Independent Study (Adrian Reich, Zachery Swartz, Tara Fresques)
- Visiting Instructor, 4 classes in synthetic Biology, Biotechnology Graduate Program, Addis Ababa University, Ethiopia

Spring 2012

- Bio 1310, Analysis of Development; Guest laboratory on fertilization and early development.
- Bio 1330, Biology of Reproduction
- Bio 2980, Graduate Independent Study (Adrian Reich, Zachery Swartz, Jennifer Johnson)
- Visiting Instructor, Course in Synthetic Biology, Biotechnology Graduate Program, and Guest lecture in undergraduate course in Molecular Biology, Addis Ababa University, Ethiopia

Fall 2012

- Bio 2010A, Introduction to MCB Faculty Research, Guest Lecture
- Bio 1210 Synthetic Biological Systems (26 classes)
- Alpert School of Medicine, Brown University, Medical Elective course - Bionic Human, Faculty sponsor and lecturer.
- Bio 1950, Undergraduate Independent Study (Elena Suglia)
- Bio 2980, Graduate Independent Study (Adrian Reich, Zachery Swartz, Tara Fresques, Jennifer Forcina, Allison Tagart)

Spring 2013

- Bio 1310, Analysis of Development; Guest Lecture and Laboratory.
- Bio 1950, Undergraduate Independent Study (William Poole)
- Bio 2980, Graduate Independent Study (Adrian Reich, Zachery Swartz, Tara Fresques)
- Bio 111, Comprehensive Biology, Morehouse College, Guest lecturer
- Visiting Instructor, Course in Synthetic Biology, Biotechnology Graduate Program, and Guest lecture in undergraduate course in Molecular Biology, Addis Ababa University, Ethiopia

- Alpert School of Medicine, Brown University, Medical Elective course - Bionic Human, Faculty sponsor and lecturer.

Fall 2013

- Bio 2010A, Introduction to MCB Faculty Research, Guest Lecture
- Alpert School of Medicine, Brown University, Medical Elective course - Bionic Human, Faculty sponsor and lecturer.
- Bio 2980, Graduate Independent Study (Adrian Reich, Zachery Swartz, Tara Fresques)
- Tateyama Marine Station Open Course, Tateyama, Japan, invited speaker, lecturer, and lab module Director

Spring 2014

- Bio 1330, Biology of Reproduction
- Bio 2980, Graduate Independent Study (Adrian Reich, Zachery Swartz, Tara Fresques)
- Visiting Instructor, Course in Synthetic Biology, Biotechnology Graduate Program, and Guest lecture in undergraduate course in Molecular Biology, Addis Ababa University, Ethiopia

Fall 2014

- Bio 1210 Synthetic Biological Systems
- Bio 1310/2310 Analysis of Development (Guest lecture and laboratory)
- Bio 1950, Undergraduate Independent Study (Jessica Laird)
- Bio 2010A, Introduction to MCB Faculty Research, Guest Lecture
- Alpert School of Medicine, Brown University, Medical Elective course - Bionic Human, Faculty sponsor and lecturer.
- Bio 2980, Graduate Independent Study (Zachery Swartz, Tara Fresques)

Spring 2015

- Bio 1330, Biology of Reproduction
- Bio 2980, Graduate Independent Study (Zachery Swartz, Tara Fresques, Alexandra Mascaro)
- Visiting Instructor, Course in Synthetic Biology, Biotechnology Graduate Program, and Guest lecture in undergraduate course in Molecular Biology, Addis Ababa University, Ethiopia
- University of Tohoku, Asamushi Marine Station International Open Course, Asamushi, Japan, invited lecturer and Director of course module

Fall 2015

- Bio 1210 Synthetic Biological Systems
- Bio 1310/2310 Analysis of Development (Guest laboratory)
- Bio 1950, Undergraduate Independent Study (Saba Shevidi)
- Bio 2030, Foundations in the Advanced Study of Life Sciences; 7 classes
- Bio 2010A, Introduction to MCB Faculty Research, Guest Lecture
- Bio 2970, Graduate Independent Study (Tara Fresques)

Spring 2016

- Bio 1330, Biology of Reproduction
- Bio 2980, Graduate Independent Study (Tara Fresques)
- BioT M854 Developmental and Stem Cell Biology, Biotechnology Graduate Program, Addis Ababa University, Ethiopia

Fall 2016

- Tateyama Marine Station Open Course, Tateyama, Japan, invited speaker, lecturer, and lab module Director
- Bio 1310/2310 Analysis of Development (Guest laboratory)
- Bio 2010A, Introduction to MCB Faculty Research, Guest Lecture
- Bio 2970, Graduate Independent Study (Tara Fresques, Jane Abalafia)
- Bio 1950, Independent Study (Cynthia Phillips-Hale)

Spring 2017

- Bio 1330, Biology of Reproduction
- Bio 2980, Graduate Independent Study (Tara Fresques)
- Bio 1960, Independent Study (Cynthia Phillips-Hale)

Fall 2017

- Bio 1310/2310 Analysis of Development (Guest laboratory)
- Bio 1950, Undergraduate Independent Study (Peter Baek)
- Bio 2030, Foundations in the Advanced Study of Life Sciences; 8 sessions
- Bio 2010A, Introduction to MCB Faculty Research, Guest Lecture
- Bio 2970, Graduate Independent Study (Alice Pieplow)
- Tateyama Marine Station Open Course, Tateyama, Japan, invited speaker, lecturer, and lab module Director

Spring 2018

- Bio 1330, Biology of Reproduction
- Bio 2970, Graduate Independent Study (Stephanie Foster)
- REPR_SCI 440, Reproductive Technologies, Northwestern University, Guest Lecture

Summer 2018

- Warren Alpert School of Medicine, Brown University, IMS/Histology and Cell Biology, 2 Lectures, Review, Exam

Fall 2018

- Bio 1950, Undergraduate Independent Study (Lauren Lubeck, Amy Lipman)
- Bio 2030, Foundations in the Advanced Study of Life Sciences; 6 sessions
- Bio 2010A, Introduction to MCB Faculty Research, Guest Lecture
- Bio 2970, Graduate Independent Study (Alice Pieplow, Stephany Foster, Gerardo Reyes)

- Tateyama Marine Station Open Course, Tateyama, Japan, invited speaker, lecturer, and lab module Director

Spring 2019

- Bio 1330, Biology of Reproduction
- Bio 2970, Graduate Independent Study (Stephanie Foster, Alice Pieplow, Gerardo Reyes)

Fall 2019

- Bio 0100 Living Biology at Brown and Beyond – guest lecture
- Bio 2010A, Introduction to MCB Faculty Research, Guest Lecture
- Bio 2030, Foundations in the Advanced Study of Life Sciences; 6 sessions
- Bio 2970, Graduate Independent Study (Alice Pieplow, Stephany Foster)
- Tateyama Marine Station Open Course, Tateyama, Japan, invited speaker, lecturer, and lab module Director

Spring 2020

- Bio 1330, Biology of Reproduction
- Bio 2980, Graduate Independent Study (Stephanie Foster, Alice Pieplow, Jennifer Cui)
- Bio 1310/2310 Analysis of Development (Guest laboratory)

Fall 2020

- Bio 2010A, Introduction to MCB Faculty Research, Guest Lecture
- Bio 2970, Graduate Independent Study (Alice Pieplow, Stephany Foster, Gerardo Reyes)
- Tateyama Marine Station Open Course, Tateyama, Japan, invited speaker

Spring 2021

- Bio 1330, Biology of Reproduction
- Bio 1960, Undergraduate Independent Study, Maxwell Spurrell
- Bio 2980, Graduate Independent Study (Stephanie Foster, Alice Pieplow, Gerardo Reyes)

Fall 2021

- Bio 1050/2050, Advanced Cell Biology, Guest Lecture
- Bio 2010A, Introduction to MCB Faculty Research, Guest Lecture
- Bio 2970, Graduate Independent Study (Stephanie Foster, Cosmo Pieplow, Gerardo Reyes)
- Tateyama Marine Station Open Course, Tateyama, Japan, invited speaker (virtual)

Spring 2022

- Bio 1330, Biology of Reproduction
- Bio 2980, Graduate Independent Study (Stephanie Foster, Cosmo Pieplow, Gerardo Reyes)

Fall 2022

- Bio 1050/2050, Advanced Cell Biology, Guest Lecture
- Bio 2010A, Introduction to MCB Faculty Research, Guest Lecture
- Bio 1950, Undergraduate Independent Study, Rushane Dunn
- Bio 2970, Graduate Independent Study (Cosmo Pieplow, Gerardo Reyes)
- Tateyama Marine Station Open Course, Lectures and lab instruction, Tateyama, Japan

Spring 2023

- Bio 1330, Biology of Reproduction
- Bio 1960, Undergraduate Independent Study, Rushane Dunn
- Bio 2980, Graduate Independent Study (Cosmo Pieplow, Gerardo Reyes)

Fall 2023

- Bio 2010A, Introduction to MCB Faculty Research, Guest Lecture
- Bio 1950, Undergraduate Independent Study, El Hebert
- Bio 2970, Graduate Independent Study (Gerardo Reyes)
- Tateyama Marine Station Open Course, Lectures and lab instruction, Tateyama, Japan

New courses instituted into the Brown Curriculum:

2003: Bio0500, Cell and Molecular Biology

2007: Bio1210, Synthetic Biological Systems

2009: Bio1220, Synthetic Biological Systems in Theory and Practice

2011: Bio1330, Biology of Reproduction

LEARNING

2020: Mentorship training - The Science of Effective Mentorship in STEM and Medicine, Erin Dolan

Mentorship Training - Undergraduate Research at Scale: What if the Treatment Is a CURE? Erin Dolan

INVITED SEMINARS (since 2000)

2000: University of Massachusetts, Department of Biology
Carnegie Mellon University, Department of Biological Sciences
Developmental Biology of the Sea Urchin, Woods Hole, MA, Invited plenary speaker
Frontiers in Reproduction, MBL, Woods Hole, MA, Invited Course Speaker

2001: Morehouse College, Department of Biology
Rutgers University, Department of Biological Sciences
Semana de Jornadas Científico-Culturales del XX Aniversario del IIBE, Invited
Symposium Speaker, Guanajuato Gto, Mexico

2002: Developmental Biology of the Sea Urchin, Woods Hole, MA, Invited plenary speaker
California Institute of Technology, Pasadena, CA, Division of Biology, invited seminar
Scripps Institute of Oceanography, La Jolla, CA invited seminar

2003: Developmental Biology of the Sea Urchin, Woods Hole, MA, Invited plenary speaker,

- session chairperson
Duke University, Durham, NC, Department of Biology, Invited Speaker
University of Pennsylvania, Department of Biology, Invited Speaker
Marine Biological Laboratory, Woods Hole MA, Embryology course faculty lecture
University of Tohoku, Japan, Asamushi Marine Lab, Invited Speaker
Glycobiology Annual Symposium, San Diego CA, Invited Plenary Speaker
California Institute of Technology, Pasadena, CA, Division of Biology, invited seminar
- 2004: Scripps Institute of Oceanography, LaJolla, CA; Invited Speaker
Stanford University Hopkins Marine Station, Pacific Grove CA, Invited Speaker
Marine Biological Laboratory, Woods Hole MA, Embryology course faculty lecture
Tsukuba University, Tsukuba Japan, Department of Molecular Biology, Invited Speaker
International Symposium on the Molecular and Cell Biology of Egg- and Embryo-Coats,
Ise-Shima National Park, Japan, Invited plenary speaker
California Institute of Technology, Pasadena, CA, Division of Biology, Invited Speaker
University of Texas M.D.Anderson Cancer Center, Invited Blaffer Lecture speaker
Xavier University, New Orleans, LA, Department of Biology, Invited Speaker
- 2005: Developmental Biology of the Sea Urchin XV, Woods Hole, MA, plenary speaker
Marine Biological Laboratory, Woods Hole MA, Embryology course faculty lecture
Gordon Conference on Fertilization and Egg activation, invited speaker
International Symposium on Signal Transduction and Cell Response, Institute of
Research in Experimental Biology, University of Guanajuato, México; invited
plenary speaker
University of Tohoku, Japan, Asamushi Marine Lab, Invited Speaker
Department of Biology, Georgia Southern University, Invited Speaker
Marine Biological Laboratory, Woods Hole MA, Bay Paul Center Lecture series, invited
speaker
- 2006: Vanderbilt University, Program in Developmental Biology; Invited Speaker
University of Massachusetts Medical School, Worcester MA, Department of Cell
Biology, Invited seminar speaker
Duke University, Developmental Biology Colloquium, Invited speaker
National Institutes of Health, Bethesda, MD, Laboratory of Cellular and Developmental
Biology, Invited seminar speaker
Marine Biological Laboratory, Woods Hole MA, Embryology course faculty lecture
International Echinoderm Conference XII, Durham, NH., invited plenary speaker.
Developmental Biology of the Sea Urchin XVI, Woods Hole, MA, Conference
Organizer, Plenary speaker
Gordon Research Conference on NOX family NADPH oxidases, invited speaker
- 2007 Annual Dennis Barrett Lectureship, University of Denver; Inaugural Speaker
University of Arkansas Medical Center, Invited seminar speaker
- 2008 Oocyte Maturation and the Cell Cycle, Kyoto Japan, invited plenary speaker

- Developmental Biology of the Sea Urchin XVII, Woods Hole, MA, Plenary speaker,
Session Organizer
Biology in the Genomic Age, Howard Hughes Medical Institute, Summer Teachers
Workshop, Invited Distinguished Speaker, Amherst MA
University of Massachusetts, Boston, Department of Biology, invited seminar speaker
UCSF Developmental Biology Symposium, Keynote Speaker
WISE Faculty Lecture Series, Brown University
National Shellfish Association Annual Meeting, Invited Plenary speaker, Providence RI
EE Just Symposium, Plenary Speaker, Howard University, Washington DC
Stanford University Hopkins Marine Station, invited speaker
Station Biologique de Roscoff, invited speaker, Roscoff France
- 2009 Astor Visiting Lectureship, Department of Pharmacology, University of Oxford,
Cambridge England
Wiley Conference on Molecular Reproduction and Development, Plenary Speaker
University of Connecticut Health Science Center, Department of Genetics and Cell
Biology, invited speaker
Developmental Biology of the Sea Urchin XVIII, Woods Hole, MA, Plenary speaker,
Session Organizer
University of Minnesota, Department of Biochemistry and Biophysics, invited speaker.
- 2010 Rhode Island College, Department of Biology, Invited speaker
29th Annual Carnegie Symposium, Department of Embryology, Carnegie Institution for
Science, Baltimore, invited plenary speaker
Germ Cells, Invited Plenary Speaker, Cold Spring Harbor Symposium
Germ Cells and Oocytes, Invited Plenary Speaker, University of Washington Friday
Harbor.
Japanese Zoological Society, University of Tokyo, invited plenary speaker.
- 2011 University of Pennsylvania, Department of Biology
Northwest Regional Meeting of the Society for Developmental Biology, invited plenary
speaker
Reproduction and Regeneration, Invited Plenary speaker, University of Pennsylvania
Developmental Biology of the Sea Urchin XX, Woods Hole, MA, Plenary speaker,
Session Organizer
Gordon Conference on Fertilization and Egg activation, invited speaker, session
chairperson, Vice-chairperson-elect
Division of Reproductive Endocrinology and Infertility, Albert Einstein College of
Medicine, invited seminar speaker
Addis Ababa University, Graduate Program in Biotechnology, invited speaker and
workshop
- 2012 JAMBIO, Japanese Zoological Society, University of Tokyo, Invited plenary speaker.
Keio University, Tokyo, Department of Biological Sciences, Invited seminar speaker
Northeast Regional Meeting of The Society for Developmental Biology, Invited Plenary
speaker

- Valdosta State University, Valdosta Georgia, Department of Biology, invited seminar speaker and guest lecturer in honors biology class.
- Addis Ababa University, Graduate Program in Biotechnology, invited speaker and workshop
- A Symposium Honoring Ernest Everett Just, Medical University of South Carolina, invited Plenary speaker
- Department of Pharmacology, University of Oxford, Cambridge England, invited speaker
- Middlebury College, three presentations: Developmental Biology lab (fertilization and early development), Cell Biology Class (synthetic biology), Research seminar (Germ line determination) invited speaker.
- SUNY Stony Brook Department of Molecular Biology and Biochemistry. Invited plenary speaker for Lennarz Symposium.
- European Evolutionary Developmental Biology. Invited speaker
- International Symposium on the Molecular and Cell Biology of Egg- and Embryo-Coats, Nagoya University, Japan, Invited plenary speaker
- The Vieques Conservation and Historical Trust, Puerto Rico, invited speaker
- 2013: Morehouse College, Department of Biology
- Addis Ababa University, Ethiopia, Graduate Program in Biotechnology, invited speaker and workshop
- Gondar University, Ethiopia, Department of Biotechnology, invited speaker and lecturer
- University of Florida, Department of Obstetrics and Gynecology
- EMBO Conference Biology of the Oocyte, Banyuls Marine Station, France, Invited plenary speaker, and session chairperson.
- The Ovarian Club, Paris, France. Invited speaker and session chairperson
- National Institutes of Health, Bethesda, MD, Laboratory of Cellular and Developmental Biology, Invited seminar speaker
- Gordon Research Conference, Fertilization and Activation of Development, Conference Vice-Chair and Discussion Leader,
- Tateyama Marine Station, Tateyama, Japan, invited speaker and lecturer
- New York University, Department of Biology, invited seminar speaker
- University of Connecticut, Department of Marine Sciences, Invited seminar speaker
- 2014: Rutgers University, Department of Genetics, Invited seminar speaker.
- Developmental Biology of the Sea Urchin XXII, Woods Hole, MA, Plenary speaker, Session Organizer
- Addis Ababa University, Ethiopia, Graduate Program in Biotechnology, invited speaker and workshop
- Addis Ababa Science and Technology University, Ethiopia, Graduate Program in Biotechnology, invited speaker and workshop
- American Association for the Advancement of Sciences Pacific Division, Marine Molecular Biology, Invited Plenary Speaker.
- University of Bergen, Norway, Department of Marine Developmental Biology, Invited seminar speaker.
- International Fetal Medicine and Surgery Society Annual Meeting, Keynote Speaker, Chatham MA

- 2015: Department of Cell Physiology & Molecular Biophysics, Texas Tech University Health Sciences Center, Invited seminar speaker
Department of Physiology & Neurobiology, University of Connecticut, Invited seminar speaker
Germ Cells and Oocytes International Conference, Invited Plenary Speaker, Asamushi Japan
Stem Cell Interest Group, Brown University
University of Tohoku Marine Science Laboratory, Invited speaker and Director of Open Course module, Asamushi Japan
Gordon Research Conference, Fertilization and Activation of Development, Conference Chair and Plenary Discussion Leader
Addis Ababa University, Ethiopia, Graduate Program in Biotechnology, invited speaker and workshop
iCog Labs, Addis Ababa, Ethiopia
Wheeler School, iGEM team and Synthetic Biology Invited speaker
- 2016: 57th annual Northeast Regional Society of Developmental Biologists, Invited plenary speaker, Woods Hole MA
Center for Reproductive Sciences University of California, San Francisco, Annual retreat, Keynote speaker
Addis Ababa University, Ethiopia, Graduate Program in Biotechnology, Invited speaker and workshop
Pediatric Research Colloquium, Women and Infants Hospital, Invited speaker
75th Annual Meeting of the Society for Developmental Biology, Satellite Symposium – The Germ Line, invited speaker.
University of California, Davis, Department of Molecular and Cellular Biology, Invited seminar speaker.
Women and Infants Hospital, COBRE Research Symposium, Invited speaker.
Tateyama Marine Station, Tateyama, Japan, invited speaker and lecturer
MCB Graduate Program Data Club, Brown University, Invited speaker
Women and Infants Hospital, Division of Gynecologic Oncology Research Seminar series, Invited speaker.
- 2017: EMBO Workshop on the Maternal – Zygotic Transition, Max Plank Institute-Dresden, Germany. Invited Plenary Speaker.
University of Goettingen, Faculty of Medicine-Department of Developmental Biochemistry, Invited Seminar Speaker
Tateyama Marine Station of Ochanomizu University, Tateyama, Japan, Invited Seminar Speaker
International Symposium on Regulation of Germ Cell Development *in vivo* and *in vitro*. Fukuoka, Japan. Invited Keynote speaker.
- 2018: Cornell University, Ithaca NY. Invited seminar speaker.
University of Tokyo, Misaki Marine Biology Station, Misaki, Japan, Invited Speaker

Tateyama Marine Station of Ochanomizu University, Tateyama, Japan, Invited Seminar Speaker

- 2019: International Meeting of Oocytes, Villefranche-sur-mer, invited speaker.
Gordon Research Conference on Egg activation and beginning of development, invited speaker and session chairperson.
University of Tokyo, Misaki Marine Biology Station, Misaki, Japan, Invited Speaker
Tateyama Marine Station of Ochanomizu University, Tateyama, Japan, Invited Seminar Speaker
Gloucester Marine Genomics Institute, Invited speaker
- 2020: International Conference of the Developmental Biology of the Sea Urchin and Other Marine Invertebrates, Marine Biological Laboratories, Woods Hole MA, Invited Plenary Speaker (Postponed due to COVID19)
University of Tokyo, Misaki Marine Biology Station, Misaki, Japan, Invited Speaker (Postponed due to COVID19)
European Society of Evolution and Development, Napels, Italy, Invited speaker (Postponed due to COVID19)
Icahn School of Medicine at Mount Sinai, Cell, Developmental & Regenerative Biology Invited seminar speaker (Virtual)
Tateyama Marine Station of Ochanomizu University, Tateyama, Japan, Invited Seminar Speaker (Virtual)
- 2021: Dickinson College, Department of Biology, invited (virtual) seminar speaker.
Tateyama Marine Station of Ochanomizu University, Tateyama, Japan, Invited Seminar Speaker (Virtual)
- 2022: Reproductive Biology and Women's Health, Brown University Women and Infant's Hospital, invited seminar speaker
Developmental Biology of the Sea Urchin and other Marine Invertebrates XXVI, Woods Hole, MA, Plenary speaker
Developmental Biology of the Sea Urchin and other Marine Invertebrates XXVI, Woods Hole, MA, Presenter - Workshop on Cas9 optimization for echinoderms.
Tateyama Marine Station Open Course, Tateyama, Japan, invited speaker
- 2023: Duke University, Durham, NC Developmental and Stem Cell Biology Colloquium, Invited speaker
NIEHS, Research Triangle Park, NC Invited speaker.
56th Annual Meeting of the Japanese Society of Developmental Biologists, Sendai, Japan Invited speaker
Wheaton College, Norton MA, Invited speaker
Tateyama Marine Station Open Course, Tateyama, Japan, invited speaker
Tohoku University, Asamushi Research Center for Marine Biology, invited speaker

SERVICE TO THE PROFESSION

- Editorial Boards

- *Scientific Reports*, Member Editorial Board 2023 - present
- *Faculty Opinions*, contributing member 2020- present
- Member, *BMC Developmental Biology*, 2004 – 2020, Editorial Advisor 2020-2021
- Editor, *Zygote* (Cambridge Press), 2013 - present
- Academic Editorial Board, PeerJ, 2012 - present
- Editor-in-Chief, *Molecular Reproduction and Development* (Wiley) , 2008 - 2018
- International Review of Cell and Molecular Biology, Advisory Board, 2014 - 2018
- Executive Editor, *Molecular Reproduction and Development*, 2007-2008
- The Open Cell and Developmental Biology Journal 2007 - 2016
- Section Editor, MCB, *BMC Biology Image Library*, 2006 - 2016
- Member, *Developmental Dynamics*. 2002 - 2015
- Member, *Reproductive Biology and Endocrinology*. 2002 – 2017
- Associate Editor, *Molecular Reproduction and Development*, 2000 – 2007
- Reviews Editor, *Developmental Biology*, 1998 – 2008
- Member, CRC Year Book of Developmental Biology, 1988-1990
- NICHD- P50 center applications: “National Centers for Translational Research in Reproduction and Infertility (NCTRI)” panel member April 2024
- NIEHS Site Visit Reviewer, Epigenetics and Stem Cell Biology Laboratory (ESBCL) ad hoc, November 2023
- NIH CSR Special Emphasis Panel for Fellowships on Cell Biology, Developmental Biology, and Bioengineering ZRG1 F05-Q (20) Chairperson and panel member 02/2022, 07/2022, 11/2022
- NIH Special Emphasis Panel ZRG1 EMNR-V(02) 2020/10, Chairperson and panel member 07-2020
- NIH Special Emphasis Panel of R01 and R21 grant applications Endocrine and Reproductive Biology ZRG1 FO5U Chairperson and panel member, 2019, 2020
- NIH Special Emphasis Panel of R01 and R21 grant applications Endocrine and Reproductive Biology ZRG1 EMNR-F(02) Chairperson and panel member, 2019
- NIH Cellular and Molecular Integrative Reproduction (CMIR) NIH IRG Panel Member Oct 2019, Oct 2021
- NIH Fellowship (F31 and F32) Review Panel (F05U, Cell Biology and Bioengineering) October 2019. Chairperson and Panel member
- NIH Fellowship (F31 and F32) Review Panel (F05U, Cell Biology and Bioengineering) June 2019. Panel member and Vice-Chair
- NIH Reproductive and Perinatal Biology Special Emphasis Panel (2019/01 ZRG1 EMNR-P), Panel member, 2019
- NIH Reproductive and Perinatal Biology Special Emphasis Panel (2018/01 ZRG1 EMNR-V), Chairperson and panel member, 2018
- External Site Reviewer, Periodic Program Review for Program of Biology and for Program for Environmental Sciences, LaGuardia Community College, NY 2018
- NIH Special Emphasis Panel of R01 and R21 grant applications Endocrine and Reproductive Biology ZRG1 EMNR-V(02) Chairperson and panel member, 2017

- NIH Special Emphasis Panel of R01 grant applications for PAR-15-020: Systems Developmental Biology for Understanding Embryonic Development and the Ontogeny of Structural Birth Defects, Chairperson and panel member, 2017
- NIH ZRG1 BBBP-Y (45) RFA Panel: Animal/Biological Resource Facilities, Panel member 2015, 2016
- American Society for Cell Biology Nominating Committee 2022 - 2023
- American Society for Cell Biology International Affairs Committee (IAC); Associate Member 2022
- Ethiopian Academy of Sciences, Ministry of Science and Technology, evaluator, National Curriculum in Undergraduate and Graduate Programs in Biotechnology. 2016 - 2020
- Young Scholars Conference, Brown University, Poster Judge, 2016
- Adviser and Instructor for the International Marine Lab Open Courses, Asamushi Research Center for Marine Biology, Asamushi, Japan 2014, 2015, 2016
- NSF Developmental Systems, Animal Developmental Mechanisms & Evo/Devo Review Panel, 2015
- Co-organizer (with Dr. Richard Cardullo) American Association for the Advancement of Sciences Pacific Division, Molecular Reproduction and Development Section, 2014
- Center for Scientific Review Advisory Panel to Dr. Richard Nakamura, Endocrine, Metabolism, Nutrition and Reproductive Sciences Integrated Review Group (EMNR IRG) panel member and chairperson, 2014
- NIH/DP5 Director's Early Independence Award Reviewer, 2014.
- Gordon Conference on Fertilization and Activation of Development, Vice-Chairperson, 2013; Chairperson, 2015
- NSF IOS Grant Review Panel (Developmental Biology) 2013
- Co-organizer (with Dr. Carmen Williams) of the Triangle Area Conference on Regenerative Medicine and Reproduction, Duke University, Durham NC. 2013
- Center for Computational Regulatory Genomics, California Institute of Technology, Pasadena CA, an NIH – supported facility, Advisory Committee 2012 - 2018
- Scientific site visiting committee for Laboratoire de Biologie du Développement - BioDev UMR 7009, VilleFranche-sur-mer, France. November 2012
- American Association for the Advance of Science, Program Committee - Session Proposal Reviewer, 2012
- Grant reviewer for The Hong Kong Institute of Education, Committee on Research and Development, 2012 - present
- Co-Organizer (with John Gearhart and Deborah Driscoll) MRD/UPenn Conference on Regenerative Medicine and Reproduction, University of Pennsylvania, June 2011
- Co-Organizer (with Steve Stricker – University of New Mexico and Takeo Kishimoto – Tokyo Institute of Technology) Conference on Germ Cells and Oocyte Maturation Sept 2010
- Grant reviewer for Medical Research Council, United Kingdom 2010
- Marine Biological Laboratory, Woods Hole MA, Corporation Committee on Courses, member, 2010 - 2016.
- Wiley Conference on Molecular Reproduction and Development. Brown University organizer 2009

- NIH Board of Scientific Counselors Review; National Institute of Dental and Craniofacial Research, Member 2008, 2010
- Marine Biological Laboratory, Woods Hole MA, Embryology course Faculty, 2003 - 2006
- Marine Biological Laboratory, Woods Hole MA, Education Committee member, 2003 – 2012
- National Institutes of Health, Reviewer: Cellular, Molecular, and Integrative Reproduction Study Section (CMIR) 2008 – 2013 (member); CMIR Chairperson 2011 - 2013; Cellular Biology and Physiology Study Section, Subcommittee 1, (CBY1 – ad hoc) June 1994, February 1995; Cell and Developmental Function-5 (CDF-5 - ad hoc) October 2001; Reproductive Biology, Feb 2002; 2008 (ad hoc); Dev-2 February 2005 (ad hoc); Dev-1, February 2006 (ad hoc);
- Developmental Biology of the Sea Urchin, Conference Co-organizer, 1997, 2006, 2015
- Textbook reviewer: Wiley Press, *Cell and Molecular Biology*, Karp, 4th edition, 2006; Sinauer Press, *Developmental Biology*, Gilbert, 8th edition, 2005; Garland Science, *Essential Cell Biology*. Second edition. Alberts et al., 2004;
- 2005 SACNAS National Conference; Poster judge
- FASEB Finance Committee, Representative from Society for Developmental Biology; NIH and NSF representative, 2001 - 2004
- FASEB's Fiscal Year 2001 Federal Funding Consensus Conference, member of NIH and NSF advisory panel, Fall 1999 - 2004
- Society for Developmental Biology, Treasurer, 1996-1999
- New England Regional Developmental Biology Conference, Session Co-Organizer, 1998
- Society for Developmental Biology, Board of Trustees, Northeast Representative, 1993-1996
- New England Regional Developmental Biology Conference, Co-Organizer, 1995
- National Institutes of Health, Study Section; R-15 (AREA) Grants, 1993, 1994, 1996
- 52nd Annual Symposium of the Society for Developmental Biology; Brown University Faculty Sponsor, and Chairperson, Local Arrangements Committee; 1993
- Reviewer of Manuscripts for: *Developmental Biology*, 1988 - present (Average 5 manuscripts per year); *Development*, 1991 – present 2-3 per year); *EvoDevo*, 2014 – present (1-2 per year); *Journal of Experimental Zoology*, 1988 - 1998; *Wilhelm Roux Archives of Developmental Biology*, 1990 - 2000; *Aquaculture*, 2005 – 2012 (3 per year); *Comparative Biochemistry and Physiology*; 1991-2008; *Molecular and Cellular Biology*, 1994- 2010; *Science* 2002 – present (1 per year); *Current Biology* (Average one- two manuscripts per year each).
- Reviewer of Grants for: The National Science Foundation (USA), 1988-present; The Natural Sciences and Engineering Research Council of Canada, 1997 - 2002; The Pennsylvania Academy of Sciences, 1992-1994; The North Dakota Program in Science Excellence, 1995; The United States Department of Agriculture, 2000 – present; Lalor Foundation, 2003; The Hong Kong Institute of Education (HKIEd) Committee on Research and Development (CRD) 2012 – present; United States-Israel Binational Science Foundation 2013 – present).
- New England Regional Developmental Biology Conference, Session Chairperson, 1993

- New England Biology Teachers Conference, Chairperson and Conference Organizer, Brown University, 1992
- National Institute of General Medical Sciences, Special Review Committee, (Minority Fellowships) 1992, 1993
- American Association of Anatomists; Advisory Committee of Young Anatomists; 1987-1990
- American Society of Zoology; Representative of the Division of Cell and Developmental Biology for the Committee of Student Affairs; 1985-1990
- M.D. Anderson Associates Steering Subcommittee on Trainee Representation, 1987-1990
- Mellon Foundation Panel Discussant for: *The Academics Handbook*, eds. A.L. Deneef, C.D. Goodwin, and E.S. Stern), Duke University Press, 1988; 1985-1986

SERVICE TO THE UNIVERSITY

- Tenure, Promotion, and Appointments Committee (TPAC), September 1, 2022 - June 1, 2025
- Biology Undergraduate Education DIAP committee 2023 - present
- MCBGP Seminar Series Organizational Committee 2020 - present
- Women's Reproductive Health Research (WRHR) Career Development Training Grant (NIH-K12) Women and Infants Hospital / Brown University; member advisory committee 2019 – present.
- Embryonic Stem Cell Research Oversight (ESCRO) Committee, Primary member 2017-present
- Division of Biology and Medicine, Medical Science Promotion Committee, Member, 2015 - present
- Promotions Committee Member for Professor Mark Johnson, 2017-2018; 2022 – 2023
- Promotions Committee Member for Professor Alexandra Deaconescu 2022 – 2023
- Promotions Committee Chairperson for Professor Nicola Neretti , 2018-2019
- Internal Review Committee for Department of Ecology and Evolutionary Biology, 2018
- Search Committee Member for MCB Assistant/Associate Professor in Structural Biology. 2017 - 2018
- Responsible Conduct of Research (BEARCORE), panel member 2017
- Search Committee member, Department of Obstetrics and Gynecology, Director for Division of Gynecologic Oncology, Alpert School of Medicine, Brown University 2016 – 2017
- First Readings Committee Member, Dean of the College, 2016-2021
- MCB Department Curriculum Committee, 2016 - 2019
- BioMed Division's Diversity and Inclusion Action Plan (DIAP), MCB Department, Chairperson, 2016
- Astronaut Scholarship Foundation selection committee, 2015.
- Sheridan Center for Teaching and Learning, Certificate V Mentorship Program Speaker/Discussion leader, 2014, 2015
- Brown University Celebration of the 250th Anniversary, Lab tours for middle school students, March 7th 2014, Open house for community lab tours March 8th 2014, iGEM demonstration September 27th, 2014.

- UTRA Selection Committee for iTeam-, Spring-, and Summer, 2014 - 2016
- Search Committee member, Division Director of Reproductive Endocrinology, Alpert School of Medicine, Brown University 2013 – 2015
- Brown University Celebration of the 250th Anniversary, Chair of the committee to host Keio University in the celebration 2013-2014
[<http://news.brown.edu/shorts/2014/03/semiquincentenary-visit-keio-faculty>]
- Committee for Academic Standing 2012
- MCB Graduate Program Admissions Committee 2012- 2013, 2013 – 2014, 2017-2018, 2021-2022 (Chairperson)
- Provost Seed Grant Review Committee 2011, 2012, 2014
- Commencement 2006; 2010, 2015 Undergraduate Biology Ceremony, Faculty Speaker
- MCB Graduate Program Curriculum Committee Member, 2009 – 2012, 2013 - present
- Initiative to Maximize Student Diversity, NIH-T32 Training Program, Senior Scholar 2008 - 2010
- Marine Biological Laboratory Search Committee for Chief Academic and Scientific Officer, 2007
- Bike-to-Brown Faculty Liaison, 2007 - 2012
- Tenure and Promotion Advisory Committee, 2006 – 2008
- Commencement, Baccalaureate Faculty Usher, 2005 - present
- Brown University iGEM Faculty Sponsor; 2006 – present
 - 2006 Silver Medal, iGEM World Competition
 - 2007 Bronze Medal, iGEM World Competition
 - 2008 Gold Medal, Best Environmental Detector, GEM World Competition
 - 2009 Silver Medal, iGEM World Competition
 - 2010, Bronze Medal
 - 2011, Gold Medal, Best Presentation, Final four finisher - Americas competition; Best New Application, Top Sixteen in Worlds
 - 2012, Gold Medal, Final Four finisher - Americas competition; Best New BioBrick, Runner-up Human Practices, Top Sixteen in Worlds
 - 2013, Gold Medal, Top category finisher - Americas competition; Gold Medal in World Competition
 - 2014, Gold Medal in World Competition
 - 2015, Gold Medal in World Competition, Best in Manufacturing Class
 - 2016, Gold Medal in World Competition, Best in Biological Measuring Device
 - 2017, Bronze Medal in World Competition
 - 2018, Gold Medal in World Competition
 - 2019, Gold Medal in World Competition
- Triple Helix, International Editorial Board, 2005 - 2016
- Brown University/Marine Biological Laboratory Joint Graduate Program, Faculty Advisory Committee to the Provost, member, 2004 – 2012
- Sophomore advisor, 1995-1996; 2003-2010, 2011
- Faculty Teaching Fellow, Life Science Representative, Sheridan Center, June 2002 – 2009

- Biology Concentration Advisor; 1992-1994, 1996 – present
- Football Recruiting Program, Speaker and Representative for the Division of Biology and Medicine; 1992, 1993, 1996, 1998, 1999, 2001-2003, 2004-2006, 2009 – 2010.
- Program of Molecular and Cell Biology and Biochemistry Training Grant, Trainer; 1990-present
- MCB Department Executive Committee, 2005 - 2006
- MCB Graduate Program Executive Committee; Minority Student Development, 2004 - 2006
- MCB Graduate Program Newsletter; Faculty sponsor, 2004 - 2006
- Leduc BioImaging Facility, Faculty Oversight Committee; 2002 - 2006
- Leduc Microscopy Facility Committee, Member, 1995 - 2006
- Search Committee for Associate Dean for Graduate and Postdoctoral Training, Chairperson, 2005 (Dean Nancy Thompson)
- Dean's Action Group to define: Associate Dean for Graduate and Postdoctoral Training, Chairperson 2005
- Graduate Student Career Services; guest speaker, 2005
- Member of the Advisory Committee for the Center for Genetics and Genomics, NIH COBRA, April 2000 - 2005
- Center for Genetics and Genomics, Member, Executive Committee, and Core (D) Leader for NIH COBRA Application/Award ; Confocal Microscopy Facility Upgrade (PI, John Sedivy) May 2000 – 2005
- MCB Graduate Program Admissions Committee Co-Chairperson, 2004 - 2005
- MCB Graduate Program Retreat Co-Chairperson, 2004, 2005
- Biology Curriculum Committee Faculty member 2004 - 2005
- MCB Department Representative for the Brown University/Marine Biological Laboratory Joint Graduate Program, 2003 – 2004
- Member of the Advisory Committee on Corporate Responsibility in Investing, April 2002 - 2003
- BioMedical Division Imaging Facility; Founder and Faculty Director; 1997 - 2007
- Search Committees:
 - Search Committee member, Department of Molecular and Cellular Biology and Biochemistry, Structural Biologist 2017 – 2018 (Professor George Lisi)
 - Search Committee member, Department of Obstetrics and Gynecology, Director for Division of Gynecologic Oncology, Alpert School of Medicine, Brown University 2015-2017
 - Director of Division of Reproductive Endocrinology and Infertility of the Department of Obstetrics and Gynecology at Women and Infants Hospital. 2013 – 2015; 2018-2020.
 - Department of Microbiology and Molecular Immunology 2012-2013
 - Assistant Professor (Developmental Biology) 2002 – 2003; [Dr. Richard Freiman]; Chairperson
 - Assistant Professor (Biochemist) 2001 – 2002 [Profs. Tricia Serio and Jeff Laney]

- Research Assistant Professor (BioImaging) 2001 – 2002 [Prof. Robbert Creton], Chairperson,
- Assistant Professor (Molecular Geneticist) 2000 – 2001 [Prof. Jeffrey Singer]
- Assistant Professor (Neonatologist), Department of Neonatology, 1998-1999
- Assistant Professor (Department of Medicine, Molecular Biology of Connective Tissue) 1993
- Assistant Professor (Biochemistry), 1991-1992; [Dr. Kimberly Mowry]
- Department of Molecular and Cellular Biology and Biochemistry, Vice-Chairperson, September 1997 – May 2000
- Invited speaker, Career Services Academic Job Search program for graduate students and postdoctoral fellows, 2001
- The 101 Forum, invited speaker, February 2001
- MCB Graduate Program, Curriculum Committee member, June 2000 - 2005
- Graduate Program of Molecular and Cellular Biology and Biochemistry, Director; January 1997 – May 2000
- Program of Molecular and Cellular Biology and Biochemistry, Assistant Director; July - December 1996
- Undergraduate Biology Affairs Office, Panel Speaker; 1996, 1998, 2000
- Program of Molecular and Cellular Biology and Biochemistry, Editor and Producer of MCB Program Flyer and Booklet; 1992, 1993, 1994, 1996, 1997, 1998, 1999
- Macromolecular Facility Scientific Advisory Committee, Member, 1995
- Program of Molecular and Cellular Biology and Biochemistry, Member of Graduate Admissions Committee; 1994, 1996
- Member, Undergraduate Biology Academic Awards Committee; 1994, 1997
- Developmental Biology Group, Organizer; 1992-1996

SERVICE TO THE COMMUNITY and OUTREACH

- Scientific Advisory Board, Vieques Conservation and Historical Trust 2017 - present
- Mentorship of Jacqueline Forson, WPI Academy 11th grader on science project. Reached the National Competition 2015-2016.
- SPARK program – Science Summer at Brown. Instructor. 2012, 2013, 2014, 2015, 2018, 2019
- Science project mentor, Rachael Finn, East Providence High School, 2014
- Academic Advisor, Boundless Educational Services, 2013 - 2015
- Founder and President of The Wally Foundation, a 501(c)(3) charitable organization to promote educational opportunities in Ethiopia, 2012 - present
- Science Outreach Coordinator for Nathan Bishop Middle School, Providence RI - 2009.
- The Met School, intern supervisor (Jasmine Atkinsulare) 2008
- San Miguel Middle School (Providence, RI) Scientific advisor 2006 – 2012.
- Eastside Sports Soccer Coach 2006 – 2008; 2015
- Collegiate Inventors Competition, National Inventor's Hall of Fame, Finalist Judge, Akron, Ohio, 2004
- March of Dimes, Rhode Island Chapter, Member, Board of Directors; 1995 – 2000

OUTREACH ACTIVITIES

Interviews (since 2013)

1. Live interview with Gene Valicenti, 630 WPRO, progress in synthetic biology, Fall 2014
2. <http://www.livescience.com/41042-starfish-wasting-disease.html>
3. http://www.washingtonpost.com/national/health-science/sea-stars-are-wasting-away-in-larger-numbers-on-a-wider-scale-in-two-oceans/2013/11/22/05652194-4be1-11e3-be6b-d3d28122e6d4_story.html
4. <http://www.foxnews.com/science/2013/11/11/mysterious-disease-turning-sea-stars-to-goo/>
5. <http://www.livescience.com/46188-mystery-disease-devastates-sea-stars.html>

Narrative: The research we undertake also has a significant impact beyond the bench and into society. We have integrated students of all levels into the process of science. Our youngest researcher was Allie Daluz. As an eighth grader at Bay View middle school she conducted her science fair project in our lab on the cellular changes during fertilization in the sea urchin using confocal microscopy. Her project was selected as winner of the state middle school science fair in 2005. Hannah Spaulding and Chandler Cates conducted their eighth-grade science fair project on heat absorption properties of various biological and non-biological surfaces with resources and assistance from members of the lab. Their project was selected to represent their school (the Pegasus Program of LaSalle) in the state science fair, where they received an honorable mention. We also routinely (three-four times per year) have grade school, and middle school students tour the lab with hands on experiences. The schools involved include LaSalle, The Wheeler School, San Miguel, and Bay View. Each of these experiences have helped lab personnel relate their research activities better to the general public, and in turn, we have exposed the scientific process to over 100 school children per year at a formative period in their lives.

In September 2009, the lab donated their time for an item we call Researcher for a Day to help raise money for the ALS foundation auction. On January 16th, the family that won the bid (\$780!) will arrive in the lab. In three groups (three kids, two adults) our lab members will guide the family through a day of hands on, realistic research. This includes isolating plasmid DNA, running gels, injecting eggs, and photographing embryos. One of the siblings is interested in imaging, so his project will emphasize confocal reconstruction of larval tissues with fate mapping of the small micromere lineages. The other siblings are eleven and 13, and their research will be isolating genomic DNA from sea urchins (the really snotty, stringy way from sperm), to run PCR on their own DNA from cheek cells (a clinical fellow in the lab has primers to many human genes), and to photograph their own cheek cells stained with fluorescent dyes. At the end of the day, each young investigator will present their research findings to the rest of the lab in a conference format, complete with PowerPoint slides, introductions and a question session, followed by dinner. We were surprised/refreshed at how many people were interested in the item and it resulted in one of the highest bid items in a program that included sky trips and hotel vacations! Overall, the PI and the members of the lab enjoy living the life of outreach as another reward that science offers.

I have several additional activities that impacts science in society. For example, I was the science liaison for the Nathan Bishop Middle School in which I coordinated resources, expertise, and

volunteers for the science teachers at the school. The major activity was the Science Olympiad for the 6th grade class [<http://www.ric.edu/faculty/organic/ScienceOlympiad/>] in which one of the projects developed was the physics of biology –the force required for trees to support major branches. I also volunteer my time at Brown as the iGEM faculty sponsor. This is a group of independent undergraduates who acquire their own support and have their own space to conduct research in synthetic biology. Each year this culminates in the iGEM Jamboree at MIT. The 2016 team had six undergraduate researchers and they received a gold medal at the Jamboree and won best Biological Measurement Device. I was also on the international faculty board of advisors for the Triple Helix [<http://www.thetriplehelix.org/>], an undergraduate science journal published biannually, and I was on the review board of the Catalyst [<http://www.brown.edu/Students/Catalyst/>], an undergraduate journal linking science with the humanities. I have also enlisted a small core of humanities students to participate in science related projects. Elissa Briggs was a French concentrator who worked with me to translate and analyze the work of Alphonse Derbes from 1847, the first experimental work that documented sperm in egg activation at fertilization in animals. This resulted in a peer review publication (Briggs and Wessel, 2006. In the beginning Animal fertilization and sea urchin development. *Dev. Biol.* **300**:15-26). I have also led a project involving three students concentrating in German (Nicolas Gonzalez, Maria Schrieber, and Alanna Boyajian) to translate and interpret early works on apoptosis and embryogenesis of German researchers that have been unavailable for the general English reader. One of the goals in this type of work is to help expose science to students. Overall, these activities have worked both ways – it has certainly enriched my life of science beyond the bench, and I believe it has contributed to the mind set of people who would otherwise have not been exposed to scientific thought and practice.

The sea urchin also remains essential to the teaching mission I perform in laboratory courses, in lecture demonstrations, and in independent study projects. My pedagogical approach in research is ownership and creativity. That is, to instill in the student the belief that they are capable of creating their own contribution to the field by designing their own project goals, experimental designs, and conclusions. Sometimes this means allowing failure as a training mechanism, but each of these traits usually leads to a meaningful, long term research future. The results from this approach are documented by the numbers of trainees and the publication record; the majority of publications from the lab are first authored by students (75%), and two-thirds of the publications from this lab have 3 or fewer authors. Of all the trainees in my lab, over 90% remain active in careers of BioMedical research.

DEI statement: Diversity and inclusion are central to our research mission of creating knowledge and preparing ourselves and our trainees to serve the community, the nation, and the world. Our commitment to inclusion means maintaining our laboratory environments as welcoming cultures such that each individual's humanity and dignity are acknowledged and accorded the full respect of the entire community, and in which each individual's equal standing as a member of that community is assured.

Specific outreach activities (Since 2017):

- Synthetic biology talk at Bayview Academy (Riverside RI) AP bio and Molecular Biology classes (2017, 2023)

- Host fifth grade students in the laboratory from local Montessori School (2017)
- Host high school student (Madeline Brannon) on research internship in lab, Spring 2017
- Host high school student (Hossam Ziki) on research internship in lab, Summer 2017
- Host visiting undergraduate students (Mollie Westrick, Sokunvichet Long, Alejandro Bonilla, Emily Ortiz) for summer research (2017)
- Host visiting professors from LaGuardia Community College (NY; Ingrid Veras, Thomas Onorato) for research (2017- present)
- Host Brown Summer High School STEM class for half-day research experiences 2017, 2018, 2019
- Guest Scientist, in Skype a Scientist (UNC-Wilmington; Department of Biology) 2019, 2020
- Poster/Picture Judge for Womxn in STEM; Leveraging your expertise, building your brand. (<https://wistemsymposium.com/>) 2019
- Host Brown University SPARK program (a middle school age hands-on STEM program; four hour laboratory engagement) 2019, Sarah Berthiaume-Leduc, [sarahberthiaumeleduc@wheelerschool.org]
- Host 8th grade from St. Andrews School (Barrington, RI) (hands-on, four hour laboratory engagement) 2020, Mr. Abdou Lo [alo@standrews-ri.org]
- I have instituted an outreach project within my course Bio 1330 Biology of Reproduction in which everyone in the class creates an educational outreach tool for an eight-grade class. The Brown students are evaluated by the eight-graders, the eight-grade teacher, and me, and everyone benefits from this project. *You do not know it until you can teach it.* 2020 - present
- Sprout and S.T.E.M., a nonprofit organization that provides academic and professional resources to students in urban, public school systems. The program features a semester-long seminar series called *Careers in S.T.E.M.* where professionals join students for 30 minutes to discuss their responsibilities, training, and social impact. Participant

MEMBERSHIP IN PROFESSIONAL SOCIETIES

- American Society for Cell Biology
- Society for Developmental Biology
- American Association for the Advancement of Science
- SACNAS (Lifetime member)

GRADUATE RESEARCH SUPERVISION IN MY LABORATORY

Siming W. Chen, 1991-1995 (Ph.D., 1995)
Michael Laidlaw, 1991-1995 (Ph.D., 1996)
Frederick Clark, 1991-1992 (M.S., 1992)
Linnea Berg, MAT 1991
Eun Yong Shim, 1992 (Rotation Student)
Minghua Zheng, 1995 (Rotation Student)
Sean Conner, 1995- 1999 (Ph.D. 1999)
Sheila Haley, 1996 - 2001 (Ph.D. 2001)
Jacqueline Brooks, 1996 - 2002 (Ph.D. 2002)
Ekaterina Vornonina, 1998 - 2003 (Ph.D. 2003)
Mariana Leguia, 2000 – 2005 (Ph.D.)

Julian Wong, 2001 – 2005 (Ph.D.)
Eric Gustafson, 2003; 2006 – 2010 (Ph.D.)
Celina Juliano, 2004 – 2009 (Ph.D.)
Maryanna Aldrich, 2006 (Rotation Student)
Aron Gyuris, 2007 (Rotation Student)
Adrian Reich, 2008 - 2015
Zachery Swartz, 2009 - present
Natalie Chavez, 2010 (Rotation Student)
Samantha Jeschonek, 2010 (Rotation Student)
Dan Berg, 2011 (Rotation Student)
Tara Fresques, 2011 – 2017
Jennifer Forcina, 2012 (Rotation Student)
Allison Taggart 2012 (Rotation Student)
Alexandra Mascaro 2015 (Rotation Student)
Jane Abalafia 2016 (Rotation Student)
Kira Neel 2017-2018 (Medical Student)
Gerardo Reyes 2018-2019 (NIH-PREP Student)
Jennifer Cui 2020 (Rotation Student)
Sydney Roman 2023 – present (ScM student)
Chloe Lindberg 2024 (MCBGP Rotation student)
Katrina Kulesh 2024 – present (ScM student)

UNDERGRADUATE INDEPENDENT STUDY MENTORSHIP

1. Frances Galvin 1991
2. Ron Citro (UTRA Fellowship) 1991
3. Michael Fessler (Howard Hughes Fellowship) 1992-1993
4. Kathryn Gavin (Tougaloo College Exchange Student) 1993
5. Jacob Harrison (UTRA Fellowship) 1993-1994
6. Sarah Paul (WISE Fellowship, Howard Hughes Fellowship) 1993-1995
7. Jennifer Hsu (UTRA Fellow) 1993-1995
8. Anand Soni (PLME, Howard Hughes Fellow) 1995
9. Chan-Tran Phung (UTRA Fellow) 1996-1997
10. Felipe Molina (Leadership Alliance Fellow, Royce Fellow) 1997 - 1999
11. Victor Zaydfudim (PLME Fellow) 1998 – 2002
12. Audrey Howell 2000 – 2003
13. iGEM team 2006: Jamie Lemon, Annie Gao, Peter Goldstein, Brendan Hickey, Victoria Lattanzi, Megan Schmidt
14. Laya Varghese, 2004 – 2006
15. Elissa Briggs, 2005-2006
16. Christine Stack, 2005
17. Jamie Lemon, 2006 – 2007
18. Victoria Lattanzi, 2006 - 2007
19. Brendan Hickey, 2006 - 2007
20. Peter Goldstein, 2006 - 2007
21. Natasha Barrett, 2006 – 2007

22. iGEM team 2007: Kyle Shutter, Deepa Galaiya, Tito Jankowski, Norris Huang, Azeem Kaka, Jason Loehmuller
23. Annie Gao, 2007 – 2009
24. Daniel Weisberg, 2007 – 2008
25. Phil Kara, 2007 – 2008
26. iGEM team 2008: Rima Shah, Neil Parikh, Kate Jacobs, John Szymanski, Aaron Gliberman
27. Rima Shah, 2008 - 2009
28. Neil Parikh, 2008 - 2009
29. Kate Jacobs, 2008 – 2009
30. iGEM team 2009: Michael Chang, Stephanie Cheung, Flora Ko, Will Allen, Eli Scheer, Ahmad Rana, Indu Voruganti, Minoos Ramanathan, Ashley Kim
31. Nicolas Gonzalez 2009-2010
32. Maria Schriebner 2009-2010
33. Alanna Beyojian 2009-2010
34. iGEM team 2010: Lily Chang; Jen Kao, James Weis, Ethan Richman, Julius Ho, Tim Johnstone
35. Cecilia Bahamon 2010 – 2011
36. iGEM team 2011: Julius Ho, Jovian Yu, Lei Ma, Max Song (Gold Medal, Best Presentation, Best New Application)
37. Elena Suglia 2012 RI Epscor SURF
38. iGEM team 2012: Bella Okiddy, Jason Hu, Benjamin Gielach, Julia Borden (Gold Medal, Best BioBrick, Best Human Practices)
39. William Poole, 2012 - 2013
40. Jamila Crossman, 2012
41. iGEM team 2013: Emily Toomey, Gordon Wade, Simon Vecchione, Nguyen Le, Alex Constantino, Sophia Liang
42. Gerardo Luis Reyes Chavez 2014 – 2015 (La Guardia Community College, NY; Leadership Alliance)
43. iGEM team 2014: Jovita Byemerwa, Benjamin Doughty, Jeannette Gonzales Wright, Ross Dispenza, Alexander Levine, Eli Block
44. Jessica Laird, UTRA, 2014
45. iGEM team 2015; Daniel Kunin, Daniel Xiang, Daniel Greenberg, Forrest Tran, Tyler Devlin
46. iGEM team 2016; Cynthia Hale-Phillips, Charles Gleason, Julia Gross, Eric Liu, Taylor Pullinger, Elias Robinson
47. Charles Gleason, 2016
48. Sokuvichet Long, 2016, 2017
49. Cynthia Hale-Phillips, 2016-2017
50. Alejandro Bonilla (La Guardia Community College) 2017
51. Mollie Westrick (University of Pennsylvania) 2017
52. Emily Ortiz (St. Mary's University of Minnesota) 2017
53. Peter Baek, 2017
54. Jason Gottesheim, 2017-2018
55. Maxwell Spurrell, 2018 – present
56. Hossam Zaki, 2018 – present

57. Rushane Dunn 2022 – present
58. El Hebert 2023 – present
59. Ellie Kim 2023 – present
60. Tarrin Dewberry 2023 - 2024

UNDERGRADUATE HONORS THESES

- 1992: Aneil Mallavarapu, Sponsor, laboratory work performed at Harvard University, Dr. Daniel Jay
Daniel Alam, Second Reader, Gerbi Lab
- 1993: Dara Friedman, Second Reader, Zaret Lab
Michael Fessler, Sponsor
- 1994: Jacob Harrison, Sponsor
Vanessa Gluck, Second Reader; Mehta Lab
- 1995: Beth Ryder, Second Reader, Gerbi Lab
Sahar Ghassemi, Second Reader, Beale Lab
Joyce Lee, Second Reader, Dahlberg Lab
Khoi Dang, Second Reader, Valentini Lab
Sarah Paul, Sponsor
Jennifer Hsu, Sponsor
- 1996: Rhoda Wynn, Second Reader, Wharton Lab
Sindhu Cherian, Second Reader, Zaret Lab
- 1997: Chan Tran Phung, Sponsor
Kirthi Reddy, Second Reader, Bearer Lab
- 1998: Felipe Molina, Sponsor
- 1999: Francis Gonzalez, Second Reader, Coleman Lab
Jessica Roybal, Second Reader, Keeping Lab
Jennifer Colasacco, Second Reader, McGowan Lab
Margaret Cary, Second Reader, Zaret Lab
Keith Blechman, Second Reader, Wharton Lab
Fiona Kouyoumdjian, Second Reader, Mowry Lab
- 2000: Victor Zayadfudim, Sponsor
Joanne Silvia, Second Reader, J. Coleman Lab
Alenka Zeman, Second Reader, Sedivy Lab
Erin Smith, Second Reader, Wharton Lab
- 2001: Clara Kim, Second Reader, J. Coleman Lab
- 2003: Jennifer Rosenberg, Second Reader, Sedivy Lab
Melissa Duan, Second Reader, Wharton Lab
Samuel Posner, Second Reader, Nilni Lab
Cory Pelletier, Second Reader, Keefe Lab
- 2004: Rachel Karin, Second Reader, Keefe Lab
Elizabeth Buza, Second Reader, Keefe Lab
Jodi Eipper-Mains, Second Reader, Boney Lab
- 2005: Julie Ho, Second Reader, Hai lab
- 2006: Geoff Stetson, Second Reader, Paige Lab
- 2007: Manuela Belda, Second Reader, Yap lab

- 2008 Alexander Raufi, Second Reader, Barnea lab
2009 Annie Gao, Sponsor
Sophia Tintori, Second Reader, Dunn Lab
2010 Patrick Davis, Freiman Lab, Second Reader
2011 Cecilia Bahamon, Sponsor
2012 Kin Israel Notarte, external advisor, Silliman University, Dumaguete City, Negros
Oriental, Philippines
Indu Voruganti, Second Reader
Timothy Johnson, Second Reader (Sorin Istrail, Computer Science)
Marissa Palmor, Second Reader, (Kelly Pagidas, Women and Infants Hospital)
William Allen, Second Reader (Barnea lab)
2013 Elias Scheer, Second Reader (Barnea lab)
Sophia Lin, Second Reader (Lipscomb lab)
Ethan Richmond, Second Reader (Barnea lab)
Simon Vecchione, Second Reader (Fast Lab)
Sumitha Ranan, Second Reader (Johnson Lab)
Riyad Seervai, Second Reader (Bennett lab)
2014 Emily Regier, Second Reader (Creton lab)
Chiara Prodani, Second Reader (Freiman lab)
2015 Anna Zeidman, Second Reader (Larschan lab)
Austin Tam, Second Reader, (Helfand Lab)
2016 Rana Suliman, Second Reader (Freiman lab)
Julia Leung, Second Reader (Gerbi lab)
Saba Shevidi, Co-Sponsor with Mamiko Yajima
Beatrice Steinert, Second Reader, (Wharton lab)
William Seritelli, Second Reader (Lefort Lab)
2017 Benjamin Doughty, Second Reader (Gerbi Lab)
Cynthia Hale-Phillips, Sponsor
2018 Amy Lipman, Sponsor
Lauren Lubeck, Sponsor
2020 Benjamin Styler, Second Reader (Johnson Lab)
2021 Michelle Medina, Second Reader (Johnson Lab)
2024 Douglas Dubosky, second reader (Yajima lab)

VISITING RESEARCHERS IN THE LABORATORY

Jianfeng Mei, M.S.; Xiamen University, PR China, (1993)
Yuka Horiuchi, Kyoto University, Kyoto Japan, (1996)
Cynthia Somers, Ph.D. University of Colorado, (1997)
Jose Fernando Covian Nares Ph.D. University of Guanajuato Gto, Mexico (2003)
Brenda Schumpert Ph.D., University of Washington (2005)
Vanessa Zazueta Ph.D. University of Guanajuato Gto, Mexico (2005, 2007)
Lianne Davis, Ph.D. Oxford University 2007-2008
Antony Morgan, Ph.D. Oxford University 2008
Thomas Onorato, Ph.D. Professor CUNY/LaGuardia Community College (2010, 2011,
2014, 2015, 2016, 2017, 2022)

Keisuke Niikura, Keio University Tokyo (2011)
Xu Dongdong Ph.D. Professor, Zhejiang Ocean University, (2014 – 2015)
Sophie George, Ph.D. Professor Georgia Southern University (2014, 2015, 2016)
Ingrid Veras, Ph.D. Professor CUNY/LaGuardia Community College (2016, 2017, 2018)
Elliot Jackson, PhD Student, Cornell University (2019)
Ashley Mohr Ph.D. and Justin Mott M.D./ Ph.D. University of Nebraska Cancer Center

POSTDOCTORAL – ASSISTANT PROFESSOR TRAINEES

Dr. Gary LaFleur, Jr. (University of Florida) 1996 - 1998 (Assistant Professor, Nicholls University, Thibidoux, LA)
Dr. Sean Conner (Brown University) 1999-2000 (Assistant Professor, University of Minnesota)
Dr. Sheila Haley (Assistant Professor, Research, Brown University) 2001 – 2003
Dr. Jacqueline Brooks (Brown University) 2002 – 2004 (Craig Hunter, Harvard University)
Dr. Jia Song (University of Washington) 2002 – 2009 (Assistant Professor, tenure track, University of Delaware)
Dr. Ekaterina Voronina (Brown University) 2003 – 2006 (Post-doc Geraldine Seydoux, Johns Hopkins University)
Dr. Julian Wong (Brown University) 2005 – 2008 (Research Fellow Scripps Research Institute)
Dr. Mamiko Yajima (Masaki Marine Station, Tokyo Japan) 2007 – 2017
Dr. Peter Klatsky (M.D.) Women and Infants Hospital, Ob/Gyn Clinical Research Fellow, 2008 – 2010
Dr. Nathalie Oulhen (Roscoff Marine Laboratory, Roscoff France) 2009 – present
Dr. Eric Gustafson (Brown University) 2009 – 2010
Dr. Isabela Ramos (Federal University, Rio de Janeiro, Brazil, PEW Fellow), 2011 - 2014
Dr. Lynae Brayboy (M.D.) Women and Infants Hospital, Ob/Gyn Clinical Research Fellow, 2011 – 2018
Dr. Vanesa Zazueta, Ph.D. Conycet Fellow, 2012 – 2016
Dr. Margherita Perillo, 2018 – 2022
Dr. Shumpei Morita, 2019 – 2022
Dr. Haruka Suzuki 2023 – present
Dr. Cosmo Pieplow 2023 – present

RESEARCH ASSISTANTS

Aidan Furze 2023 – present
Madison Francoeur 2022 -present
Laura Knapik, B.S. 2017 – 2019
Haley Clark B.Sc. 2017-2018
Alicia Uchida B.S. 2017 - 2018
Jessica Poon B.S. 2014-2016
Julian Wong B.S. 2000 - 2001

Emma Green, B.S. 1999 - 2001
Christine Mary Combs B.S. 1999
Linnea Berg, MAT 1991- 1997
Kim Cafran Lillien, M.S. 1991

UNDERGRADUATE LABORATORY ASSISTANTS

James Park 1991
Dung Le 1991
Michael Fessler 1991
Victor Zaydfudim 1996 – 2001
Audrey Howell 2000 – 2003
Jeffrey Lo 2004
Laya Varghese, 2004 – 2006
Caitlyn Thompson, 2004-2007
Madeline Pape, 2019
Pauline Gregory, 2020 - present

GRADUATE THESES COMPLETED IN MY LABORATORY

1. Siming W. Chen, Ph.D. 1991-1995
2. Michael Laidlaw, Ph.D. 1992-1995
3. Frederick Clark, M.S. 1992
4. Sean Conner, Ph.D.1995 – 1999; Barry Rosen Award
5. Sheila Haley, Ph.D. 1996 - 2001
6. Jacqueline Brooks, Ph.D. 1997 - 2002
7. Ekaterina Voronina, Ph.D. 1998 - 2003
8. Julian Wong, Ph.D. 2001 – 2005; Joukowsky Outstanding Dissertation Award, Brown University Excellence in Teaching Award
9. Mariana Leguia, Ph.D. 2000 - 2005
10. Celina Juliano, Ph.D. 2004 – 2009; Barry Rosen Award
11. Eric Gustafson, Ph.D. 2006 – 2009
12. Adrian Reich, Ph.D. 2008 - 2014
13. Zachery Swartz, 2009 – 2015; Barry Rosen Award
14. Tara Fresques, 2011 – 2017
15. Stephany Foster, 2018-2022; Barry Rosen Award
16. Cosmo Pieplow, 2018-2023; Barry Rosen Award

GRADUATE THESIS COMMITTEES (MCB Graduate Program unless otherwise noted)

1. Matt Firpo, Ph.D. 1991-1994
2. Nan Wu, Ph.D. 1991-1993
3. Siming W. Chen, Ph.D. 1991-1995
4. Michael Laidlaw, Ph.D. 1992-1995
5. Frederick Clark, M.S. 1992
6. Kathy Rowader, M.S. 1992-1994
7. Eric Ingersoll, Ph.D. 1993 (Carnegie-Mellon University, Outside Reader)
8. Margaret Soltysik-Espanola, Ph.D. 1995 (Tufts University, Outside Reader)
9. Fyodor Urnov, Ph.D. 1992-1996

10. Chengyu Jiang, Ph.D. 1992-1996
11. Jeongwu Lee, Ph.D. 1994 - 1997
12. Minghua Zheng, MA 1995- 1997
13. Jung-Won Yoon, MA 1995 - 1997
14. Sabrina Santiago, MA 1997
15. Heekyoung Chung, Ph.D.1994-1998
16. Sean Conner, Ph.D.1995 - 1999
17. Kyungjae Myung, Ph.D. 1996 - 1999
18. Vera Gross, Ph.D. (Tufts University School of Medicine, Outside Committee Member), 1997 - 1999
19. Lorena Soares, Ph.D. 1994-1996; 1999 - 2005
20. Allison Abbott Ph.D. (Tufts University School of Medicine, Outside Committee Member), 1997 - 2000
21. Sheila Haley, Ph.D. 1996 - 2001
22. Jennifer Rossi, Ph.D. 1997 - 2001
23. Zhi-Li, Ph.D. (Pathobiology) 1997 - 2001
24. Jacqueline Brooks, Ph.D. 1997 - 2002
25. Margaret Just, Ph.D (SUNY, Stony Brook; Graduate Program in Cell and Molecular Biology; Outside Committee Member) 1998-1999
26. Zhongfa Yang, Ph.D. 1998 - 2005
27. Wenyi Wei, Ph.D. 1998 – 2001
28. Xiaolan Hu, Ph.D. 1998 - 2002
29. Natasha Volodina, Ph.D. 1998 - 2001
30. Michael Ezrokhi, Ph.D. 1998 (Substitute Member for Thesis Defense)
31. Ekaterina Voronina, Ph.D. 1998 - 2003
32. Joonil Jung, Ph.D. 1998 - 2000
33. Luke Huggins Ph.D. (SUNY, Stony Brook; Graduate Program in Cell and Molecular Biology; Outside Committee Member) 1998-1999.
34. Corey Braastad, Ph.D. 1999 – 2002
35. Mariana Leguia, Ph.D. 2000 - 2005
36. Ana Egana, Ph.D., Tufts University, Graduate Program in Cell and Molecular Biology, Outside Reader, 2000
37. Linda Runft, Ph.D. University of Connecticut Health Center, Physiology Department; Outside Reader, 2000
38. Erdem Bangi, Ph.D. 2000 – 2005
39. Lawrence Mulcahy, Ph.D. 2001 – 2006
40. Tim Messitt, Ph.D. 2001 – 2006
41. Julian Wong, Ph.D. 2001 – 2005
42. Marco Azaro, Ph.D. 2001 – 2002
43. Stephanie Thompson Beall, Ph.D. (Pathobiology) 2002 – 2005
44. Reza Rasopour, Ph.D. (Pathobiology) 2002 – 2005
45. Magdalena Kuzniar, (Pathobiology) 2002 - 2009
46. Pooja Agrawal, Ph.D. 2003 – 2005
47. Erika Lawson Ph.D. 2003 – 2007
48. Amy Whiting, Ph.D. 2004 - 2007
49. Jae Lim Ph.D. (Neurobiology) 2003 – 2005

50. Mindy Reynolds, Ph.D. (Pathobiology) 2004 – 2006
51. Celina Juliano, Ph.D. 2004 – 2009
52. Aubrey Frank 2006 - 2010
53. Xian O'Brien, Ph.D. (Pathobiology) 2006 – 2011
54. Tsedensodnom Orkhontuya, Ph.D. 2006 – 2010.
55. Eric Gustafson, Ph.D. 2006 – 2009
56. Paul Haines, M.A. 2007 – 2009
57. Vinh Nguyen, Ph.D. 2010
58. Courtney Frederick, Ph.D. (MPPB) 2008 – 2012
59. Ryan Tarpin, Ph.D. (Computer Science) 2008 – 2012
60. Vince Siu, Ph.D. (Biomedical Engineering) 2009 – 2014.
61. Adrian Reich, Ph.D. 2008 - 2014
62. John Cumbers, Ph.D. 2008 – 2011
63. Zachary Swartz, 2009 – 2015
64. Kristin Beale, Ph.D. 2009 – 2013
65. Glareh Azadi, Ph.D. (Biomedical Engineering) 2009 – 2013
66. Steve Jones, Ph.D. 2010 – 2015
67. Rebecca Helm, (EEB), Ph.D. 2010 – 2015
68. Stephanie Angione, Ph.D. (Engineering) 2010 – 2014.
69. Samantha Jeschonek, 2011 – 2018
70. Nathalie Chavez, MA 2011 – 2012
71. Kathryn Grive, Ph.D. 2011 – 2015
72. Daniel Berg, 2011 – 2017
73. Cassandra Bilogan, Ph.D. (Brown/MBL) 2012 – 2013
74. Tara Fresques, 2012 – 2017
75. Edward Anderson, 2013 – 2017
76. Robert Thorn, 2013 – 2018
77. Jennifer Forcina, 2013 – 2018
78. Georges St. Laurent, Ph.D. (posthumous) 2014 – 2015
79. Josh Leung, 2014 (MSc, Engineering)
80. Lei Zhang, 2014 (MSc, Engineering), PhD 2014 – 2017
81. Meseret Dastaw, Addis Ababa University, Biotechnology, Wally Foundation Fellowship recipient 2014 – 2022 M.Sc
82. Caitlin Del Sesto, URI, Marine Biology 2014 – 2015, M.Sc.
83. Lulit Tilahun, Addis Ababa University, Biotechnology, Wally Foundation Fellowship recipient; 2014 - 2021
84. Jan Inge Øvrebø Ph.D. (University of Bergen, Norway) 2014
85. Rebecca Wojciechowicz (MSc, BioMedical Engineering) 2015
86. Alexandra Mascaro, 2015 – 2019
87. Julia Leung, MSc 2016 – 2017
88. Brett Baggett, 2016 – 2017
89. Jeray Thewell, (MSc, BioMedical Engineering) 2017
90. Anze Urh (M.D. Gynecological Oncology Fellow Thesis Defense Committee) 2017
91. Christina M. Bailey-Hytholt, Biomedical Engineering 2017 – 2019
92. Joshua Berus, 2018 – 2020
93. Stephany Foster, 2018 – 2022

- 94. Cosmo Pieplow, 2018 – 2023
- 95. Lindsay Schneider, Biomedical Engineering, 2019 – 2022
- 96. Gerardo Reyes Chavez 2020 - present**

Bold indicates currently active