

CURRICULUM VITAE

John M. Hash Ph.D.
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APPOINTMENTS

2018– Present	Research Associate, National Museum of Natural History, Smithsonian Institution, Washington, DC
2017– 2018	Postdoctoral Fellow, National Museum of Natural History, Smithsonian Institution, Washington, DC
2016	Lecturer in Biology Department, UC Riverside
2010–2015	Graduate student researcher and teaching assistant, UC Riverside
2008–2010	Graduate student researcher and teaching assistant, CSU Bakersfield

EDUCATION



2020 Projected: BS, Computer Science. Oregon State University, Corvallis.
2015 Doctor of Philosophy, Entomology. University of California, Riverside.
2010 MS, Biology. California State University, Bakersfield.
2007 BS, Biology. California State University, Bakersfield.



PUBLICATIONS

- Reeder-Myers, L. A, K. W. Gobalet, **J. Hash**, T. C. Rick, T. A. Wake. 2018. Book Chapter: "Subsistence, Diet, and Environmental Interactions" in *Deception Island: Archaeology of 'Anyapax, Anacapa Island, California*.
- Brown, B. V., Hayes, C., **Hash, J. M.**, & Smith, P. T. 2018. Molecular Phylogeny of the Ant-Decapitating Flies, Genus Apocephalus Coquillett (Diptera: Phoridae). *Insect Systematics and Diversity*, 2(4), 1–8
- Art Borkent, Brian V. Brown Peter H. Adler, Dalton de Souza Amorim, Kevin Barber, Daniel Bickel, Stephanie Boucher, Scott E. Brooks, John Burger, Zelia L. Burington, Renato S. Capellari, Daniel N.R. Costa, Jeffrey M. Cumming, Greg Curler, Carl W. Dick, John H. Epler, Eric Fisher, Stephen D. Gaimari, Jon Gelhaus, David A. Grimaldi, **John Hash**, Martin Hauser, Heikki Hippa, Sergio Ibáñez-Bernal, Mathias Jaschhof, Elena P. Kameneva, Peter H. Kerr, Valery Korneyev, Cheslavo A. Korytkowski, Giar-Ann Kung, Gunnar Mikalsen Kvifte, Owen Lonsdale, Stephen A. Marshall, Wayne Mathis, Verner Michelsen, Stefan Naglis, Allen L. Norrbom, Steven Paiero, Thomas Pape, Alexandre Pereira-Colavite, Marc Pollet, Sabrina Rochefort, Alessandra Rung, Justin B. Runyon, Jade Savage, Vera C. Silva, Bradley J. Sinclair, Jeffrey H. Skevington, John O. Stireman III, John Swann, F. Christian Thompson, Pekka Vilkamaa, Terry Wheeler, Terry Whitworth, Maria Wong, D. Monty Wood, Norman Woodley, Tiffany Yau, Thomas J. Zavortink & Manuel A. Zumbado. 2018. Remarkable fly (Diptera) diversity in a patch of Costa Rican cloud forest: Why inventory is a vital science. *Zootaxa*, 4402(1), 053–090.
- Brian V. Brown, Art Borkent, Peter H. Adler, Dalton de Souza Amorim, Kevin Barber, Daniel Bickel,

Stephanie Boucher, Scott E. Brooks, John Burger, Zelia L. Burington, Renato S. Capellari, Daniel N.R. Costa, Jeffrey M. Cumming, Greg Curler, Carl W. Dick, John H. Epler, Eric Fisher, Stephen D. Gaimari, Jon Gelhaus, David A. Grimaldi, **John Hash**, Martin Hauser, Heikki Hippa, Sergio Ibáñez-Bernal, Mathias Jaschhof, Elena P. Kameneva, Peter H. Kerr, Valery Korneyev, Cheslavo A. Korytkowski, Giar-Ann Kung, Gunnar Mikalsen Kvifte, Owen Lonsdale, Stephen A. Marshall, Wayne Mathis, Verner Michelsen, Stefan Naglis, Allen L. Norrbom, Steven Paiero, Thomas Pape, Alexandre Pereira-Colavite, Marc Pollet, Sabrina Rochefort, Alessandra Rung, Justin B. Runyon, Jade Savage, Vera C. Silva, Bradley J. Sinclair, Jeffrey H. Skevington, John O. Stireman III, John Swann, F. Christian Thompson, Pekka Vilkamaa, Terry Wheeler, Terry Whitworth, Maria Wong, D. Monty Wood, Norman Woodley, Tiffany Yau, Thomas J. Zavortink & Manuel A. Zumbado. 2018. Comprehensive inventory of true flies (Diptera) at a tropical site. *Communications Biology*, 1, article 21.

- Hash, J.M.**, Heraty, J.M. and Brown, B.V., 2018. Phylogeny, host association and biogeographical patterns in the diverse millipede-parasitoid genus *Myriophora* Brown (Diptera: Phoridae). *Cladistics*, 34(1), 93-112.
- Harwood, J.F., Rama, V., **Hash, J.M.** and Gordon, S.W., 2017. The Attractiveness of the Gravid Aedes Trap to Dengue Vectors in Fiji. *Journal of Medical Entomology*, 55(2). 481-484.
- Heiduk, A., Brake, I., v. Tschirnhaus, M., Haenni, J.-P., Miller, R., **Hash, J.**, Prieto-Benítez, S., Jürgens, A., Johnson, S.D., Schulz, S., Liede-Schumann, S., Meve, U. & Dötterl, S. 2017. Floral scent and pollinators of *Ceropegia* trap flowers. *Flora*, 232, 169–182.
- Brown, B.V., **J.M. Hash**, E.A. Hartop, W. Porras, and D.S. Amorim. 2017. Baby killers: Documentation and evolution of scuttle fly (Diptera: Phoridae) parasitism of ant (Hymenoptera: Formicidae) Brood. *Biodiversity Data Journal*, DOI 10.3897/BDJ.5.e11277
- Hash, J.M.**, J.G. Millar, J.M. Heraty, J.F. Harwood, and B.V. Brown. 2017. Millipede defensive compounds are a double-edged sword: Natural history of the millipede-parasitic genus *Myriophora* Brown (Diptera: Phoridae). *Journal of Chemical Ecology*, 43 (2), 198–206. DOI 10.1007/s10886-016-0815-7
- Hash, J.M.**, B.V. Brown. 2015. Revision of the New World species of the millipede-parasitic genus *Myriophora* Brown (Diptera: Phoridae). *Zootaxa*, 4035 (1), 1–079.
- Hash, J.M.**, K.W. Gobalet, and J.F. Harwood. 2015. Differential decomposition may contribute to the abundance of Sacramento Perch (*Archoplites interruptus*) in the archeological record of California. *Journal of California and Great Basin Anthropology*, 35, 87–97.
- Hash, J.M.** 2014. Species of *Megaselia* Rondani (Diptera: Phoridae) attracted to defensive compounds of cyanogenic millipedes (Diplopoda: Polydesmida). *Proceedings of the Entomological Society of Washington*, 116, 273–282.
- Hash, J.M.**, B.V. Brown, P.T. Smith, and T. Kanao. 2013. A molecular phylogenetic analysis of the genus *Dohrniphora* (Diptera: Phoridae). *Annals of the Entomological Society of America*, 106, 401–409.
- Hash, J.M.**, B.V. Brown, and P.T. Smith. 2011. Preliminary use of DNA sequences for *Dohrniphora* (Diptera: Phoridae) phylogeny and taxonomy. *Zootaxa*, 2991, 13–20.

Manuscripts in Preparation

- Brown, B.V., P.T. Smith, **J.M. Hash**, E.A. Hartop. Molecular phylogeny and evolution of termitophily in phorid flies (Diptera: Phoridae).
- Hash, J.M.** Three New Genera of Neotropical Phorid Flies (Diptera: Phoridae).
- Hash, J.M.** and B.V. Brown. New phylogenetic perspectives on Platypezoidea and early lineages of Phoridae (Diptera) based on morphological evidence and dense taxon sampling.
- Dikow, T., **J.M. Hash**, and B. Sinclair. Novel morphological data to decipher the character and life history evolution and diversification of Asiloidea and Nemestrinoidea flies.

HONORS AND AWARDS

- 2017 CSU, Bakersfield Rising Runner Alumni Award, School of Natural Sciences and Mathematics
- 2016 Entomological Society of America Student Transition Early Professional Travel Award for the International Congress of Entomology 2016, **\$1,350**
- 2015 Proceedings of the Entomological Society of Washington Student Paper Award, **\$3,000**
- 2015 National Geographic Society Explorers Grant, **\$19,500**, Co-PI (#9654-15)
- 2014 Lorquin Entomological Society Student Research 1st Place, **\$500**
- 2014 UC Riverside Earle C. Anthony Travel Award, **\$900**
- 2014 UC Riverside Dissertation Year Fellowship (Tuition and salary for one quarter, **\$11,264**)
- 2013 Entomological Society of America Annual Meeting, SysEB section. Graduate Student Oral Presentation Competition, President's Prize, **2nd Place**
- 2013 UC Riverside Graduate Dean's Dissertation Research Grant, **\$500**
- 2013 Systematics and Biodiversity Section Student Travel Award, Entomological Society of America, **\$1,000**
- 2012 Entomological Society of America Annual Meeting, SysEB section. Graduate Student Poster Competition, President's Prize, **1st Place**
- 2012 UC Riverside Entomology Student Seminar Day, Poster Competition, **1st Place**
- 2010 UC Riverside Diversity Fellowship from the Graduate Division upon entrance
- 2010 Outstanding Graduate Student for the College of Natural Sciences and Mathematics
CSU, Bakersfield

PRESENTATIONS

- 2018 International Congress of Dipterology; Systematics and taxonomy of lower Cyclorrhapha Symposium; "New phylogenetic perspectives on Platypezoidea and early lineages of Phoridae based on morphological evidence and dense taxon sampling"
- 2018 International Congress of Dipterology; Morphological character systems in Diptera Symposium; "Novel morphological data to decipher characters and life-history evolution in Asiloidea and Nemestrinoidea"
- 2018 Invited Entomology Seminar; National Museum of Natural History; "Natural History and Systematics of Millipede-Killing Flies"
- 2016 International Congress of Entomology; "Systematics and Natural History of the Millipede-Parasitic Genus *Myriophora* (Diptera: Phoridae)"
- 2014 International Congress of Dipterology; Ecology and Evolution of Parasitoids Symposium; "Toxin-swilling and millipede-killing: Natural history and Systematics of the genus *Myriophora* (Diptera: Phoridae)"
- 2013 Entomological Society of America Annual Meeting; Systematics, Evolution, and Biodiversity Section Meeting; "Collecting Millipede Parasitoids in the Tropics: Batteries Required"
- 2013 Entomological Society of America Annual Meeting
"Exploitation of Chemically Defended Hosts: Systematics of the Millipede-Parasitic Genus *Myriophora* (Diptera: Phoridae)"
- 2012 Entomological Society of America Annual Meeting (Poster)
"Systematics of the Millipede-Parasitoid Genus *Myriophora* (Diptera: Phoridae)"
- 2012 UC Riverside Entomology Student Seminar Day (Poster)
"Systematics of the Millipede-Parasitoid Genus *Myriophora* (Diptera: Phoridae)"
- 2011 Entomological Society of America Annual Meeting
"Using DNA Sequence Data for *Dohniophora* Dahl (Diptera: Phoridae) Phylogeny and Associating Males and Females in Sexually Dimorphic Species"
- 2011 UC Riverside Entomology Student Seminar Day
"Systematics of the Millipede-Parasitoid Genus *Myriophora* (Diptera: Phoridae)"

2008 Society for California Archaeology in Burbank, CA.
"Taphonomy of Sacramento Perch and Biases in California's Zooarchaeological Record"

TEACHING EXPERIENCE

Lecturer

2016 Introduction to Evolution and Ecology; Evolution
Prepared lectures, exams, quizzes, and laboratory activities for classes with over 50 students.
Supervised graduate student teaching assistants.

Teaching Assistant/Laboratory Instructor

2015 Field Entomology
Led day and overnight field trips around southern California deserts and mountains for undergraduate students. Prepared laboratory exercises and graded collections.
2014 Human Anatomy and Physiology; Biological Control
2013 Field Entomology; Cell and Molecular Biology; Evolution and Ecology
2012 Insect Evolution and Morphology
2011 Principles of Systematics
2010 Zoology; Introductory Biology
2009 Introductory Ecology; Zoology; Introductory Biology
2008 Comparative Vertebrate Anatomy; Introductory Biology
2007 Human Anatomy

OTHER RELEVANT EXPERIENCE AND SKILLS

2014-2015 Website design for UC Riverside's Center for Integrative Biological Collections
Designed and created website for UCR CIBC to promote collections based research activities at University of California Riverside: <http://cibc.ucr.edu>
2012 ADBC Tri-Trophic Database collaboration funded through National Science Foundation
Supervised and organized daily work assignments for undergraduate students. Worked with students to understand basic concepts of relational databases, best practices for image and specimen data, and georeferencing.
2006-2009 Archaeological fish faunal analysis (freelance contracts and guided research)
Identifying and cataloging fish bones recovered from Native American pre-historic sites in California for cultural consulting industry
2007 Chemistry/Biology tutor for undergraduate students (CSU, Bakersfield)
2007 Biology Technician performing field surveys and plant identification for MH Wolfe and Assoc.

Object Oriented Programing Languages

Proficient in Python and C++

Web Development

Experience with client and server side JavaScript, Node.js, npm, and MySQL
Proficient in HTML and CSS

Native English
Basic Spanish

PROFESSIONAL ACTIVITIES AND SERVICE

- 2018 International Congress of Dipterology. Co-convenor of the symposium entitled “Morphological character systems in Diptera” with Dr. Greg Curler. Solicited talks from prospective speakers, approved abstract submissions, and coordinated the symposium.
- 2014-2016 UC Riverside. **President of FERM** (Friends of the Entomological Research Museum). Duties include helping organize annual meeting and newsletter.
- 2013-2014 UC Riverside. **Graduate student representative** and voting member on the Entomology department's Internal Student Affairs Committee (ISAC). Attend weekly meetings with faculty to discuss issues affecting students, including catalog changes, admissions, and student welfare.
- 2012-2013 UC Riverside. **Graduate Student Mentorship Program**. Competitively assigned position as a graduate student mentor to first year graduate students to help increase retention rates.
- 2011-2012 UC Riverside. **Treasurer** of Entomology Graduate Student Association. Duties included managing a non-profit account and organizing finances for one of the largest departmental graduate student association at UC Riverside.
- 2010-2014 UC Riverside. **Vice President of FERM**. Duties include providing help organizing annual meeting and performing search for invited speaker.
- 2010-2015 UC Riverside. Frequent involvement in UC, Riverside **Entomology Outreach** programs educating local elementary, middle, and high school students in all aspects of entomology, including presenting specialized information on parasitoid phorid flies.
- 2009 Chevron REVS-UP summer program at CSU, Bakersfield supervising a high school teacher and students in STEM themed research.
- Manuscript Reviews for: *Zootaxa*, *Proceedings of the Entomological Society of Washington*, *BMC Evolutionary Biology*, *Biodiversity Data Journal*, *Systematic Entomology*, *Western North American Naturalist*, *Zoological Journal of the Linnaean Society*

SELECTED FIELDWORK

- Costa Rica.** 11 days in August 2011 focusing on collecting parasitic phorid flies
- USA.** Arizona. 3 days in September 2012 general insect collecting at Southwestern Research Station
- Costa Rica.** 21 days in August 2013 collecting parasitic phorid flies and participating in the Zurquí All Diptera Biodiversity Inventory (NSF DEB 1145890)
- USA.** Florida. 10 days in June 2014 collecting millipedes and parasitoid Diptera
- Singapore.** 17 days in March 2015 collecting millipedes and *Myriophora* (Phoridae) and performing behavioral field assays (NGS #9654-15)
- Australia.** 14 days in May 2015 collecting phorid flies in the Wet Tropics of Queensland (NGS)
- Colombia.** 11 days in June 2015 collecting millipedes and parasitic phorid flies in Amazonas (NGS)
- Costa Rica.** 14 days in May 2016 general insect collecting and collecting parasitic phorid flies (NGS)