

# **Katharine Lewis**

## **Education**

- 1994 - 1998 PhD, Developmental Biology and Genetics. University College, London, UK.
- 1993 - 1994 Postgraduate credit (GPA 4.0). Harvard University, Cambridge, MA, USA.
- 1990 - 1993 BA (Honors), First Class (all 3 years), Natural Sciences. Cambridge University, UK. (Final year specialization in Genetics).

**Postdoctoral Training:** Postdoctoral fellow, Institute of Neuroscience, University of Oregon, Eugene, Oregon, USA.

## **Academic Appointments**

- 2010 - present Associate Professor, Department of Biology, Syracuse University, Syracuse, USA.
- 2010 - present Graduate Faculty, SUNY Upstate Medical University, Syracuse, USA.
- 2012 - present Adjunct Associate Professor, Department of Neuroscience and Physiology, SUNY Upstate Medical University, Syracuse, USA.
- 2004 - 2010 Royal Society University Research Fellowship. 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.
- 1994 - 1998 PhD student, Philip Ingham's laboratory, Imperial Cancer Research Fund (ICRF), Lincoln's Inn Fields and University College London, London, UK. [Last year was spent at Sheffield University, UK].

## **Awards, Honors and Fellowships**

- 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.
- 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.
- 1993 - 1994 Kennedy Memorial Fellowship. 1 years 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.

## **Publications**

<sup>^</sup> indicates undergraduate student author from my lab; \* indicates graduate student author from my lab; + indicates postdoc author from my lab

S. J. England<sup>+</sup>, P. C. Campbell<sup>^</sup>, S. Banerjee<sup>+</sup>, A. J. Swanson, and **K. E. Lewis** (2017) Identification and expression analysis of the complete family of zebrafish *pkd* genes. *Frontiers in Cell and Developmental Biology*. In press.

R. Wilk, N. Ali, S. J. England<sup>+</sup>, **K. E. Lewis** (2017) Using Zebrafish in Urban Classrooms to Transform Abstract Concepts into Reality. Submitted.

J. L. Juárez-Morales<sup>+</sup>, R. I. Martínez-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. Submitted.

G. M. W. Cook, **K. E. Lewis**, R. J. Keynes (2017) Neural Patterning: Spinal Cord Segmentation and Somite Patterning. In Reference Module in Neuroscience and Biobehavioral Psychology, Elsevier. ISBN 9780128093245.

W. C. Hilinski<sup>\*</sup>, J. R. Bostrom, S. J. England<sup>+</sup>, J. L. Juárez-Morales<sup>+</sup>, S. de Jager<sup>+</sup>; 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. Juárez-Morales<sup>+</sup>, C. Schulte<sup>\*</sup>, S. A. Pezoa<sup>^</sup>, G. K. Vallejo<sup>^</sup>, W. Hilinski<sup>\*</sup>, S. England<sup>+</sup>, S. de Jager<sup>+</sup> 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](https://doi.org/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<sup>\*</sup>, 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<sup>+</sup>, Hilinski, W<sup>\*</sup>., de Jager, S.<sup>+</sup>, Andrzejczuk, L. <sup>\*</sup>, Campbell, P.<sup>^</sup>, Chowdhury, T. <sup>\*</sup>, Demby, C. <sup>^</sup>, Fancher, W. <sup>^</sup>, Gong, Y. <sup>\*</sup>, Lin, C. <sup>\*</sup>, Machikas, A. <sup>^</sup>, Rodriguez-Larrain, G. <sup>^</sup>, Roman Rivera, V<sup>^</sup>. and Lewis, K. E. (2014) Identifying Transcription Factors expressed by Ventral Spinal Cord Interneurons. ZFIN online publication. <http://zfin.org/ZDB-PUB-140822-10>.

S. England<sup>+</sup>, M. F. Batista<sup>\*</sup>, 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<sup>\*</sup>, H. A. Callaway, G. Cerda<sup>\*</sup>, **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<sup>\*</sup>, C. Allen, S. England<sup>+</sup>, J. Juárez-Morales<sup>+</sup> 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<sup>\*</sup>, J. L. Juárez-Morales<sup>+</sup>, 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<sup>\*</sup>, M. Hargrave<sup>+</sup>, **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. (Plus cover image).
- K. Wotton, F. Weierud\*, S. Dietrich, and **K. E. Lewis** (2008) Comparative genomics of *Lbx* loci reveals conservation of identical *Lbx* orthologs 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. Schauerer, G. Joerg-Rauch, A. Kirn, 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.
- 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 *smoothed* 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. Schauerer, 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<sup>3</sup>* suggests bifurcation in Shh Pathway. Development 126: 2297-2407.
- 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.

### **Papers in Preparation**

L. Andrzejczuk\*, S. Banerjee+, A. Swanson, K. Kamura^ and **K. E. Lewis**. The functions of Gata2, Gata3 and SCL transcription factors in specifying KA and V2b spinal neurons.

Juárez-Morales+, F. Weierud\*, J. C. Demby^, N. Santos^, P. Wincker, C. Da Silva, S. Mazan and **K. E. Lewis**. Evolution of spinal cord *Lbx* expression and function.

J. Marrero, J. Zheng, J. Hewett, F. Middleton, J. Hassett, **K.E. Lewis**. Exposure to PTE or PXE is toxic to zebrafish embryos and increases the incidence of PTZ induced seizure.

S. England+, W. Hilinski \*, S. de Jager+, L. Andrzejczuk\*, P. Campbell^, T. Chowdhury\*, C. Demby^, W. Fanher ^ and **K. E. Lewis**. Transcription Factors with broad CNS expression.

### **Published Abstracts (only those that contain unpublished data)**

S. de Jager+, G. Cerda\*, J. Juárez-Morales+, & **K. Lewis** (2009) Interneuron development in the zebrafish spinal cord. *Mechanisms of Development* 126: S193.

G. Cerda\* & **K. Lewis** (2009) Characterising the function of transcription factors involved in specifying Circumferential Ascending spinal interneurons. *Mechanisms of Development* 126: S204.

M. Batista\* & **K. Lewis** (2009) Specification of interneurons in the zebrafish spinal cord. *Mechanisms of Development* 126: S211.

### **Research Grants Awarded**

#### **Current Support:**

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**

2014-2019 NIH NINDS R01 "Specification of functional properties of spinal cord interneurons." Sole PI. **\$1,618,750**

2014-2017 HFSP "Sensory-motor integration in cerebrospinal fluid contacting neurons". One of three Co-PIs with two colleagues in France. **\$900,000** (\$100,000 per lab per annum).

2013-2016 NSF "Specification of V0v interneurons in the zebrafish spinal cord". Sole PI. **\$606,000**

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

2014-2015 RET Supplement to above grant **\$8,336**

#### **Past Support:**

2016 New York State Spinal cord injury funds. "Institutional Support of Spinal Cord Injury Research 2016". One of three Co-PIs. **\$337,218**

2013-2016 NSF MRI "Acquisition of a Fluorescence Activated Cell Sorter". One of three Co-PIs. **\$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**

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

- 2011-2014 R21 NIH NINDS “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 on this grant. £401,282 (~**\$606,000**)
- 2008-2011 MRC 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. This was a highly competitive individual fellowship. It 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 on this grant. £50,000 (~**\$75,500**)
- 2007-2010 Leverhulme Trust 3-year project grant “Genetic tools to study neuronal circuit formation in zebrafish and *Xenopus*”. Main 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 support 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 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 (I was the 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. This provided some research expenses for a 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 the spectrum of Science, Technology and the Arts in the UK. £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**)

## **Conferences**

### **Conference organizing committees**

- Spring 2010 British Society for Developmental Biology (BSDB) annual spring conference. One of two scientific organizers.
- October 2008 Frontiers of Science Symposium co-funded by the Royal Society (UK) and Japanese Society for the Promotion of Science.

### **Chair of session**

|      |   |
|------|---|
| 2017 | Zebrafish Strategic Principal Investigator's conference, USA. |
| 2015 | Zebrafish Strategic Principal Investigator's conference, USA. |
| 2008 | UK-Japan Frontiers of Science Symposium.                      |
| 2005 | Zebrafish Strategic Principal Investigator's conference, USA. |
| 2004 | BSDB Autumn meeting, UK.                                      |

### **Invited conference speaker**

|      |  |
|------|--|
| 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".<br>Kobe, Japan. |

### **Other conference presentations**

#### **Oral presentations (selected from submitted abstracts):**

|      |   |
|------|---|
| 2017 | International Zebrafish Strategic Principal Investigator's biannual conference. |
| 2009 | International Zebrafish Strategic Principal Investigator's biannual conference. |
| 2006 | International Zebrafish biannual meeting.                                       |
| 2005 | BSDB annual spring meeting.   |
| 2003 | European Zebrafish biannual meeting.  |
| 1996 | Cold Spring Harbor Zebrafish Meeting.   |

#### **Poster presentations (selected from submitted abstracts):**

|  |   |
|--|---|
| 2012, 2013                               | Society for Neuroscience annual meeting.                                |
| 1995-98, 2002, 2006-2010                 | BSDB annual spring meetings.  |
| 2002, 2004, 2006, 2008, 2010, 2012, 2016 | International Zebrafish biannual meetings.                              |
| 2011                                     | International Brain Research Organisation (IBRO) conference.            |
| 2010                                     | European Zebrafish Principal Investigator Conference.                   |
| 2009                                     | International Society for Developmental Biology international congress. |
| 2005, 2007, 2011, 2013, 2015             | 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)

|      |                                    |
|------|------------------------------------|
| 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.

**Major Service** (not including conference organization, which is listed above)

**International and National**

**PhD examiner:** National University of Singapore, University of London and University of Cambridge.

**Journal Reviewer:** Development, Neural Development, Journal of Neurobiology, Developmental Biology, Development, Genes and Evolution, BMC Developmental Biology, Gene Expression Patterns.

**Grant Panels:** NSF panel for pre-proposals for IOS Neural Organization March 2013.

Grant Reviewer: Wellcome Trust, MRC, BBSRC, NSF, National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs), Austrian Science Fund, Israel Science Foundation, Motor Neurone Disease Association. Sheffield Children's NHS Foundation Trust, Research Grants Council Hong Kong, Royal Society.

Professional Organizations: Elected committee member for British Society for Developmental Biology 2005 – 2010.

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

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

### **University, College and Department**

2015 - present Syracuse University Biology Department Seminar Series Organizer.

2014 - present Syracuse University Biology Department Vision Committee.

2013 - present Syracuse University Neuroscience Executive Committee.

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

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

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

2015 - present Syracuse University Wise Postdoctoral scholar faculty mentor.

2011 - 2015 Syracuse University Wise Future Professionals Program faculty mentor.

2011 - present Syracuse University Wise Faculty Advisory Group.

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 associated practical details for a brand new £1,200,000 (including room refurbishment costs) 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 of the 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.

2000, 2001, 2005, 2006, 2007, 2010 Invited speaker at seminars promoting women in science.

1996 - present Regular presentations of my research to the general public. For example, at the Museum of Science and Technology, Syracuse (2012), departmental events and open days at Syracuse University (2011 - present), University of

Cambridge (2006 - 2010) and University of Oregon (1999 - 2003) and presentations to ICRF employees (1996 & 1997).

### **K-12 scientific outreach**

- July 2012, 2013, 2014 Summer Institute for inner city high school students (9<sup>th</sup> and 10<sup>th</sup> graders).
- March 2012, 2013, 2014, 2015, 2016 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).
- 2014-2016 Helped facilitate experimental modules at Nottingham High School in Living Environment and SUPA Biology classes.
- Summer 2014 Hosted two Nottingham High School teachers who learnt about and participated in our research and helped us to develop experimental teaching modules that they could use in their Living Environment and SUPA Biology classes. We have an ongoing collaboration with these teachers, helping them to implement these modules and we aim to publish the modules once they have been fully tested.
- May 2013 Week-long zebrafish experiment with two Advanced Placement Biology classes (juniors and seniors) at Nottingham High School.
- October 2012 Speaker at a Junior Science café organized by Technology Alliance of Central New York at the Museum of Science and Technology, Syracuse.

### **Training / Mentoring**

#### **Current PhD students:**

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

#### **Past PhD students:**

Will Hilinski. SUNY Upstate Medical University. Graduated 2016.

Gustavo Cerda-Moya. University of Cambridge. Graduated 2011.

Frida Weierud. University of Cambridge. Graduated 2011.

Debbie Goode. Open University part-time PhD student co-supervised with Dr Greg Elgar. Graduated 2011.

Claus Schulte. University of Cambridge. Graduated 2010.

Manuel Batista. University of Cambridge. Graduated 2009.

#### **Past MPhil/MSc students:**

Livia Andrzejczuk, Syracuse University. Graduated 2015.

Roseanna Smith. University of Cambridge. Graduated 2009.

Jeffrey Jacobstein. University of Cambridge. Graduated 2007.

Claus Schulte. University of Cambridge. Graduated 2007.

#### **Postdoctoral researchers:**

2015 - present Santanu Banerjee

2010 - present Sam England

2007 - present Jose-Luis Juarez Morales

2009 - 2011 Sarah de Jager (50% time)

|             |                 |
|-------------|-----------------|
| 2009        | Simon Durdan    |
| 2007 - 2008 | Murray Hargrave |

Undergraduate researchers (lab-based research projects):

|                |   |
|----------------|---|
| 2016 – present | Martina Morris  |
| 2015 - present | Christiane Voufo and Richard Bates                                      |
| Summer 2015    | Andrew Tynon REU student (Biomaterials REU) from Le Moyne               |
| Summer 2014    | Victor Rivera REU student (SDB Choose Development REU) from Puerto Rico |
| 2014 – present | Jose Marrero Rosado   |
| 2014 - 2016    | Jason Zheng   |
| 2014- 2015     | Anjana Patti and Will Fancher   |
| 2013 - 2015    | Grace Vallejo, Paul Campbell, Ria Foye-Edwards and Nicole Santos        |
| 2012 - 2014    | Celia Demby and Alexa Machikas  |
| 2011 - 2013    | Sofia Alia-Pezo and Gisella Rodriguez-Larrain                           |
| 2010 - 2012    | Kadiyah Kamura and Samantha Balakirsky                                  |
| 2009 - 2010    | Florence Giger  |
| 2007 - 2008    | Marion Baraban  |
| 2005 - 2006    | Sophie Lutter   |
| 2002 - 2003    | Prerana Ranjitkar   |
| 2001 - 2002    | Jen Bates   |

Postgraduate Interns:

|             |                    |
|-------------|--------------------|
| 2010 - 2011 | Geoffrey Henderson |
| 2009-2010   | Jinghua Li         |