Curriculum Vitae: Dr. Rachel Hoang (she/her)

(maiden name: Rachel Dawes)
Department of Biology, Haverford College,
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Academic Positions

- 2013-present: *Associate Professor*, Biology Dept, Haverford College, USA
- 2005-2013: *Assistant Professor*, Biology Dept, Haverford College, USA
- 2000-2005: *Research Staff Member,* Dept of Molecular Biology, Wieschaus Lab, Princeton University, USA

Education

- 1997-2000: *Helen Hay Whitney Postdoctoral Fellow*. Dr. Eric Wieschaus, Nobel Laureate, Princeton University, USA. "The control of cell shape change during *Drosophila* gastrulation"
- 1992-1997: Ph.D., Genetics, Wellcome/CRC Institute, University of Cambridge, UK. Thesis advisor: Dr. Michael Akam, FRS. "Characterisation of the locust *Dax* (*ftz*) gene: Implications for a family of divergent Hox genes and their changing role in early development"
- 1994: M.A. Natural Sciences. University of Cambridge, UK
- 1987-1990 B.Sc. (Hons.) Natural Sciences (Part II Genetics), Emmanuel College, University of Cambridge, UK

Haverford College Leadership Positions

• Chair of the Biology Department, July 2014-July 2017; January 2019-July 2021; January 2023-July 2023

• Academic Council (elected), member of Council 2018-20, 2023-present; member of Alternate Council 2015-16, 2020-21, 2022-23

• Chair of the Haverford College Institutional Biosafety Committee and Laboratory Safety Committee, 2012-2013

Awards and Fellowships

- Helen Hay Whitney Postdoctoral Fellowship, USA, 1997-2000
- Medical Research Council Graduate Studentship, UK, 1992-1996
- Durham Fund, Kings College Undergraduate Research Fellowship, UK, 1990

Grants

- 2023-2024 - Mellon Foundation Faculty Forum Seed Grant "Sustaining Tri-College Evolutionary Developmental Biology (Tri-Co-EvoDevo)" Co-lead with Greg Davis and Brad Davidson $1,700

- 2022-2028 - Howard Hughes Medical Institute, Inclusive Excellence 3 Grant - 6-year Phase II Institutional Grant to Haverford College to support effective and inclusive teaching in STEM (Leadership Team) $500,000
- 2022-2023 - Haverford College Faculty Research Grant Award "Visualizing Gene Expression Patterns Using RNAScope" Co-PI with Laura Been, $6,000 to each PI
- 2021-23 - Howard Hughes Medical Institute, Inclusive Excellence 3 - 2 year Institutional Learning Grant to Haverford College to support effective and inclusive teaching in STEM (Leadership Team) $30,000
- 2021-2022 – Haverford College Faculty Research Grant Award "Gene Analysis - species identification and visualization of gene expression" $5,500
- 2021-2022 - Mellon Foundation Brainstorming Grant "Revival of the Tri-College Evolutionary Developmental Biology (Tri-Co-EvoDevo) Group", Co-authored with Greg Davis and Brad Davidson $600
- *2016-2017:* Haverford College Teaching with technology grant: "Rethinking the biology research lab: creating interactive AV-equipped workspaces for student-faculty interaction beyond the traditional wet lab" Hoang, Fairman, Whalen, Wilson.
- *2015*-2016 - Haverford College Faculty Research Grant Award "Gene expression in Anopheles embryos" $5,997
- *2014-2015* – Mellon Foundation Course Development Grant "Introduction to genetics and the environment"
- *2013–2014* – Mellon Foundation Brainstorming Grant "Trico Evolutionary Developmental Biology". Co-authored with Greg Davis and Brad Davidson.
- *2009 – 2013* - NIH (NICHD) 1R15HD059957-01 "The developmental function and evolutionary history of the *Drosophila folded gastrulation* gene" Award: $213,530
- *2009-2012* - National Science Foundation MRI, "Acquisition of molecular and cellular imaging instrumentation." Co-PI with R. Fairman, K. Johnson, J. Punt, and W. Smith. Award: $996,294.
- 2010-2011: Haverford College Teaching with technology grant: "Facilitating student use of scanning electron and confocal microscopy through development of training videos and a centralized website"
- 2010: Haverford College, Louis Green Fund: Research trip for 5 students to John Hopkins School of Public Health.
- 2009-2010: Haverford College Mellon Brainstorming Grant: "Brainstorming Into Existence a Trico Evolutionary Developmental Biology Group" co-authored with Andrea Morris, Greg Davis and Scott Gilbert.

Haverford College Service and Engagement

Diversity, Equity, Inclusion and Access

• *HHMI IE3*: Leadership team for Howard Hughes Medical Institute Inclusive Excellence 3 Grant awarded to Haverford College (2021-present)

• *Mentor for Chesick Scholars program* – biweekly meetings with students in their first two years at Haverford followed by continued mentorship through their junior and senior years. Other advising/training contributions to the program. (2018-present)

• *Mentor for students in the Multicultural Scholars Program* - mentorship also includes providing lab employment, research experience, attendance at lab meetings and regional scientific meetings, and summer research experience (2005-2017)

• "*Crafting an Inclusive Biology Curriculum Focus Group 1: Developing a 1st Year Course"* worked with students and colleagues to propose a new first year entry to biology designed to welcome and support students into the biology learning community at Haverford (2020).

• *"Navigation/Transformation" Curricular Development Seminar*, Participant 2019-2020

• *Faculty Reading Groups:* "Strategic Diversity Leadership"; "Toxic Ivory Towers" (2018, 2021)

• *Chesick Scholars Summer Course*: When the Chesick scholars program involved a summer residential component I taught biology class modules (2018, 2019)

• *Haverford Summer Science Institute* (HSSI) - an intensive, residential, five-week introduction to college-level science study for incoming first-year students. HSSI sought highly-motivated students who come from groups that are traditionally underrepresented in science, or from families with little or no college experience. I taught a week of classes in the "problem solving in biology" series for many summers that this program was offered (2006, 2007, 2009 and 2010).

• *Teaching and Learning Institute (TLI) Pedagogy Seminars* with Students as Learners and Teachers (SaLT) program, participant 2008. I also participated in the TLI workshop offered by visiting TLI fellow Dr. Ken Bains in Fall 2010

Faculty and Staff Search Committees

• *Bryn Mawr College Genomics and Bioinformatics Search Committee* (2020-2021)

• *Haverford College Provost Search Committee* (2019-2020)

• *Haverford College Instrument Specialist Search Committee* (2016-2017)

• *Haverford College Neurobiology Search Committee* (2014-2015)

• *Bryn Mawr College Evolution and Development Search Committee* (2007-2008)

• *Haverford College Visiting Faculty Searches* (frequent)

Other Haverford Service and Engagement

• *Committee on Student Standing and Programs (CSSP):* (2006-2009; 2022-2023)

• *Study Abroad Advisor For Biology* (2011-2017; 2022-2023)

• *Faculty academic advisor* for first and second year students and majors (annually)

• *Pre-health Committee* - Special Student Advisor (Committee member 2011-2013, 2016-2017, 2018-2019, 2020-2021)

• *Glossator* of outside letters for tenure/promotion cases (2 cases)

• *Academic Council Appeals Committee* (Elected 2016-2017; 2017-2018)

• *New Faculty Mentor* (2017-2018)

• *Sharpless Building Renovation Project Steering Committee* (2014-2017)

• *Institutional Biosafety Committee and Laboratory Safety Committee* (2010-13, and 2015-17, Chair 2012-13)

• *Beckman Scholars Selection Committee* (2018)

• *Mentor for Lab Development for Mentors as Student Teachers (MAST) Program* for Philadelphia area high school & middle school students at Haverford College (2014-2019)

• *Center for Peace and Global Citizenship Steering Committee:* (2007-2008)

• *Goldwater and Churchill Fellowship College Selection Committee* (2008, 2010, 2011)

• *Rhodes Scholar – Mock Interviewer* (2008)

• *Presenter for student teacher* to Teacher Education Committee (2009)

• *Humanities Center Steering Committee*: (2006-2007)

• *Koshland Integrated Natural Sciences Center Summer Journal Club:* participant and presenter (2006).

• *Biology Faculty Summer Data Club:* participant and presenter (2006).

Works In Revision (* denotes undergrad. co-author)

- Arnold, F. J.*, Hofmann, J. J., Dao*, K., Dhawan*, I., Freilich*, S., Garrett*, W. S., Geratowski*, J. D., Sohail*, F., Tripp*, T. B., and Rachel E. Dawes-Hoang "Gastrulation in *Drosophila melanogaster* and *Drosophila pseudoobscura*: a comparison of *folded gastrulation* and *T48* expression profiles". Manuscript in revision.

- Shane Denecke, Madeline F. Malfara, Kelly R. Hodges, Nikki A. Holmes, Andre R. Williams, Julia H. Gallagher-Teske*, Julia M. Pascarella*, Abigail M. Daniels, Geert Jan Sterk, Rob Leurs, Gordon Ruthel, Rachel Hoang, Megan L. Povelones, Michael Povelones "Adhesion of *Crithidia fasciculata* promotes a rapid change in developmental fate driven by cAMP signaling" BioRxiv preprint doi

Publications (* denotes undergrad. co-author)

- Philip Meneely, Rachel Hoang, Iruka Okeke, and Katherine Heston *"Evolution, Genomes & Genetics".* Textbook published May 2017 with Oxford University Press.

- Online Journal Clubs for "Principles of Development" by Lewis Wolpert (Oxford University Press) (2011): I wrote the following Journal Clubs:

  "How the Hox gene Ubx specifies two different segment identities" Chapter 2.

  "Interactions BetweenVertebrate Hox Genes" Chapter 5.

  "The Dynamics and Mechanics of Apical Constriction" Chapter 8.

  "Hox Genes And The Evolution Of TheVertebrate Body Plan" Chapter 15.

- Arnold*, F., Dao*, K., Geratowski*, J., & Hoang, R. (2011). Evolution of folded gastrulation: A comparison between *Drosophila melanogaster* and *Drosophila pseudoobscura*. *Developmental Biology*, 356(1), 244-245. (Published conference abstract).

- David L. Stern and Rachel E. Dawes-Hoang. "Michael Akam and the rise of evolutionary developmental biology". *International Journal of Developmental Biology* (2010) 54; 561-565.

- Hoang, R. E., Dao*, K., Eghbal*, M., & Tripp*, T. (2008). "Evolution of the Drosophila *folded gastrulation* gene. *Developmental Biology*, 319(2), 495. (Published conference abstract).

- Dawes-Hoang, R.E., Parmar*, K., Christiansen, A.E., Phelps,C., Brand, A., Wieschaus, E. F. folded gastrulation, cell shape change and the control of myosin localization (2005). *Development* 132 (18) 4165-4178.

- Dawes-Hoang, R. E., Zallen, J. A. and Wieschaus, E.F. (2003) Bringing classical embryology to *C. elegans* gastrulation *Dev Cell* 4, 6-8.

- Dawes-Hoang, R. E., and Wieschaus, E. F. (2001). Cell and developmental biology--a shared past, an intertwined future. *Dev Cell* 1, 27-36.

- Averof, M., R. Dawes and D. Ferrier (1996). Diversification of arthropod Hox genes as a paradigm for the evolution of gene functions. *Seminars in Cell and Dev Biol* 7, 539-551.

- Michael Akam, Michalis Averof, Rachel Dawes, Jaime Castelli-Gair, Francesco Falciani and David Ferrier. (1994). The evolving role of Hox genes in arthropods. *Development* 120 Supplement: 209-215.

- Rachel Dawes, Iain Dawson, Francesco Falciani, Guy Tear and Michael Akam (1994). Dax, a locust Hox gene related to fushi-tarazu but showing no pair-rule expression. *Development* 120 (6): 1561 - 1572.

- Michael Akam and Rachel Dawes. (1992) More than one way to slice an egg. *Current Biology*, 2: 395-398.

Research Talks & Presentations (since arriving at Haverford, * denotes undergrad. co-author)

- 2008 Society for Developmental Biology 67th Annual Meeting, in Philadelphia. Poster presentation. "Evolution of the Drosophila *folded gastrulation* gene". Rachel E. Hoang, Kim Dao*, Mitra Eghbal*, Tovah Tripp*. (Abstract listed in publications)
- 2010 Society for Developmental Biology, Baltimore June 2010. Poster. "Evolution of the folded gastrulation gene" Rachel E. Hoang, Kim Dao*, Mitra Eghbal*, Tovah Tripp*, Rutwik Kharkar*.

- 2011 Mid-Atlantic Society for Developmental Biology, Philadelphia. Poster. "Ventral Furrow Formation in *Drosophila pseudoobscura.* Frederick J. Arnold*, Jill D. Geratowski*, Raul Hernandez* and Rachel E. Hoang.
- 2011 70th Annual Meeting of the Society for Developmental Biology, Chicago. Poster. "Evolution of *folded gastrulation*: A comparison between *Drosophila melanogaster* and *Drosophila pseudoobscura*. Rachel E. Hoang, Kimberly Dao*, Frederick J. Arnold*, Jill D. Geratowski*. (Abstract listed in publications)
- 2012 Invited Seminar Speaker, Dept, of Biochemistry, Drexel University College of Medicine, Philadelphia. April 2012 "Cutting through the fog – evolution of the *folded gastrulation* gene in insects".
- 2012 71st Annual Meeting of the Society for Developmental Biology, Montreal Canada, Poster. "Gastrulation in *Drosophila melanogaster* and *Drosophila pseudoobscura*: a comparison of *folded gastrulation* and *T48* expression profiles." Frederick J. Arnold*, Kimberly Dao*, William Garrett*, Jill D. Geratowski*, Faraz Sohail* and Rachel E. Hoang.
- 2013 Invited Seminar Speaker, Biology Department, St. Joseph's University, Philadelphia. January 2013 "Cutting through the fog – evolution of the *folded gastrulation* gene in insects".
- 2014 Invited Seminar Speaker, Biology Department, University of Pennsylvania February 2014 "Cutting through the fog – evolution of the *folded gastrulation* gene in insects".
- 2014 Mid-Atlantic Society for Developmental Biology, Baltimore. Poster. "Evolution of gastrulation in dipterans: insights from comparative studies of the folded gastrulation and T48 genes." Frederick J. Arnold*, Kimberly Dao*, William Garrett*, Jill D. Geratowski *, Faraz Sohail*, Jennifer Hofmann, Ishita Dhawan* and Rachel E. Hoang.
- 2014 Beating Malaria, EuroSciCon Conference, London, UK. "Understanding gastrulation in *Anopheles gambiae* embryos – extending a study from *Drosophila melanogaster*." F. J. Arnold*, K. Dao*, W. Garrett*, M. Carroll*, J. D. Geratowski*, F. Sohail*, J. Hofmann, I. Dhawan* and R. E. Dawes-Hoang.
- 2014 Society For Experimental Biology (SEB), Manchester, UK. "Evolution of morphogenesis: insights from comparative gastrulation studies in dipteran insects". Frederick J. Arnold*, Kimberly Dao*, William Garrett*, Jill D. Geratowski*, Faraz Sohail*, Ishita Dhawan* and Rachel E. Hoang.
- 2021 Society of Freshwater Science Annual Meeting (Virtual) "Freshwater Biodiversity And Species Identification Using Microscopy, DNA Barcoding And Metagenomics Approaches: A Course-Based Undergraduate Research Experience" A. Glazier, H. Rando, N. Bayard*, M. Casey*, G. Dallmeyer-Drennen*, M. Figueredo*, N. Fukuda*, E. Greene*, E. Iacobucci*, D. Kosyagin*, B. Kwon*, A. Lee*, A. Martin*, J. Melnick*, J. Nguyen*, R. O'Donnell*, R. Outen*, J. Rebh*, G. Rendon*, T. Seid*, R. Simamora*, C. Solomon*, W. Vostrejs*, K. Wass*, R. White*, H. Yang*, M. Yea*, A. Zegeye*, Y. Zhang* and R. Hoang
- 2023 British Society For Developmental Biology Annual Meeting, Sheffield, UK. Poster presentation. "Evolution of epithelial invagination in the formation of the

mesoderm – a comparative approach in dipteran insect embryos" Frederick J. Arnold*, Yongjie Gao*, Ivan Ruiz* and Rachel Hoang

Student Research Presentations (since arriving at Haverford, * denotes undergrad. co-author)

- 2006 Regional HHMI Undergraduate Science Research Symposium at Dickinson College. Poster: "Evolution of the Folded Gastrulation Gene" Kim Dao*, Sarah Freilich* and Rachel Hoang.
- 2007 The Genetics Society of America's 48th Annual Drosophila Research Conference in Philadelphia. Poster presentation by two undergraduates: "The evolution of gastrulation in Drosophila and beyond" Sarah B. Freilich*, Jennifer M. Paroulek*, Aislinn R. Sowash*, Rowan M. Spivey*, Tripti Tewari*, Kimberly A Dao*, Justin Jiulianti, and Rachel E. Dawes-Hoang.
- 2008 Micronet: Undergraduate Microbiology Research Symposium, at Swarthmore College. Poster presentation. ""Bugs" within bugs: Investigating the relationship between Wolbachia Surface Proteins and localization patterns in Drosophila species". Sunil U. Adige*, Paul J. Bloch*, Heidi S. Bretscher*, Jennifer L. Crowe*, Kimberly A. Dao*, Shivani J. Gandhi*, Sarah E. Graves*, Pritika Gupta*, Janice M. Harlow*, Rebecca A. Harris*, Abigail M. Huff*, Jennifer Hwang*, Laura N. Jones*, Jessica N. Kim*, Dean D. Laganosky*, Hannah S. Land*, Justin Mancini*, Jennifer S. Millman*, Mary F. Mulqueen*, Timothy D. Ouellette*, Luke F. Pennington*, Lisa C. Perkins*, Naomi H. Philip*, Elliot C. Rabinowitz*, Numa T. Rahman*, Whitney A. Reid*, Adam V. Subhas*, Samuel J. Vidal*, Mary S. Welsh*, Brian B. Wexler*, Mitra Eghbal*, Iruka N Okeke and Rachel Hoang.
- 2008 Regional HHMI Undergraduate Science Research Symposium, at Haverford College. Poster. "Evolution of the Folded Gastrulation Gene". Kimberly Dao*, Sarah Freilich*, Mitra Eghbal*, Rutwik Kharkar*, Tovah Tripp*, and Rachel Hoang.
- 2008 Regional HHMI Undergraduate Science Research Symposium, at Haverford College. Poster presentation. "The evolution of *fog* across different species". Rutwik Kharkar*, Mitra Eghbal* and Rachel Hoang.
- 2008 Regional HHMI Undergraduate Science Research Symposium, at Haverford College. Poster presentation. "Myosin Activity During Early Embryogenesis of *Drosophila melanogaster* and *Drosophila pseudoobscura*". Megan Raime*, Asia Gobourne* and Rachel Hoang.
- 2009 109th General Meeting of the American Society for Microbiology, in Philadelphia. Poster. "Investigating the relationship between Wolbachia Surface Proteins and *Wolbachia* localization patterns across *Drosophila* species". Mary S. Welsh*, Laboratory in Molecular Biology*, Iruka N. Okeke and Rachel E. Dawes-Hoang.
- 2010 110th General Meeting of the American Society for Microbiology, San Diego. Poster. "Bacterial autoaggregation conferred by self-associating Wolbachia surface proteins" Yoonjie Chung*, Jessica Glaubman, Laboratory in Molecular Microbiology Class*, Rachel Hoang and Iruka N Okeke.

- 2010 Regional HHMI Undergraduate Science Research Symposium, at Haverford College. Poster presentation. "Characterization of Embryonic Development in Drosophila melanogaster vs Drosophila pseudoobscura using Scanning Electron Microscopy" Jill D Geratowski* and Rachel Hoang.
- 2010 Regional HHMI Undergraduate Science Research Symposium, at Haverford College. Poster presentation. "In situ hybridization analysis of the folded gastrulation (fog) gene in Drosophila melanogaster and Drosophila pseudoobscura provides new insights into the evolution of fog's role in insect gastrulation" Eric Arnold* and Rachel.
- 2010 Regional HHMI Undergraduate Science Research Symposium, at Haverford College. Poster presentation. "Jumping into gastrulation: A comparative study of Drosophila and the house cricket Acheta domesticus" Jennifer Schwartz* and Rachel Hoang.
- 2011 Regional HHMI Undergraduate Science Research Symposium, at Haverford College. Poster presentation. "Live Imaging of ventral furrow formation in *D. melanogaster* and *D. pseudoobscura*". Andrew Moore* and Rachel Hoang.
- 2011 Regional HHMI Undergraduate Science Research Symposium, at Haverford College. Poster presentation. "Analysis of folded gastrulation expression levels in *D. melanogaster* and *D. pseudoobscura*". Eric Arnold* and Rachel Hoang.
- 2011 Regional HHMI Undergraduate Science Research Symposium, at Haverford College. Poster. "Cloning the T48 gene". Faraz Sohail* and Rachel Hoang.
- 2012 Regional HHMI Undergraduate Science Research Symposium, at Haverford College. Poster presentation. "*T48* expression during gastrulation of *Drosophila melanogaster* and *Drosophila pseudoobscura*". Ishita Dhawan* and Rachel Hoang.
- 2013 Regional HHMI Undergraduate Science Research Symposium, at Haverford College. Poster presentation. "Cloning *twist* and *snail*: gastrulation related genes of *Anopheles gambiae*" Ishita Dhawan* and Rachel Hoang.
- 2015 Regional HHMI Undergraduate Science Research Symposium, at Haverford College. Poster presentation. "Investigating Wolbachia in *Drosophila suzukii*" Katie Rose Sullivan*, Elizabeth Fishman*, George Ordiway* and Rachel Hoang.
- 2015 Regional HHMI Undergraduate Science Research Symposium, at Haverford College. Poster presentation. "Exploring the susceptibility of invasive *D. suzukii* flies to the use of Wolbachia as an alternative biological pesticide" Michael Moraskie*, Christina Szi*, Santiago Laverde*, and Rachel Hoang.
- 2017 Regional HHMI Undergraduate Science Research Symposium, at Haverford College. Poster presentation. "The Intracellular localization of Wolbachia bacteria in a range of host fly species" Anya Bernhard*, Katie Rose Sullivan*, Mandy Levine*, Benjamin Cattau*, Megan Chenworth*, Jennifer Hofmann and Rachel Hoang.
- 2017 American Society of Cell Biology Annual Meeting, Philadelphia. Poster presentation. "Evolution of a morphogenesis pathway: comparative gastrulation studies in dipteran insects" Katie Rose Sullivan*, Sasha Mathrani*, Feven Gezahegn*, William S Garrtett* and Rachel Hoang.

- 2017 American Society of Cell Biology Annual Meeting, Philadelphia. Poster presentation. "Wolbachia Infection Status, Embryo-Wide Distribution and SubcellularLocalization Patterns During Early Embryonic Development in a Variety of Drosophila Species" Mandara A. Levine*, Morgan L. Chien-Hale*, Megan Chenworth*, Rebecca Lewinsohn*, Jennifer Hofmann, Jonathan T. Fingerut, Scott P. McRobert, Rachel E. Hoang.
- 2018 Regional HHMI Undergraduate Science Research Symposium, at Haverford College. Poster presentation. "Localization of Wolbachia, DNA, Tubulin, and Actin during Drosophila Embryogenesis" Juliana Benitez*, Grace Pindzola*, Feven Gezahegn*, Jharna Jahnavi* and Rachel Hoang.
- 2018 Regional HHMI Undergraduate Science Research Symposium, at Haverford College. Poster presentation. "Preparing reagents to compare genetic control of Gastrulation in *Anopheles gambiae* and *Drosophila melanogaster*". Feven Z. Gezahegn*, Jharna Jahnavi*, Juliana Benitez*, Grace Pindzola*, Sasha Mathrani* and Rachel E. Hoang
- 2022 Annual Biomedical Research Conference For Minority Students "Understanding intracellular interactions of Wolbachia endosymbiotic bacteria within its insect host, *Drosophila melanogaster"* Annabel Flint*, Dina Kosyagin* and Rachel Hoang

Other Conferences/Talks/Workshops (since arriving at Haverford)

- 2006 Pennsylvania Muscle Institute Symposium "Cytoskeletal Dynamics of Living Cells" in Philadelphia. Attended with two undergraduate students.
- 2006 Society for Developmental Biology 65th Annual Meeting, Ann Arbor MI. Meeting participant and selected participant in the "Boot Camp for New Faculty" two day workshop.
- 2006 Haverford College, KINSC Summer Journal Club. Talk: "Humans & Chimps - Genomes & Origins"
- 2008 "Mendel in the 21st Century: The Scientific, Social, and Ethical Impact of Genetics in Our World," Conference at Villanova University. Attended.
- 2008 American Society of Human Genetics 58th Annual Meeting, Philadelphia. Invited participant of the Undergraduate Genetics Education Workshop.
- 2013 Mellon Foundation: Trico Orientation for new faculty. Speaker and Panelist.
- 2014 University of Pennsylvania: Faculty Conversations on the Academic Job Search and Academic Life. Speaker and Panelist. March 2014.
- 2014 University of Pennsylvania: Careers for Women Scientists Workshop. Speaker and Panelist. April 2014.
- 2015 Tri-Institutional Career Symposium: Memorial Sloan Kettering, Rockefeller University, Weill Cornell Medical College "Realties of Academic Job Market".
- 2016 American Society of Cell Biology Annual Meeting, San Francisco.

- 2017 Teaching with Technology Forum, Haverford College, Panelist for "Mobile Devices and Tablets in the Classroom", May 2017.
- 2017 Faculty Publication Talk, Haverford College Magill Library, with Philip Meneely, Kate Heston and Iruka Okeke. February 2017.
- 2017 Invited talk in Scientific Teaching course. Skirball Institute, New York University Langone Medical Center.
- 2018 Invited working group panelist. Cell Biology Education – Electronic Textbook Project, Yale.
- 2019 Cold Spring Harbor at James Madison University "DNA Barcoding Course" five day intensive workshop
- 2020 ASLO Ocean Sciences Meeting, San Diego. Poster Presentation "Linking Marine Science With Biology Education Using Course-Based Undergraduate Research Experiences In A Sea Anemone Model System" Jay Lunden (presented), Mary Ellen Kelly and Rachel Hoang. With Jake Ephron* and the students of BiolH301-Sp19*
- 2022 TriCollege EvoDevo Meeting, Bryn Mawr (co-organizer). "Developmental And Evolutionary Biology Using Insect Model Systems" Hoang Lab Presentation.
- 2023 (hosted), 2022, 2021 U Penn, Villanova, Haverford Regional *Crithidia fasciculata* Biology meetings.
- 2023 HHMI Inclusive Excellence 3 In-Person Gathering. Janelia Research Campus, Ashburn, VA. June 2023.
- 2023 HHMI Inclusive Excellence 3 LCC1 Annual Meeting, Rochester, NY. Poster presentation. "Leveraging Student Knowledge For Curricular Change" Gabriel Angrand, Brian Cuzzolina, Rachel Hoang and Helen K. White.

Related Activities & Outreach

Professional service:

- *ETS GRE and Biology Praxis Exams* – committee panelist and question writer (2015-2020, 2022)
- *External reviewer* - for tenure case (2015)
- *Ad hoc reviewer* - for PLOS Biology and Developmental Biology Journals
- *NSF grant proposal reviewer (non-panelist)* (2008, 2012)
- *Annual Biomedical Research Conference For Minority Students:* served as a judge for submitted presentation proposals (2006-present).
- *Regional Society For Developmental Biology Meeting:* judge for graduate student and postdoctoral researcher poster presentation awards (2010)

K-12 STEM Education outreach:

- BioEYES zebrafish lab - middle school classroom volunteer (2020)

• 'Virtual Class Visit" with schoolchildren in an Advanced Biology class at Abington Friends School (taught by Haverford College alum Christine Hunter '92) along with students: Ruben Monarrez '14, Wenyu Pan (BMC '14), Alexa Santomero '14, and Lawrence Wang '14. (2014)

• "Looking at Cells" Biology activity and class for Eastern PA Girl Scouts troop 7233, with Haverford student Alison Reynolds '15. (2014)

• *PJAS Science Fair* - Judge for regional science fair. (2000-2005)

• *Instructor for Expanding Your Horizons* - conferences designed to nurture middle school girls' interest in science and math courses and to encourage them to consider science and math-based career options (Swarthmore 2006, 2008).

• *Short Circuit – Science Documentary*, ITV television, UK, 1995.

• *Museum Exhibit*, National Science Museum, London, UK. 1993.

Other Higher Ed mentorship and outreach:

• *Mentor for students undertaking international internships* with the Center for Peace and Global Citizenship and HHMI Science In Society programs. (2006 - Claire Roden "Prenatal care of HIV positive mothers" Paris France; 2007 - Kim Dao "Pediatric medical care and HIV/AIDS orphanages" Vietnam).

• *Postdoctoral Society*, Dept. Molecular Biology, Princeton University, (2000-2002). Established and ran a forum for postdocs specific concerns and issues.

Teaching at Haverford

(Leaves since tenure: 2013-14 post tenure leave; 2017-18 accrued sabbatical ½ time; 2021-22 accrued sabbatical ½ time)

First Year Courses

• *Bio130 Origins – Evolution and Animal Diversity* (intended for non-majors)

• *BiolH115 Exploring Biology - Biology Seminar With Lab*

Intro courses to the major (sophomore level, also taken by many who will not major in Biology)

• *Bio200 Evolution, Genetics, & Genomics.* (lecture, lab and discussion sections)

• *Bio220 Unlocking Key Concepts in Biology*

Half-semester courses for the Jr. and Sr. Biology major (some also count for Biochemistry and Neuroscience programs)

• *Bio300/301 Advanced Lab in Biology* (SuperLab - half semester, and occasional full semester, novel research projects)

• *Bio301(now 311) Advanced Genetic Analysis*

• *Bio312 Development and Evolution*

• *Bio358 (now 458) Advanced Topics in Developmental Genetics*

Senior Research Course

• *Bio411(now406) Senior Research Tutorial in Developmental Biology and Evolution* - year long research mentorship (73 students since Fall 2005)

Additional teaching

• *Bio499: Senior Seminar* - year-long course for biology thesis students

• *Bio380/480: Independent Study* for juniors and seniors

• *Bio400:* on campus advisor for senior thesis students outside the biology department

• *Bio*295/395/495 "*Crafting an Inclusive Biology Curriculum"*(2020)

• *Chesick Scholars Summer Course "The microbes within"*(2018, 2019)

• *Statistics Workshops*: designed and taught with Prof Huber (Math - visitor) and Okeke (Biology) as part of Bio499 (2006)

Other Teaching Experiences

Research Supervision, Princeton University, 1997-2003. Supervising undergraduate thesis projects and graduate rotation projects on the cell biology of early Drosophila development.

Undergraduate research and course support, University of Cambridge, 1993-1997. Weekly tutoring of undergraduate course work, lab class teaching assistant, supervisor of research based undergraduate thesis projects.

High School Teaching. South Africa, 1991. I taught math and biology to students in their last two years of high school, in a KwaZulu township school outside Durban.