

Curriculum Vitae

Dina M. Fonseca, M.S., Ph.D.

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Scopus: <http://www.scopus.com/authid/detail.uri?authorId=7006671158> (*h-index*=27)

Google Scholar: <http://scholar.google.com/citations?user=Sjx4rv0AAAAJ&hl> (*h-index*=33, *i10index*=63)

Research Gate: https://www.researchgate.net/profile/Dina_Fonseca (*h-index*=32)

LinkedIn: <https://www.linkedin.com/pub/dina-fonseca/15/15/380>

PeerJ: <https://peerj.com/dinafons/>

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I am a molecular ecologist examining how populations of invasive mosquitoes primarily dispersed by humans differ in vectorial capacity over space and time, profoundly affecting epidemiological landscapes and risk estimates. I have a strong extension program where I work closely with professional mosquito control programs using my understanding of mosquito biology, ecology and evolution to develop effective and efficient strategies for control. I have also spearheaded urban mosquito control by residents through Citizen Action Through Science (Citizen AcTS): <http://vectorbio.rutgers.edu/CitizenAcTS.htm> and am a founding member of InSITE (Innovative Strategies for Invasives) using environmental DNA (eDNA) and risk analysis to detect and contain invasive species.

Summary of education and employment: B.S. in Biology and Geology from the University of Coimbra, Portugal, Ph.D. in Ecology and Evolution from the University of Pennsylvania, USA. Smithsonian Fellow at the National Zoo Institute for Conservation and Biodiversity. Then NRC Associate at Walter Reed Army Institute of Research. Geneticist at the Smithsonian Institution, where she is still a Research Associate, then Assistant Curator at the Academy of Natural Sciences, joined Rutgers University in 2007 as an Associate Professor. Became tenured in 2010 and Full Professor in 2014. Teaches courses in Medical and Veterinary Entomology and Molecular Methods in Entomology, Ecology and Epidemiology. Became the Interim Director of the Center for Vector Biology (CVB) in October 2016 and the CVB Director in July 2017.

EDUCATION

- 2015 (August 17-21) – “Crispr/Cas9 technology for insect transformation”, a workshop at the Insect Genetic Technologies Research Coordination Network, IBBR, University of Maryland, Rockville, MD
- 2015 (August 12-13) – “Bioinfo-R-matics” an workshop in R, Bioinformatics Core, University of Maryland, College Park, MD
- 1998-2001 National Research Council Associateship, Walter Reed Army Institute of Research, WRBU “**Vectors as filters of parasite diversity**”. Advisor: Dr. Rick Wilkerson
- 1996-1998 Smithsonian Fellowship, Genetics Laboratory, National Zoological Park. “**Effects of multiple introductions of the house mosquito in Hawaii on avian malaria transmission**”. Advisor: Dr. Robert Fleischer

- 1989 – 1996 Ph.D. in Ecology and Evolution, University of Pennsylvania. Thesis entitled "**Fluid-mediated dispersal: effects on the distribution and foraging behavior of stream insects**". Advisor: Dr. David D. Hart
- 1988-1989 M.S. in Biology. Central Michigan University. Advisor: Dr. Raymond E. Hampton
- 1981-1986 B.Sc. in Biological Research, University of Coimbra, Portugal. Senior thesis entitled "**Hydrobiological survey of two Portuguese rivers: a multivariate analysis**". Advisor: Dr. Manuel Augusto Simões Graça
- 1978-1984 English Teaching Certificate, University of Cambridge, through the International House of Coimbra, Portugal.

EMPLOYMENT

- July 2017 – Director, Center for Vector Biology, SEBS
- Oct 16-Jun 17 Interim Director, Center for Vector Biology, SEBS
- July 2014 - Professor, Center for Vector Biology, Department of Entomology, School of Environmental and Biological Sciences, Rutgers University & NJ Agricultural Experimental Station, New Brunswick, NJ (60% research, 20% teaching, 20% extension)
- 2010-2014 Associate Professor with tenure, Center for Vector Biology, Department of Entomology, School of Environmental and Biological Sciences, Rutgers University & NJ Agricultural Experimental Station, New Brunswick, NJ (60% research, 20% teaching, 20% extension)
- 2007-2010 Associate Professor, Center for Vector Biology, Department of Entomology, School of Environmental and Biological Sciences, Rutgers University & NJ Agricultural Experimental Station, New Brunswick, NJ (60% research, 20% teaching, 20% extension)
- 2004-2007 Assistant Curator, Molecular Ecology, Academy of Natural Sciences, Philadelphia, PA
- 2001-2004 Research Geneticist, National Museum of Natural History, Smithsonian Institution, Washington, DC
- 1986-1989 Tenure-track teaching assistant. Department of Zoology, University of Coimbra, Portugal
- 1985-1986 High-school Teacher. Biology (8th grade) and Health (9th grade). Escola C+S de Miranda do Corvo, Portugal

OTHER AFFILIATIONS

- 2014-present Research Associate, Center for Conservation and Evolutionary Genetics, National Zoological Park, Smithsonian Institution, Washington, DC
- 2013-present Member of the Graduate Program in Microbial Biology. School of Environmental and Biological Sciences, Rutgers University, New Brunswick, NJ
- 2008-present Member of the Graduate Program in Ecology, Evolution and Natural Resources. School of Environmental and Biological Sciences, Rutgers University, New Brunswick, NJ
- 2007-present Member of the Graduate Program in Entomology. School of Environmental and Biological Sciences, Rutgers University, New Brunswick, NJ
- 2008-present Associate Professor in the UMDNJ-School of Public Health (SPH), Piscataway, NJ
- 2007-2010 Research Associate in the Patrick Center for Environmental Sciences, Academy of Natural Sciences, Philadelphia, PA
- 2005-2009 Adjunct Professor in the Biology Department, University of Delaware, Newark, DE

- 2004-2007 Visiting Professor in the Department of Entomology, Rutgers University, School of Environmental and Biological Sciences,
- 2001-2008 Research Associate, National Museum of Natural History, Smithsonian Institution, Washington DC

AWARDS, SCHOLARSHIPS AND FELLOWSHIPS

- 2015-2016 – George C. Burch Fellowship in Theoretical Medicine at the Smithsonian National Zoological Park, Center for Conservation and Evolutionary Genomics
- 2015 – Association of Natural Resource Extension Professionals Short Publication Silver Award. Presented for “Rain Barrels and mosquitoes” by Rector P, Duckworth T, Fonseca DM
- 2014 – Team Excellence Award (Asian tiger mosquito project), Rutgers University, School of Environmental and Biological Sciences, New Brunswick, NJ, USA
- 2009 – Academic Excellence Award, Rutgers University “Building the Rutgers Climate and Environmental Change Initiative” with multiple researchers at Rutgers. School of Environmental and Biological Sciences, New Brunswick, NJ, USA
- 2008 – Academic Excellence Award, Rutgers University, “Climate and Health Research Initiative” (CHRI) Initiative with E. Boros, N. Fefferman, D. Fonseca, R. Gaugler, R. Lathrop and M. Robson. School of Environmental and Biological Sciences, New Brunswick, NJ, USA
- 2005 – Excellence in Staff Development Award, Academy of Natural Sciences, Philadelphia, PA, USA.
- 1998-2000 – National Research council Associateship, WRBU, Walter Reed Army Institute of Research & Smithsonian Institution, Washington, DC, USA
- 1996-1998 – Smithsonian Fellowship, Genetics Laboratory, National Zoological Park, Smithsonian Institution, Washington, DC, USA
- 1988-1989 – Masters Scholarship from Central Michigan University, Mount Pleasant, MI, USA.
- 1986-1988 – Research Scholarship from the Portuguese National Scientific Research Institute in the Zoology Department of the University of Coimbra, Portugal.

TEACHING

- 2015-16, Fall – invited lecturer in “**Insect Biology**” (3 credits), an Entomology course taught by Dr. Cesar Rodriguez-Saona. My lecture was on Insects in Medicine.
- 2015-16, Fall – “**Medical and Veterinary Entomology**” (3 credits) at SEBS, Rutgers University, New Brunswick (elective in the Departments of Entomology, Biology, Microbiology, and Ecology and Evolution, as well as accredited in the School of Public Health, UMDNJ).
- 2015 Fall – invited lecturer in “**World of Insects**” (3 credits), an Entomology course taught by Dr. Frank Carle. My lecture was broadly on mosquitoes and my research on invasive insects.
- 2014, Spring – Organized and taught the graduate level **Seminar** course in Entomology (603, 604). Rutgers University, New Brunswick, NJ, USA.
- 2013, Fall – “**Molecular tools in EEE (Ecology, Entomology, Epidemiology)**” (501 and 401, 4 credits) at SEBS, Rutgers University, New Brunswick (elective in the Departments of Entomology, Biology, Microbiology, and Ecology and Evolution).
- 2011,13,15 Spring – Invited lecturer in “**Evolution of Infectious Diseases**” (16:215:600:02), a course in the Ecology and Evolution program taught by Dr. Sioban Duffy. My lecture is on Malaria evolution.
- 2012, Fall – Invited lecturer in “**Evolution of Eukaryotes**” (11:704:401), a course in the Ecology and

Evolution program taught by Drs. Lena Struwe and Debashish Battacharya. My lecture is on Malaria evolution.

2012, Spring – Invited lecturer in “**NextGen Biotechnology and Genomics**” (16:137:616), a core course in the Masters in Business and Science track in Biotech and Genomics at Rutgers.

2011-12, Fall - “**Case Studies in Vector Borne Diseases (CSI-VBD)**” (501 and 401, 3 credits) at SEBS, Rutgers University, New Brunswick (elective in the Departments of Entomology, Biology, Microbiology, and Ecology and Evolution, as well as accredited in the School of Public Health, UMDNJ).

2009, Fall – Taught the Population Genetics sections of the course **Concepts and Methods in Evolution** (Department of Ecology, Evolution, and Natural Resources, 215-601, 4 credits). SEBS, Rutgers University, New Brunswick.

2009-2010, Spring - Developed and taught a new course for graduates and undergraduates entitled “**Case Studies in Vector Borne Diseases**” (501 and 401, 3 credits) at SEBS, Rutgers University, New Brunswick (elective in the Departments of Entomology, Biology, Microbiology, and Ecology and Evolution, as well as accredited in the School of Public Health, UMDNJ). The course was funded (\$3,000) and follows the guidelines of NSF-SENCER (Science Education for New Civic Engagements and Responsibilities). This course will be taught every Spring and the addition of a laboratory/field section has been approved (upgrade to 4 credits).

2009, Spring. Organized and taught the graduate level **Seminar** course in Entomology (603, 604). Rutgers University, New Brunswick, NJ, USA.

2007, Fall - Invited Lecturer “**Preventive Medicine**” Graduate Program in Occupational and Environmental Health, EOHSI, University of Medicine and Dentistry of NJ-School of Public Health, New Brunswick, NJ, USA.

2003- 2006, Spring. Invited Lecturer, Course entitled “**Emerging infectious Diseases**”, Microbiology Department, University of Pennsylvania Medical School. Philadelphia, PA, USA.

1996, Spring - Taught “**Introductory Biology**”, Biology Department, University of Pennsylvania, Philadelphia, PA, USA

1995-1996 – Graduate Teaching Assistant in “**Advanced Community and Ecosystem Ecology**” (graduate level), Biology Department, University of Pennsylvania, Philadelphia, USA.

1989-1992 - Graduate Teaching Assistant in “**Advanced Molecular Biology and Genetics**” (graduate level), “**Evolution**”, “**Statistics**”, “**Invertebrate Zoology**”, “**Microbiology**”, “**Introductory Biology**”, Biology Department, University of Pennsylvania, Philadelphia, PA, USA.

1989, Winter - Lecturer in “**Biometrics**” (substitute teacher), Biology Department, Central Michigan University, Mt. Pleasant, MI, USA.

1987-1989 - Graduate Teaching Assistant in “**Animal Ecology**”, “**Entomology**”, “**Environmental Physiology**”, “**Invertebrate Zoology**”, and “**Vertebrate Zoology**”, Biology Department, University of Coimbra, Portugal.

1985 - High School teacher of “**Biology**” and “**Health**” (8th and 9th grades), Escola C+S de Miranda do Corvo, Portugal.

POSTGRADUATE-SCHOLAR AND THESIS ADVISOR

Postdoctoral Associates:

Brian Johnson, Rutgers University (April 3 – present) – **Main advisor** (funded by NOAA project on coastal resilience and salt marsh mosquitoes). Co-author.

Sebastien Marcombe, Rutgers University (May 11 – April 13) – **Main advisor** (in May 2013 started as the Principal investigator on the project: Characterization of insecticide resistance in malaria vectors in Lao People's Democratic Republic and Thailand and capacity building in medical entomology). Co-author.

Jiawu Xu, Rutgers University (Jan 10 – June 13) – **Main advisor** (currently a research associate in the Department of Anthropology, University of Oklahoma). Co-author.

Kristen Bartlett-Healy, Rutgers University (Mar 08-Sept 11) – **co-advisor** (became Burlington (NJ) county epidemiologist in the Department of Health, and as of Spring 2013 is a tenure track Assistant Professor at Louisiana State University). Co-author and collaborator.

Emilie Cameron, Rutgers University (Jan 08 – Mar 10) – **Main advisor**. Co-author.

Kavitha Damal, Rutgers University (Feb 09 – Aug09) – **Main advisor** (left for medical reasons)

Nusha Keyghobadi, Smithsonian Institution (01-03) – **Main advisor** (currently Associate Professor with tenure with a Canada Research Chair, University of Western Ontario, Canada). Co-author.

Graduate Students:

Agnesa Redere, Rutgers University, DEENR (Summer 2017 – present) PhD **Main advisor (Dr. Nina Fefferman, U. Tennessee is co-advisor)**. Co-author.

James Occi, Rutgers University, Entomology (Spring 2016 – present) PhD **Main advisor**

Rafael Valentin, Rutgers University, DEENR (Fall 12 - present) PhD **Main advisor (Dr. Julie Lockwood, EENR Rutgers is co-advisor)**. Co-author.

John Pote, Rutgers University, Entomology (Fall 13 – Fall 2017) PhD. Co-author.

Brian Johnson, Rutgers University, DEENR (Fall 12 – Fall 14) PhD - **Main advisor**. Research Associate in Scott Ritchie's lab at Queensland University, Australia. **Currently Researcher at CVB**. Co-author.

Paul Frandsen, Rutgers University, Entomology (Fall 10 – Fall 15) PhD, currently research associate in Bioinformatics and Genomics, Smithsonian Institution, DC.

Dana Price, Rutgers University, Entomology (Spring 10 – Spring 15) PhD – **Main advisor**. Currently Research Associate Professor at Rutgers University, Director of the Genome Initiative. Co-author.

Alexandra Villiard, Rutgers University, Entomology (Fall 10 – Spring 15) PhD. Currently Research Scientist at Phillip Alampi Beneficial Insect Rearing Lab (NJ Dept of Ag).

Andrea Egizi, Rutgers University, DEENR (Fall 09 – Spring 14) PhD – **Main advisor**. Director of the tick program at Monmouth Co. NJ; Visiting Assistant Professor at Rutgers University, Co-author, collaborator.

Laran Kaplan, Rutgers University, Entomology (Fall 09 - Fall 10) PhD – left for medical reasons without finishing. Co-author.

Eric Williges, Rutgers University, Entomology (Fall 09 – Spring 14) Masters.

Diana Carle, Rutgers University, Entomology (Fall 09 – Fall 14) PhD

Julian Avery, Rutgers University, DEENR (Fall 09-Summer 12) PhD. Co-author.

Carrie Ferwerda, Rutgers University, CRSSA (08-09) Masters

Ary Farajollahi, Rutgers University, Entomology (Fall 07 – Spring 14) PhD. Changed name to Ary Faraji. Currently assistant manager at the Salt Lake City Mosquito Abatement District). Co-author, collaborator.

Nur Faeza Abu Kassim, University of Sydney, Australia (graduated May 2013) PhD (currently lecturer/researcher in Medical Entomology at University Science Malaysia in Malaysia).

Phanthip Olanratmanee, Mahidol University, Thailand (graduated September 2012) PhD
Holly Vuong, Rutgers University, DEENR (07-12) PhD (currently postdoctoral Associate, University of Sydney). Co-author.

Linda O'Connor, University of Delaware, Biology (graduated May 2008) PhD (currently postdoctoral Associate, University of Kentucky)

Jon Beadell, University of Maryland, Biology (graduated May 2007) PhD (currently postdoctoral Associate, Yale University) . Co-author.

UNDERGRADUATE MENTORING

Spring 2017 - undergraduate research mentor, Elijah Leung (major: biotechnology), Rutgers University. Co-mentored by James Occi (see above). Project entitled “**Rickettsian parasites in NJ ticks**”

Fall 2015 – Spring 2016: undergraduate research mentor, Elena Nayan, Rutgers University, New Brunswick. Project entitled “**What drives the lack of diapause in Florida populations of *Aedes albopictus*?**”

Fall 2012 – Spring 2013: undergraduate research mentor, Rhiannon Andre-Tucker, Rutgers University, New Brunswick. Project entitled “**Local adaptation in populations of *Aedes albopictus***”. Rhiannon is currently a Masters student in Secondary Education.

Spring 2011-2012: undergraduate research mentor, Rebekah Heiry, Rutgers University, New Brunswick. Project entitled “**Variable life-history traits of *Aedes albopictus***”. Left Fall 2012 to become a full time research staff at Hartz Inc. In March 2014 started as a research technician screening for new cancer drug potentials at Bristol Myers Squibb, Lawrenceville, NJ. Co-author.

Spring-Fall 2011: undergraduate research mentor, Rafael Valentin, Rutgers University, New Brunswick. Project entitled “**qPCR based rapid assay for mosquito egg identification: a maximum likelihood approach**”. Rafael started his PhD project at DEENR in the Fall 2012.

Spring 2009: undergraduate research mentor, Shalom Fialkoff, Rutgers University, New Brunswick. Project entitled “**Quantitative PCR assays to identify and quantify the presence of *Aedes albopictus* eggs**”.

Fall 2008: undergraduate research mentor, Lynnette Wray, Rutgers University, New Brunswick. Project entitled “**Examining the inheritance of microsatellite loci in *Culex restuans*, a critical vector of West Nile virus**”.

Fall 2008: undergraduate research mentor, Shalom Fialkoff, Rutgers University, New Brunswick. Project entitled “**DNA-based rapid assay for the differentiation of *Aedes albopictus* (Diptera: Culicidae) from other container *Aedes* species in the northeastern US**”.

Summer 2006: Mentor of REU-NSF student, Robert James Henry, Academy of Natural Sciences, Philadelphia. Project entitled “**Population genetics of the white-spotted mosquito, *Culex restuans*, a critical vector of West Nile virus**”.

Summer 2005: Mentor of REU- NSF student, Tarannum Jalleel, Academy of Natural Sciences, Philadelphia. Project entitled “**Development of microsatellite markers for the white-spotted mosquito, *Culex restuans*, a critical vector of West Nile virus**”.

Summer 2002: Mentor of REU-NSF student, Michael Faybyshev, Academy of Natural Sciences, Philadelphia. Project entitled “**Multilocus fingerprinting of urban vectors of West Nile virus in the US reveals extensive cryptic and not so cryptic introgression**”.

1997-98: Mentor of Thomas Jefferson HighSchool for Science and Technology student, Sarina Mohanti (October 1997 to May 1998), National Zoological Park, Washington, DC.

COOPERATIVE AGREEMENTS

Closed:

PI on a cooperative agreement between Rutgers University/NJ Agriculture Experiment Station and the Agriculture Research Service (ARS/USDA) on an **Area-Wide Pest Management (AWPM) Project to Control the Asian Tiger Mosquito**. The USDA point researcher is Gary Clark, co-PIs are Daniel Kline (USDA-ARS), Randy Gaugler, George Hamilton (Rutgers University), Donald Shepard (Brandeis University). Other critical personnel are Sean Healy and Ary Farajolahy from Mosquito Control Programs in Monmouth and Mercer Counties, NJ, respectively. Mar. 2008 – September 2014 (\$3,930,000, of which \$3,455,000 were awarded to Rutgers University and managed by PI at Rutgers DM Fonseca).

CONTRACTS AND GIFTS

Closed:

Co-PI with Laura Kramer (Wadsworth Center, NISDH) in a NIAID contract, a response to RFP NIH-NIAID-DMID-02-24 “U.S. Based Collaboration in Emerging Viral and Prion Diseases”. Contract # N01-A1-25480. Sub-contract entitled “**Patterns of expansion of newly introduced species and impact on viral transmission: tools and tests**”. Oct. 2002 – Sept 2009 (\$723,548).

GRANTS (direct costs in parenthesis)

Pre-proposal shortlisted

Open Philantropy Project “**Food security and its vulnerabilities: a risk assessment of global famine resulting from natural or intentionally bioengineered pathogens in significant crops and food animals in a changing world**”. 2 year project, \$565,000. Project Leader is Laura H. Kahn, Woodrow Wilson School of Public and International Affairs, Princeton University.

Pending:

PI in proposal to NJDEP/State Mosquito Control Commission entitled “**Insecticide Resistance Management Program for New Jersey, 2017-2018**”. Submitted 08/18/2017 (1 year project, \$48,851).

Co-PI in proposal to NJDEP/State Mosquito Control Commission entitled “**An Arbovirus and Adult Mosquito Surveillance Program 2017-2018**”. Submitted 08/18/2017 (1 year project, \$26,158).

Cooperator in suggestion to Farm Bill 2018 entitled “**Improved surveillance of Spotted lanternfly**”. Submitted 08/14/2017 (1 year project, \$228,904 Rutgers part). PI is Sven-Erik Spichiger, PA Department of Agriculture. Co-cooperators are Julie Lockwood (EENR) and Anne Nielsen (Entomology).

Co-PI CDC proposal entitled “**Operational research to identify ways to link national or local insecticide resistance surveillance systems with internationally (WHO) endorsed surveillance methods**”. PI is John Grieco, Notre Dame University and remaining co-PI are members of the Worldwide Insecticide Resistance Network (WIN). Submitted 08/10/2016; January 2017-December 2021 (\$5,000,000)

Co-PI CDC proposal entitled “**Validation of novel molecular insecticide resistance markers and development of new diagnostic tools that address disease and vector control program delivery priorities**”. PI is John Grieco, Notre Dame University and remaining co-PI are members of the Worldwide Insecticide Resistance Network (WIN). Submitted 08/10/2016; January 2017-December 2021 (\$500,000 earmarked for Rutgers).

Recommended for funding:

PI in an NSF project entitled: “**Predicting the evolution of vector-borne disease dynamics in a changing world**” submitted as a response to the RFA Ecology & Evolution of Infectious Diseases (EEID). Proposal#111616, submitted 11/16/2016; \$2,498,976.00 for 4 years, seven co-PIs.

Active:

Co-PI in NOAA NERRS Science Collaborative Research proposal entitled “**Investigating the interconnectedness of climate, nuisance mosquito populations, and the long-term resilience of coastal salt marsh systems**” (\$743,002 for 3 years; Project lead: Richard Lathrop, Rutgers U.)

Consultant in NSF “**RAPID: Modeling Zika Control Effectiveness with Feedback in Risk Perception and Associated Demand across Scales of Intervention**” (\$195,000, PI: Nina Fefferman, U. Tennessee)

Member of the **Worldwide Insecticide-resistance Network (WIN)** in mosquito vectors of arboviruses. Funded by WHO-TDR and CDC (\$200,000 Jan 2016-May 2017). PI is Vincent Corbel, French Institute pour Recherche et Development (IRD).

Advisor in a USDA-NIFA graduate fellowship to Rafael Valentin, PhD student in the Graduate Program in Ecology and Evolution, Rutgers University). \$96,650 for 2 years (Sept 2016-August 2018).

Co-advisor in a USDA Northeast SARE Graduate Student grant award entitled “**Development of a high-resolution surveillance protocol using eDNA for detection of brown marmorated stink bugs**” (award# GNE15-112, \$15,000 from August 2015 – July 2017; awarded to Rafael Valentin, PhD student in the Graduate Program in Ecology and Evolution, Rutgers University).

PI in a NJAES Multistate Research Initiative within **NE-1043: Biology, Ecology & Management of Emerging Disease Vectors** (\$35,000/year from July 2015 – June 2020).

Closed:

PI in an NSF project entitled “**EAGER: New genomic resources and models for predicting evolving vector-borne disease dynamics in a changing world**” (\$160,000 from July 2015 – June 2017).

PI (MPI) in NIH grant proposal NIH-1R21AI096017 titled “**High throughput population genomics of *Aedes albopictus***”. June 2011 - May 2014 (\$275,000 – MPI with Dr. Jeff Powell, Yale University).

Co-PI with John Worobey (Nutrition and Activity, Rutgers) in a Robert Wood Johnson Foundation rapid response award titled “**Mosquito Abatement and increased outdoor physical activity**”. May 2011-Sept 2012 (\$124,255)

PI in a NJAES Hatch Research Project entitled “**Selective forces shaping the ecological genetics of disease vectors**”. Project no. NJ08194 (2007-2012, \$15,000)

Co-PI in an USDA-CSREES award, 2008-09. International Asian tiger mosquito symposium. Gaugler et al. (\$10,000).

Co-PI in a grant from the Academic Excellence Fund. Fefferman, Gaugler, and Fonseca. Risk Assessment modeling. 2008-2009. (\$5,760).

PI in a Charles and Johanna Busch Biomedical Research Grant, Rutgers University. Entitled “**Transfer of useful genes across hybrid zones in the *Culex pipiens* complex**”. July 2007-June 2009 (\$45,000).

PI in SEBS and NJAES Competitive Intramural Research Infrastructure Award, Rutgers University. Entitled “The Use of Quantitative Real-time PCR in Vector Biology Research”. (\$26,250).

Collaborator in NSF BioComplexity grant to David C. Duffy (University of Hawaii). Proposal# DEB-0083944 entitled “**Biocomplexity of Introduced Avian Diseases in Hawaii: Threats to Biodiversity**”

of Native Forest Ecosystems". Co-PI's were Carter Atkinson, Michael D. Samuel, Robert C. Fleischer, Dennis LaPointe, Andy Dobson, Warren Porter, and Susan Jarvi. Jan 2001 - Aug 2006 (\$4,188,575 – \$500,000 granted to my laboratory for vector population genetics).

Co-PI with R.C. Fleischer (NMNH, Smithsonian Institution) in NIH R01 grant in the "Evolution of infectious diseases" panel. Proposal# 1R01GM063258 entitled "**Disease Dynamics Following Multiple Vector Introductions**". May 2001 – Apr. 2006 (\$1,383,678).

Co-PI with Laura Kramer and Jan Conn (Wadsworth Center, NY Dept. of Health) in a CDC/NIH grant in the Applied Research in Emerging Infections panel. Proposal# U50/CCU220532 entitled "**Culex population variability in New York State: impact on WN virus**". Oct. 2001 - Sept 2005 (\$964,332).

PI in grant from the Department of the Army entitled "**The regal fritillary butterfly in the eastern United States; molecular genetic tools for conservation and re-introduction**". Co-PI: Nusha Keyghobadi, Aug. 2003-Dec. 2004 (\$99,049).

FY01 Internal Army Grant with Dr. Richard Wilkerson. 2001. Project entitled "**Vectors as bottlenecks: what knowing the vector species tells us about human malaria diversity**" (\$87,000).

Restricted Endowment - Abbott Fund, National Zoological Park, USA. 1998. Project entitled "**Protecting a biodiversity hot-spot**" (\$6,000).

Friends of the National Zoo, USA. 1997-1998. Extension of the Smithsonian Fellowship (\$32,000).

Co-PI with David D. Hart in NSF Dissertation Improvement Grant, National Science Foundation, USA. 1992-1996. Short title: "**Fluid-mediated dispersal**" (\$9,000).

PI Responsible for the systematics and ecology of the aquatic invertebrates in a study of the Lower Course and Estuary of the Mondego River, Portugal, funded by the Portuguese Ministry of Fisheries and Agriculture at the Museum and Zoological Laboratory of the University of Coimbra, Portugal. 1986-1988.

ONLINE PRESENCE

2017, Sustainable Maryland Wednesday Webinar entitled "Developing a Community-Based Mosquito Control Program available at <https://webmeeting.umd.edu/p3fct5k9tri/>

2014, Webpage of the Area-wide Asian tiger mosquito control program, USDA-ARS funded, available at <http://asiantigermosquito.rutgers.edu/>

ORAL PRESENTATIONS

Invited Research (since joining Rutgers University):

2017, March 2, Camden, NJ – departmental seminar in the **Biology Department, Rutgers University, Camden** (host Angelica Gonzalez, Assistant Professor) "The hitchhikers guide to invasion: lessons from a new US mosquito"

2017, February 1, Piscataway, NJ – departmental seminar in the **Center for Advanced Biotechnology and Medicine**, Department of Biochemistry and Molecular Biology, Rutgers University (host Céline Gélinas, Senior Associate Dean for Research) "Next steps in arboviral control in the US: "The [first] thing we have to fear is fear itself".

2016, December 6, Rio de Janeiro, Brazil – workshop integrated in the WIN. Moderator and Speaker in Session 2 entitled "**Causes and consequences of Insecticide Resistance in Aedes vectors**". Talk entitled "Insecticide resistance and the globalization of *Aedes*".

2016, May 23, Montpellier, France – part of the first WIN (**Worldwide Insecticide Resistance Network**). Presentation entitled "Worldwide patterns of genetic diversity in Dengue vectors".

- 2016, February 18, Blacksburg, VA – invited seminar in the Entomology Department, **Virginia Tech** (host Zach Alderman, Associate Professor) “The hitchhikers guide to invasion: lessons from a new US mosquito”
- 2015, October 1-3, Berlin, Germany – invited seminar at the **National Academy of Sciences Leopoldina** Meeting "Arthropod-borne Infectious Diseases and Arthropods as disease agents in human and animal health". 30 minute oral presentation entitled “Approaches to infer local vectorial capacity: from rapid assays to population genomics and transcriptomics, a review”.
- 2015, September 28, **Fish & Wildlife Service National Conservation Training Center**, Shepherdstown, WV – invited 20 min oral presentation on vectors of avian malaria during the Avian Malaria Workshop, organized by the National Conservation Training Center.
- 2014, October 21, Philadelphia, PA – invited seminar at the **Biology Department** (student invitation) University of Pennsylvania. “Domestication or invasiveness in mosquitoes: what came first?”.
- 2014, October 10, Washington, DC – invited seminar at the **National Zoological Park**, Smithsonian Conservation Biology Institute (host Robert Fleischer, Senior Scientist and Head, Center for Conservation and Evolutionary Genetics) “Rapid evolution in invasive mosquitoes: evidence and implications”.
- 2014, September 12, Sydney, Australia – Invited seminar at the **Marie Bashir Institute of Infectious Diseases and Biosecurity**, Sydney Medical School, University of Sydney (host Cameron Webb) "Managing the Asian tiger mosquito, *Aedes albopictus*, in America: implications for exotic pathogen introduction and nuisance-biting impacts”
- 2014, March 28, New Brunswick, NJ – Departmental seminar at **Rutgers University**, Entomology Department “Area-wide management of the Asian tiger mosquito: lessons I learned”.
- 2014, March 21, Orono, MI – Invited departmental seminar at the **University of Maine**, Department of Biology (host Eleanor Groden) “Post-introduction anthropogenic rescue”
- 2013, September 6, New Brunswick, NJ – Invited Departmental Seminar at **Rutgers University**, Entomology Department (host Lena Brattstein) “Rapid evolution, mosquitoes and us”
- 2013, February 8, College Park, Maryland – Invited departmental seminar at the University of Maryland, Department of Entomology (host David O’Brochta) “What makes a mosquito invasive?”
- 2012, May 21-22, invited departmental seminar in the Biology Department at **University of Cincinnati**, OH (host Ken Petren) “History, evolution, and new tools for control of invasive mosquitoes as told by a population geneticist”
- 2012, March 16-19, Hartford, CT – 83rd Annual Meeting of the Entomological Society of America Eastern Branch. Invited moderator and speaker of the Vector Biology Symposium “Evolution of Vectors and Parasites”. 45 min talk “The evolutionary history of the *Culex pipiens* complex”.
- 2011, August 5-15, Ghana, West Africa – **Workshop on Genetics and Disease Control**. two 1 hr lectures/discussions.
- 2011, May 9-10, Italy, Cervia – Opening talk on workshop entitled "**Emerging vector borne disease: the role of *Aedes* mosquitoes**". Talk entitled "The Asian tiger mosquito in the United States: past, present, and future" (45 min).
- 2011, April 6 – Invited seminar at the **Raritan Valley Community College**, Branchburg, NJ (host Melanie Lenahan) “Tracking mosquito invasions”.
- 2011, February 17 – Invited seminar at the **Cary Institute of Ecosystems Studies**, Millbrook, NY (host Shannon LaDeau) “Fine-scale population genetics of disease vectors”.
- 2009, September 18 – Invited Departmental Seminar at **Rutgers University**, Entomology Department, New Brunswick, NJ, USA. (host Randy Gaugler) “Population genetics and phenotypic traits: can neutral markers predict behavior?”.

- 2009, August 31 – Invited Departmental Seminar at **North Carolina State University**, Department of Entomology, Raleigh, NC, USA (host Charles Apperson). Title “Human mediated evolution of the *Culex pipiens* complex across the world”.
- 2009, June 8 – **Kyoto University**, Department of Zoology, Kyoto, Japan (host Teiji Sota) “Population genetics of the mosquito *Culex pipiens pallens* reveals sex-linked asymmetric introgression by *Culex quinquefasciatus*”
- 2009, February 12-13 - co-organized the International Symposium on the Asian tiger mosquito and made the final presentation of the Symposium in which I provided a summary of the research available and in progress on the Asian Tiger Mosquito.
- 2008, November 16-19 - **Annual Meeting of the Entomological Society of America** (Reno, NV USA) – Structural Veterinarian, and Public Health Systems Section Symposium, “Highlights of Medical Entomology (45 minute invited presentation). Recorded audio and video files available at <http://esa.confex.com/esa/2008/webprogram/Session9283.html>.
- 2008, February 27 – **International Symposium on risks of Chickungunya transmitted by Aedes albopictus (Tiger Mosquito) and other potential vectors in Europe** - Alessandria, Italy. Dina M. Fonseca et al “Area-wide management of the Asian Tiger Mosquito”.
- 2007, December 9-12 - **Annual Meeting of the Entomological Society of America** (San Jose, CA, USA) –invited presentation in the Symposium “Ecology of Invasive Mosquitoes: Factors Controlling Their Spread and Ecological and Public Health Impacts”. Fonseca DM “Ecological Genetics of multiple vector introductions” (30 minute oral presentation)
- 2007, November 4-8 - **Annual Meeting of the Society for Tropical Medicine and Hygiene**, Philadelphia, PA. Co-organized with Laura Kramer the Symposium “Intraspecific Variation in Viral and Vector Genetics and Pathogen Transmission”. Presented “Population genetics of phenotypic traits in the *Culex pipiens* complex” (15 minutes).
- 2007, March 14 – **Annual Meeting of the New Jersey Mosquito Control Association**, Atlantic City, NJ, USA – Oral presentation “Multilocus fingerprinting of the *Culex pipiens* complex in the US reveals asymmetric introgression” (20 minutes).

Extension:

- 2017, March 14-17, Atlantic City, NJ, Meeting of the NJ Mosquito Control Association. 15 min talk entitled “**CVB and NJMCA: together we are stronger**”. I was also part of a 2 hr Zika panel where I spoke for 5 min and then fielded questions from the audience.
- 2017, Jan 23-26, Crystal City, VA, National Council for Science and the Environment’s National Conference and Global Forum in Science, Policy, and the Environment: Integrating environment and health. I was part of a 4 panelist Symposium entitled “One Health: a transdisciplinary approach”. My 10 min talk presenting discussion topics was entitled “Arboviral control priorities in the US: “The [first] thing we have to fear is fear itself”. A manuscript is being developed from the symposium and workshop.
- 2016, June 11, University Park, MD, Speaker in a monthly seminar series, talk entitled “Enlightened mosquito control” is part of the community led initiative that I am advising on the use of lethal gravid traps to survey and control backyard *Aedes*.
- 2016, June 9, Highland Park, NJ, addressed the Health committee of the town regarding vectors of Zika virus and their control.
- 2016, April 1, Washington, DC – invited panelist in **Zika virus Symposium** at Georgetown University “Control of invasive mosquitoes past, present, future”.

- 2016, April 15, Newark, NJ – invited **Medicine Grand Rounds** at the Rutgers New Jersey Medical School. 50 min oral presentation entitled “Invasive mosquitoes and emerging arboviruses: what to expect and how to prepare”.
- 2015, March 28-April 2, New Orleans, LA – **Annual Meetings of the American Mosquito Control Association**. Oral presentation entitled “Extension Medical Entomology as a research tool: a win-win” by Dina M. Fonseca integrated in the Symposium “Extension Medical Entomology Programs: Current Programs and Future Challenges”.
- 2014, December 4 - New Orleans, LA – **Keynote Speaker** at the annual meetings of the Louisiana Mosquito Control Association. “Area-wide management of the Asian tiger mosquito: lessons learned”.
- 2014, March 21 – moderator of 2.5 hr workshop bringing together for the first time all branches and interested parties in mosquito and vector control in the state of Maine. Organized and held at the **University of Maine**. Orono, Maine.
- 2013, December 16 – invited oral presentation and participation in 4 day workshop “Linking novel interventions to disease indicators”. **FNIH Meeting on Area-wide Control of Mosquitoes Using Novel Technologies**. St. Augustine, Florida
- 2013, April 24 – invited oral presentation (white board discussion) about Medical Entomology to Public Health Certificate students at the **University of Pennsylvania School of Public Health**, Perelman School of Medicine. Host: Hilary Nelson. “Fingerprints of alien invasions” (60 min).
- 2013, March 26-28 – Oral presentation and symposium moderator at the **10th Arbovirus Surveillance and Mosquito Control Workshop**, AMCD, St. Augustine, FL. Title: “The need for customized mosquito control: differences in genetics and behavior among US populations of *Aedes albopictus*”
- 2012, December 5 – Oral presentation on West Nile virus at the **Emerging Infectious Diseases Conference** organized by the **Rutgers College of Nursing**.
- 2010-present – 3-hour presentations and discussions to the **Rutgers Environmental Stewards** (at Duke Farms, Rutgers EcoComplex, and/or Atlantic County Utility Authority). Workshops entitled “Enlightened mosquito control”.
- 2007-present – I attend monthly meetings of the **Vector-borne diseases Group**, as representative of Rutgers University, Center for Vector Biology. This group also includes representatives of the NJ Departments of Health and Agriculture, the NJ Mosquito Control Commission, the mosquito control Commissions and county programs, and the Army Pest Control. These meetings aim to share developments and difficulties, foster collaborations, and keep the channels of communication open, in a relatively informal setting.
- 2009-present – Made **multiple interviews** with news organizations (mostly radio and newspapers) and have been cited several times. Rutgers Focus did an article on me and later an article on the Asian Tiger Mosquito Management project in which I am the PI at Rutgers
- 2010, November 14 – 1 hour presentation to the **East Brunswick Historical Society**, East Brunswick, NJ within the series “Some remarkable women in science in New Jersey history”. Talk entitled “Enlightened mosquito control”.
- 2009, May 27 – made a 30 minute invited presentation inserted in a workshop on **RAMP** (Rapid Analyte Measurement Platform) organized by the Morris County Mosquito Extermination Commission at the Center for Vector Biology. I aimed to summarize the strengths and shortcomings of the technique to aid the ongoing discussion of its use in NJ to quickly identify hot-spots of West Nile virus.
- 2009, April 30 – Co-organized and moderated a workshop entitled “**Mosquito modeling made easy**” offered at the Center for Vector Biology funded by a subaward from the Rutgers Climate and Environmental Change Initiative. The aim of the workshop offered to mosquito control officers in NJ and surrounding states was to demystify mathematical modeling. The ultimate aim is to establish effective collaborations between scientists and county officers leading to rapid responses to disease outbreaks due to environmental change and new introductions.

- 2009, March 12 (Annual Meeting of the New Jersey Mosquito Control Association, Atlantic City, NJ, USA) – made a 30 min oral presentation entitled “**The Meaning of Minimum Infection Rates**”. I aimed to elucidate the real meaning of this metric to an audience of users, and discussed alternative strategies.
- 2009, February 12-13 (**International Symposium on the Asian Tiger Mosquito**) – co-organized the Symposium and made the final presentation of the Symposium in which I aimed to provide both a summary of the research available and in progress on the Asian Tiger Mosquito, but also distill the importance of Mosquito Control Programs and individual officers in actions against this mosquito pest and disease vector.
- 2008, October 24 – **Pest Control Operators and Health Officers Day**, 45 minute invited oral presentation entitled “Asian Tiger Mosquitoes: The Biology, Life-cycle and Control of Asian Tiger Mosquitoes”. Newark, NJ, USA.
- 2008, March 11-14 – **Annual Meeting of the New Jersey Mosquito Control Association**, Atlantic City, NJ. "Spread of chikungunya virus to new vectors and locations" (30 minute oral presentation). Lay summary of published information.
- 2008, January 23 - Center for Vector Biology **Biologists Meeting**, Rutgers University, New Brunswick, NJ, USA. “The Asian tiger mosquito”. Summary of biology, ecology, and control practices (30 minute oral presentation).
- 2003, March 11 - **PA-DEP Workshop**, Academy of Natural Sciences. One-day workshop for the Pennsylvania Department of Environmental Protection on the use of Genetic Markers in Vector Control. The workshop included an introduction to molecular methods (DNA chemistry, DNA extraction, PCR, sequencing), a “hands-on” laboratory practice using a species diagnostic PCR, and a series of research short talks by members of my laboratory.

Oral presentations at International Meetings (since 2008):

- 2016, August 29- September 30, Montpellier, France – **5th International EcoSummit**. Oral presentation in the accepted Symposium “Designing urban biodiversity to regulate disease vectors”. Title: “Native vs. exotic invaders as drivers of vector-borne disease in cities”.
- 2016, January 3-7, Philadelphia, PA – **Northeastern Plant, Pest, and Soils conference**. Oral presentation entitled “Human networks (cities and highways) drives the invasiveness of exotic mosquitoes”. Fonseca DM, Egizi A, Fefferman N.
- 2014, September 7-10 – Oral presentation at the **12th Annual Meeting of the Mosquito Control Association of Australia**, Mandurah, Australia. Title: "The need for customized mosquito control: rapid evolution in *Aedes albopictus*"
- 2013, August 19-24, Lisbon, Portugal – **Congress of the European Society for Evolutionary Biology**. Poster presentation “Anthropogenic rescue of invasive species”. Dina M. Fonseca
- 2013, February 24-28, Atlantic City, NJ – **Annual Meetings of the American Mosquito Control Association**. Organizer and presenter of a Symposium on the Asian tiger mosquito. Participated in over 15 presentations by students, postdocs, and collaborators. Oral presentation “Area-wide management of the Asian tiger mosquito: lessons learned”. Dina M. Fonseca, Gary G. Clark.
- 2012, July 6-10, Ottawa, Canada – **1st Joint Congress on Evolutionary Biology**. Oral presentation “A model System for the evolution of invasiveness”. Also co-authored 3 posters by graduate students.
- 2012, March 28-30, Atlantic City, NJ – **Annual Meeting of the NJ Mosquito Control Association**
- Unlu I, Farajollahi A, Indelicato N, Healy S, Crepeau T, Gaugler R, Fonseca DM. “Using ArcGIS to identify Asian tiger hot spots.
 - Marcombe S, Fonseca DM. “Insecticide susceptibility status of *Aedes albopictus* in New Jersey.

- c. Farajollahi A, Healy S, Unlu I, Crepeau T, Egizi A, Gaugler R, Crans S, Williams G, Bartlett-Healy K, Hamilton G, Shepard D, Clark G, Strickman D, Fonseca DM. “Current update on *Aedes albopictus* and the Asian tiger mosquito project”.
- 2012, March 16-19, Hartford, CT – **83rd Annual Meeting of the Entomological Society of America Eastern Branch.** Xu J, Fonseca DM. “Invasiveness Associated with multiple introductions of a temperate mosquito.”
- 2012, Feb 26-Mar 1, Austin, TX – **78th Annual Meeting of the American Mosquito Control Association**
- 1) Williams G, Farajollahi A, Fonseca DM, Healy S. “Efficacy of area-wide larviciding techniques in urban areas”.
 - 2) Organizer/Moderator of Symposium entitled “*Aedes albopictus* Surveillance” with G. Clark.
 1. Crepeau T, Bartlett-Healy K, Healy S, Farajollahi A, Unlu S, Gaugler R, Fonseca DM. “Demographic variable and their predictive ability for assessing presence”
 2. Fonseca DM, Valentin R, Crepeau T, Healy S, Farajollahi A, Unlu I. “The pros and cons of egg counts”
 3. Unlu I, Farajollahi A, Corichi A, Gaugler R, Fonseca DM, Gaugler R, Strickman D. “Surveys of immature stages”
 4. Farajollahi A, Egizi A, Healy S, Unlu I, Crepeau T, Bartlett-Healy K, Clark G, Strickman D, Gaugler R, Fonseca DM. “Population dynamics and host preference of adults”
 5. Marcombe S, Farajollahi A, Healy S, Fonseca DM. “Insecticide resistance status”
 6. Shepard D, Halasa Y, Wittenberg E, Fonseca DM, Farajollahi A, Healy S, Gaugler R, Bartlett-Healy K, Strickman D, Clark G. “Cost-benefit analysis of an area wide pest management program”.
- 2011, November 13-16, Reno, NV – **59th Annual Meeting of the Entomological Society of America.**
- a. Symposium Organizer with Kristen Bartlett Healy. Symposium Moderator. “Predictors of Vector and Disease Dynamics”. Opening remarks: Fonseca DM. “Real time modeling, a tool for enlightened pest and disease control”.
 - b. Gaugler R, Healy S, Williams G, Wang Y, Farajollahi A, Suman D, Lloyd A, Fonseca DM, Farooq M, Brey C, Schoeler G. “Point source and area wide field studies of pyriproxifen auto-dissemination against container-inhabiting mosquitoes in urban environments”.
 - c. Farajollahi A, Healy SP, Fonseca DM, Gaugler R, Bartlett-Healy K, Williams G, Crans S, Unlu I, Crepeau T, Clark G, Strickman D. “Integrated mosquito management from predictions to proactive control measures”.
 - d. Bartlett-Healy K, Fonseca DM, Healy S, Farajollahi A, Crepeau T, Unlu I. “The use of temperature-based models to predict container inhabiting mosquitoes”.
- 2010, December 12-15, San Diego, CA – **58th Annual Meeting of the Entomological Society of America.**
- a. Hosterey JC, Bohonak AJ, Fonseca DM, Walton W. “Widely separated populations of *Culex erythrothorax* (Culicidae) are not genetically differentiated”.
 - b. Fonseca DM, Cameron EC. “Transfer of genetic material across hybrid zones in the *Culex pipiens* complex.
 - c. Egizi AM, Fonseca DM. “Rapid assay for blood meal identification in *Aedes albopictus*, the Asian tiger mosquito”.
- 2010, Mar 28-31, New Orleans, LN – **Annual Meeting of the American Mosquito Control Association.**
- a. Bartlett-Healy and the ATM team “Utilization of artificial and natural container habitats by *Aedes albopictus* in urban, suburban, and rural areas of New Jersey”
 - b. Unlu I and the ATM team “Area-wide surveillance and control of *Aedes albopictus*: An effort to find, catch, and tame the tiger”

- c. Bartlett-Healy K and the ATM team “Development and pretesting of an educational program geared towards source reduction of Asian tiger mosquito habitat in New Jersey”
 - d. Healy S and the ATM team “Efficacy of backpack applications of VectoBac WDG for *Aedes albopictus* larvae in placed containers and comparison to other control techniques”
 - e. Farajollahi A and the ATM team “Urban field spray characterization and habitat penetration of DUET™ via truck-mounted ULV equipment against *Aedes albopictus*”
- 2010, Mar 10-12, Atlantic City, NJ – **Annual Meeting of the NJ Mosquito Control Association**
- a. Fonseca DM. “The *Aedes* from Japan Keep on Coming”
 - b. Farajollahi A and the ATM team “Adulticide applications with DUET in an urban environment: Where do the droplets go?”
 - c. Unlu I and the ATM team “Area-wide surveillance and control of *Aedes albopictus*, an effort to find, catch, and tame the tiger”
 - d. Ferwerda C and the ATM team. “The effects of microclimate on trapping success”
 - e. Bartlett-Healy K and the ATM team. “From tires to toilets, the most productive container habitats for *Aedes albopictus*”
 - f. Healy S and the ATM team. “NECE studies on larval control of Asian Tiger mosquitoes”
- 2009, December 13-16, Indianapolis, IN – **57th Annual Meeting of the Entomological Society of America**. 40 min panel integrated in the Symposium “Celebrating Entomology at the USDA Agricultural Research Service”. Section entitled “Areawide integrated pest management of the Asian Tiger Mosquito”. Organizers Klein DL, Fonseca, DM, Clark GG.
- 2009, November 17-18, Washington, DC – **Annual Meeting of the Society for Tropical Medicine and Hygiene**. Halasa YA, Shepard DS, Fonseca DM, Farajollahi A, Healy S, Gaugler R, Clark GG. “Willingness to pay for vector control for the Asian tiger mosquito in New Jersey”.
- 2009, June 3-7 – **Annual Meeting of the Society for Molecular Biology and Evolution (SMBE)**, Iowa City, IA, USA. Cameron E and Fonseca DM “An ancient hybridization revealed by suppressed recombination in a disease vector”.
- 2009, April 5-9 – **Annual meeting of the American Mosquito Control Association**, New Orleans, LN.
- a. Bartlett K, Hamilton G, Crepeau T, Healy S, Slaff M, Gaugler R, Fonseca DM. “Using a focus group to improve outreach and educational materials”.
 - b. Nelder M, Kesavaraju B, Farajollahi A, Healy S, Clayson P, Unlu I, Crepeau T, Fonseca DM, Gaugler R. “Evaluation of a monomolecular film and (S)-methoprene composite against *Aedes albopictus*”.
 - c. Slaff M, Fonseca DM, Gaugler R, Clark G, Healy S, Farajollahi A. “Area-wide management of *Aedes albopictus*: Progress and Plans”.
 - d. Farajollahi A, Unlu I, Healy S, Crepeau T, Fonseca DM, Gaugler R, Slaff M, Kesavaraju B. “Use of BG-Sentinel traps as a surveillance tool in an area-wide management program for *Aedes albopictus*”.
 - e. Healy S, Farajollahi A, Clayson P, Crans S, Fonseca DM, Gaugler R. “Efficacy of an insecticide mixture containing sumithrin, prallethrin, and PBO by ultra-low volume ground application against caged *Aedes albopictus*”.
 - f. Reed L, Crans S, Fonseca DM, Slaff M. “Changes in *Aedes albopictus* in New Jersey from 1998 to 2008”. (poster).
- 2009, March – **Annual Meeting of the NJ Mosquito Control Association**, Atlantic City, NJ.
- a. Reed L, Crans S, Slaff M, Fonseca DM. “Change in *Aedes albopictus* populations in New Jersey, 1998-2008”
 - b. Reed L, Crans S, Fonseca DM, Slaff M, Gaugler R. “NJ Vector and adult mosquito surveillance”.
 - c. Slaff M, Fonseca DM, Gaugler R, Healy S, Farajollahi A “Overview of the Asian tiger mosquito project”.

- d. Crepeau T, Nelder M, Kesavaraju B, Farajollahi A, Healy S, Clayson P, Unlu I, Fonseca DM, Gaugler R. "Evaluation of a monomolecular film and (S)-methoprene composite against *Aedes albopictus*".
 - e. 2008, November 16-19 – Annual Meeting of the Entomological Society of America. Reno-Sparks, NV.
 - f. Nelder M, Farajollahi A, Kesavaraju B, Clayson P, Unlu I, Crepeau T, Gaugler R, Fonseca DM, "Laboratory and field testing of the efficacy of a monomolecular film and (S)-methoprene in tandem against *Aedes albopictus* immatures".
 - g. Williges E, Gaugler R, Fonseca DM. "Vertical oviposition preferences of *Aedes albopictus* in New Jersey".
- 2008, July 6-12 – **XXIII International Congress of Entomology**. Durban, South Africa. Kline D, Clark G, Fonseca DM. "Area-wide management of the Asian tiger mosquito".
- 2008, March 11-14 – **Annual Meeting of the New Jersey Mosquito Control Association**, Atlantic City, NJ. Cameron E, Fonseca DM. "A puzzling pattern of genetic mixing between two species of *Culex* in Asia".
- 2008, March 2-6 – **Annual Meeting of the American Mosquito Control Association**, Reno, NV. O'Connor LL, Gingrich JB, Fonseca DM, Unnasch TR "Culex pipiens hybridization, feeding behavior, and parity rates on late season West Nile virus activity in Delaware".

NON-REFEREED PUBLICATIONS

Extension

5. Occi J, Egizi A, Fonseca DM. 2017. Lone star ticks in New Jersey: risk, ecology and prevention Rutgers Cooperative Extension Fact Sheet No. XXX. New Brunswick, New Jersey 4 pp.
4. Occi J, Fonseca DM. 2016. "**Ticks and Gardening**". *Gardener News*. August issue, Larry Katz Rutgers NJAES column.
3. Fonseca DM. 2016. "**Strengthening a Zika weak link: what gardeners should know**". *Gardener News*. July issue, Larry Katz Rutgers NJAES column.
2. Helen Spafford (chair), Robert Venette, Dina Fonseca, Ariel Rivers, Alejandro Calixto. 2016. The Not so-hidden dangers of invasive species. ESA Position Statement on Invasive Species. Approved April 21, 2016 valid through April 21, 2020: http://www.entsoc.org/PDF/2016/EntSocAmerica_PolicyStatement_InvasiveSpecies.pdf
1. Rector P, Duckworth TN, and Fonseca DM. 2014. Rain Barrels and Mosquitoes. Rutgers Cooperative Extension Fact Sheet No. 1240. New Brunswick, New Jersey 4 pp. <https://njaes.rutgers.edu/pubs/fs1240/> (Association of Natural Resource Extension Professionals 2015 Short Publication Silver Award)

White papers and Symposium papers

2. Fonseca DM 2016 Approaches to infer vectorial capacity: from rapid assays to population genomics and transcriptomics. A paper in a Symposium on "**Arthropod-borne infectious diseases and arthropods as disease agents in human and animal health**" 1-3 October 2016, Berlin, Germany. Accepted for publication in *Nova Acta Leopoldina* a publication of the *German Academy of Science Leopoldina*.

1. Fonseca DM 2016 *Steps for effective mosquito control in response to a potential Zika virus outbreak*. Submitted to the Joint Subcommittee Meeting on Foreign Affairs entitled “**The Global Zika Epidemic: Emerging in the Americas**” (Subcommittee on Africa, Global Health, Global Human Rights, and International Organizations Christopher H. Smith (R-NJ), Chairman & Subcommittee on the Western Hemisphere Jeff Duncan (R-SC), Chairman), February 10, 2016.

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Published (*graduate student; ** postdoc in my lab; *** technician or undergraduate)

2017

93. Valentin R, Nielsen A., Wiman NG, Lee D-H, Fonseca DM 2017 Global invasion network of the brown marmorated stink bug, *Halyomorpha halys* Stål. **Nature Scientific Reports** (accepted)
92. Stone CM, Schwab SR, Fonseca DM, Fefferman NH 2017 Human movement, cooperation, and the effectiveness of coordinated vector control strategies **Journal of the Royal Society Interface** (accepted)
91. Corbel V, Fonseca DM, Weetman D, Pinto J, Achee NL, Chandre F, Coulibaly MB, Dusfour I, Grieco J, Juntarajumnong W, Lenhart A, Martins AJ, Moyes C, Ng LC, Raghavendra K, Vatandoost H, Vontas J, Muller P, Kasai S, Fouque F, Velayudhan R, Durot C, David J-C 2017 International workshop on insecticide resistance in vectors of arboviruses, December 2016, Rio de Janeiro, Brazil. **Parasites & Vectors** <https://parasitesandvectors.biomedcentral.com/articles/10.1186/s13071-017-2224-3>
90. Maslo B, Valentin R*, Leu K, Kerwin K, Bevan A, Hamilton GC, Fefferman NH, Fonseca DM 2017 *Chiro*Surveillance: The Use of Native Bats to Detect Invasive Agricultural Pests. **PLoS One** <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0173321>
89. Vuong HB*, Chiu GS, Smouse PE, Fonseca DM, Brisson D, Morin, PJ, Ostfeld RS 2017 Influences of host community characteristics of *Borrelia burgdorferi* infection prevalence in blacklegged ticks. **PLoS One** <http://dx.doi.org/10.1371/journal.pone.0167810>
88. Johnson BJ, Ritchie S, Fonseca DM 2017 The state of the art of lethal oviposition trap-based mass interventions for arboviral control **Insects** 8, 5; doi:10.3390/insects8010005

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87. Corbel V, Achee N, Chandre F, Coulibaly MB, Dusfour I, Fonseca DM, Grieco J, Juntarajumnong W, Martins Jr AJ, Moyes C, Ng LC, Pinto J, Raghavendra K, Vatandoost H, Vontas J, Weetman D, David J-P 2016 Tracking insecticide resistance in mosquito vectors of arboviruses worldwide: the Worldwide Insecticide resistance Network (WIN). **PLoS NTD** 10(12):e0005054. doi: 10.1371/journal.pntd.0005054
86. Chaulk AC, Carson PK, Whitney HG, Fonseca DM, Chapman TW 2016 The arrival of the northern house mosquito *Culex pipiens* (Diptera: Culicidae) on Newfoundland’s Avalon Peninsula. **Journal of Medical Entomology** 53(6):1364-1369.
85. Egizi A*, Kiser J, Abadam C, Fonseca DM 2016 The hitchhiker’s guide to becoming invasive: exotic mosquitoes spread across a U.S. state by human transport not autonomous flight. **Molecular Ecology** 25(13): 3033-47.
84. Faraji A, Unlu I, Crepeau T, Healy S, Crans S, Lizarraga L, Fonseca DM, Gaugler R 2016 Droplet characterization and penetration of an ultra-low volume mosquito adulticide spray targeting the Asian tiger mosquito, *Aedes albopictus*, within urban and suburban environments of northeastern USA. **PLoS One** <http://dx.doi.org/10.1371/journal.pone.0152069>

83. Rivera MJ*, Rodriguez-Saona C, Egizi A, Fonseca DM, Jennings DE, Koppenhöfer AM 2016 Cultivation and domestication of highbush blueberry (*Vaccinium corymbosum*) alters abundance, diversity, and virulence of entomopathogenic nematodes. **Agriculture, Ecosystems, and Environment** 222: 148-155.
82. Valentin R*, Maslo B, Lockwood J, Pote J*, Fonseca DM 2016 Real-time PCR assay to detect brown marmorated stink bug, *Halyomorpha halys* (Stål), in environmental DNA (eDNA). **Pest Management Science** 72(10):1854-61. doi: 10.1002/ps.4217
81. Thompson J, Fonseca DM, Finelli C, Bakhtier F, Hart DD 2016 Scale dependent relationships between suspension-feeding stream insects and water velocity in spatially heterogeneous environments. **Freshwater Biology** DOI: 10.1111/fwb.12688
80. Johnson BJ*, Fonseca DM 2016 Insecticide resistance alleles in wetland and residential populations of the West Nile virus vector *Culex pipiens* in New Jersey, USA. **Pest Management Science** 72(3):481-8. doi: 10.1002/ps.4011.

2015

79. Price DC*, Egizi AM, Fonseca DM 2015 *Doublesex* is ubiquitous and ancestral in insects **Scientific Reports** 5(13068). DOI: 10.1038/srep13068.
78. Wilkerson RC, Linton Y-M, Fonseca DM, Schultz TR, Price* DC, Strickman DA 2015 Making mosquito taxonomy useful: a stable classification of tribe Aedini that balances utility with current knowledge of evolutionary relationships. **PLoS One** 10(7): e0133602. DOI:10.1371/journal.pone.0133602
77. Price DC*, Egizi AM, Fonseca DM 2015 Characterization of the *doublesex* gene within the *Culex pipiens* complex underscores plasticity at the base of the mosquito sex determination cascade **BMC: Evolutionary Biology** 15:108 DOI: 10.1186/s12862-015-0386-1
76. Fonseca DM, Kaplan LR*, Heiry RA***, Strickman D 2015 Density dependent oviposition by female *Aedes albopictus* (Diptera: Culicidae) spreads eggs among containers during the summer but accumulates them in the fall. **Journal of Medical Entomology** 52(4):705-12.
75. Price DC* and Fonseca DM 2015 Genetic divergence between populations of feral and domestic forms of a mosquito disease vector assessed by transcriptomics. **PeerJ** 3:e807 <https://dx.doi.org/10.7717/peerj.807>
74. Fingerut JT, Fonseca DM, Thompson JR, Hart DD 2015 Seeking shelter from the storm: Responses of benthic stream invertebrates to natural and experimental floods. **Freshwater Science** 34(3): 897-908.
73. Egizi A*, Fefferman NH, Fonseca DM 2015 Evidence that implicit assumptions of “no evolution” of disease vectors in changing environments can be violated on a rapid timescale. **Philosophical Transactions of the Royal Society Series B** 370(1665) DOI: 10.1098/rstb.2014.0136.
72. Johnson BJ*, Robson MG, Fonseca DM 2015 Unexpected spatiotemporal abundance of infected *Cx. restuans* suggest a greater role as a West Nile virus vector for this native species. **Infection, Genetics and Evolution** 31: 40-47.
71. Egizi A*, Fonseca DM. 2015. Ecological limits can obscure expansion history: patterns of genetic diversity in a temperate mosquito in Hawaii. **Biological Invasions** 17(1): 123-132.

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70. Shepard D, Halasa Y, Fonseca DM, Farajollahi A, Healy S, Gaugler R, Bartlett-Healy K, Strickman D, Clark G 2014 Economic evaluation of an area-wide pest management program to control the Asian tiger mosquito in New Jersey. **PLoS One** 9(10): e111014.
69. Turell MJ, Dohm DJ, Fonseca DM 2014 Comparison of the potential for different genetic forms in the *Culex pipiens* complex (Diptera: Culicidae) in North America to transmit Rift Valley fever virus. **Journal of American Mosquito Control Association** 30(4): 253-259.
68. Williams GM, Farajollahi A, Healy S, Farooq M, Gaugler R, Hamilton G, Fonseca DM 2014 Area wide truck-mounted applications of VectoBac WDG for the control of *Aedes albopictus* in residential areas: from optimization to operation. **PLoS One** 9(10): e110035.
67. Healy K**, Hamilton G, Crepeau T, Healy S, Unlu I, Farajollahi A, Fonseca DM 2014 Integrating the public in mosquito management: active education by community peers can lead to significant reduction in peridomestic container mosquito habitats. **PLoS One** 9(9): e108504.
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3. Fonseca DM and Hart DD. 1996. Density-dependent dispersal of black fly neonates is mediated by flow. **Oikos**, 75: 49-58.
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Submitted

1. Dusfour I, Vontas J, David J-P, Weetman D, Fonseca DM, Raghavendra K, Corvel V, Coulibaly MB, Martins AJ, Chandre F Management of insecticide resistance in arbovirus mosquito vectors: advances and challenges **PLoS NTD** (submitted June 2017)
2. Healy KB, Boothe E, Fonseca DM (in draft) Development of a degree day model to predict early season emergence of *Aedes albopictus* (Diptera: Culicidae) **Journal of Medical Entomology**
3. Valentin R, Fonseca DM, Nielsen A, Leskey T, Lockwood JL (in draft) Using eDNA for early detection of terrestrial exotics to minimize impacts on the environment. **Frontiers in Ecology and the Environment** (submitted 4 August 2017)

Invited

1. Fonseca DM, Price DC. 2018. The *Culex pipiens* complex: insights from the genome and the transcriptome. **Annual Review of Entomology** 52 (in preparation).

PATENTS

US patent. Title of application: “The use of major intrinsic proteins in non-mammalian embryo cryopreservation”. Application no.: 6338188. Provisional status

EDITORIALS, ARTICLES AND INTERVIEWS SHOWCASING MY WORK

Princetonian. 2016.

You Bet your Garden. 2016. National Public Radio (March 5) “Garden mosquitoes” by Mike McGrath

Wall Street Journal. 2011. Life & Culture (July 20) “Attack of the urban mosquitoes” by Aatekah Mir

Smithsonian.com. 2011. Science & Nature (June 29) “The next West Nile virus?” by Carrie Arnold

Nature. 2010. News Feature. 466: 432-434. “Ecology: A world without mosquitoes” by Janet Fang

National Geographic. 2006. Beastly News (July): 22. Results of the worldwide survey of populations of the southern house mosquito.

Science. 2004. News of the week in Genetics. 303: 1451. “Hybrid Mosquitoes Suspected in West Nile Virus Spread” by Jennifer Couzin.

Science News. 2004. Editorial. 165(10): 149. “Worst of two Worlds: hybrid mosquitoes spread West Nile virus” by Ben Harder.

New Scientist. 2004. Editorial (March 5) “Hybrid mosquitoes blamed for US West Nile disease” by Debora MacKenzie.

BioScience. 2004. Forum. 54(1): 66-74 (January) “The value of Museum collections for Research and Society” by Andrew Suarez and Neil Tsutsui.

Nature Medicine. 2003. News. 9(5): 488. “Mosquito mating game could mean buzzkill for Brits” by Laura Spinney.

PROFESSIONAL MEMBERSHIPS

2006–present Member of the American Society of Tropical Medicine and Hygiene

2001–present Member of the American Mosquito Control Association

1989–present Member of the Society for the Study of Evolution

2006–present Member of the Entomological Society of America

SERVICE

- 2017 Chair of the Graduate Student Evaluation Committee for the Entomology Department, Rutgers University.
- 2016, present Member of the Editorial Board of the **Journal of Medical Entomology** (2.7)
- 2016, 1-5 Dec Reviewer for the Florida Department of Health and Oak Ridge Associated Universities (ORAU) FLDOH Zika Review 2016
- 2016 Member of the “City of New York Expert Panel” for mosquito-borne Zika control.
- 2016, 10 Feb Attended the Joint Subcommittee Meeting on Foreign Affairs entitled “**The Global Zika Epidemic: Emerging in the Americas**” (Subcommittee on Africa, Global Health, Global Human Rights, and International Organizations Christopher H. Smith (R-NJ), Chairman & Subcommittee on the Western Hemisphere Jeff Duncan (R-SC), Chairman); My participation was entered into the record of the proceedings.
- 2016, Spring Ecology and Evolution Graduate Program Chair Committee, Rutgers University
- 2015–present Member of the Appointments and Promotions (A&P) Committee, Rutgers University
- 2015–2016 co-chair of the Strategic Plan Committee for the Entomology Department, Rutgers University.
- 2015 Associate Editor (one of 6) of the Open Access journal, **Parasites & Vectors** (3.5)
- 2014–present Academic Editor of the Open Access journal, **PeerJ**
- 2014–present Promotions Committee, Entomology Department, Rutgers University.
- 2014, Spring Departmental Seminar Organizer, Entomology Department, Rutgers University.
- 2012–present ad-hoc reviewer in NIH Vector Biology study section. Fall and Spring.
- 2010–present Biomedical Research Advisory Committee (Busch Biomedical Competitive Grant program), School of Arts and Sciences, Rutgers University
- 2010–2015 Graduate Admissions Committee, Entomology Department, Rutgers (2013-2015 chair)
- 2009–present reviewer in Special Emphasis Panels for NIH SBIR grants.
- 2009–2012 Receiving editor for **Infection, Genetics and Evolution** (3.2)
- 2009 Graduate Admissions Committee, Department of Ecology and Evolution, Rutgers University
- 2009, Fall Curriculum Committee, Entomology Department, Rutgers University.
- 2009, Spring Departmental Seminar Organizer, Entomology Department, Rutgers University.
- 2008, Fall Reviewer of SEBS and NJAES Competitive Intramural Research Infrastructure Awards, Rutgers University.
- 2008–2010 Member of the Affirmative Action, Diversity and Equal Opportunity Committee, School of Environmental and Biological Sciences, Rutgers University.
- 2007–2011 Chair of the Climate and Human Health working group at Rutgers University, New Brunswick, NJ, USA.

Since 1989 I have been a reviewer for multiple research journals. I currently review 5-10 manuscripts annually for Molecular Ecology, Infection, Genetics and Evolution, PLoS One, PLoS Biology, PLoS Neglected Tropical Diseases and Parasites & Vectors (on occasion I have reviewed more than 10 mss/year for any one journal). I often also review manuscripts for the Journal of Medical Entomology, Journal of the American Society of Tropical Medicine and Hygiene, Science, Nature, Nature Biotechnology, Ecology, Oikos, Oecologia, Heredity, Journal of Heredity, Molecular Biology and Evolution, Genomics, Medical and Veterinary Entomology, and Journal of the American Mosquito Control Association.