# CURRICULUM VITAE

## Hemlata Lakshman Mistry

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## Education

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| 1993-99 | Ph.D. in Genetics, University of Cambridge, UK. Supervisor CJ. O'Kane Ph.D. |
| 1989-93 | Bachelor of Science (*hons*) in Molecular Biology, University of Glasgow, UK |

## Research and Teaching Experience

**Widener University, Chester, PA, USA (August 2008 to present)**
Associate Professor in the Department of Biology. Teaching Principles of Evolution and Ecology (lecture and laboratory), Biochemistry Seminar I, Principles of Biological Systems (laboratory), Principles of Modern Genetic Analysis (lecture and laboratory), Developmental Neurobiology (lecture and laboratory), Medical Genetics (lecture and laboratory), Senior Thesis in Biology and Biochemistry.
Research interests include: investigating the role of RNA degradation in *Drosophila* development; investigating the impact of wounding in the *Drosophila* embryonic central nervous system; the effect of protein degradation on the activity of different transcription factors in neuronal fate decisions during nervous system development in *Drosophila*.

**Dickinson College, Carlisle, PA, USA (July 2007 to July 2008)**
Visiting Assistant Professor in the Department of Biology. Teaching Genetics (lecture and laboratory), Understanding Cancer (laboratory). Research investigating the activity of different transcription factors in neuronal fate decisions during nervous system development in *Drosophila melanogaster*.

**Washington University, St Louis, USA (January 2004 to May 2006)**
Lecturer in the Department of Biology, teaching Microbiology (laboratory)

**Washington University, School of Medicine, St Louis, USA (January 1998 to June 2006)**
Postdoctoral Research Associate in the laboratory of James B. Skeath PhD. Research in genetic and developmental mechanisms underlying nervous system generation in *Drosophila melanogaster*.

**University of Cambridge, UK (July to December 1997)**
Researcher with European *Drosophila* Genome Project Consortium in the laboratory of Michael Ashburner PhD. Physical mapping of *Drosophila melanogaster* third chromosome.

**University of Cambridge, UK (October 1993 to July 1997)**
Wellcome Trust Prize funded Ph.D. Student in the laboratory of Cahir O'Kane PhD. Identified a number of molecularly characterised loci that interact with $G\alpha_s$ signalling pathways in *Drosophila melanogaster*. Identified guftagu (dCul3) as a potential target.

## Awards and other professional activities

2010 to date Member of the American Society for Cell Biology
2009 to date Member of the Society for Developmental Biology
1996 to date Member of the Genetics Society of America
1993-2006 Member of the Genetics Society of Great Britain
British Society for Developmental Biology
1989-1993 Honours student, University of Glasgow, UK

**Fellowships**

2013-2015 Cynthia H. Sarnoski Faculty Fellowship, Widener University, USA
2000-2003 Monsanto Research Fellowship, Washington University in St Louis, USA
1993-1997 Wellcome Trust Prize Studentship, University of Cambridge, UK

## Undergraduate Courses taught at Widener University

BCH408, 409, 410—Senior Thesis in Biochemistry
BIOL408, 409, 410—Senior Thesis in Biology
BIOL314 Developmental Neurobiology
BIOL326 Medical Genetics
BIOL262 Principles of Modern Genetic Analysis
BIOL165 Biological Concepts I—Principles of Ecology and Evolution Laboratory
BIOL161 Biological Concepts I—Principles of Ecology and Evolution Lecture
BIOL101 Principles of Biological Systems Laboratory
BCH101 Biochemistry Seminar I
BIOL101 Principles of Biological Systems Lecture and Laboratory

## Publications

***** Indicates peer-reviewed publication
†Published since beginning at Widener University
Undergraduate authors are underlined

*†Haluk Lacin, Rusch, J., Yeh, RT., Fujioka, M., Wilson, BA., Zhu, Y., **Mistry, H**., Jaynes, JB., and Skeath JB. Genome-wide identification of Drosophila Hb9 targets reveals a pivotal role in directing the transcriptome within eight neuronal lineages, including activation of Nitric Oxide Synthase and FoxD. Developmental Biology 388 (1), 117-133 (2014)

*†Christopher Shaffer… **Mistry, H**… Elgin, SCR (83 authors). A Course-based Research Experience: How Benefits Change with Increased Investment in Instructional Time. CBE Life Sciences Education 13 (1), 111-130 (2014).

*†Lauren A. Campion, Choi, S., **Mistry, H. L.,** and Coughlin DJ. Myosin heavy chain and parvalbumin expression in swimming and feeding muscles of *centrarchid* fishes: The molecular basis of the scaling of contractile properties. Comparative Biochemistry and Physiology, Part A 163, 233-230 (2012)

*†Scott M. Boback, Dichter, E., and **Mistry, H**. A Developmental Staging Series for the African House Snake, *Lamprophis fuliginosus.* Zoology 115, 38-46 (2012).

*†A. Burcu Babaoglan, O'Connor-Giles, KM, **Mistry, H**., Schickedanz, A., Wilson, BA, and Skeath, JB. Sanpodo: a context-dependent activator and inhibitor of Notch signalling during asymmetric divisions. Development 136, 4089-4098 (2009).

*Kirsten Guss, **Mistry, H**, and Skeath, JB. *vestigial* expression in the *Drosophila* central nervous system. Developmental Dynamics 237, 2483-2489 (2008).

***Hemlata Mistry**, Wilson BA., Roberts IJH., O'Kane, CJ., and Skeath, JB. Cullin-3 regulates pattern formation, external sensory organ development and cell survival during *Drosophila* development. Mechanisms of Development, 121, 1495-1507 (2004).

## Platform Presentations

¶Presented since beginning at Widener University

¶**Hemlata Mistry**, Snee, M., Skeath, J. (2014). A genetic screen for new dis3 alleles in *Drosophila melanogaster.* Annual *Drosophila* Research Conference 55 (San Diego CA).

¶**Hemlata Mistry** and Alexis Nagengast (2012). An Interdisciplinary approach to teaching Bioinformatics. Genetics Education Partnership, Washington University in St Louis, St Louis, MO.

¶D. J. Coughlin, **Hemlata Mistry**, L. A. Campion and S. Choi (2012). Contractile Properties and Myosin Expression in Swimming and Feeding Muscles of *Centrarchid* Fishes. Society for Integrative and Comparative Biology, Charleston, SC

¶**Hemlata Mistry** (2010). Generation and Maintenance of Neuronal Diversity in the Central Nervous System. Science Seminar, Widener University, Chester, PA

Guss, K., **Mistry, H**., Skeath, J. (2008). Expression of vestigial in the *Drosophila* embryonic central nervous system. Annual *Drosophila* Research Conference 49 : 148.

**Hemlata Mistry** and Skeath, J. (2000). The role of guftagu, a *Drosophila* cul-3 homolog, during the cell cycle. Annual *Drosophila* Research Conference 41 : 23. Chicago, IL.

## Platform Co-Presentations with Undergraduate Students

¶Presented since beginning at Widener University

¶Raimer, A., and Mistry, H. (2013) The Importance of being ERK-ed; Understanding the role of Dis3 in RNA Degradation. Widener University Students Projects Day.

¶Donegan, M., and **Mistry, H** (2012). Modelling Degenerative Disc Disease in *Drosophila melanogaster*. Widener University Students Projects Day.

¶Raimer, A., and **Mistry, H** (2012). Characterization of Dis3 in *Drosophila melanogaster*. Widener University Students Projects Day.

¶Bennett, A., **Mistry, H**. and Nagengast, A. (2011). Manipulating Expression of Adipokinetic Hormone Affects Lipid Phenotype in *Drosophila melanogaster*. Widener University Student Projects Day

¶Miller, M., Cross, A., and **Mistry, H**. (2010) Modeling Fragile X Mental Retardation Syndrome in the Fruit Fly, *Drosophila melanogaster.* Widener University Students Projects Day.

¶Chiaro, J. and **Mistry, H**. (2010) HDAC-6 rescues neurodegeneration in a *Drosophila* model of Kennedy Disease. Widener University Students Projects Day.

¶Chiaro, J. and **Mistry, H**. (2010) Modeling Degenerative Disc Disease in *Drosophila*. Widener University Honors Week Presentation.

## Poster Presentations

¶Presented since beginning at Widener University

¶**Mistry, H**, Snee, M., Skeath, J. (2014). A genetic screen for new dis3 alleles in *Drosophila melanogaster.* Annual *Drosophila* Research Conference 55 (San Diego CA).

¶**Mistry, H**, Morris, R. W., Fischer-Drowos, S., and Nagengast, A. (2013). An Interdisciplinary Approach to Molecular Bioscience Content in the Undergraduate Curriculum. Annual *Drosophila* Research Conference 54 (Washington DC).

¶**Mistry, H** (2012). Modelling Degenerative Disc Disease in *Drosophila melanogaster*. Model Organisms and Human Biology Conference (Washington DC).

¶**Mistry, H**, Morris, R. W., Fischer-Drowos, S., and Nagengast, A. (2012). An Interdisciplinary Approach to Molecular Bioscience Content in the Undergraduate Curriculum. Model Organisms and Human Biology Conference (Washington DC).

¶Dichter, E., **Mistry H**., and Boback S. (2009). Embryonic Jaw Development in the African House Snake (*Lamprophis fuliginosus*). Annual Society for Developmental Biology Conference.

Lacin, H., Broihier, H., Zhu, Y., Wilson, B., **Mistry, H**., Skeath, J. (2007). Characterizing the role of Dbx in the embryonic CNS development. Annual *Drosophila* Research Conference 48 : 586A.

**Mistry, H**., Wilson, B., Skeath, J. (2003). Cul-3 mediated protein degradation regulates Ci stability during *Drosophila* imaginal disc development. Annual *Drosophila* Research Conference 44 : 506B.

**Mistry, H**., Skeath, J.B. (2001). Functional characterization of the conserved C-terminal domain of *Drosophila* Cullin-3. Annual *Drosophila* Research Conference 42 : 389B.

Wheeler, S.R., **Mistry, H**., Skeath, J.B. (2000). The Role of *empty spiracles* in CNS development of *Drosophila*. Annual *Drosophila* Research Conference 41 : 731A. Research Conference 40 : 683A.

**Mistry, H**., Roberts, I., O'Kane, C. (1996). G-protein signaling in *Drosophila melanogaster*.

Annual *Drosophila* Research Conference. 37 : 352.

Roberts, I., **Mistry, H**., Wolfgang, W., Forte, M., O'Kane, C. (1996). WG and MAP kinase pathways but not PKA are required for $Ga_s$-signaling. Annual *Drosophila* Research Conference.37 : 23.

**Mistry, H**., Roberts, I., O'Kane, C.J. (1995). Identification of components involved in G-protein mediated signalling in *Drosophila melanogaster*. European *Drosophila* Research Conference 14 : 220.

Roberts, I.J.H., **Mistry, H**., Round, J., Forte, M., O'Kane, C. (1995). Genetic dissection of G-protein signal transduction. Fifth European Meeting on the Neurogenetics of *Drosophila*. *Abstract* published in J. Neurogenet. **10(1)**: 48.

## Poster Presentations with Undergraduate Students

¶Presented since beginning at Widener University

Petsch, L., Bazelak, D., Snee, M., **Mistry, H**., Skeath, J. (2015). Characterization of Dis3 in *Drosophila melanogaster*. Annual *Drosophila* Research Conference 56.

¶Layeeq, S., and Mistry, H. (2014) Detection of Dis3 protein expression in *Drosophila* embryos using western blotting analysis. Widener University Students Projects Day.

¶Petsch, L., and Mistry, H. (2014) Molecular characterization of novel *dis3* alleles in *Drosophila melanogaster*. Widener University Students Projects Day.

¶Henderson, C., Nutthaki, S., Raimer, A., and **Mistry, H**. (2013) Characterization of Dis3-like in *Drosophila melanogaster*. Widener University Student Projects Day

¶Raimer, A., **Mistry, H**., Snee, M. and Skeath J. (2013) Characterization of Dis3 in *Drosophila melanogaster*. Annual *Drosophila* Research Conference 54.

¶Henderson, C., Nutthaki, S., and **Mistry, H**. (2012) Dissecting the Function of the Exosome in Flies. Widener University 3rd Annual Summer Research Symposium.

¶Kakrecha, B., Ng, S., Nagengast, A., and **Mistry, H**. (2012) Examining Lipid Droplet Morphology in the Sex Determination Pathway in *Drosophila*. Widener University 3rd Annual Summer Research Symposium.

¶Donegan, M., and **Mistry, H** (2012). Modeling Degenerative Disc Disease in *Drosophila melanogaster*. Annual *Drosophila* Research Conference 53.

¶Raimer, A., and **Mistry, H**. (2011) Designing a Genetic Screen to Identify Dominant Interactors of *dCul-3,* Widener University 2nd Annual Summer Research Symposium.

¶Donegan, M., and **Mistry, H**. (2011) Modeling Degenerative Disc Disease in *Drosophila* Widener University 2nd Annual Summer Research Symposium.

¶Donegan, M., and **Mistry, H**. Characterization of Hb9-expressing neuronal lineages in the embryonic *Drosophila* Central Nervous System. Widener University Student Projects Day
¶Bennett, A., **Mistry, H**. and Nagengast, A. (2011). Manipulating Expression of Adipokinetic Hormone Affects Lipid Phenotype in *Drosophila melanogaster*. Widener University Student Projects Day

¶Choi, S., Campion, L., **Mistry, H**., and Coughlin, D. (2011). Myosin and Parvalbumin Expression of Swimming and Feeding Muscles of Centrarchid Fishes. Widener University Student Projects Day

¶Nagengast, A., Knight C., Polen, M., Sirohi, N., Rudolph, T., **Mistry, H**., and DiAngelo, J. (2011) The Effect of Resveratrol and Diet on Lifespan and Nutrient Storage. Annual *Drosophila* Research Conference 52

¶Bennett, A. and **Mistry, H**. (2010). The Effect of Adipokinetic Hormone on Lipid Phenotype in *Drosophila melanogaster*. Widener University 1st Annual Summer Research Symposium.

¶Vogel, M., Bennett, A., and **Mistry, H**. (2010). Determining the Expression of Specific Morphogens during Embryonic Jaw Development in Vertebrates. Widener University Annual Summer Research Symposium 1

¶Chiaro, J., and **Mistry, H**. (2010). Modeling Degenerative Disc Disease in *Drosophila*. Annual *Drosophila* Research Conference 51