

RYAN MARC CARNEY

Department of Integrative Biology • Center for Virtualization & Applied Spatial Technologies (CFAST)
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EDUCATION

PhD	2016	Brown University , Providence, RI Ecology & Evolutionary Biology; advisor Prof. Stephen Gatesy Thesis: <i>Evolution of the archosaurian shoulder joint and the flight stroke of Archaeopteryx</i>
MS	2013	Ecology & Evolutionary Biology
MPH	2010	Yale School of Medicine , New Haven, CT Epidemiology of Microbial Diseases; advisor Prof. Durland Fish Thesis: <i>GIS-based early warning system for predicting high-risk areas of dengue virus transmission, Ribeirão Preto, Brazil</i> . Winner of Dean's Prize for Outstanding Thesis.
MBA	2010	Yale School of Management , New Haven, CT Concentration: Technology
BA (Honors)	2003	University of California - Berkeley , Berkeley, CA Integrative Biology; advisor Prof. Kevin Padian Thesis: <i>Phylogenetically testing the hypothesis of secondary flightlessness within Maniraptoriformes</i>
BA	2003	Art Practice

ACADEMIC POSITION

2016 - present **Assistant Professor of Digital Science, University of South Florida**, Tampa, FL.
Department of Integrative Biology / Center for Virtualization & Applied Spatial Technologies (CFAST).

RESEARCH INTERESTS

From *Archaeopteryx* to Zika, my research interests primarily revolve around three disparate topics: **functional morphology**, **paleocolor**, and **epidemiology**. Overall, my interdisciplinary research program combines leading-edge digital technologies, exceptional fossil specimens, and novel comparative approaches among living and extinct animals. My work aims to reveal overarching evolutionary processes that have driven adaptive radiations, and answer fundamental questions in organismal biology. In particular, this includes the structural and functional changes that occurred during major locomotor transitions, and the evolution and function of coloration over deep time. I also bring a diverse background and over a decade of leadership experience serving as Principal Investigator for various large-scale research projects. Specific interests include:

- Discovering new anatomical insights into the evolution of avian flight, with an emphasis on *Archaeopteryx*
- Advancing understanding of joint functional morphology and locomotor biomechanics, using *in vivo* methods
- Reconstructing ancient motion, through a synthesis of the above approaches and animation software
- Reconstructing the original colors of fossilized feathers and skin, to reveal evolutionary insights
- Developing GIS-based models that predict epidemics of mosquito-borne diseases
- Integrating research into educational tools, open-source software, and science outreach
- Utilizing next-generation 3D platforms (virtual reality, interactive holograms) for research and teaching

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FELLOWSHIPS AND SCHOLARSHIPS

2011	National Science Foundation – Graduate Research Fellowship	\$127,900
2007–2010	Yale University – Dean’s Scholarship, merit-based award to top 5% of students	\$22,400
2007–2008	Yale University – Susan Dwight Bliss Scholarship	\$5,000
2008	Centers for Disease Control – Graduate Training Fellowship	\$7,000
1999–2003	University of California, Berkeley – Alumni Leadership Scholarship	\$5,000
2000–2001	University of California, Berkeley – Honorary Morgan Scholarship	\$1,000
1999	Corcoran Jaycees Scholarship	\$1,000
1999	National Merit Scholarship	\$2,000

SELECTED GRANTS

2014	National Geographic Society – Waitt Research Grant	\$13,992
2013	National Geographic Society – Committee for Research and Exploration	\$13,800
2012	National Geographic Society – Waitt Research Grant	\$14,971
2009–2011	National Science Foundation – SGER Research Grant, in collab. with J. Gauthier	\$41,996
2010	National Geographic Society – Expeditions Council Research Grant	\$5,745
2010	National Geographic Society – Waitt Research Grant	\$4,950
2002–2003	University of California, Berkeley – Gompertz Research Grant	\$2,000

- 2005: secured \$200,000 to create and maintain a West Nile virus risk modeling system; see Professional Experience

TEACHING EXPERIENCE

University of South Florida, Tampa, FL 1/17 - present

Digital Dinosaurs (BSC 4933.017; undergraduate level): lecture and laboratory course

- Designed and developed curriculum, delivered lectures, and ran laboratory sections.

Alpert Medical School, Brown University, Providence, RI 8/11 - 1/12

Graduate Teaching Instructor, **Human Anatomy** (BIOL 3664 IMS I)

- Taught cadaver-based laboratory sections for >100 medical students (>100 hours of laboratory).
- Designed rotator cuff prosection, dissected anatomy; presented knee and bovine heart/lung prosections.
- Wrote questions for written and practical examinations; proctored practical examinations.

School of Medicine, Yale University, New Haven, CT 9/09 - 12/09

Teaching Fellow, **GIS Applications in Epidemiology and Public Health** (Biostatistics 511; graduate level)

- Taught course lab sections using geographic information systems software; graded assignments.

Department of Art, University of California, Berkeley, CA 1/05 - 5/05

Teaching Assistant, **Digital Sculpture** (Art Practice 160; undergraduate level)

- Taught lab sections, lectured, and supervised and trained students to use 3D laser scanning equipment.

Invited course lectures (see below for other presentations)

- “Archosaurs and *Archaeopteryx*” for undergraduate biology course at U Mass Dartmouth, 2016
- “Bird and Dinosaur Origins” for undergraduate biology course at Brown University, 2015
- “West Nile Virus Risk Modeling” for graduate public health course at Yale University, 2009
- “GIS and Public Health Surveillance” for graduate public health course at UC Berkeley, 2007

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PUBLICATIONS

citations: 542 • h-index: 11 • Google Scholar profile: [\[link\]](#)

Lindgren J, Sjövall P, **Carney RM**, Cincotta A, Uvdal P, Hutcheson SW, Gustafsson O, Lefèvre U, Escuillié F, Heimdal J, Engdahl A, Gren JA, Kear BP, Wakamatsu K, Yans J, Godefroit P. 2015. Molecular composition and ultrastructure of Jurassic paravian feathers. *Scientific Reports* 5. [\[link\]](#)

Lindgren J, Sjövall P, **Carney RM**, Uvdal P, Gren JA, Dyke G, Schultz BP, Shawkey MD, Barnes KR, Polcyn MJ. 2014. Skin pigmentation provides evidence of convergent melanism in extinct marine reptiles. *Nature* 506(7489):484–8. [\[link\]](#)

Carney RM, Vinther J, Shawkey MD, D’Alba L, Ackermann J. 2012. New evidence on the colour and nature of the isolated *Archaeopteryx* feather. *Nature Communications* 3:637 doi: 10.1038/ncomms1642. [featured in >140 articles from 30 countries, including the *The New York Times*; see Outreach] [\[link\]](#)[\[video\]](#)

Vinther J, Jell P, Kampouris G, **Carney RM**, Racicot RA, Briggs DEG. 2012. The origin of multiplacophorans – convergent evolution in aculiferan molluscs. *Palaeontology* 55(5):1007–19. [\[link\]](#)[\[animation\]](#)

Carney RM, Ahearn SC, McConchie A, Glaser C, Jean C, Barker C, Park B, Padgett K, Parker E, Aquino E, Kramer V. 2011. Early warning system for West Nile virus risk areas, California, USA. *Emerging Infectious Diseases* 17(8): 1445-54. [\[link\]](#)

Carney RM. 2010. GIS-based early warning system for predicting high-risk areas of dengue virus transmission, Ribeirão Preto, Brazil. Masters Thesis, *Yale University*. [winner of Dean’s Prize for Outstanding Thesis] [\[link\]](#)

Carney RM, Husted S, Jean C, Glaser C, Kramer V. 2008. Efficacy of aerial spraying of mosquito adulticide in reducing incidence of West Nile virus in humans, Sacramento County, California, 2005. *Emerging Infectious Diseases* 14(5):747-54. [\[link\]](#)

Carney RM, Ahearn S, McConchie A, Glaser C, Jean C, Barker C, Park B, Padgett K, Kramer V. 2008. Implementation of the spatiotemporal DYCAST risk modeling system to predict human West Nile virus cases in California, 2005. In: *5th International Conference on Geographic Information Systems (ICGIS-2008): Proceedings, July 2-5, 2008*. Demirci, A. (Ed.), Fatih University Publications, Istanbul, Vol. II.

Crosbie SP, Koenig WD, Reisen WK, Kramer VL, Marcus L, **Carney RM**, Pandolfino E, Bolen GM, Crosbie LR, Bell DA, Ernest HB. 2008. Early impact of West Nile virus on the Yellow-billed Magpie (*Pica nuttalli*). *The Auk* 125(3): 542-550.

Scott T, Lee P-Y, Padgett K, **Carney R**, Husted S, Koenig W. 2008. The impact of West Nile virus on birds in California’s hardwood rangelands. In: *Proceedings of the Sixth Symposium on Oak Woodlands* (pp. 151-163).

Padgett KA, Reisen WK, Kahl-Purcell N, Fang Y, Cahoon-Young B, **Carney R**, Anderson N, Zucca L, Woods L, Husted S, Kramer V. 2007. West Nile virus infection in tree squirrels (Rodentia: Sciuridae) in California, 2004-2005. *American Journal of Tropical Medicine and Hygiene* 76(5):810-3.

Feiszli T, Park B, Kramer V, Kjemtrup A, Eldridge B, Fang Y, Reisen WK, Baylis E, Jean C, Glover J, **Carney R**, Padgett K, Erickson C, Husted S. 2007. Surveillance for mosquito-borne encephalitis virus activity in California, 2006. *Proceedings and Papers of the Mosquito and Vector Control Association of California (MVCAC)* 75(1):48-59.

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Reisen WK, Barker CM, **Carney R**, Lothrop HD, Wheeler SS, Wilson JL, Madon MB, Takahashi R, Carroll B, Garcia S, Fang Y, Shafii M, Kahl N, Ashtari S, Kramer V, Glaser C, Jean C. 2006. Role of corvids in epidemiology of West Nile virus in southern California. *Journal of Medical Entomology* 43(2):356-67.

Reisen WK, Fang Y, Lothrop HD, Martinez VM, Wilson J, O'Connor P, **Carney R**, Cahoon-Young B, Shafii M, Brault AC. 2006. Overwintering of West Nile virus in southern California. *Journal of Medical Entomology* 43(2):344-55.

Padgett KA, Cahoon-Young B, **Carney R**, Woods L, Read D, Husted S, Kramer V. 2006. Field and laboratory evaluation of diagnostic assays for detecting West Nile virus in oropharyngeal swabs from California wild birds. *Vector-Borne and Zoonotic Diseases* 6(2):183-91.

Hom A, Bonilla D, Kjemtrup A, Kramer VL, Cahoon-Young B, Barker C, Marcus L, Glaser C, Baylis E, Jean C, Eldridge B, **Carney R**, Padgett K, Sun B, Reisen WK, Woods L, Glover J, Erickson C, Barclay C, Husted S. 2006. Surveillance for mosquito-borne encephalitis virus activity and human diseases, including West Nile virus in California, 2005. *Proceedings and Papers of the MVCAC* 74:43-54.

Wheeler SS, **Carney R**, Carroll B, Wright S, Armijos V, Wilson J, Garcia S, Fang Y, Reisen WK. 2005. West Nile virus in wild birds: who lives and who dies? *Proceedings and Papers of the MVCAC* 73.

Hom A, Marcus L, Kramer VL, Cahoon-Young B, Glaser C, Cossen C, Baylis E, Jean C, Tu E, Eldridge BF, **Carney R**, Padgett K, Sun B, Reisen WK, Woods L, Husted S. 2005. Surveillance for mosquito-borne encephalitis virus activity and human disease, including West Nile virus, in California, 2004. *Proceedings and Papers of the MVCAC* 73:66-77.

SELECTED CONFERENCE ABSTRACTS

Carney RM, Molnar J, Updike E, Brown W, Jackson J, Shawkey M, Lindgren J, Sjövall P, Falkingham P, Gauthier J. 2014. *Archaeopteryx* in 4D. *Journal of Vertebrate Paleontology* 34(3S):83-4. Invited symposium speaker.

Carney RM. 2008. ArcOSAUR: ArcGIS Operations for Surface Analysis Using Rasters. *Journal of Vertebrate Paleontology* 28(3S):61A.

Carney RM, Gishlick A. 2004. Utilizing digital techniques within an extant phylogenetic bracketing paradigm to reconstruct and analyze the role of articular cartilaginous structures in dromaeosaur forelimb function. *Journal of Vertebrate Paleontology*. 24(3S):44A.

Carney RM. 2003. Phylogenetically testing the hypothesis of secondary flightlessness in Maniraptoriformes. *Journal of Vertebrate Paleontology*. 23(3S):38A.

SOFTWARE

- **ArcOSAUR**: ArcGIS Operations for Surface Analysis Using Rasters (ArcGIS software) (Carney 2008)
- **GoogIecology**: corporate planning dashboard based on “organizational phylogenetics” (Improvise software)

REVIEWER FOR

International Journal of General Medicine, Naturwissenschaften, PLOS ONE, SLAC National Accelerator Lab

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PROFESSIONAL AFFILIATIONS

American Chemical Society, International Society of Vertebrate Morphologists, Sigma Xi (Full Member), Society of Experimental Biology, Society for Integrative & Comparative Biology, Society of Vertebrate Paleontology (Lanzendorf PaleoArt Committee, 2012–present)

PROFESSIONAL EXPERIENCE

Paleontologist

8/02 – present

- Served as Principal Investigator for various international collaborative research projects, most notably: 1). high-resolution 3D digital scanning and reconstruction of the best-preserved *Archaeopteryx* skeleton, 2). investigating the color and composition of the isolated *Archaeopteryx* fossil feather (Carney et al 2012), and 3). investigating the coloration and exceptional soft-tissue preservation of a mummified dinosaur.
- Created a set of computational tools (ArcOSAUR: ArcGIS Operations for Surface Analysis Using Rasters) for topographical analysis of 3D anatomical data within a geographic information systems platform.
- Conducted fieldwork in the Cretaceous Hell Creek Formation of North Dakota and Jurassic Solnhofen of Germany.
- Produced and directed documentary video, photography, and press releases for future dissemination in popular media; created and licensed computer animated video content for publication and television broadcast.

Google, Mountain View, CA

6/09 - 8/09

Intern

- Created an interactive organizational planning dashboard (“GooglEcology”) for executives to easily visualize, analyze, and compare internal data. Invented a new heuristic (“organizational phylogenetics”) that integrates frameworks and methodologies from ecology, evolutionary science, and sociology.
- Validated and improved a survival analysis statistical model for predicting employee attrition, and also analyzed which elements of diversity drove innovation among engineering teams.

Yale University, Ribeirão Preto, Brazil

6/08 - 8/08

Centers for Disease Control, Graduate Fellow Intern

- Designed and conducted a research project involving the spatiotemporal analysis of dengue virus transmission in Ribeirão Preto, Brazil; created and analyzed various datasets (e.g., human dengue cases, vector surveillance, census, address locator, satellite imagery) (Carney 2010).
- Met with local health departments, vector control agency, research laboratory, and medical facility to acquire necessary data; consulted agencies on how to implement and utilize geographic information systems.

California Department of Public Health, Richmond, CA

2/04 - 8/07

Coordinator, West Nile Virus (WNV) Dead Bird Surveillance Program

- Led a 33-person, \$600K statewide disease surveillance program, including hotline and website.
- Served as Principal Investigator for two research projects (Carney et al 2008, Carney et al 2010), presented research at national and state conferences.
- Secured \$200K to create and maintain an open-source, real-time West Nile virus risk modeling system (DYCAST), which predicted 82% of human cases its first year. Success resulted in incorporation into state response plan.
- Coordinated and collaborated with >250 agencies and laboratories regarding submission and reporting of test samples (>9K/year), weekly bulletins of statewide results, and public education campaigns.
- Developed and coordinated a centralized, multi-agency database network (BIRD) for managing and disseminating all avian influenza surveillance data statewide.

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- Created hotline features to accommodate a 17-fold seasonal increase in calls (up to 3K/day) and increase public education and disease prevention; created and initiated novel algorithms and solutions for emergency control during epidemics.

University of California, Berkeley, CA

7/02 - 1/04

Staff Research Associate, *Insect Biology*: Dr. Robert Lane

- Conducted research in NIH and CDC-funded genetic and BL3 animal laboratories; investigated the ecology, epidemiology, and microbiology of *Borrelia burgdorferi* spirochetes and other tick-borne pathogens.
- Conducted experimental studies and procedures involving research animals and vector-borne diseases in the field and laboratory; collected and managed ticks and wildlife in field-study sites.
- Performed PCR assays of ticks, vertebrate tissues, and borrelial isolates for identification and sequence characterization; managed data and sample collections.

SKILLS

Software: 3D modeling and animation (Maya), 3D processing (Geomagic, MeshLab), CT imaging and segmentation (Avizo/Amira, OsiriX/Horos), databases and queries (Access, Excel, SQL), data visualization (ImageJ, Improvise), genetic (GenBank, Sequencher), graphic design and illustration (Adobe Creative Suite), geographic information systems (ArcGIS suite/Python), MATLAB, MS Office suite, photogrammetry (PhotoScan), satellite imaging (ER Mapper, ENVI), statistical (R, SAS, SPSS), video editing (Final Cut Pro, Premiere), web design/HTML.

Laboratory: acid demineralization, animal care, contrast-enhanced staining, CT scanning, DNA extraction/sequencing, electromyography, gel electrophoresis, human and animal cadaver dissection, laser scanning, light microscopy, RT-PCR, scanning electron microscopy, tissue fixation, time-of-flight secondary ion mass spectrometry (ToF-SIMS), veterinary surgery, wavelength-dispersive x-ray spectroscopy, x-ray diffraction, X-ray Reconstruction of Moving Morphology (XROMM).

SCIENCE OUTREACH

- [National Geographic Explorer](#)
- National Geographic Learning / Cengage. Global middle school curriculum, Flight unit. Contributor (2016)
- National Geographic Kids. "Dinosaur Color" by Zac Petit. Interviewee (2014)
- Volunteer: Florida Aquarium: National Fossil Day (2016); Yale Peabody Museum: Dr. Martin Luther King Jr. Days, Paleo-Knowledge Bowl (2007-2010); California State Capital: Science Days (2007).
- San Francisco Chronicle. "Chronicles in Education: The New Science of Dinosaurs." Contributor (2005)
- (see public presentations below)

Exhibits

- "Dinosaurs Take Flight: The Art of *Archaeopteryx*" traveling exhibit. Contributor, consultant (2015)
- Garden of the Gods Visitor Center. "*Theiophytalia kerri*." Consultant (2014)
- Lawrence Hall of Science. "Big Dinos Return." Contributor (2005)

Television

- National Geographic Channel. TBD film. Consultant (2016)
- National Geographic Channel. "*T. rex* Autopsy." Consultant (2015)
- Discovery / Science Channel. "The Dinosaur Feather Mystery." Contributor (2004)

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PRESS

2016

- [PNAS](#). “News Feature: Prehistoric animals, in living color” by Amber Dance.
- Comment in: [Christian Science Monitor](#). “How a 10-million-year-old snake helps bring extinct animals into full color” by Eva Botkin-Kowacki.

2015

- **Lindgren et al 2015**, *Scientific Reports* press releases: [EurekAlert!](#), [Brown University](#): “Pigments, organelles persist in fossil feathers” • articles: [Forbes](#), [IFLScience!](#), [NBC News](#), [redOrbit](#), [Science Update radio / AAAS](#), [Tech Times](#), [Vice / Motherboard](#), [Der Standard](#) (Austria), [Yahoo! News](#) (Canada), [Gazeta Wyborcza](#) (Poland), [VladTime](#) (Russia), [Europa Press](#) (Spain)
- [Providence Journal](#). “‘Nerd Nite’ debut in Providence draws a curious crowd” by Carol Kozma
- [Vice / Motherboard](#). “These Are the Dinosaurs Paleontologists Want to See in Movies” by Becky Ferreira

2014

- **Lindgren et al 2014**, *Nature* press release: [EurekAlert!](#): “Fossil pigments reveal the colors of ancient sea monsters” • articles: [BBC](#), [Brown Daily Herald](#), [Brown University](#), [CBS News](#), [Discovery News](#), [National Geographic](#), [Phys.org](#), [redOrbit](#), [Science / AAAS](#), [The Scientist](#), [Laborwelt](#) (Germany), [Spiegel Online](#) (Germany), [Le Scienze](#) (Italy)
- [Nature](#). “Rival species recast significance of ‘first bird’” by Ewen Callaway
- [National Geographic](#). “Feathered Fossils Give Scaly Dinosaurs a Makeover” by Dan Vergano
- **Carney et al 2014**, *JVP* press release: [Society for Vertebrate Paleontology](#): “Taking a deeper look at ‘ancient wing’” • articles: [Vice / Motherboard](#), [Science World Report](#), [Science 2.0.](#), [Biosphere](#)
- [LiveScience](#). “True Color of Dinosaur Feathers Debated” by Megan Gannon
- [COSMOS](#) (Australia). “The ever-changing land of the dinosaurs” by Becky Crew
- [Journal Sentinel](#). “Study finds new shades in proto-bird's feathers” by Jennifer Laaser
- [Chemistry World / Royal Society of Chemistry](#) (UK). “Colouring in the dinosaur book” by Emma Stoye

2013

- *Archaeopteryx* research featured in the book, [My Beloved Brontosaurus](#) by Brian Switek
- *Archaeopteryx* research featured in the book, [Zombie Birds, Astronaut Fish, and Other Weird Animals](#) by Becky Crew

2012

- **Carney et al 2012**, *Nature Communications* press releases: [EurekAlert!](#), [Brown University](#): “Winged dinosaur Archaeopteryx dressed for flight” • articles: [The New York Times](#), [Nature](#), [Science / AAAS](#), [National Geographic](#), [Brown Daily Herald](#), [ScienceNews](#), [Huffington Post](#), [Medill Reports](#), [WSU](#), [COSMOS](#) (Australia), [Die Presse](#) (Austria), [Futura-Sciences](#)(France), [Hindustan Times](#) (India), [NRC](#) (Netherlands), [NWT Magazine](#) (Netherlands), [Scientias](#) (Netherlands), [Kennislink](#)(Netherlands), [La Razon](#) (Spain), [metrics](#) • video: [National Geographic/Brown University](#), • radio: National Geographic Weekend Radio,
- [Discover Magazine](#). “*Archaeopteryx*: The Embargoed Tattoo” by Carl Zimmer
- **Vinther et al 2012**, *Palaeontology* press release: [UT Austin](#): “CT scan and 3-D print help scientists reconstruct an ancient mollusk” • articles: [National Geographic](#), [Daily Mail](#), [redOrbit](#), [Sci-News](#), [Science](#), [Space & Robots](#) • animation: [link](#)

2011

- **Carney et al 2011**, *Emerging Infectious Diseases* press release: [Brown University](#): “Software predicted virus risk in California epidemic” by David Orenstein • articles: [Medical Xpress](#), [redOrbit](#), [UPI](#)

2008

- **Carney et al 2008**, *Emerging Infectious Diseases* • article: [Yale University](#). “Aerial Spraying Effectively Reduces Incidence of West Nile Virus in Humans” by Michael Greenwood

2006

- [San Francisco Chronicle](#). “West Nile warning system: Citizens’ dead bird reports have helped control infected mosquitoes” by Sabin Russell

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- [San Francisco Chronicle](#). "West Nile could get worse, expert warns: Virus outbreak could turn into major epidemic" by Sabin Russell
- [Smash Magazine](#). "Mastema" by Lauren Napier
- [Government Health IT](#). "Surveillance case study: Mosquito coasts" by Dibya Sarkar

ORAL PRESENTATIONS

- "Swinging for the fences." Keynote speaker. Administrators Conference on Education, Albuquerque, NM, 2016.
- "Diseases & Dinosaurs." Invited speaker. National Geographic Closer Look presentation, Washington, DC, 2016.
- "Evolution of the archosaurian shoulder joint and the flight stroke of *Archaeopteryx*." Society of Vertebrate Paleontology conference, Salt Lake City, UT, 2016.
- "A novel joint surface approach for studying skeletal evolution and motion." International Congress of Vertebrate Morphology, Washington, DC, 2016.
- "Evolution of the archosaurian shoulder joint and the flight stroke of *Archaeopteryx*." PhD dissertation defense. Brown University, Providence RI, 2016.
- "The 3D *Archaeopteryx* Project." Society for Integrative and Comparative Biology, Division of Vertebrate Morphology regional meeting, University of Massachusetts Dartmouth, North Dartmouth, MA, 2015.
- "Imagining the Prehistoric." Invited speaker. Nerd Nite, Providence, RI, 2015.
- "*Archaeopteryx* in 4D." Invited symposium speaker. Society of Vertebrate Paleontology conference, Berlin, 2014.
- "Imagining the Prehistoric." Science Communication Research Social, Brown University, 2014.
- "Imagining the Prehistoric." Invited symposium speaker. National Geographic Society Explorers Symposium, Washington, D.C., 2014.
- "*Archaeopteryx* and the evolution of the archosaur shoulder." Society for Integrative and Comparative Biology, Division of Vertebrate Morphology regional meeting, Yale University, New Haven, CT, 2013.
- "Back in black: new evidence on the color and nature of the isolated *Archaeopteryx* feather." International Congress of Vertebrate Morphology, Barcelona, Spain, 2013.
- "Back in black: new evidence on the color and nature of the isolated *Archaeopteryx* feather." Society for Experimental Biology annual conference, Valencia, Spain, 2013.
- "*Archaeopteryx* feather color and mummified dinosaur skin." Invited speaker. Geology Department, Brown University, Providence, RI, 2013.
- "A biologically-based GIS model for predicting outbreaks of mosquito-borne viral diseases." Society for Integrative and Comparative Biology Annual Meeting, San Francisco, CA, 2013.
- "Back in black: new evidence on the color, ultrastructure, and nature of the isolated *Archaeopteryx* fossil feather." University of Rhode Island Graduate Student Conference, Kingston, RI, 2012.
- "Back in black: new evidence on the color, ultrastructure, and nature of the isolated *Archaeopteryx* fossil feather." Invited speaker. Brown University public forum, Providence, RI, 2012.
- "Back in black: new evidence on the color, ultrastructure, and nature of the isolated *Archaeopteryx* fossil feather." Society for Integrative and Comparative Biology annual meeting, Charleston, SC, 2012.
- "Of bugs and birds: from vector-borne disease models to the color of flying dinosaur *Archaeopteryx*." Invited speaker. BioMed Interdisciplinary Graduate Seminar Series, Brown University, Providence, RI, 2011.
- "Black feather color in *Archaeopteryx*." Society of Vertebrate Paleontology conference, Las Vegas, NV, 2011.
- "Of bugs and birds: from ecological disease models to the color of *Archaeopteryx*." Ecology & Evolutionary Biology departmental seminar, Brown University, Providence, RI, 2011.
- "What I did on my summer vacation at Google / 'Search and Employ.'" Google, Mountain View, CA, 2009.
- "GooglEcology and ROCnroll." Google, Mountain View, CA. 2009.
- "Cretaceous Park." Google, Mountain View, CA, 2009.
- "Dengue transmission in Ribeirão Preto." Universidade de São Paulo; public health internship presentation, Ribeirão Preto, Brazil, 2008.
- "The 2006 California DYCAST Program." Mosquito & Vector Control Association of California (MVCAC) annual conference, Fresno, CA, 2007.

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- “The California Dynamic Continuous-Area Space-Time (DYCAST) risk modeling system.” Invited speaker. New York City Department of Health & Mental Hygiene, New York, NY, 2006.
- “Utilizing the spatiotemporal DYCAST system to predict human West Nile virus cases in California, and to evaluate the efficacy of aerial adulticiding within Sacramento County, 2005.” Invited presentation to Centers for Disease Control and Prevention, via conference call, 2006.
- “The California Dynamic Continuous-Area Space-Time (DYCAST) risk modeling system.” Microbial Diseases Laboratory, California Department of Public Health, Richmond, CA, 2006.
- “The California Dynamic Continuous-Area Space-Time (DYCAST) risk modeling system.” Mosquito & Vector Control Association of California annual conference, Reno, NV, 2006.
- “The California Dynamic Continuous-Area Space-Time (DYCAST) risk modeling system.” Mosquito & Vector Control Association of California continuing education workshop, Alameda, CA, 2006.
- “Utilizing dead bird reports and GIS: Prospective space time analysis of West Nile virus risk areas.” ESRI Sacramento Users Group meeting, California Department of Public Health, Sacramento, CA, 2006.
- “California DYCAST Model: Prospective Space Time Analysis of West Nile Virus Risk Areas.” California Conference of Local Health Officers, Oakland, CA, 2005.
- “Arbovirus Surveillance & Response: West Nile Virus: 2004.” Vector-Borne Disease Section annual off-site meeting, Sacramento-Yolo Mosquito and Vector Control District, Elk Grove, CA, 2005.
- “Public Health Labs and the WNV Dead Bird Surveillance Program.” Public Health Laboratory Dead Bird PCR Testing workshop, University of California, Davis, CA, 2005.
- “The WNV Dead Bird Surveillance Program.” MVCAC continuing education workshop, Fresno, CA, 2005.
- “The Dead Bird Surveillance Program – Challenges and Solutions in 2004.” Mosquito & Vector Control Association of California annual conference, Monterey, CA, 2005.
- “Utilizing digital techniques within an extant phylogenetic bracketing paradigm to reconstruct and analyze the role of articular cartilaginous structures in dromaeosaur forelimb function.” Society of Vertebrate Paleontology annual conference, Denver, CO, 2004.
- “The CDHS West Nile virus Dead Bird Surveillance Program.” Mosquito & Vector Control Association of California annual steering committee meeting, Davis, CA, 2004.
- “Using digital scanning and modeling to reconstruct and test the forelimb function of *Deinonychus antirrhopus*.” Society of Vertebrate Paleontology annual conference, Minneapolis, MN, 2003.

ADDITIONAL INFORMATION

- Eagle Scout
- Graduate Student Council Representative, Brown University (2012–2015)
- Published, award-winning visual artist (drawing, painting, sculpture, graphic design)