

Curriculum Vitae

Katharine E. Lewis (Kate)

Laura J. and L. Douglas Meredith Professor of Teaching Excellence

Director of the Integrated Learning Major in Neuroscience

Faculty Co-Director of Syracuse University WiSE

CONTACT INFORMATION

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PROFESSIONAL EXPERIENCE and POSITIONS

- 2019 – present Laura J. and L. Douglas Meredith Professor for Teaching Excellence.
- 2018 - present Professor, Department of Biology, Syracuse University, Syracuse, USA.
- 2017 - present Director of Syracuse University's Integrated Learning Major in Neuroscience.
- 2017 - present Faculty Co-Director of Syracuse University's Women in Science and Engineering Program.
- 2017 - present Treasurer of the International Zebrafish Society, IZFS.
- 2010 - present Graduate Faculty, SUNY Upstate Medical University, Syracuse, USA.
- 2012 - present Adjunct Professor/Associate Professor, Department of Neuroscience and Physiology, SUNY Upstate Medical University, Syracuse, USA.
- 2010 - 2018 Associate Professor, Department of Biology, Syracuse University, Syracuse, USA.
- 2004 - 2010 Royal Society University Research Fellowship (equivalent to an Assistant/Associate Professor). Department of Physiology, Development and Neuroscience, Cambridge University, UK.
- 2004 - 2010 Fellow of King's College, Cambridge, UK.
- 2004 - 2007 Tutor for King's College, Cambridge (academic, professional and counseling support for approximately 70 undergraduate students a year).
- 1999 - 2003 Postdoctoral fellow, Judith Eisen's laboratory, Institute of Neuroscience, University of Oregon, Eugene, Oregon, USA.
- 1996 EMBO Practical Course "Medaka and Zebrafish Development".
- 1994 - 1998 PhD student, Philip Ingham's laboratory, Imperial Cancer Research Fund (ICRF), Lincoln's Inn Fields and University College London, UK. [Last year was spent at Sheffield University, UK].
- 1993 Undergraduate thesis project with Dr Ashburner, Genetics Department, Cambridge University.
- 1992 Undergraduate research with Dr Richards, Department of Medicine, Cambridge University.
- 1989 - 1990 Research Assistant, Small Angle Neutron and X-Ray Scattering. ICI Chemicals and Polymers Ltd.

EDUCATION

- 1994 - 1998 PhD, Developmental Biology and Genetics. University College London, UK.
- 1995 - 1997 MA with Distinction in Women's Studies, University of Westminster, UK (part-time study).
- 1993 - 1994 Postgraduate credit (GPA 4.0). Harvard University, Cambridge, USA. (Kennedy Scholar).
- 1990 - 1993 BA (Honors), First Class (all 3 years), Natural Sciences. Cambridge University, UK. (Final year specialization in Genetics). [MA awarded in 1996].

HONORS and FELLOWSHIPS

- 2019 – present Laura J. and L. Douglas Meredith Professorship for Outstanding Teaching. Syracuse University awards two of these a year. For more information see <http://provost.syr.edu/faculty-affairs/faculty-recognition-programs/meredith-professorships/>
- 2019 James K. Duah-Agyeman Award for Outstanding Faculty (awarded for work with under-represented minority students).
- 2019 Invited reviewer for Fulbright undergraduate awards.
- 2017 - present Elected Treasurer of the International Zebrafish Society (IZFS).
- 2004 - 2010 Royal Society University Research Fellowship. (Renewed in 2008).
- 2004 - 2010 King's College, Cambridge Fellowship.
- 2006 National Endowment for Science, Technology and the Arts Crucible fellowship.
- 2006 Represented British Science at a reception with the Queen and Duke of Edinburgh.
- 2005 - 2010 Elected committee member, British Society of Developmental Biology (BSDB).
- 1999 & 2000 Wellcome International Prize Travelling Research Fellowship.
- 1994 - 1998 Imperial Cancer Research Fund PhD Studentship.
- 1996 EMBO Short Term Fellowship to visit Haffter lab, Tübingen, Germany.
- 1996 Promega/Genetical Society Young Geneticist Competition, 2nd prize.
- 1993 - 1994 Kennedy Memorial Fellowship. 1 year's study, Harvard University.
- 1991 - 1993 King's College, Cambridge University, UK. Scholarship Prizes awarded each year for Class I exam results (part IA, part IB and part II).
- 1992 Imperial Chemical Industries (ICI) Sponsorship for Scientists.
- 1992 Nuffield Foundation Undergraduate Research Fellowship.
- 1992 Glyn Prize, King's College Cambridge (awarded to student "most distinguished for learning").

PUBLICATIONS

[^] indicates undergraduate student in my lab; * indicates graduate student in my lab (including rotation students);
⁺ indicates postdoc in my lab; [#] indicates technician in my lab.

K. L. Duggan[^], M. Morris[^], S. K. Bhatia, M. M. Khachan, **K. E. Lewis (2019)**. Effects of Cationic Polyacrylamide and Cationic Starch on Aquatic Life. *Journal of Hazardous, Toxic, and Radioactive Waste* 23 (4).
[https://doi.org/10.1061/\(ASCE\)HZ.2153-5515.0000467](https://doi.org/10.1061/(ASCE)HZ.2153-5515.0000467)

R. Hartwell, S. England⁺, N. Monk, N. van Hateren, S. Baxendale, M. Marzo, **K. E. Lewis** and T. Whitfield (2019). Anteroposterior patterning of the zebrafish ear through Fgf- and Hh-dependent regulation of *hmx3a* expression. *PLoS genetics* 15 (4), e1008051. <https://doi.org/10.1371/journal.pgen.1008051>

D. R. Johnson, M. M. Blum, **K. E. Lewis**, and S. W. Alestalo (2019) Intersectionality as Praxis for Equity in STEM: A WiSE Women of Color Program. Chapter 19 in "Intersectionality & Higher Education: Theory, Research and Praxis". Second Edition. Peter Lang [Peer-reviewed chapter]

L. Andrzejczuk*, S. Banerjee⁺, S. England⁺, C. Voufo[^], K. Kamara[^] and **K. E. Lewis** (2018). Tal1, Gata2a and Gata3 have distinct functions in the development of V2b and cerebrospinal fluid-contacting KA neurons. *Frontiers in Neuroscience*. 12:170 doi: 10.3389/fnins.2018.00170

R. Wilk, N. Ali, S. J. England⁺, **K. E. Lewis** (2018) Using Zebrafish to Bring Hands-On Laboratory Experiences to Urban Classrooms. *Zebrafish* 15: 2 <https://doi.org/10.1089/zeb.2017.1503>

S. J. England⁺, P. C. Campbell[^], S. Banerjee⁺, A. Swanson[#], and **K. E. Lewis** (2017) Identification and expression analysis of the complete family of zebrafish *pkd* genes. *Frontiers in Cell and Developmental Biology* 5:5

- J. L. Juárez-Morales⁺, R. I. Martinez-De Luna, M. E. Zuber, A. Roberts and **K. E. Lewis** (2017) Zebrafish transgenic constructs label specific neurons in *Xenopus laevis* spinal cord and identify frog V0v spinal neurons. *Developmental Neurobiology*: 77 (8), 1007-1020. DOI: 10.1002/dneu.22490
- G. M. W. Cook, **K. E. Lewis**, R. J. Keynes (2017) *Neural Patterning: Spinal Cord Segmentation and Somite Patterning*. Reference Module in Neuroscience and Biobehavioral Psychology, Elsevier. ISBN 9780128093245
- W. C. Hilinski*, J. R. Bostrom, S. J. England⁺, J. L. Juárez-Morales⁺, S. de Jager⁺; O. Armant; J. Legradi; U. Strähle; B. A. Link; **K. E. Lewis** (2016) *Lmx1b* is required for the glutamatergic fates of a subset of spinal cord neurons. *Neural Development* 11:16 DOI: 10.1186/s13064-016-0070-1
- J. L. Juarez-Morales⁺, C. Schulte*, S. A. Pezoa[^], G. K. Vallejo[^], W. Hilinski*, S. England⁺, S. de Jager⁺ and **K. E. Lewis** (2016) *Evx1* and *Evx2* specify excitatory neurotransmitter fates and suppress inhibitory fates through a Pax2 independent mechanism. *Neural Development*. 11: 5 DOI: 10.1186/s13064-016-0059-9
- A. Thélie, S. Desiderio, J. Hanotel, I. Quigley, B. Van Driessche, A. Rodari, M. D. Borromeo, S. Kricha, F. Lahaye, J. Croce, G. Cerda-Moya*, J. O. Fernandez, B. Bolle, **K. E. Lewis**, M. Sander, A. Pierani, M. Schubert, J. E. Johnson, C. R. Kintner, T. Pieler, C. Van Lint, K. A. Henningfeld, E. J. Bellefroid, and C. V. Campenhout (2015) *Prdm12* specifies V1 interneurons through cross-repressive interactions with *Dbx1* and *Nkx6* genes in *Xenopus*. *Development* 142:3416-3428
- S. England⁺, W. Hilinski*, S. de Jager⁺, L. Andrzejczuk*, P. Campbell[^], T. Chowdhury*, C. Demby[^], W. Fancher[^], Y. Gong*, C. Lin*, A. Machikas[^], G. Rodriguez-Larrain[^], V. Roman Rivera[^] and **K. E. Lewis** (2014) Identifying Transcription Factors expressed by Ventral Spinal Cord Interneurons. ZFIN on-line publication. <http://zfin.org/ZDB-PUB-140822-10>
- S. England⁺, M. F. Batista*, J. K. Mich, J. K. Chen and **K. E. Lewis** (2011) Roles of Hedgehog Pathway Components and Retinoic Acid Signalling in Specifying Zebrafish Ventral Spinal Cord Neurons. *Development* 138: 5121-5134
**** Recommended by Faculty of 1000**
- D. K. Goode*, H. A. Callaway, G. Cerda*, **K. E. Lewis** and G. Elgar (2011) Minor change, major difference: divergent functions of highly conserved cis-regulatory elements subsequent to whole genome duplication events. *Development* 138: 879-884
**** Recommended by Faculty of 1000**
- C. J. Schulte*, C. Allen, S. England⁺, J. Juárez-Morales⁺ and **K. E. Lewis** (2011) *Evx1* is required for joint formation in zebrafish fin dermoskeleton. *Developmental Dynamics* 240: 1240-1248
Chosen by the Editor to be part of a special issue on limb development.
- K. Wotton, F. Weierud*, J. L. Juarez Morales⁺, L. E. Alvares, S. Dietrich, **K. E. Lewis** (2010) Conservation of gene linkage in dispersed vertebrate NK homeobox clusters. *Development, Genes and Evolution* 219:481-496
- G. Cerda*, M. Hargrave⁺, **K. E. Lewis** (2009) RNA profiling of FAC-sorted neurons from the developing zebrafish spinal cord. *Developmental Dynamics* 238: 150-162
**** Recommended by Faculty of 1000**
- G. Cooke, **K. E. Lewis** and R. Keynes (2009) *Segmentation: Spinal cord segmentation - A-P somite patterning*. *Encyclopedia of Neuroscience* 8: 537-544. Edited by Larry Squire et al. Oxford: Academic Press
- M. F. Batista* and **K. E. Lewis** (2008) *Pax2/8* act redundantly to specify glycinergic and GABAergic fates of multiple spinal interneurons. *Developmental Biology* 323: 88-97
- M. F. Batista*, J. Jacobstein* and **K. E. Lewis** (2008) Zebrafish V2 cells develop into excitatory CiD and Notch signaling dependent inhibitory VeLD interneurons. *Developmental Biology* 322: 263-275. **Chosen for cover image**
- K. Wotton, F. Weierud*, S. Dietrich, and **K. E. Lewis** (2008) Comparative genomics of *Lbx* loci reveals conservation of identical *Lbx* ohnologs in bony vertebrates. *BMC Evolutionary Biology* 8:171
- G. Lupo, W.A. Harris, **K. E. Lewis** (2006) Mechanisms of ventral patterning in the vertebrate nervous system. *Nature Reviews Neuroscience* 7:103-114
- K. E. Lewis** (2006) How do genes regulate simple behaviours? Understanding how different neurons in the vertebrate spinal cord are genetically specified. *Philosophical Transactions of the Royal Society B: Biological Sciences* 361(1465): 45-66

- K. E. Lewis, J. Bates & J. S. Eisen (2005)** Regulation of *iro3* expression in the zebrafish spinal cord. *Developmental Dynamics* 232:140-148
- C. Wolff, S. Roy, **K. E. Lewis**, H. Schauerte, G. Joerg-Rauch, A. Kim, C. Weiler, R. Geisler, P. Haffter & P. W. Ingham (2004) *iguana* encodes a novel zinc finger protein with coiled-coil domains essential for Hedgehog signal transduction in the vertebrate embryo. *Genes and Development* 18: 1565-1576. ***Chosen for cover image***
- K. E. Lewis & J. S. Eisen (2004)** Paraxial Mesoderm Specifies Zebrafish Primary Motoneuron Subtype Identity. *Development* 131: 891-902
- K. E. Lewis & J. S. Eisen (2003)** From Cells to Circuits: Development of the Zebrafish Spinal Cord. *Progress in Neurobiology* 69 (6): 419-449
- K. E. Lewis & J. S. Eisen (2001)** Hedgehog signaling is required for primary motoneuron induction in zebrafish. *Development* 128: 3485-3495
- Z. M. Varga, A. Amores, **K. E. Lewis**, Y.-L. Yan, J. H. Postlethwait, J. S. Eisen, M. Westerfield (2001) Zebrafish *smoothened* functions in ventral neural tube specification and axon tract formation. *Development* 128: 3497-3509
- G. Drossopoulou, **K. E. Lewis**, J. J. Sanz-Ezquerro, C. Hofmann, A. P. McMahon and C. Tickle (2000) A new model for antero-posterior patterning of the limb involving sequential long and short range Shh signalling and Bmp signalling. *Development* 127: 1337-1348
- K. E. Lewis (1999)** Genetic Analysis of Hedgehog Signalling and the Regulation of *Patched* Gene Expression in Vertebrate Embryos. PhD Thesis. University of London
- K. E. Lewis, J. P. Concordet and P. W. Ingham (1999)** Characterisation of a second *patched* gene in the zebrafish *Danio rerio* and the differential response of *patched* genes to Hedgehog signalling. *Developmental Biology* 208: 14-29
- K. E. Lewis, P. D. Currie, S. Roy, H. Schauerte, P. Haffter, and P. W. Ingham (1999)** Control of muscle cell-type specification in the zebrafish embryo by hedgehog signalling. *Developmental Biology* 216: 469-480
- K. E. Lewis, G. Drossopoulou, I. R. Paton, D. R. Morrice, K. E. Robertson, D. W. Burt, P. W. Ingham and C. Tickle (1999)** Expression of *ptc* and *gli* genes in *talpid*³ suggests bifurcation in Shh Pathway. *Development* 126: 2297-2407
- K. E. Lewis (1997)** Friendships Between Women. MA Thesis. University of Westminster
- J. P. Concordet, **K. E. Lewis**, L. Goodrich, R. Johnson, M. Scott and P. Ingham (1996) Spatial Regulation of a Zebrafish *Patched* Homologue Reflects the Roles of *Sonic Hedgehog* and Protein Kinase A in Neural Tube and Somite Patterning. *Development* 122: 2835 - 2846
- J. D. Morrison, J. Corcoran and **K. E. Lewis (1992)** The Determination of Particle Size Distributions in Small-Angle Scattering using the Maximum-Entropy Method. *J. Appl. Cryst.* 25: 504-513

FUNDING

Current Support:

- 2018 - 2021 NSF IOS 1755354 "Collaborative Proposal: Specification of Excitatory Fates in the Spinal Cord". PI **\$812,000** (\$675,000 to Lewis and \$137,000 to CoPI Banerjee)
- 2017 - 2022 New York State Spinal Cord Injury Fund. "Institutional Support of Spinal Cord Injury Research". Sole PI **\$242,500**
- 2014 - 2020 NIH NINDS R01 NS077947 "Specification of functional properties of spinal cord interneurons." Sole PI. **\$1,618,750**
- 2019 Diversity supplement for R01 NS077947 to support an African American female high school student to undertake research in the lab. Sole PI. **\$4,028**
- 2018-2020 CUSE grant "Genetic dissection of seizure susceptibility following early life exposure to environmental contaminants." CoPI with Dr J Hewett (Biology, SU). **\$30,000** (\$15,000 per lab)

Past Support:

- 2014 - 2018 HFSP RGP0063 "Sensory-motor integration in cerebrospinal fluid contacting neurons". Co-PI with Claire Wyart (Paris) and Patrick Delmas (Marseille). **\$900,000** (\$300,000 per lab)

2013 - 2017 NSF IOS 1257583 "Specification of V0v interneurons in the zebrafish spinal cord". Sole PI. **\$606,000**

2014 - 2016 RET Supplement to above grant. Sole PI. **\$8,336**

2014 REU Supplement to above grant. Sole PI. **\$6,000**

2016 - 2017 Hill Collaboration on Environmental Medicine, Disorders of the Nervous System "Neurotoxicity of early life exposure to contaminants isolated from Onondaga Lake bed sediment". Co-PI with John Hassett (SUNY ESF), Jim Hewett (SU) and Frank Middleton (SUNY UMU). **\$15,000**

2016 New York State Spinal Cord Injury Fund. "Institutional Support of Spinal Cord Injury Research 2016". Co-PI. PI was Sandra Hewett (SU). **\$337,218**

2013 - 2016 NSF MRI 1337787 "Acquisition of Fluorescence Activated Cell Sorter". Co-PI. PI was Dacheng Ren (SU). **\$459,000**

2014 - 2016 Hill Collaboration on Environmental Medicine, Disorders of the Nervous System "Neurotoxicity of early life exposure to contaminants isolated from Onondaga Lake bed sediment". CoPI with John Hassett (SUNY ESF), Jim Hewett (SU) and Frank Middleton (SUNY UMU). **\$15,000**

2011 - 2016 NSF "Soft Interfaces-Bridging the Divide in Graduate Education (iBriDGE): IGERT", Named faculty member. IGERT advisor for William Haws.

2014 - 2015 New York State Spinal Cord Injury Fund. "Institutional Support of Spinal Cord Injury Research CRER #15938". Sole PI. **\$212,636**

2011 - 2014 R21 NIH NINDS R21NS073979 "Identifying transcription factors expressed by ventral spinal cord interneurons". Sole PI. **\$453,862** (\$405,750, plus a supplement of \$48,112)

2013 - 2014 Hill Collaboration on Environmental Medicine, Disorders of the Nervous System "Neurotoxicity of early life exposure to contaminants isolated from Onondaga Lake bed sediment". CoPI with John Hassett (SUNY ESF), Jim Hewett (SU) and Frank Middleton (SUNY UMU). **\$20,000**

2008 - 2013 Wellcome Trust Equipment Grant towards a new zebrafish facility at the University of Cambridge, UK. CoPI. PI was Professor Bill Harris (Cambridge). £401,282 (~**\$606,000**)

2008 - 2011 MRC G0801283 3-year project grant "Determining the transcription factor code that specifies CiA interneurons". Sole PI. £377,168 (~**\$570,000**)

2008 - 2010 Royal Society University Research Fellowship Renewal. Highly competitive individual fellowship. Provided my salary and some research expenses. £353,213 (~**\$533,500**)

2008 - 2010 Cambridge Isaac Newton Trust Grant. Contribution to new zebrafish facility at the University of Cambridge, UK. CoPI. PI was Professor Bill Harris (Cambridge). £50,000 (~**\$75,500**)

2007 - 2010 Leverhulme Trust 3-year project grant "Genetic tools to study neuronal circuit formation in zebrafish and *Xenopus*". PI. Professor Roberts and colleagues at the University of Bristol were CoPIs. £119,521 (~**\$180,500**)

2008 - 2009 Cambridge Isaac Newton Trust Grant. Partial salary for a postdoctoral fellow. Sole PI. £30,794 (~**\$46,500**)

2007 - 2009 Wellcome Trust 3-year project grant "Specification of Circumferential Ascending Interneurons in Zebrafish Spinal Cord". Sole PI. £246,134 (~**\$371,700**)

2007 - 2008 MRC G0600877 1-year pilot grant "Pilot grant to determine the transcription factor code that specifies CiA interneurons". Sole PI. £97,421 (~**\$147,100**)

2005 - 2009 Portuguese Foundation for Science & Technology PhD studentship research expenses provided for Manuel Batista. Sole PI. £14,000 (~**\$21,150**)

2004 - 2008 Royal Society University Research Fellowship (see description of renewal above). £268,774 (~**\$406,000**)

2006 Royal Society Summer Studentship. Research expenses for summer student. Sole PI. £2,380 (~**\$3,600**)

2006 NESTA (National Endowment for Science, Technology and the Arts) Crucible fellowship. 30 awardees funded each year from across spectrum of UK Science, Technology and Arts. £4,000 (~**\$6,000**)

- 2004 - 2007 Cambridge Isaac Newton Trust Grant. “Interneuron specification in the zebrafish spinal cord”.
Sole PI. £24,678 (~\$37,264)
- 2004 Royal Society Research Grant. Sole PI. £15,000 (~\$22,650)
- 1999 - 2000 Wellcome International Prize Travelling Research 2-year Postdoctoral Fellowship. £69,647 (~\$105,200)

PRESENTATIONS

Invited conference speaker

- 2017 New York State Biotech Symposium, USA.
- 2014 North East Society for Developmental Biology Meeting, USA.
- 2011 Belgian Society for Cell and Developmental Biology, Rochehaut, Belgium.
- 2010 Endocyte Workshop, London, UK.
- 2008 “20 Years Since Patched ...Life After Hedgehog”. Sheffield, UK.
- 2008 Brain Sciences Conference, London, UK.
- 2007 “Development and Emergence of Function in the Nervous System”. Kobe, Japan.

Other conference presentations

Oral presentations (selected from submitted abstracts):

- 2020 International Zebrafish Strategic Principal Investigator Conference, Taiwan
- 2019 International Zebrafish Conference in China.
- 2018 International “Imaging Structure and Function of the Zebrafish Brain” conference.
- 2017 International Zebrafish Strategic Principal Investigator’s biannual conference.
- 2009 International Zebrafish Strategic Principal Investigator’s biannual conference.
- 2006 International Zebrafish Conference in Madison, USA.
- 2005 BSDB annual spring meeting.
- 2003 European Zebrafish biannual meeting.
- 1996 Cold Spring Harbor Zebrafish Meeting.

Poster presentations (selected from submitted abstracts):

- 2018 New York State Spinal Cord Injury Research Symposium
- 2017 Human Frontiers Science Program Invited conference.
- 2012, 2013 Society for Neuroscience annual meeting.
- 1995 - 98, 2002, 2006 - 2010 BSDB annual spring meetings.
- 2002, 2004, 2006, 2008, 2010, 2012, 2016, 2018 International Zebrafish Biannual Conference.
- 2011 International Brain Research Organization (IBRO) conference.
- 2010 European Zebrafish Principal Investigator Conference.
- 2009, 2017 International Society for Developmental Biology International Congress.
- 2005, 2007, 2011, 2013, 2015, 2019 Zebrafish Principal Investigator’s biannual strategic conferences.
- 2003, 2005 European Zebrafish biannual meetings.
- 2001, 2003 Society for Developmental Biology (USA) annual meetings.
- 2000, 2001 NW Society for Developmental Biology (USA) annual meetings.

Invited participant

- 2010 Zebrafish Phenome Project Workshop in Bethesda, Maryland, USA.
- 2008 Royal Society and Hong Kong Frontiers of Science Symposium.

Invited External Research Seminars (not including conferences, which are listed above)

- 2019 Clemson University, Clemson, South Carolina, USA.
- 2018 Texas Women's University, Denton, Texas, USA.
- 2016 University of Hawaii, Hilo, USA.
- 2016 Carnegie Institute, Baltimore, USA.
- 2015 University of Vermont, Burlington, USA.
- 2015 Drexel University, Philadelphia, USA.
- 2012 University of Massachusetts, Amherst, USA.
- 2011 ICM, Brain and Spine Institute, Paris, France.
- 2011 SUNY Upstate Medical University, Syracuse, USA.
- 2011 Clarkson University, Potsdam, USA.
- 2009 Dalhousie University, Halifax, Canada.
- 2009 University of Wisconsin, Milwaukee, USA.
- 2009 Wayne State University, Detroit, USA.
- 2009 North Carolina State University, Raleigh, USA.
- 2009 University of California, Irvine, USA.
- 2009 University of Syracuse, Syracuse, USA.
- 2009 Temple University, Philadelphia, USA.
- 2009 University of Toronto, Toronto, Canada.
- 2009 Bath University, Bath, UK.
- 2009 Institute of Toxicology and Genetics, University of Karlsruhe, Germany.
- 2008 RIKEN Brain Sciences Institute, Tokyo, Japan.
- 2008 National Institute of Genetics, Mishima, Japan.
- 2008 National Institute for Physiological Sciences, Okazaki, Japan.
- 2008 Galway University, Galway, Ireland.
- 2007 ZF Models workshop and weekend symposium, Hinxton, UK.
- 2006 London Zebrafish meeting, London, UK.
- 2006 Bristol University, Bristol, UK.
- 2004 NIMR Mill Hill, London, UK.
- 2002 The Wellcome Trust Centre for Cell Biology, Edinburgh, UK.
- 2002 MRC Human Genetics Unit, Edinburgh, UK.
- 2002 MRC Centre for Developmental Neurobiology, King's College London, UK.
- 2002 Institute of Genetics, University of Nottingham, Nottingham, UK.
- 2002 Wolfson Institute for Biomedical Research, University College London, UK.
- 2002 Department of Biology and Biochemistry, University of Bath, Bath, UK.

SERVICE

International and National

Conference organization

- 2019 Third CNY zebrafish conference.
- 2018 Second CNY zebrafish conference.
- 2017 First ever CNY zebrafish conference.
- 2010 British Society for Developmental Biology (BSDB) annual spring conference.
- 2008 Frontiers of Science Symposium co-funded by the Royal Society (UK) and Japanese Society for the Promotion of Science.

Chair of conference session

- 2017 International Society for Developmental Biology Congress, Singapore.
- 2017 Zebrafish Strategic Principal Investigator's conference, USA.
- 2015 Zebrafish Strategic Principal Investigator's conference, USA.
- 2008 UK-Japan Frontiers of Science Symposium, Japan.
- 2005 Zebrafish Strategic Principal Investigator's conference, USA.
- 2004 BSDB Autumn meeting, UK.

Grant Review Panels

- 2019 Fulbright undergraduate awards.
- 2018 NSF IOS panel.
- 2018 NIH NDPR Study section.
- 2018 Spinal Cord Injury Research Program (SCIRP) for the Department of Defense Congressionally Directed Medical Research Programs (CDMRP).
- 2013 NSF IOS panel.

Grant Reviewer

Austrian Science Fund (2006), BBSRC (2017, 2014, 2012, 2011, 2010, 2008), Israel Science Foundation (2009), Motor Neurone Disease Association (2006), MRC (2014, 2009), National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3R; 2010, 2008), NIH (2018), NSF (2018, 2013, 2008, 2006), Research Grants Council Hong Kong (2017, 2011), Royal Society (2011), Sheffield Children's NHS Foundation Trust (2009), Wellcome Trust (2014, 2009, 2008, 2007).

Professional Organizations

Elected Treasurer for International Zebrafish Society (IZFS) June 2017 - present.

Elected committee member for British Society for Developmental Biology 2005 - 2010.

SDB Choose Development Mentor, 2014.

PhD examiner

National University of Singapore, University of London, University of Cambridge, Syracuse University, Upstate Medical University.

Journal Reviewer

Development, Neural Development, Journal of Neurobiology, Developmental Biology, Development, Genes and Evolution, BMC Developmental Biology, Gene Expression Patterns, PLoS One, Zebrafish.

Consultancy

UK Government Office of Science and Technology's Horizon Scanning Centre, January 2006. Consulted about predicted science & technology developments and proposed science policy.

Advocacy

Selected participant in Royal Society Member of Parliament (MP) pairing scheme 2007.

Local Area

- 2019 Organizing third CNY zebrafish meeting with Jeff Amack and Jason Myers.
- 2019 Participated in “Brainfreeze” a neuroscience-themed event for adults at the Museum of Science and Technology in Syracuse. Provided several hands-on experiments.
- 2018 Organized second CNY zebrafish meeting with Jeff Amack and Jason Myers.
- 2018 “Meet a Geneticist” day at the Museum of Science and Technology in Syracuse. Provided hands-on genetics experiments for families visiting the museum.
- 2018 MOST panel on Women in STEM.
- 2017 Organized first ever CNY zebrafish meeting with Jeff Amack and Jason Myers.
- 2011 - present Co-host Syracuse Developmental Biology Interest Group with Jeff Amack (SUNY UMU).

K-12 scientific outreach

- 2017 Provided and facilitated experiments for after-school program for middle school students.
- 2012-2014 Summer Science Institute for inner city 9th and 10th graders. Provide 5-day module where students learn about vertebrate development and the scientific process by designing their own experiments to test the effects of ethanol on zebrafish embryonic development, 2012, 2013, 2014, 2018.
- 2012 - 2019 Biology Apprenticeship Experience for inner city high school students (Nottingham High school 2012, 2013, 2014; Henninger High school 2013; Solvay High school 2014, 2015, 2016, 2017, 2018, 2019; Institute of Technology at Syracuse Central, 2017, 2017). Includes tours of Biology department and zebrafish facility, hands-on experiments with zebrafish addressing questions in genetics and vertebrate development, and informal discussion with Biology undergraduates, about studying Biology, doing research and applying to college.
- 2014 - 2017 Helped facilitate experimental modules at Nottingham High School in Living Environment and SUPA Biology classes.
- Summer 2014 Hosted two Nottingham High School teachers who participated in our research and collaborated with us to develop hands-on lab teaching modules to use in their Living Environment and SUPA Biology classes. I have an ongoing collaboration with these teachers, helping them to implement these modules and we have written a paper describing these resources.
- 2013 Week-long zebrafish experiment with two Advanced Placement Biology classes (juniors and seniors) at Nottingham High School.
- 2012 Speaker at a Junior Science café organized by Technology Alliance of Central New York at the Museum of Science and Technology, Syracuse.

Other scientific outreach

- 2000, 2001, 2005, 2006, 2007, 2010, 2018 Invited speaker at seminars promoting women in science.
- 1996 - present Regular presentations of research to general public. For example, at the Museum of Science and Technology, Syracuse (2012, 2018, 2019), departmental events and open days at Syracuse University (2011 - present), University of Cambridge (2006 - 2010) and University of Oregon (1999 - 2003), PEN authors event (2005) and presentations to ICRF employees (1996 & 1997).

University, College and Department Service

- 2018 – present Faculty advisor for new SU chapter of Nu Rho Psi, the national honors society for Neuroscience (I applied for chapter status in spring 2018 and we were awarded it in August 2018).
- 2017 - present Director of Syracuse University Neuroscience Integrated Learning Major.
- 2017 - present Faculty Co-Director of Syracuse University WiSE.

2017 - present Chair of Neuroscience Integrated Learning Major Curriculum Committee.

2016 - present Faculty Mentoring Committee (Dr Jessica MacDonald).

2015 - present Syracuse University Biology Department Seminar Series Organizer.

2014 - present Syracuse University Biology Department Vision Committee.

2013 - present Syracuse University Neuroscience Executive Committee (spans several schools and colleges).

2011 - present Syracuse University WiSE Faculty Advisory Group.

2019 SEM100 facilitator

2016 - 2019 Faculty Mentoring Committee (Dr Melody Sweet).

2018 Chair/moderator of an OSP panel about applying for NSF CAREER awards

2018 New WiSE First Year Forum Professor (piloted two sections with 3 colleagues).

2018 New WiSE Summer Research Program for undergraduate women of color (Co-Director).

2018 Myers Briggs workshop for Full Circle Students.

2018 Chaired Honors Capstone Prize Committee for science and engineering. Member of Honors Orlin Prize Committee.

2018 Organized and hosted campus visit by Professor Rick McGee, Associate Dean for faculty recruitment and professional development, Northwestern University.

2012 - 2018 Workshop facilitator and panel member for Syracuse University's *Louis Stokes Alliances for Minority Participation* (LSAMP) program.

2017 Organized and hosted Norma Slepecky Memorial Lecture and visit.

2017 Myers Briggs workshop for WiSE and Empower Graduate Students.

2017 Honors Capstone Prize Committee.

2015 - 2017 Syracuse University WiSE Postdoctoral Scholar Faculty Mentor.

2016 & 2015 Slepecky Memorial Undergraduate Research Prize Committee.

2015 - 2017 Lower Division Advisor.

2015 - 2016 First Year Forum Professor.

2014 - 2015 Chair of Search Committee for Assistant Professor in Biology.

2012 - 2013 Co-Director of the Biology Graduate Program, Syracuse University.

2010 - 2013 Member of the SU Biology Department, Graduate Education and Research Committee.

2011 - 2014 Elected member of Chair's Advisory Committee for SU Biology Department.

2011 - 2015 Faculty Mentor for Syracuse University WiSE Future Professionals Program for graduate students.

2007 - 2010 Cambridge University, UK. University Working Group for developing and overseeing a new *Principal Investigator Development* program.

2007 - 2010 Elected member of King's College Garden Committee.

2007 - 2010 Spearheaded and organized design, grant funding, supplier bids and other practical details for new £1,200,000 zebrafish facility at University of Cambridge.

2006 - 2010 Elected member of King's College Fellowship committee.

2007 - 2008 Elected member of King's College Equal Opportunities committee.

2005 - 2006 Department Research committee (PDN, Cambridge).

2004 - 2007 Personal Tutor for King's College, Cambridge (academic, counseling and professional support for undergraduate students).

2002 - 2003 Founding member, Vice-Chancellors Postdoctoral Fellows Issues Task Force, University of Oregon.

2000 - 2001 Selection panel for University of Oregon Centre for the Study of Women in Society "Ecological Conversations: Gender Science and the Sacred" fellowship program.

1999 - 2001 Initiated and organized departmental Postdoctoral Professional Development seminar series.

TRAINING/MENTORING

Current PhD students:

William Haws SU Biology Department and IGERT fellow. Joined lab in August 2015.

Current Masters students:

Amber Woodward, SU Biology Department. Joined lab in September 2018.

Past PhD students:

Will Hilinski. SUNY UMU. Graduated 2016. Next step: Industry.

Gustavo Cerda-Moya. University of Cambridge. Graduated 2011. Next step: Postdoc at University of Cambridge.

Frida Weierud. University of Cambridge. Graduated 2011. Next step: Industry.

Debbie Goode. Open University part-time PhD student co-supervised with Dr Greg Elgar. Graduated 2011. Next step: Postdoc at University of Cambridge.

Claus Schulte. University of Cambridge. Graduated 2010. Next step: Biotech company.

Manuel Batista. University of Cambridge. Graduated 2009. Next step: Postdoc at Skirball Institute, NY.

Past MPhil/MSc students:

Livia Andrzejczuk, Syracuse University. Graduated 2015. Next step: Research Assistant at Univ. of Pittsburgh.

Roseanna Smith. University of Cambridge. Graduated 2009. Next step: Unknown.

Jeffrey Jacobstein. University of Cambridge. Graduated 2007. Next step: Harvard Law school.

Claus Schulte. University of Cambridge. Graduated 2007. Next step: PhD at University of Cambridge.

Graduate Student lab rotations at Syracuse University:

Audrey Wood (fall 2019), Nikhila Krishnan (spring 2019), Matthew Allen (fall 2015), William Haws (summer 2015), Deion Burks (summer 2014), David Lemon (summer 2013), Yifan Gong (spring 2013), Chao Lin (spring 2013), Twinkle Chowdbury (fall 2012), Livia Andrzejczuk (fall 2012), Guneet Singh (spring 2012), Mat Snyder (spring 2011), and Will Hilinski (spring 2011).

Postdoctoral researchers:

2015 - 2017 Santanu Banerjee. Appointed as a Research Assistant Professor at SU in 2016. Next step: Assistant Professor (Tenure Track) at SUNY Cortland from Aug 2017.

2010 - present Sam England. Appointed as a Research Assistant Professor at SU in 2016.

2007 - 2017 Jose-Luis Juarez Morales. Appointed as a Research Assistant Professor at SU in 2016. Next step: Applying for faculty positions in Mexico while full-time father.

2009 - 2011 Sarah de Jager (50% time). Next step: Another postdoc at University of Cambridge.

2009 Simon Durdan. Next step: High school teacher.

2007 - 2008 Murray Hargrave. Next step: Full-time father.

Undergraduate researchers (lab-based research projects):

2019 – present Hunter Mirer. (Currently a freshman).

2019 – present Ashley Andrews. (Currently a junior).

2019 – present Sophie Hernandez. (Currently a sophomore).

2018 - present Amra Mujcic. (Currently a junior with senior standing).

2018 - present Taylor Sorice. (Currently a senior).

2017 - 2019 April Kessler. Next step: gap year while applying to medical school.

2017 - 2019 Gabriela Susana. Next step: research experience while applying to graduate school.

2016 - 2019 Martina Morris. Next step: Cornell University College of Veterinary Medicine.

2017 - 2018 Katie Duggan. Next step: Industry. Co-mentored with Prof. Bhatia in Civil Engineering.

2015 - 2017 Christiane Voufo. Next step: PhD at UC Berkeley.

2015 - 2017 Richard Bates. Next step: EMT while applying to medical school.

2014 - 2017 Jose Marrero Rosado. Next step: PhD at UC Berkeley.

2014 - 2016 Jason Zheng. Next step: Medical scribing while applying to medical school.

Summer 2015 Andrew Tynon. REU student (Biomaterials REU) from Le Moyne University, Syracuse. Next step: Stonybrook Medical School.

2014 - 2015 Anjana Patti. Next step: Unknown (was only a freshman when in lab).

2014 - 2015 Will Fancher. Next step: MSc in Environmental Science at SUNY ESF.

2013 - 2015 Grace Vallejo. Next step: Ross University Medical School.

2013 - 2015 Paul Campbell. Next step: RA for two years. Then PhD at Brown.

2013 - 2015 Ria Foye-Edwards. Next step: MA in Science Writing at John Hopkin's University.

2013 - 2015 Nicole Santos. Next step: Clinical Data Associate at ECOG-ACRIN. Currently Clinical Trial Coordinator at Vertex Pharmaceuticals.

Summer 2014 Victor Rivera. REU student (SDB Choose Development REU) from Puerto Rico. Next step: Unknown.

2012 - 2014 Celia Demby. Next step: PhD at John Hopkin's University.

2012 - 2014 Alexa Machikas. Next step: PhD at University of Maryland School of Medicine.

2011 - 2013 Gisella Rodriguez-Larrain. Next step: Research Assistant, University of Texas, Dallas.

2011 - 2013 Sofia Alia-Pezo. Next steps: PostBac research at NIH, then PhD at University of Colorado.

2010 - 2012 Samantha Balakirsky. Next steps: RA at Memorial Sloan Kettering Cancer Center, then Physicians Assistant Program at Weill Cornell School of Medicine, now Physician's Assistant at New York Presbyterian-Cornell in Manhattan.

2010 - 2012 Kadiah Kamura. Next step: Teach for America.

2009 - 2010 Florence Giger. Next step: PhD at INSERM, Paris.

2007 - 2008 Marion Baraban. Next step: PhD at University Pierre and Marie Curie, Paris.

2005 - 2006 Sophie Lutter. Next step: PhD at Cancer Research UK.

2002 - 2003 Prerana Ranjitkar. Next step: PhD at University of Oregon.

2001 - 2002 Jen Bates. Next step PhD at University of Oregon.

Postgraduate Interns:

2018-2019 Alice Garrastegui. Next step: University of Buffalo Medical School. (Was previously an SU undergraduate and my full-circle mentee).

2010 - 2011 Geoffrey Henderson. Next step: UCLA Medical School.

2009-2010 Jinghua Li. Next step: PhD at Cambridge University.

Current Full Circle Mentee (Mentoring program for under-represented students): Davon Edwards

Previous Full Circle Mentees:

Osatohanmwun Onaghinor. Currently a senior.

Alice Garrastegui. Graduated 2018. Next step: Post-bac research internship, followed by medical school.

Elizabeth Artiles. Graduated 2018. Next step: Medical internship while applying to MPH programs.

MSc examined [Read thesis and conducted final thesis exam/defense]

2019 Chaired Masters thesis defense committee for Chinthoory Ganesalingam, (Bhatia lab, department of Civil and Environmental Engineering, Syracuse University).

PhDs examined [Read thesis and conducted final thesis exam/defense]

2017 David Lemon (Garza Lab, Syracuse University).

2015 Zahra Motahari (Zuber lab, SUNY UMU).

2012 Flora Rajaei (Winkler lab, University of Singapore).

2010 Marta Vitorino (Harris lab, University of Cambridge).

2009 Barbara Chwalla (Landgraf lab, University of Cambridge).

2007 Katie Hill (Briscoe lab, University of London).

2007 Emma Kenyon (Stemple lab, University of London).

2006 Eva Asscher (Papalopulu lab, University of Cambridge).

Graduate Student Committees (in addition to my own students)

2013-2017 David Lemon (Garza Lab, SU). Graduated with PhD 2017.

2011-2016 Zainab Mansaray (Howell lab, SUNY UMU). Graduated with PhD 2016.

2011-2013 Dan Snyder (Garza Lab, SU). Graduated with Masters 2013.

2010-2011 Sarah Collins (Albertson Lab, SU). Left program (lab moved to UMass Amherst).

Qualifying Exam Committees

2017 Mayara Ribiero (MacDonald Lab, SU).

2014 Twinkle Chowdhury (Hewett Lab, SU).

2014 Dan Snyder (Garza Lab, SU).

2012 Agnik Dasgupta (Amack lab, SU).

TEACHING and ADVISING

Syracuse University

BIO 305 Integrated Biology lab. Required sophomore lab class for majors. Enrollment ~160-192. 2012 - present.

BIO 437/637 Developmental Neuroscience. Seminar class for seniors and graduate students. Enrollment ~5-15. 2012, 2013, 2014, 2017 (on research leave in fall 2016, taught Bio 705 instead in 2015, course relief for Neuroscience Director position in 2018 and 2019).

SEM 100 First Year Experience. Enrollment 24. Fall 2019.

CAS 101 First Year Forum. Enrollment 16. 2018 (WiSE pilot) and 2015.

Biology Advising. 10-20 students per year. 2011 - present.

Neuroscience Advising. Ad hoc basis. 220+ undergraduate majors. 2017 - present.

BIO 400/600 Biology of Sex and Gender. Enrollment ~5-15. 2016 - 2017.

BIO 460 / BCM 460 / CHE 450 Undergraduate Research in Biology/Biochemistry/Chemistry (2-9 students every semester).

BIO 490 Undergraduate individual study (1 student some semesters).
 BIO 495 Biology Distinction Project (1-4 students, spring semesters).
 BIO 499 Honors Capstone Project (1-2 students, spring semesters).
 BIO 610 Graduate Rotations (1-2 students some semesters).
 BIO 688 Individual study/literature review (1-2 students some semesters).
 BIO 705 Graduate Research Seminar Class. Required seminar class for graduate students. Enrollment ~35-40. Taught fall, 2015. Guest lectures fall, 2012.
 BIO 407/607 Advanced Neuroscience. Guest lectures 2013, 2014.
 SUNY UMU Graduate Developmental Neuroscience class. Guest lectures 2012.
 BIO 200: Introduction to Biological Research at Syracuse. Guest lectures March 2010 and November 2017.

University of Cambridge

Part II PDN/Neuroscience “Developmental Neuroscience” module. 2007, 2008.
 Departmental Supervisions (individual teaching sessions with 1-2 part II (senior) students at a time). 2006 - 2009.
 Part IB MVST “Neurobiology and Human Behaviour” Neuroanatomy Human Dissection classes. 2007, 2008.
 Part IA Functional Architecture of the Body course for 1st year medical students. Guest lecture on Cranial Facial Development. 2009.
 Part II “Local Circuits and Neural Networks”. “Development of circuitry in the spinal cord” module. 2006-2009.
 Part IB Neuroscience practical. Brain Histology. 2004, 2007-2009.
 Summer undergraduate class “From Cell to Animal: General Principles of Developmental Biology”. Part of University of Cambridge International Summer Schools program. 2009.
 Part II “Gender Sex and Sexuality”. 2006, 2007.
 Summer undergraduate class “From Cell to Animal: General Principles of Cell and Developmental Biology”. Upper Division course. (Worth five quarter units at University of California). For Pembroke / King’s Summer program for US students. 2007.
 Anatomy Part II Option A “Patterning the Nervous system” module. 2004, 2005.
 Anatomy Part II Option B workshops in Professional Skills and Development. 2005.
 Graduate Core Course in Developmental Biology. “Patterning the Nervous system” module. 2004, 2005.
 Supervisions for King’s College in IB Cell and Developmental Biology. 2004-2005.
 Supervisions for King’s College in IB Molecular Cell Biology. 2003-2004.

Undergraduate Researchers (non-lab based Part II dissertation projects (equivalent to senior thesis))

2007-2008	Kate Lager.
2006 - 2007	Claire Jones and Rosie Sherman.
2005-2006	Sam Roberts, Emily Bounds and Charlotte Naidoo.
2004-2005	Meera Kamalanathan.

University of Oregon

Undergraduate/Graduate course in Developmental Neurobiology. Guest Lectures (2-4 per year). 2000-2002.
 Zebrafish lab class as part of undergraduate Developmental Biology course. Two half-day sessions. 2001, 2002.
 Women's studies summer class (one credit) "Friendships Between Women". 2002.