

# RYAN MARC CARNEY

Department of Integrative Biology • National Geographic Emerging Explorer  
University of South Florida; 4202 E. Fowler Ave., SCA 110; Tampa, FL 33620-5200  
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## EDUCATION

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<b>PhD</b>	2016	<b>Brown University</b> , Providence, RI Ecology & Evolutionary Biology; advisor Prof. Stephen Gatesy Thesis: <i>Evolution of the archosaurian shoulder joint and the flight stroke of Archaeopteryx</i>
<b>MS</b>	2013	Ecology & Evolutionary Biology
<b>MPH</b>	2010	<b>Yale School of Medicine</b> , 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.
<b>MBA</b>	2010	<b>Yale School of Management</b> , New Haven, CT Concentration: Technology
<b>BA (Honors)</b>	2003	<b>University of California - Berkeley</b> , Berkeley, CA Integrative Biology; advisor Prof. Kevin Padian Thesis: <i>Phylogenetically testing the hypothesis of secondary flightlessness within Maniraptoriformes</i>
<b>BA</b>	2003	Art Practice

## ACADEMIC POSITION

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2016 - present      **Assistant Professor of Digital Science, University of South Florida**, Tampa, FL.  
Department of Integrative Biology

## RESEARCH INTERESTS

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From *Archaeopteryx* to Zika, my research primarily involves dinosaurs and diseases, and is fundamentally digital and interdisciplinary. Pedagogical activities include integrating research into educational tools and science outreach, and utilizing next-generation 3D platforms such as virtual reality and augmented reality (holographic computing).

- **Dinosaurs.** My paleontology research focuses on bringing dinosaurs "back to life" by scientifically reconstructing skeletons, motion, and original coloration. Approaches combine exceptionally-preserved fossils and state-of-the-art technologies, from high-resolution X-ray imaging to Maya animation software. Generally, I'm interested in the structural and functional changes that occurred during major transitions. In particular, my research involves the evolution of flying dinosaurs, with an emphasis on the iconic "missing link," *Archaeopteryx*. Other lines of investigation include joint functional morphology and evolutionary biomechanics, pursued through an integration of *in vivo* experiments, *in silico* modeling, and novel comparative approaches among living and extinct animals. My research also includes the emerging field of paleocolor: elucidating the original colors of fossilized feathers and skin, using new imaging and molecular techniques. Such results reveal not only what ancient creatures once looked like, they also provide insights into their evolutionary history and behavior.

- **Diseases.** My epidemiology research focuses on the surveillance and control of mosquito-borne diseases, particularly Zika, dengue, and West Nile virus. Given that there are no cures or vaccines available, prevention and mosquito abatement are the only solutions for containing outbreaks. With that goal, my work leverages technologies such as geographic information systems, remote sensing (drone and satellite imagery), and the DYCAST early warning system as powerful tools for fighting disease - from predicting epidemics to the strategic targeting of control efforts.

## RYAN MARC CARNEY

### SELECTED GRANTS AND AWARDS

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2018	University of South Florida – Outstanding Faculty Award	N/A
2017	National Geographic Society – Emerging Explorer Award	\$10,000
2014	National Geographic Society – Waitt Research Grant	\$13,992
2013	National Geographic Society – Committee for Research and Exploration Grant	\$13,800
2012	National Geographic Society – Waitt Research Grant	\$14,971
2011	National Science Foundation – Graduate Research Fellowship	\$127,900
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
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
1997	Boy Scouts of America – Eagle Scout	N/A

### TEACHING EXPERIENCE

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

**Digital Dinosaurs** (BSC 4933; undergraduate level, 24 students): lecture and laboratory course

- Designed and developed technology-focused curriculum, delivered lectures, and ran laboratory sections.
- **Synopsis:** This course provides a comprehensive exploration, including some hands-on training, of the cutting-edge digital tools used in paleontology. While the subject matter will focus on dinosaurs, the techniques will be applicable to a variety of disciplines. Link: [\[TV clip\]](#)

**University of South Florida, Tampa, FL** 1/19 - present

**Comparative Vertebrate Anatomy** (ZOO 3713C; undergraduate level, 96 students): lecture and laboratory course

- Lectured twice a week and supervised four graduate Teaching Assistants (TAs) and four undergraduate TAs involved in the four dissection-based laboratory sections..
- **Synopsis:** Designed for undergraduates in biology or the biomedical sciences – particularly pre-veterinary and pre-medicine – this course covers the anatomy of the vertebrates, emphasizing the comparative, functional, and evolutionary aspects of these animals.

**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.

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## Invited course lectures (see below for other presentations)

- “Visualizing GIS in 3D and augmented reality” for graduate course at USF College of Public Health, 2017
- “Zika early warning system” for graduate course at USF College of Public Health, 2017
- “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

## MENTORING & TRAINING

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### Postdoctoral Researchers

- Dr. Phil Morris. Integrative Biology (2019–present)
- Dr. Toni Panaou. Integrative Biology (2018)

### Graduate Students

- Alex Kirk. PhD student, Integrative Biology. Advisee (2017–present)
- William Gardner. MPH candidate, College of Public Health (2017–2019)

### Graduate Committees

- Sean Beeman. PhD candidate, College of Public Health (2018–present)
- Christian Brown. PhD candidate, Integrative Biology (2018–present)
- Meredith Krause. PhD candidate, Integrative Biology (2019–present)
- Nils Tack. PhD candidate, Integrative Biology (2019–present)

### Undergraduate Students

- Connor Mapes. Honors College / Geosciences (2018–present); Honors Thesis Advisee (2019–present).
- Mary Williams. Honors College / Engineering (2017–present)
- Alec Baines. Integrative Biology (2017–present)
- Jim Mirzakhlov. Honors College / Engineering (2017–18)
- Manuel Regalado. Honors College / Chemical Engineering (2017–18)
- Kaleigh Nelson. Integrative Biology, Geosciences (2017)
- Michael Rey. College of Public Health (2016–17)

### Researchers

- Vincent Meijer. Staff Research Associate (2017)
- Myriam Van Walsum. Staff Research Associate (2017)

## PUBLICATIONS (undergraduate\*, graduate\*\*)

citations: 789 • h-index: 12 • Google Scholar profile: [\[link\]](#)

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23). Schwarz D, Kundrát M, Tischlinger H, Dyke G, & Carney RM. 2019. Ultraviolet light illuminates the avian nature of the Berlin *Archaeopteryx* skeleton. *Scientific Reports* 9:6518. [\[link\]](#)

22). Baier DB, Garrity BM\*, Moritz S, & Carney RM. 2018. Alligator *mississippiensis* sternal and shoulder girdle mobility increase stride length during high walks. *Journal of Experimental Biology* 221(22):jeb186791. [\[link\]](#)

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- 21). Leandro-Reguillo P\*, Panaou T\*\*, **Carney R**, Jacob BG. 2017. Fuzzification of multi-criteria proxy geoclassifiable vegetation and landscape biosignature estimators to predict the potential invasion of *Aedes aegypti* in Barcelona, Spain. *International Journal of Geographic Information System* 4(2):1-19.
- 20). **Carney RM**. 2016. Evolution of the archosaurian shoulder joint and the flight stroke of *Archaeopteryx*. PhD Dissertation, *Brown University*.
- 19). 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](#)]
- 18). 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](#)]
- 17). **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](#)]
- 16). 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](#)]
- 15). **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](#)]
- 14). **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](#)]
- 13). **Carney RM**, Ahearn SC, 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 Geographical Information Systems (ICGIS-2008): Proceedings, July 2-5, 2008*. Demirci, A. (Ed.), Fatih University Publications, Istanbul, Vol. 2:657-63.
- 12). **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](#)]
- 11). 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): 542-50.
- 10). Feiszli T, Husted S, Park B, Eldrige B, Fang Y, Reisen WK, Jean C, Cossen C, **Carney R**, Parker E, Erickson C, McQuarry A, Kramer V. 2008. Surveillance for mosquito-borne encephalitis virus activity in California, 2007. *Proceedings and Papers of the MVCAC* 76:108-23.
- 9). 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. *Proceedings of the Sixth Symposium on Oak Woodlands* 151-63.

## RYAN MARC CARNEY

- 8). 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.
- 7). 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 MVCAC* 75:48-59.
- 6). 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.
- 5). 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.
- 4). 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.
- 3). 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 disease, including West Nile virus in California, 2005. *Proceedings and Papers of the MVCAC* 74:43-54.
- 2). 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* 73:32-7.
- 1). Hom A, Marcus L, Kramer VL, Cahoon B, Glaser C, Cossen C, Baylis E, Jean C, Tu EH, 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

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- Carney RM**. 2016. *Evolution of the archosaurian shoulder joint and the flight stroke of Archaeopteryx*. *Journal of Vertebrate Paleontology* 36(S):110. Invited symposium speaker.
- 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(S):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.

# RYAN MARC CARNEY

## SOFTWARE

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- **ArcOSAUR**: ArcGIS Operations for Surface Analysis Using Rasters (ArcGIS software). (Carney 2008)
- **DYCAST**: Dynamic Continuous-Area Space-Time model for predicting mosquito-borne diseases. PI on software development projects; coding by Vincent Meijer and Alan McConchie (Python, PostGIS, SQL). (Carney 2010, Carney et al 2011) [[DYCAST.org](http://DYCAST.org)]
- **GoogleEcology**: created corporate planning dashboard based on “organizational phylogenetics.” (Improvise software)

## REVIEWER FOR

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

## PROFESSIONAL AFFILIATIONS

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American Chemical Society, International Society of Vertebrate Morphology, Sigma Xi (Full Member), Society of Experimental Biology, Society for Integrative & Comparative Biology, Society of Vertebrate Paleontology (Lanzendorf PaleoArt Committee, 2012–present), Tampa Bay Fossil Club (Scientific Advisor), USF Anthropocene Working Group, USF Evolution Working Group

## INSTITUTIONAL SERVICE (USF)

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- Department of Integrative Biology: Curriculum Committee (2019-present), Seminar Committee (2019-present), Visibility & Web Page Committee (2018-present), Graduate Admission and Policy Committee (2018-19)
- University of South Florida: Office of Undergraduate Research, Faculty Advisory Committee (2017-18); Pre-Veterinary Society, Advisor (2018-present)

## PROFESSIONAL EXPERIENCE

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### 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.

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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 2011), 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.
- 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 I & II, *Insect Biology: Dr. Robert Lane Lyme Disease Lab*

- 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

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

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**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

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- [National Geographic Emerging 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

- Digital paleontology research featured on Bay News 9 (2018) [see Press link below for video]
- Digital Dinosaurs class featured on FOX 13 (2017, 2019): [<http://www.ryancarney.com/digitaldinosaurs>]
- National Geographic Channel. TBD film. Consultant (2016)
- National Geographic Channel. "*T. rex* Autopsy." Consultant (2015)
- Discovery / Science Channel. "The Dinosaur Feather Mystery." Contributor (2004)

### PRESS

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#### 2018

- National Geographic Magazine: *Archaeopteryx* research featured in a 2-page spread in the May 2018 issue: <https://www.nationalgeographic.com/magazine/2018/05/dinosaurs-survivors-birds-fossils/>
- Bay News 9: "USF professor brings dinosaurs 'back to life'" by Katie Jones [TV clip in link]: <http://www.baynews9.com/fl/tampa/news/2018/05/10/usf-professor-brings-dinosaurs-back-to-life.html>

#### 2017

- [USF News](#). "USF scientist one of 14 world-changers named 2017 National Geographic Emerging Explorers" by Tina Meketa.
- [National Geographic](#). "National Geographic Emerging Explorer Ryan Carney using X-rays and alligators to bring dinosaurs back to life" by Andrew Howley.
- [USF Magazine](#). "Using virtual reality to learn more about dinosaurs"
- [Inside Higher Ed](#). "More than just cool?" by Nick Roll.
- [The Science Times](#). "Paleontologist uses virtual reality to learn about the evolution of dinosaurs" by Zen Menahem.
- [National Geographic](#). "Fourteen world-changers named 2017 National Geographic Emerging Explorers."
- Comment in: [National Geographic](#). "How mosquitoes use stealth to steal your blood" by Elaina Zachos.



## RYAN MARC CARNEY

### 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](#)

## RYAN MARC CARNEY

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
- [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

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- “*Archaeopteryx holographica*: Bringing the Urvogel back to life with scientific animation and VR/AR.” Invited symposium speaker. Also co-led lab’s station at the associated VIRTMorph symposium workshop. International Congress of Vertebrate Morphology conference. Prague, Czech Republic. 7/23/2019.
- “Evolution of the archosaurian shoulder joint and the flight stroke of *Archaeopteryx*”. Society for Integrative & Comparative Biology annual conference. Tampa, FL. 01/05/2019.
- “*Archaeopteryx holographica*: bringing the Urvogel back to life with scientific animation and VR/AR.” Invited symposium speaker. Society of Vertebrate Paleontology annual conference. Albuquerque, NM. 10/19/2018
- “Digital Dinosaurs & Diseases: from *Archaeopteryx* to Zika.” Invited speaker. Biology Department Seminar, Southeastern Louisiana University. Hammond, LA. 9/6/2018.
- “Bringing dinosaurs back to life.” Invited speaker. Student matinees and VR/AR demonstrations. Virginia Living Museum. Newport News, VA. 5/19/2018.
- “Digital Dinosaurs.” Invited speaker. Evening presentation and VR/AR demonstration. Virginia Living Museum. Newport News, VA. 5/17/2018.
- “Digital Dinosaurs & Diseases: from *Archaeopteryx* to Zika.” Invited speaker. Taste of Science. Tampa, FL. 4/26/2018.
- “Origins.” Invited speaker. Student matinee (6th-8th graders). National Geographic Headquarters. Washington, DC. 4/20/2018.
- “On the unexpected origin of flight.” Invited speaker. National Geographic Nights evening presentation. National Geographic Headquarters. Washington, DC. 4/19/2018.
- “On the origin of flight: the ascent of maniraptora.” Invited speaker. Darwin Day event hosted by the Evolution Working Group and Institute for the Advanced Study of Culture and the Environment (IASCE), University of South Florida, Tampa, FL. 2018.
- “Digital dinosaurs & diseases.” Invited speaker. SuperFAM TechTalk hosted by the Office of the Provost & Executive Vice President. University of South Florida, Tampa, FL. 2017.
- “Digital Dinosaurs & Diseases: from *Archaeopteryx* to Zika.” Keynote speaker. Undergraduate Research Conference. University of South Florida, Tampa, FL. 2017.
- “Digital Dinosaurs.” Invited speaker. Tampa Bay Fossil Club. Tampa, FL. 2017.
- “Digital Dinosaurs & Diseases: from *Archaeopteryx* to Zika.” Invited speaker. Dean’s Advisory Council. University of South Florida, Tampa, FL. 2017.
- “Digital Science: from *Archaeopteryx* to Zika.” Invited speaker. Emerging Explorer award presentation. National Geographic Society Explorers Festival. National Geographic Headquarters. Washington, DC. 2017. [<http://www.ryancarney.com/natgeo>]
- “*Archaeopteryx* and the evolution of flying dinosaurs.” Keynote speaker. John H. Ostrom Symposium Series. Yale University, New Haven, CT. 2017.

## RYAN MARC CARNEY

- “Evolution of the archosaurian shoulder joint and the flight stroke of *Archaeopteryx*.” Invited symposium speaker. Society of Vertebrate Paleontology conference, Salt Lake City, UT, 2016.
- “Swinging for the fences.” Keynote speaker. Administrators Conference on Education, Albuquerque, NM, 2016.
- “A novel joint surface approach for studying skeletal evolution and motion.” International Congress of Vertebrate Morphology, Washington, DC, 2016.
- “Diseases & Dinosaurs.” Invited speaker. National Geographic Closer Look presentation. National Geographic Headquarters. 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. National Geographic Headquarters. 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.
- “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.

## RYAN MARC CARNEY

- “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

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- Award-winning visual artist: drawing, painting, sculpture, digital media; published in *National Geographic Magazine* (2018)
- Musician: singer/songwriter, guitarist; performed on *Warped Tour* (2005-2007)
- Actor; appeared in *E.T. the Extra-Terrestrial 20th Anniversary Edition* (2002)