

Curriculum Vitae
Nico M. Franz

Address

<i>Campus</i>	School of Life Sciences PO Box 874501 Arizona State University Tempe, AZ 85287-4501, USA
<i>Collection</i>	Alameda Building – Natural History Collections 734 West Alameda Drive Tempe, AZ 85282-4108, USA Collection – AB 145: (480) 965-2036 Fax: (480) 727-2203
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Education

<i>1993 – 1996</i>	Prediploma in Biology, University of Hamburg, Hamburg, Germany <u>Undergraduate Advisor:</u> Klaus Kubitzki
<i>1996</i>	Diploma Studies in Systematic Botany and Ecology, University of Ulm, Ulm, Germany <u>Graduate Advisor:</u> Gerhard Gottsberger
<i>1996 – 1999</i>	M.Sc. in Biology, University of Costa Rica, San José, Costa Rica <u>Graduate Advisor:</u> Paul E. Hanson
<i>1999</i>	Graduate Research Fellow, Behavioral Ecology, Smithsonian Tropical Research Institute (STRI), Balboa, Panama <u>Research Advisor:</u> William T. Wcislo
<i>1999 – 2005</i>	Ph.D. in Systematic Entomology, Cornell University, Ithaca, NY <u>Graduate Advisor:</u> Quentin D. Wheeler
<i>2003 – 2005</i>	Postdoctoral Research Fellow , National Center for Ecological Analysis and Synthesis, University of California at Sta. Barbara, Sta. Barbara, CA <u>Postdoctoral Mentor:</u> Robert K. Peet
<i>Languages</i>	English, German, Spanish (fluent); French, Latin, Vietnamese (proficient)

Faculty Appointments

<i>2006 – 2011</i>	Assistant Professor (tenure-track appointment), Department of Biology, University of Puerto Rico at Mayagüez, Mayagüez, PR
<i>2011 – present</i>	Adjunct Professor, Department of Biology, University of Puerto Rico at Mayagüez, Mayagüez, PR
<i>2011 – 2017</i>	Associate Professor (with tenure), School of Life Sciences, Arizona State University, Tempe, AZ
<i>2017 – present</i>	Professor (with tenure), School of Life Sciences, Arizona State University, Tempe, AZ

Curatorial Appointments

<i>2006 - 2008</i>	Curator of Entomology, Department of Biology, University of Puerto Rico at Mayagüez, Mayagüez, PR
<i>2008 – 2011</i>	Director of the Invertebrate Collection (UPRM-INVCOL), Department of Biology, University of Puerto Rico at Mayagüez, Mayagüez, PR
<i>2011 – present</i>	Curator of the Frank F. Hasbrouck Insect Collection (ASUHC), School of Life Sciences, Arizona State University, Tempe, AZ

Administrative Appointments

<i>2012 – 2018</i>	Lead Coordinator of the Natural History Collections, School of Life Sciences, Arizona State University, Tempe AZ
<i>2015 – present</i>	Director of the Biodiversity Knowledge Integration Center (BioKIC), College of Liberal Arts and Sciences, Arizona State University, Tempe, AZ
<i>2019 – present</i>	Director of Biocollections , School of Life Sciences, Arizona State University, Tempe, AZ

Scholarly Awards and Honors

<i>1996 – 1997</i>	German Academic Exchange Service: Integrated Foreign Studies Scholarship.
<i>1996 – 1998</i>	German National Merit Fund: Graduate Student Fellowship.
<i>1997</i>	University of Costa Rica Graduate School: Best Grade Point Average in the Basic Sciences
<i>1998</i>	Organization for Tropical Studies (OTS): Research Fellowship (La Selva).
<i>1999</i>	Smithsonian Tropical Research Institute (STRI): Short-Term Research Fellowship.
<i>1999 – 2000</i>	German National Merit Fund: Doctoral Student Scholarship.
<i>2003 – 2005</i>	Andrew W. Mellon Foundation Postdoctoral Training Fellowship: Research in Information Technology for the Science Environment for Ecological Knowledge Project (SEEK), National Center for Ecological Analysis and Synthesis, University of California at Sta. Barbara.
<i>2004</i>	National Science Foundation: Entomological Society of America Competition, XII International Congress of Entomology Travel Grant.
<i>2007</i>	The Coleopterists Society: Jean Theodore Lacordaire Prize for the Best

- Published Paper Based Upon a Doctoral Dissertation (Franz. 2006. *Systematic Entomology* 31: 220–287).
- 2014 Global Biodiversity Information Facility (GBIF) – United States Delegation: Nomination for the Ebbe Nielsen Prize
- 2014 *Systematics and Biodiversity* Editorial Board: Outstanding Paper for 2013 Award (Franz & Cardona-Duque. 2013. *Systematics and Biodiversity* 11: 209–236).

External Research Grants

I. Submitted

NSF NEON / Battelle Ecology

Revision – NEON Biorepository (RFI): "Expanded Cryo Collections Renovation"

NSF-DBI 2001394

Digitization TCN: Collaborative Research: Building a Global Consortium of Bryophytes and Lichens: keystones of Cryptobiotic Communities

NSF-DBI

Digitization TCN: Collaborative Research: Documenting Marine Biodiversity through Digitization of Invertebrate Collections

NASA

Drone Detection of Biologically-Produced Patterns on Rocks in Extreme Deserts

II. Current

Smithsonian Institution – National Museum of Natural History

Developing Global Genome Biodiversity Network (GGBN) – Symbiota Alignment

NSF NEON / Battelle Ecology

NEON Biorepository (RFI)

NSF-DBI 1756327

CSBR: Natural History: Building a specimen-based Biologia Centrali-Americana for weevils: Improved access to the Charles W. and Lois B. O'Brien Collection

USDA-APHIS-PPQ TC00150

Identification of Lepidoptera Pests Threatening US Avocado Production

USDA-APHIS-PPQ T00C087

Augmentative biological control of the coffee berry borer

NSF-STS 1827996

Productive ambiguity in classification

NSF-DEB 1754731

Weevils of Sonora: Discovering species distributions and historical patterns of symbiont associations

NSF-DBI 1702516

Digitization TCN: Collaborative Research: Using Herbarium Data to Document Plant Niches in the High Peaks and High Plains of the Southern Rockies – past, present, and future

NSF-DBI 1601697

Digitization TCN: Collaborative Research: The Mid-Atlantic Megalopolis: Achieving a Greater Scientific Understanding of Our Urban World

III. Completed

USDA-APHIS-PPQ T00-17-0056

Digital imagery for grasshopper pest screening and identification

Institute for Museum and Library Services

Libraries as community hubs for citizen science

NSF-DBI 1601659

Digitization TCN: Collaborative Research: Lepidoptera of North America Network: Documenting Diversity in the Largest Clade of Herbivores

NSF-DBI 1410069

Digitization TCN: Collaborative Research: The Key to the Cabinets: Building and Sustaining a Research Database for a Global Biodiversity Hotspot

USDA-APHIS-PPQ 14-8130-0438-CA

Cooperative Agreement: Identification and Curation of Rangeland Grasshopper and Mormon Cricket Pests and Associated Non-Target Organisms from the Grasshopper and Mormon Cricket Ecosystem

NSF-DBI 1503659

Digitization PEN: Integration of Data from Triplehorn Insect Collection with the Southwestern Collections of Arthropods Network

NSF-DBI 1410683

Digitization TCN: Collaborative Research: Documenting the Occurrence Through Space and Time of Aquatic Non-Indigenous Fish, Mollusks, Algae, and Plants Threatening North America's Great Lakes

NSF-DEB 1258154

*ARTS: Systematics of the Darkling Beetle Genus *Eleodes*: Integrating Morphology, DNA, and Biodiversity Informatics to Resolve a Taxonomically Impeded Genus*

NSF-EF 1207107

Digitization TCN: Collaborative Research: Southwest Collections of Arthropods Network

(SCAN): a Model for Collections Digitization to Promote Taxonomic and Ecological Research

USDA-ARS 58-1275-1-335

Specific Cooperative Agreement: Systematic Research Support for Economically Important Insects

NSF-DEB 1155984

CAREER: Systematics of Eustyline and Geonemine Weevils: Connecting and Contrasting Caribbean and Neotropical Mainland Radiations

Smithsonian Tropical Research Institute

Implementing a Multi-Lingual Graphic User Interface for Symbiota

University of Florida – iDigBio Project

Generating a Custom Set of Interactive Augmented Reality (AR) Flashcards for iDigBio and the 13 Current NSF ADBC Thematic Collections Networks

New York Botanical Garden

SALIX/Symbiota Integration for the Macrofungi Collections Consortium

NSF-DBI 1342595

Collaborative Research: ABI: Innovation: The Global Names Architecture, an Infrastructure for Unifying Taxonomic Databases and Services for Managers of Biological Information

Howard Hughes Medical Institute – Undergraduate Science Program

ROLE-MODEL: Research Oriented Laboratory Enhancements by MOdule DEvelopment for Laboratories

NSF-DBI 0749434

BRC: A New Infrastructure for Invertebrate Biodiversity Research in Puerto Rico

NSF-DEB 0641231

*Towards a Systematic and Evolutionary Synthesis of the Neotropical *Exophthalmus* genus Complex (Coleoptera: Curculionidae: Entiminae)*

NSF-DEB 0641231

Dissertation Research: Phylogeny and Evolution of Host Associations and Fighting Behavior in Neotropical Derelomine Weevils (Coleoptera: Curculionidae)

Philanthropic Research Grants

I. Completed

Virginia M. Ullman Foundation

Creation of the "Arizona Biocollections and Biodiversity Informatics Center"

ASU PitchFunder Campaign

*Arizona Butterfly Access***Other Philanthropic Achievements**

- 2017 Played a key role in securing the *Charles W. and Lois B. O'Brien Insect Systematics Endowment* for the ASU Natural History Collections; including a projected \$2.5 million in direct funding, and an insect research collection assessed at a value of \$9.9 million. The O'Brien fund will be used to establish an Endowed Chair of Insect Systematics and an Endowed Visiting Scientist of Insect Systematics.
- 2018 Update on O'Brien Bequest: insect research collection completely transferred to August during Fall of 2018.

Internal Research Awards

I. Current**Arizona State University – Office of the President***Special Initiative Funds: Biodiversity Data Science Initiative***II. Completed****Arizona State University – Office of the President***Special Initiative Funds: Creation of the Biodiversity Knowledge Integration Center***School of Life Sciences – Research & Training Initiatives Program***Elucidating Weevil-Endosymbiont Associations and Diversity Across Different Ecological and Evolutionary Scales***School of Life Sciences – Research & Training Initiatives Program***Conceptual and Infrastructural Requirements for a Taxonomy Clearing House***Arizona State University – Smithsonian Institution Partnership***An Extensible Strategy to Integrate Biodiversity Data Repositories and Evolving Research and Outreach Goals at the Smithsonian Tropical Research Institute***IV. Prior to ASU (abbreviated)**

- 2009 University of Puerto Rico at Mayagüez – Arts & Sciences Technology Fund: "A New Cyberinfrastructure for Organismal Collections at UPRM".
- 2009 University of Puerto Rico at Mayagüez – Arts & Sciences Travel Funds: "Attendance of the Congreso XXXVI de la Sociedad Colombiana de Entomología, Medellín, Colombia".
- 2006 University of Puerto Rico at Mayagüez – Arts & Sciences Travel Funds: "Attendance of the Annual Meeting of the Entomological Society of America, Indianapolis, IN".
- 2006 University of Puerto Rico at Mayagüez – Research & Development Center Seed Money Grant: "Documenting Beetle Pollination of *Zamia* in Puerto

- Rico".
- 2006 University of Puerto Rico at Mayagüez – Arts & Sciences Seed Money Grant: "Documenting Weevil Species Diversity in the Maricao State Forest".
- 2003 Cornell University - Entomology: "Palmer Finishing Fellowship for Graduate Students".
- 2001 Cornell University - Entomology: "Graduate Student Transportation Grant".
- 2000 Cornell University – Entomology: "Rawlins Endowment".
- 2000 Cornell University – Entomology: "Grace Griswold Fund".
- 1999 – 2000 Cornell University – Entomology: "Sage Fellowship for Incoming Graduate Students".

Research Awards Given to Mentored Students

- 2019 Entomological Society of America's President's Prize for a 10-minute oral presentation (1st place, SysEB: Biogeography and Disturbance). Awarded to graduate student Evan Waite.
- 2019 ASU School of Life Sciences Thesis Completion Fellowship. Awarded to graduate student Salvatore Anzaldo.
- 2018 ASU School of Life Sciences Thesis Completion Fellowship. Awarded to graduate students Andrew Jansen and Andrew Johnston.
- 2018 Entomological Society of America's President's Prize for a 10-minute oral presentation (1st place, SysEB: Morphology). Awarded to graduate student Salvatore Anzaldo.
- 2018 ASU College of Liberal Arts and Sciences Graduate Excellence Award. Awarded to graduate student Salvatore Anzaldo.
- 2018 ASU Graduate College Travel Grant. Awarded to graduate students Salvatore Anzaldo, Andrew Jansen, and Brian Reily.
- 2018 ASU School of Life Sciences Travel Award. Awarded to graduate students Salvatore Anzaldo (twice), Andrew Jansen, and Brian Reily.
- 2018 Society for Systematic Biologists Mini-ARTS Award (Advancing Revisionary Taxonomy and Systematics). Awarded to graduate student Salvatore Anzaldo.
- 2017 Harvard University – Museum of Comparative Zoology Ernst Mayr Travel Award. Awarded to Salvatore Anzaldo.
- 2017 Entomological Society of America's President's Prize for a 10-minute oral presentation (1st place, SysEB: Coleoptera I). Awarded to graduate student Brian Reily.
- 2017 Canadian Museum of Nature Visiting Scientist Award. Awarded to graduate student Andrew Johnston.
- 2016 ASU Evolutionary Biology Ph.D. Program – Summer 2016 Research Fellowship. Awarded to graduate student Andrew Johnston.
- 2016 USAID Research and Innovation Fellowship – Collaborative ASU / Smithsonian Tropical Research Institute Project in Biodiversity Informatics. Awarded to graduate student Edward Gilbert.
- 2015 ASU School of Life Science Undergraduate Research Grant. Awarded to

- undergraduate student Usmaan Basharat.
- 2015 ASU College of Liberal Arts and Sciences – 2015 Undergraduate Summer Enrichment. Awarded to undergraduate student Joseph Hunter.
- 2015 ASU School of Life Science Undergraduate Research Program (SOLUR) – Spring 2015. Awarded to undergraduate student Zhen Geng.
- 2014 ASU School of Life Science Undergraduate Research Program (SOLUR) – Fall 2014. Awarded to undergraduate student Usmaan Basharat.
- 2014 Society for the Study of Evolution – 2014 Undergraduate Diversity at Evolution Program. Awarded to undergraduate student Usmaan Basharat.
- 2007 – 2008 National Science Foundation – Alianza para el Aprendizaje de Ciencias y Matemáticas Summer Research Program (AIACiMa). Awarded to undergraduate students Jennifer López and Diana Ruíz.
- 2006 – 2008, 2010 National Science Foundation – Puerto Rico Louis Stokes Alliance for Minority Participation Program (PR-LSAMP). Awarded to undergraduate students Jean Carlos Cruz, Freddie Irizarry, and Christopher Molini (twice).

Peer-Reviewed Publications

Summary of Impact: Google Scholar – February 2020 ([Google Scholar Citation Link](#))

Total of **1,428 citations**

h-index = **22**

i10-index = **46**

Contributions by *mentored* students are indicated as follows:

- Undergraduate student = 1x underline
- Graduate student = 2x underline
- Postdoctoral mentee = waved underline

I. Submitted & In Preparation

71. Yule, K.M., **N.M. Franz** et al. 2020. Designing biological collections for monitoring ecological and evolutionary responses to change: The NEON Biorepository as a test case. *BioScience*. **(In Preparation)**
70. Sen, A., B.W. Sterner & **N.M. Franz**. 2020. An AI challenge for taxonomic intelligence. Conference Proceedings – 2020 International Joint Conference on Artificial Intelligence. **(In Review)**
69. Zhang, G., P. Browne, G. Zhen, M.A. Johnston, H. Cadillo-Quiroz & **N.M. Franz**. 2020. Endosymbiont diversity and evolution across the weevil tree of life. *Environmental Microbiology*. **(In Review)** Preprint in bioRxiv: DOI: 10.1101/171181
68. Sterner, B.W, E.E. Gilbert & **N.M. Franz**. 2019. Decentralized but globally coordinated biodiversity data. *Frontiers in Big Data*. **(In Review)**

II. Accepted & In Press

III. Published

67. Sterner, B., J. Witteveen & **N. Franz**. 2018. Alternatives to realist consensus in bio-ontologies: Taxonomic classification as a basis for data discovery and integration. *History and Philosophy of the Life Sciences* 42, 8. DOI: 10.1007/s40656-020-0300-z
66. Anzaldo, S.S., J.S. Wilson & **N.M. Franz**. 2020. Phenotypic analysis of aposematic conoderine weevils (Coleoptera: Curculionidae: Conoderinae) supports the existence of three large mimicry complexes. *Biological Journal of the Linnean Society*, blz205. DOI: 10.1093/biolinnean/blz205
65. Reily, B.H. & **N.M. Franz**. 2019. Case 3792 – *Pachnaeus* Schoenherr, 1826 (Insecta, Coleoptera, Curculionidae): Proposed precedence over *Docorhinus* Schoenherr, 1823. *Bulletin of Zoological Nomenclature* 76(1): 179–185. DOI: 10.21805/bzn.v76.a055
64. Jansen, M.A., J. Williams, N. Chawla & **N.M. Franz**. 2019. Avoidance of catastrophic structural failure as an evolutionary constraint: Biomechanics of the acorn weevil rostrum. *Advanced Materials* 31(41): 1903526. DOI: 10.1002/adma.20190352
63. **Franz, N.M.**, L.J. Musher, J.W. Brown, S. Yu & B. Ludäscher. 2019. Verbalizing phylogenomic conflict: Representation of node congruence across competing reconstructions of the "neoavian explosion". *PLoS Computational Biology* 15(2): e1006493. DOI: 10.1371/journal.pcbi.1006493
62. Jansen, M.A. & **N.M. Franz**. 2018. Descriptions of four new species of *Minyomerus* Horn, 1876 sec. Jansen & Franz, 2018 (Coleoptera: Curculionidae), with notes on their distribution and phylogeny. *PeerJ* 6: e5633: 1–63. DOI: 10.7717/peerj.5633
61. McKenna, D.D., D.J. Clarke, R. Anderson, J.J. Astrin, S. Brown, L. Chamorro, S.R. Davis, B. de Medeiros, M.G. del Rio, J. Haran, G. Kuschel, **N. Franz**, B. Jordal, A. Lanteri, R.A.B. Leschen, H. Letsch, C. Lyal, A. Marvaldi, J.R. Mermudes, R.G. Oberprieler, A. Schütte, A. Sequeira, S. Shin, M.H. Van Dam & G. Zhang. 2018. Morphological and molecular perspectives on the phylogeny, evolution, and classification of weevils (Coleoptera: Curculionoidea): Proceedings from the 2016 International Weevil Meeting. *Diversity* 2018, 10, 64: 1–33. DOI: 10.3390/d10030064
60. Tang, W. G. Xu, C.W. O'Brien, M. Calonje, **N.M. Franz**, M.A. Johnston, A. Taylor, A.P. Vovides, M.A. Pérez-Farrera, S.H. Salas-Morales, J.C. Lazcano-Lara, P. Skelley, C. Lopez-Gallego, A. Lindström & S. Rich. 2018. Molecular and morphological phylogenetic analyses of New World cycad beetles: what they reveal about cycad evolution in the New World. *Diversity* 2018, 10, 38: 1–26. DOI:10.3390/d10020038
59. Johnston, M.A., R.L. Aalbu & **N.M. Franz**. 2018. An updated checklist of the Tenebrionidae sec. Bousquet et al. 2018 of the Algodones Dunes of California,

- with comments on checklist data practices. *Biodiversity Data Journal* 6: e24927. DOI: 10.3897/BDJ.6.e24927
58. Cao, Y., **N. Franz**, J. Macklin, J. Mao & H. Cui. 2017. Resolving taxonomic names using evidence extracted from text. *iConference 2018 Proceedings*. (Also to appear in *Lecture Notes for Computer Science*). Pp. 1–5. URL: hdl.handle.net/2142/100260
57. **Franz, N.M.**, C. Zhang & J. Lee. 2018. A logic approach to modeling nomenclatural change. *Cladistics* 34(3): 336–357. DOI: 10.1111/cla.12201
56. Senderov, V., K. Simov, **N. Franz**, P. Stoev, T. Catapano, D. Agosti, G. Sautter, R.A. Morris & L. Penev. 2018. OpenBiodiv-O: Ontology of the OpenBiodiv knowledge management system. *Journal of Biomedical Semantics* (2018) 9:5. DOI: 10.1186/s13326-017-0174-5
55. **Franz, N.M.** & B.W. Sterner. 2018. To increase trust, change the social design behind aggregated biodiversity data. *Database*, Volume 2018, 01 January 2018, bax100. DOI: 10.1093/database/bax100
54. Cheng, Y.-Y., **N.M. Franz**, J. Schneider, S. Yu, T. Rodenhäusen & B. Ludäscher. 2017. Agreeing to disagree: reconciling conflicting taxonomic views using a logic-based approach. *ASIST 2017*. October 27 to November 01, 2017, Crystal City, VA. *Proceedings of the Association for Information Science and Technology* 54(1): 46-56. DOI: 10.1002/pra2.2017.14505401006
53. Sterner, B.W. & **N.M. Franz**. 2017. Taxonomy for humans or computers? *Cognitive pragmatics for big data*. *Biological Theory* 12(2): 99–111. DOI: 10.1007/s13752-017-0259-5
52. Seltmann, K.C. *et al.* (47 co-authors, including **N.M. Franz**). 2017. LepNet: The Lepidoptera of North America Network. *Zootaxa* 4247(1): 73–77. DOI: 10.11646/zootaxa.4247.1.10
51. **Franz, N.M.** & G. Zhang. 2017. Three new species of entimine weevils in Early Miocene amber from the Dominican Republic (Coleoptera: Curculionidae). *Biodiversity Data Journal* 5: e10469. DOI: 10.3897/BDJ.5.e10469
50. Zhang, G., U. Basharat, N. Matzke & **N.M. Franz**. 2017. Model selection in the historical biogeography of Neotropical weevils – the *Exophthalmus* genus complex (Insecta: Curculionidae: Entiminae). *Molecular Phylogenetics and Evolution* 109 (April 2017): 226–239. DOI: 10.1016/j.ympev.2016.12.039
49. **Franz, N.M.**, B. Ludäscher, E.E. Gilbert & A.S. Weakley. 2016. Controlling the taxonomic variable: Taxonomic concept resolution for a southeastern United States herbarium portal. *Research Ideas and Outcomes* 2: e10610. DOI: 10.3897/rio.2.e10610
48. Singh, S.S., M.A. Jansen, **N.M. Franz** & N. Chawla. 2016. Microstructure and nanoindentation of the rostrum of *Curculio longinasus* Chittenden, 1927 (Coleoptera: Curculionidae). *Materials Characterization* 118: 206–211. DOI: 10.1016/j.matchar.2016.05.022

47. M.A. Jansen, S.S. Singh, N. Chawla & **N.M. Franz**. 2016. A multilayer micromechanical model of the cuticle of *Curculio longinasus* Chittenden, 1927 (Coleoptera: Curculionidae). *Journal of Structural Biology* 195(2): 139–158. DOI: 10.1016/j.jsb.2016.05.007
46. **Franz**, **N.M.**, N.M. Pier, D.M. Reeder, M. Chen, S. Yu, P. Kianmajd, S. Bowers & B. Ludäscher. 2016. Two influential primate classifications logically aligned. *Systematic Biology* 65(4): 561–582. DOI: 10.1093/sysbio/syw023
45. **Franz**, **N.M.**, M. Chen, P. Kianmajd, S. Yu, S. Bowers, A.S. Weakley & B. Ludäscher. 2016. Names are not good enough: reasoning over taxonomic change in the *Andropogon* complex. *Semantic Web* 7(6): 1–23. DOI: 10.3233/SW-160220
44. Thessen, A.E. *et al.* (21 co-authors, including **N.M. Franz** and G. Zhang). 2015. Emerging semantics to link phenotype and environments. *PeerJ* 3:e1470. (39 pages) DOI: 10.7717/peerj.1470
43. M.A. Johnston, D. Fleming, **N.M. Franz** & A.D. Smith. 2015. Amphidorini Leconte (Coleoptera: Tenebrionidae) of Arizona: keys and species accounts. *Coleopterists Bulletin* 69(4): 27–54. DOI: 10.1649/0010-065X-69.mo4.27
42. Dang, T.N., **N.M. Franz**, B. Ludäscher & A.G. Forbes. 2015. ProvenanceMatrix: a visualization tool for multi-taxonomy alignments. In: Ivanova, V., P. Lambrix, S. Lohmann & C Pesquita (editor): *Voilà!2015. Proceedings of the International Workshop on Visualizations and User Interfaces for Ontologies and Linked Data*, Bethlehem, Pennsylvania, USA, October 11, 2015. *CEUR Workshop Proceedings* 1456: 13–24. URL: <http://ceur-ws.org/Vol-1456/paper2.pdf>
41. Jansen, M.A. & **N.M. Franz**. 2015. Phylogenetic revision of *Minyomerus* Horn, 1876 sec. Jansen & Franz, 2015 (Coleoptera, Curculionidae) using taxonomic concept annotations and alignments. *ZooKeys* 528: 1–133. DOI: 10.3897/zookeys.528.6001
40. Chen, M., S. Yu, P. Kianmajd, **N. Franz**, S. Bowers & B. Ludäscher. 2015. Provenance for explaining taxonomy alignments. In: Ludäscher, B. & B. Plale (editors): *Provenance and Annotation of Data and Processes. 5th International Provenance and Annotation Workshop, IPAW 2014*, Cologne, Germany, June 9-13, 2014. *Revised Selected Papers. Lecture Notes in Computer Science* 8628: 258–260. DOI: 10.1007/978-3-319-16462-5_27
39. **Franz**, **N.M.**, M. Chen, S. Yu, P. Kianmajd, S. Bowers & B. Ludäscher. 2015. Reasoning over taxonomic change: exploring alignments for the *Perellesschus* use case. *PLoS ONE* 10(2): e0118247. (34 pages) DOI: 10.1371/journal.pone.0118247
38. Deans, A.R. *et al.* (73 co-authors, including S.S. Anzaldo and **N.M. Franz**). 2015. Finding our way through phenotypes. *PLoS Biology* 13(1): e1002033. (9 pages) DOI: 10.1371/journal.pbio.1002033
37. Chen, M., S. Yu, **N. Franz**, S. Bowers & B. Ludäscher. 2014. A hybrid diagnosis approach combining Black-Box and White-Box reasoning. In: A. Bikakis, P.

- Fodor & D. Roman (editors): RuleML 2014, Proceedings of the 8th International Symposium. Lecture Notes in Computer Science 8620: 127–141.
DOI: 10.1007/978-3-319-09870-8_9
36. Gries, C., E.E. Gilbert & **N.M. Franz**. 2014. Symbiota – a virtual platform for creating voucher-based biodiversity information communities. *Biodiversity Data Journal* 2: e1114. (24 pages) DOI: 10.3897/BDJ.2.e1114
 35. Patterson, D.J., W. Egloff, D. Agosti, D. Eades, **N. Franz**, G. Hagedorn & D. Remsen. 2014. Scientific names of organisms: attribution, rights and licensing. *BMC Research Notes* 2014, 7:79. (9 pages). DOI: 10.1186/1756-0500-7-79
 34. **Franz, N.M.** 2014. Anatomy of a cladistic analysis. *Cladistics* 30(3): 294–321. DOI: 10.1111/cla.12042
 33. **Franz, N.M.** & J. Cardona-Duque. 2013. Description of two new species and phylogenetic reassessment of *Perelleschus* Wibmer & O'Brien, 1986 (Coleoptera: Curculionidae), with a complete taxonomic concept history of *Perelleschus* sec. Franz & Cardona-Duque, 2013. *Systematics and Biodiversity* 11(2): 209–236. DOI: 10.1080/14772000.2013.806371
 32. **Franz, N.M.** & A.M. Goldstein. 2013. Phenotype ontologies: are homology relations central enough? A reply to Deans *et al.* *Trends in Ecology & Evolution* 28(3): 131–132. DOI: 10.1016/j.tree.2012.08.001
 31. Cardona-Duque, J. & **N.M. Franz**. 2012. Description and phylogeny of *Azotoctla*, a new Neotropical genus of Acalyptini (Coleoptera: Curculionidae: Curculioninae) associated with the staminodes of Cyclanthaceae. *Zoological Journal of the Linnean Society* 166(3): 559–623. DOI: 10.1111/j.1096-3642.2012.00851.x
 30. Girón, J.C. & **N.M. Franz**. 2012. Phylogenetic assessment of the Caribbean weevil genus *Lachnopus* Schoenherr (Coleoptera: Curculionidae: Entiminae). *Invertebrate Systematics* 26(1): 67–82. DOI: 10.1071/IS11033
 29. **Franz, N.M.** 2012. Phylogenetic reassessment of the *Exophthalmus* genus complex (Curculionidae: Entiminae: Eustylini, Geonemini). *Zoological Journal of the Linnean Society* 164(3): 510–557. DOI: 10.1111/j.1096-3642.2011.00774.x
 28. **Franz, N.M.** 2011. *Melathra huyenae*, a new genus and new species of entimine weevil from southwestern Hispaniola (Coleoptera: Curculionidae: Entiminae). *Coleopterists Bulletin* 65(4): 352–362. DOI: 10.1649/072.065.0406
 27. Girón, J.C. & **N.M. Franz**. 2010. Revision, phylogeny, and historical biogeography of the genus *Apodrosus* Marshall, 1922 (Coleoptera: Curculionidae: Entiminae). *Insect Systematics and Evolution* 41(4): 339–414. DOI: 10.1163/187631210X538799
 26. **Franz, N.M.** & D. Thau. 2010. Biological taxonomy and ontology development: scope and limitations. *Biodiversity Informatics* 7(1): 45–66. DOI: 10.17161/bi.v7i1.3927
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4. **Franz, N.M.**, C.W. O'Brien, S.D. Shirota, M.T. Shillingburg, C.R. Tellez & E.E. Gilbert. 2016. Assembling a virtual Weevils of North America checklist with Symbiota – preliminary insights; pp. 49–59. In Ralston, B. (editor): *Proceedings of the 12th Biennial Conference of Science and Management on the Colorado Plateau*. United States Geological Survey, Scientific Investigations Report 2015–5180. DOI: 10.3133/sir20155180
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Belidae, Brentidae (Insecta: Coleoptera: Curculionoidea). Fauna of New Zealand 45". *Coleopterists Bulletin* 58(1): 27–28. DOI: 10.1649/722

Other Non-Refereed Publications

8. **Franz, N.M., E.E. Gilbert & B.W. Sterner.** 2019. Distributed, but global in reach: Outline of a de-centralized paradigm for biodiversity data intelligence. *Biodiversity Information Science and Standards* 3: e37749. DOI: 10.3897/biss.3.37749
7. Gilbert, E., C. Gries, **N.M. Franz**, L.S. Landrum & T.H. Nash III. 2019. SEINet: A centralized specimen resource managed by a distributed network of researchers. *Biodiversity Information Science and Standards* 3: e37424. DOI: 10.3897/biss.3.37424
6. Senderov, V., T. Georgiev, D. Agosti, T. Catapano, G. Sautter, E. Ó Tuama, **N. Franz**, K. Simov, P. Stoev & L. Penev. 2017. OpenBiodiv: an implementation of a semantic system running on top of the biodiversity knowledge graph. *Proceedings of TDWG 1*: e20084. URL: <https://doi.org/10.3897/tdwgproceedings.1.20084>
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3. Chen, M., S. Yu, N. Franz, S. Bowers & B. Ludäscher. 2014. Euler/X: a toolkit for logic-based taxonomy integration. WFLP 2013 – 22nd International Workshop on Functional and (Constraint) Logic Programming. 8 pages. URL: <http://arxiv.org/abs/1402.1992>
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1. **Franz, N.M., Editor.** 2002–2008. CURCULIO, International Newsletter for Curculionoidea Research, Volumes 44–56. URL: http://www.coleopsoc.org/default.asp?Action=Show_Resources&ID=Curculio

Major Contributions to Virtual Products

I. Creation and Expansion of Symbiota Portals

12. Portal Name: **Ecdysis**

- Web address: <https://serv.biokic.asu.edu/ecdysis/>
11. Portal Name: **Consortium of Pacific Herbaria**
Web address: <https://serv.biokic.asu.edu/pacific/portal/>
 10. Portal Name: **NEON Biorepository Data Portal**
Web address: <http://biorepo.neonscience.org>
 9. Portal Name: **Red de Herbarios del Noroeste de México**
Web address: <http://herbanwmex.net/portal/>
 8. Portal name: **Consortium of Rocky Mountain Regional Herbaria**
Web address: <http://symbiota4.acis.ufl.edu/seinet/rockymt/portal/>
 7. Portal name: **Mid-Atlantic Herbaria Consortium**
Web address: <http://www.midatlanticherbaria.org/portal/>
 6. Portal name: **Great Lakes Invasives Network**
Web address: <http://greatlakesinvasives.org/portal/>
 5. Portal name: **SERNEC – SE Regional Network of Expertise and Collections**
Web address: <http://sernecportal.org/portal/>
 4. Portal name: **Neotropical Flora Portal**
Web address: <http://hasbrouck.asu.edu/neotrop/plantae/>
 3. Portal name: **Neotropical Arthropod Portal**
Web address: <http://hasbrouck.asu.edu/neotrop/entomology/>
 2. Portal name: **Smithsonian Tropical Research Institute Symbiota Portal**
Web address: <https://stricollections.org/>
 1. Portal name: **SCAN – Symbiota Collections of Arthropods Network**
Web address: <http://symbiota4.acis.ufl.edu/scan/portal/>

II. Support and Expansion of Existing Symbiota Portals

4. Portal name: **CSV-Coll – Consortium of Small Vertebrate Collections**
Web address: <http://csvcoll.org/portal/>
3. Portal name: **InvertEBase Data Portal**
Web address: <http://www.invertebase.org/portal/>
2. Portal name: **MABA Fauna – Madrean Archipelago Assessment Project**
Web address: <http://www.madrean.org/symbfauna/>
1. Portal name: **SEINet – Southwestern Environmental Information Network**
Web address: <http://swbiodiversity.org/seinet/>

III. Select Additional Virtual Products

13. Product name: **Curcu-Sonora – Curculionoidea of Sonora, Mexico**
Web address: <http://symbiota4.acis.ufl.edu/scan/portal/checklists/checklist.php?cl=102>
12. Product name: **BioKIC – Biodiversity Knowledge Integration Center**

- Web address: <https://biokic.asu.edu/>
11. Product name: **Libraries of Life Collection Cards**
Web address: <http://www.libraries-of-life.org/> (links to [GooglePlay](#), [iTunes](#))
 10. Product name: **Euler Project at GitHub**
Web address: <https://github.com/EulerProject/EulerX>
 9. Product name: **Symbiota Software Platform – Homepage**
Web address: <http://symbiota.org/>
 8. Product name: **taxonbytes – Twitter Account**
Web address: <https://twitter.com/taxonbytes>
 7. Product name: **taxonbytes – Slideshare Repository**
Web address: <http://www.slideshare.net/taxonbytes>
 6. Product name: **taxonbytes – Flickr Photo Repository**
Web address: <https://www.flickr.com/photos/taxonbytes/>
 5. Product name: **taxonbytes – From Specimens to Language, Logic, and Learning**
(Franz Lab of Systematics, Evolution, and Biodiversity Informatics)
Web address: <http://taxonbytes.org/>
 4. Product name: **WoNA – Weevils of North America**
Web address: <http://symbiota4.acis.ufl.edu/scan/portal/checklists/checklist.php?cl=1>
 3. Product name: **SCAN – ASUHC High-Resolution Image Library**
Web address: <http://symbiota4.acis.ufl.edu/scan/portal/imagelib/photographers.php?collid=1>
 2. Product name: **SCAN – Arizona State University Hasbrouck Insect Collection**
Web address: <http://symbiota4.acis.ufl.edu/scan/portal/collections/misc/collprofiles.php?collid=1>
 1. Product name: **Southern Plant Diagnostic Network – Weevil Workshop Images**
Web address: <http://www.ipmimages.org/collections/viewcollection.cfm?id=69682>

Presentations

Contributions by mentored students are indicated as follows:

- Undergraduate student = 1x underline
- Graduate student = 2x underline
- Postdoctoral mentee = wavy underline

I. Invited Presentations and Colloquia

- 2019 **Franz, N.M.** "De-centralized but global: Redesigning biodiversity data aggregation for improved engagement and impact". Keynote Address – 3rd Annual Digital Data Conference, Yale University, New Haven, CO.
- 2019 **Franz, N.M.** "Discover, monitor, publish, disagree, align: Advancing the social design of biodiversity data science". Invited Presentation, Information & Library Science Colloquium Series, Indiana University, Bloomington, IN.
- 2017 **Franz, N.M.** "The limits of synthesis for integrative biology". Center for Biology + Society Conversation Series. School of Life Sciences, Arizona State

- University, Tempe, AZ.
- 2017 **Franz, N.M.** "Machine-scalable solutions for future taxonomy must begin with a philosophical recommitment to embrace trained judgment". Workshop Presentation, The Future of Systematics in Data-Centric Biology, Marine Biological Laboratory, Woods Hole, MA.
- 2017 **Franz, N.M.** "Non-unitary syntheses of taxonomic and phylogenetic knowledge". CIRSS Seminar, School of Information Sciences, University of Illinois Urbana-Champaign, Champaign, IL.
- 2016 **Franz, N.M.** "Identifying and aligning taxonomic concepts". Plenary Sessions – Practical Hacking On Identifiers at BiOSphere2 (PHOIBOS2), Biosphere2, Oracle, AZ.
- 2016 **Franz, N.M.** "Tracking taxonomic meanings (and other lab projects)". School of Life Sciences Café Seminar, Arizona State University, Tempe, AZ.
- 2015 **Franz, N.M., A. Jansen & B. Ludäscher.** "Logic resolution of the taxonomic variable for evolutionary and biodiversity information environments." Invited Presentation, Joint Annual Meeting, Entomological Societies of Canada and Québec, Montréal, Canada.
- 2015 **Franz, N.M.** "Overview of the Euler/X multi-taxonomy alignment toolkit reasoning and visualization capabilities". Seminar – Graduate School of Library and Information Science, University of Illinois – Urbana-Champaign, Champaign, IL.
- 2014 **Franz, N.M.** "Tracking taxonomic change across classifications and phylogenies". Workshop – Understanding Taxon Ranges in Space and Time – University of California at Berkeley, Global Change Biology, Berkeley, CA.
- 2014 **Franz, N.M.** "Explaining taxonomy's legacy to computers – how and why?" Symposium – The Meaning of Names: Naming Diversity in the 21st Century, University of Colorado, Boulder, CO.
- 2013 **Franz, N.M.** "Constructing a Coleoptera Anatomy Ontology – how and why". Third International Tenebrionoidea Symposium, Tempe, AZ.
- 2012 **Franz, N.M.** "Sistemática, evolución, y biogeografía de los gorgojos Entiminae del Caribe". Museo de Historia Natural Tomás Romay, Santiago de Cuba, Cuba
- 2010 **Franz, N.M.** "Systematics and evolution of acalyptine flower weevils, with comments on the taxonomic concept approach". School of Life Sciences Seminar, Arizona State University, Tempe, AZ.
- 2010 **Franz, N.M.** "Revisionary taxonomy in the age of computer ontologies". Symposium on Biodiversity, Taxonomy and Systematics in the 21st Century, Universidad Nacional Autónoma de México, Mexico.
- 2010 **Franz, N.M.** "Systematics and evolution of acalyptine flower weevils: from associations to homology". Department of Entomology Seminar, University of Arizona, Tucson, AZ.
- 2008 **Franz, N.M.** "Sistemática e historia natural de los gorgojos Neotropicales; y Entomología en la UPRM." Escuela de Biología, Universidad Autónoma de Santo Domingo, Dominican Republic.
- 2006 **Franz, N.M.** "Evolution of pollination and seed predation in Neotropical derelomine flower weevils". Universidad de Puerto Rico – Río Piedras Biology Seminar, Río Piedras, PR.

- 2005 **Franz, N.M.** "Long-term taxonomic resolvability in the Primate Life-History Databank". Wenner-Gren Foundation, New York, NY.
- 2005 **Franz, N.M.** "The SEEK project: new concepts and tools to support biodiversity research and taxonomy". New Taxonomy Conference, Cardiff, United Kingdom.
- 2004 **Franz, N.M.** "The SEEK project: new concepts and tools to support meta-analyses and taxonomy". National Center of Ecological Analysis and Synthesis – EcoLunch Series, Santa Barbara, CA.
- 2004 **Franz, N. M.** "Evolution of derelomine flower weevils". Entomologists' Meeting, Santa Barbara, CA.
- 2004 **Franz, N.M.** "Systematics of derelomine flower weevils". Jugatae Entomology Seminar, Cornell University, Ithaca, NY.
- 2002 **Franz, N.M.** "Natural history of derelomine flower weevils systematized". Keynote Address – Annual Meeting of the Coleopterists Society, Fort Lauderdale, FL.
- 2002 **Franz, N.M.** "Biología reproductiva de Cyclanthaceae y de los Curculionidae asociados". Escuela de Biología, Central University of Venezuela, Maracay, Venezuela.
- 1999 **Franz, N.M.** "Pollination in Cyclanthaceae". Smithsonian Tropical Research Institute – Bambi Seminar, Barro Colorado Island, Panama.

II. Conference Presentations

Select recent presentations are available at: <http://www.slideshare.net/taxonbytes/>

- 2019 Husain, A.P., M.A. Johnston & **N.M. Franz**. "Building an entomological cryo-collection: Insights from the NEON Biorepository". Annual Meeting of the Entomological Collections Network, St. Louis, MO.
- 2019 Engasser, E.L., S.S. Anzaldo, H.L. Boulanger, T.M. Johnson, C.K. Malm, A.K. Nagra, K.R. Wilder, S. Lee, M.A. Johnston & **N.M. Franz**. "A new life for an iconic collection: Promoting access to the Charles & Lois O'Brien Insect Collections at Arizona State University". Annual Meeting of the Entomological Collections Network, St. Louis, MO.
- 2019 Johnston, M.A., E.L. Engasser, S. Lee & **N.M. Franz**. "From documenting diversity to monitoring ecosystems: Entomological growth at the Arizona State University Biocollections, with an introduction to the NEON Biorepository". Annual Meeting of the Entomological Collections Network, St. Louis, MO.
- 2019 **Franz, N.M.**, E.E. Gilbert & B.W. Sterner. " Distributed, but global in reach: Outline of a decentralized paradigm for biodiversity data intelligence". SI87 – Empowering the Taxonomic Community by Linking Information through Names and Taxonomy. Biodiversity Next 2019, Leiden, The Netherlands.
- 2019 **Franz, N.M.**, E.E. Gilbert, A. Husain, M.A. Johnston, L. Rocha Prado, L. Steger & K.M. Yule. "NEON Biorepository @ ASU – updates, access & use". Workshop W53 – Using NEON Samples and Data in Biodiversity Research. Biodiversity Next 2019, Leiden, The Netherlands.
- 2019 Sterner, B.W., E.E. Gilbert & **N.M. Franz**. Decentralized but globally coordinated biodiversity data science. Second Meeting of the Philosophy in

- Biology and Medicine (PhilInBioMed) International Network, Bordeaux, France.
- 2019 **Franz, N.M., E.E. Gilbert, A. Husain, M.A. Johnston, L. Rocha Prado, L. Steger & K.M. Yule.** "Where NEON and natural history collections data meet: Exploring the NEON Biorepository data portal". Ecological Society of America Annual Meeting, Louisville, KY.
- 2019 Yule, K.M. & **N.M. Franz.** "Beyond data: Navigating NEON resources: NEON Biorepository". Ecological Society of America Annual Meeting, Louisville, KY.
- 2019 Gilbert, E.E., C. Gries, **N.M. Franz**, L.R. Landrum & T.H. Nash III. "SEINet: Making use of an extended network of regional consortia to mobilize the digital content of natural history collections". Botany Conference 2019, Tucson, AZ.
- 2018 Jansen, M.A. & **N.M. Franz.** "Comparative bending mechanics and morphology of the snout in *Curculio* Linnaeus 1756. Annual Meeting of the Entomological Society of America, Vancouver, BC.
- 2018 Reily, B.H. & **N.M. Franz.** "A phylogenetic revision of the blue-green citrus weevils (*Pachnaeus* Schoenherr, 1826)". Annual Meeting of the Entomological Society of America, Vancouver, BC.
- 2018 **Franz, N.M.** "Surveying the weevils of Sonora, Mexico". Madrean Conference 2018 – Collaboration Now for the Future: Biodiversity and Management of the Madrean Archipelago IV, Tucson, AZ.
- 2018 **Franz, N.M.** "Symbiota workshop". Madrean Conference 2018 – Collaboration Now for the Future: Biodiversity and Management of the Madrean Archipelago IV, Tucson, AZ.
- 2017 Jansen, M.A., N. Chawla & **N.M. Franz.** "Fracture mechanics and evolution of resilient cuticle in the rostrum of *Curculio* Linnaeus, 1758". Annual Meeting of the Entomological Society of America, Denver, CO.
- 2017 Reily, B.H. & **N.M. Franz.** "A phylogenetic revision of the blue-green citrus weevils (*Pachnaeus* Schoenherr, 1826). Annual Meeting of the Entomological Society of America, Denver, CO.
- 2017 **Franz, N.M., E.E. Gilbert, T.H. Atkinson & V. Senderov.** "Publishing a Symbiota specimen-based checklist (version) with the Biodiversity Data Journal". Annual Meeting of the Entomological Collections Network, Denver, CO.
- 2017 Johnston, M.A. & **N.M. Franz.** "Backbone taxonomies, data aggregation, and early career systematists: Something's got to give". Annual Meeting of the Entomological Collections Network, Denver, CO.
- 2017 Anzaldo, S.S. & **N.M. Franz.** "#YourDailyWeevil – a story of modest but gratifying social media success". Annual Meeting of the Entomological Collections Network, Denver, CO.
- 2016 **Franz, N.M., A. Basham & A. Mast.** "New developments for the Libraries of Life project and app". Annual Meeting of the Biodiversity Information Standards Association (TDWG), Santa Clara de San Carlos, Costa Rica.
- 2016 **Franz, N.M., N. Cobb, B. Brandt & A. Basham.** Introducing LepNet – the Lepidoptera of North America Network. Annual Meeting of the Biodiversity Information Standards Association (TDWG), Santa Clara de San Carlos, Costa Rica.

- 2016 **Franz, N.M., E. Gilbert, B. Brandt & R. Collin.** "Updates on multiple Neotropical Symbiota portals – STRI, Flora, and Arthropods". Annual Meeting of the Biodiversity Information Standards Association (TDWG), Santa Clara de San Carlos, Costa Rica.
- 2016 **Franz, N.M. & B. Ludäscher.** "Logic that embraces systematic progress and persistent conflict - an update on taxonomic concept reasoning". Annual Meeting of the Biodiversity Information Standards Association (TDWG), Santa Clara de San Carlos, Costa Rica.
- 2016 **Franz, N.M. & B.W. Sterner.** "A new power balance is needed for trustworthy biodiversity data". Annual Meeting of the Biodiversity Information Standards Association (TDWG), Santa Clara de San Carlos, Costa Rica.
- 2016 Senderov, V., T. Georgiev, D. Agosti, T. Catapano, G. Sautter, É. Ó Tuama, **N.M. Franz, K. Simov & L. Penev.** "The Open Biodiversity Knowledge Management System: a semantic suite running on top of the Biodiversity Knowledge Graph". Annual Meeting of the Biodiversity Information Standards Association (TDWG), Santa Clara de San Carlos, Costa Rica.
- 2016 Cobb, N.S., E.E. Gilbert, **N.M. Franz** & K.C. Seltmann. "Arthropod collection digitization and networking across the new world". XXV International Congress of Entomology, Orlando, Florida.
- 2016 **Franz, N.M., S.S. Anzaldo, E.E. Gilbert, M.A. Jansen, M.A. Johnston & B. Ludäscher.** "Addressing the name:meaning drift challenge in open-ended biodiversity information environments". XXV International Congress of Entomology, Orlando, Florida.
- 2016 Zhang, G., N. Rahman, S. Noudali & N.M. Franz. "Mobilizing historical literature and specimen data to study host plant associations in weevils (Curculionoidea)". XXV International Congress of Entomology, Orlando, Florida.
- 2015 Jansen, A., S. Singh, N. Franz & N. Chawla. "Mechanical behavior of the rostrum of *Curculio* Linnaeus, 1758 (Coleoptera: Curculionidae)". Annual Meeting of the Entomological Society of America, Minneapolis, MN.
- 2015 Zhang, G., Z. Geng, P. Browne, H. Cadillo-Quiroz & N. Franz. "Diversity and evolution of bacterial symbionts in weevils (Coleoptera: Curculionoidea)". Annual Meeting of the Entomological Society of America, Minneapolis, MN.
- 2015 **Franz, N., N. Cobb & K. Seltmann.** "The current state of arthropod biodiversity data: addressing impacts of global change". 30th Annual Meeting, Society for the Preservation of Natural History, Gainesville, FL.
- 2015 **Franz, N., E. Gilbert, A. Weakley & B. Ludäscher.** "Taxonomic concept resolution for voucher-based biodiversity information platforms". 30th Annual Meeting, Society for the Preservation of Natural History, Gainesville, FL.
- 2014 **Franz, N., B. Ludäscher, M. Chen, S. Yu & S. Bowers.** "Aligning insect phylogenies: *Perelleschus* and other cases". Annual Meeting of the Entomological Society of America, Portland, OR.
- 2014 Zhang, G., U. Basharat & N. Franz. "Ancient reverse colonization of Central America from the Caribbean in weevils of the *Exophthalmus* genus complex (Curculionidae: Entiminae)". Annual Meeting of the Entomological Society of America, Portland, OR.

- 2014 Cobb, N., K. Seltmann & **N. Franz**. "The current state of arthropod biodiversity data: addressing impacts of global change." Annual Meeting of the Entomological Collections Network, Portland, OR.
- 2014 Chen, M., S. Yu, N. Franz, S. Bowers & B. Ludäscher. "A hybrid diagnosis approach combining black-box and white-box approaches". RuleML 2014 – 8th International Web Rule Symposium, Prague, Czech Republic.
- 2014 Zhang, G. & N. Franz. "Integrating and visualizing taxonomic concept changes in the Heteroptera". 5th Quadrennial Meeting of the Heteropterists' Society, Washington, DC.
- 2014 Johnston, M.A., N.M. Franz & A.D. Smith. "*Eleodes* and allies: phylogenetic assessment of Amphidorini LeConte (Coleoptera: Tenebrionidae)". Entomological Society of America – Pacific Branch Annual Meeting, Tucson, AZ.
- 2013 Jansen, M.A. & N.M. Franz. "A phylogenetic revision of *Minyomerus* Horn, 1876, and *Piscatopus* Sleeper, 1960 (Coleoptera: Curculionidae: Entiminae: Tanymericini)". Annual Meeting of the Entomological Society of America, Austin, TX.
- 2013 G. Zhang & N.M. Franz. "New phylogenetic insights into the evolution of West Indian entimine weevils (Coleoptera: Curculionidae) with an emphasis on Cuban lineages". Annual Meeting of the Entomological Society of America, Austin, TX.
- 2013 **Franz, N.M., M. Chen, S. Yu**, S. Bowers & B. Ludäscher. "A toolkit for reconciling multiple taxonomic perspectives: Euler/X and the *Perelleschus* use case". Annual Meeting of the Taxonomic Database Working Group, Florence, Italy.
- 2013 **Franz, N.M., J. Lee & C. Zhang**. "Using Answer Set Programming to simulate the interplay of taxonomic and nomenclatural change". Annual Meeting of the Taxonomic Database Working Group, Florence, Italy.
- 2013 **Franz, N.M., D.J. Patterson, S. Kumar & E.E. Gilbert**. "Concepts and tools needed to increase bottom-up taxonomic expert participation in a Global Names-based infrastructure". Annual Meeting of the Taxonomic Database Working Group, Florence, Italy.
- 2013 **Franz, N.M., C. Gries, T. Nash III & E.E. Gilbert**. "Crowd sourcing and community management capabilities available within Symbiota data portals". Annual Meeting of the Taxonomic Database Working Group, Florence, Italy.
- 2013 **Franz, N.M., E.E. Gilbert**, N.S. Cobb & P.J. Morris. "SCAN – leveraging Filtered Push technology to enhance remote taxonomic identifications". Annual Meeting of the Taxonomic Database Working Group, Florence, Italy.
- 2013 **Franz, N.M., M. Shillingburg & S. Shirota**. "Using SCAN to construct an arthropod checklist – preliminary insights from the Weevils of North America projects". 12th Biennial Conference of Science and Management on the Colorado Plateau, Flagstaff, AZ.
- 2013 Jansen, M.A. & N.M. Franz. "A phylogenetic revision of *Minyomerus* Horn, 1876, and *Piscatopus* Sleeper, 1960 (Coleoptera: Curculionidae)". 12th Biennial Conference of Science and Management on the Colorado Plateau, Flagstaff, AZ.
- 2012 **Franz, N.M., M. Chen, S. Yu & B. Ludäscher**. "Reconciling succeeding

- taxonomic classifications". Annual Meeting of the Entomological Society of America, Knoxville, TN.
- 2012 **Franz, N.M.**, N.S. Cobb, P.L. Heinrich, E.E. Gilbert & P.J. Morris. "Emergence of the Southwest Collections of Arthropods Network based on the Symbiota software platform and Filtered Push technology for remote specimen identifications". Annual Meeting of the Entomological Collections Network, Knoxville, TN.
- 2012 Lee, S., **N.M. Franz** & S. Varelas. "The Hasbrouck Insect Collection at Arizona State University – past, present and future". International Lepidopterists' Conference, Denver, CO.
- 2012 **Franz, N.M.** "Anatomy of a cladistic analysis". 31st Annual Meeting of the Willi Hennig Society, Riverside, CA.
- 2012 **Franz, N.M.**, M. Chen, S. Yu & B. Ludäscher. "Ontology-aided mapping of taxonomic concepts". 31st Annual Meeting of the Willi Hennig Society, Riverside, CA.
- 2012 Stromberg, J., H. Bateman, E. Makings, **N. Franz**, H. Rowe, S. Beute, A. Suchy, D. Wolkis, B. Scott & R. Puydt. "Inventory and monitoring of the Salt River in Phoenix". Central Arizona-Phoenix Long-Term Ecological Research (CAP-LTER) – 14th Annual All Scientists Meeting & Poster Symposium, SkySong, Scottsdale, AZ.
- 2011 **Franz, N.M.**, A.D. Smith & J. Hulcr. "Developing a beetle anatomy ontology based on the HAO model – lessons for inter-ordinal ontology integration". Entomological Society of America Symposium – Illuminating the Phenome: the Future of Morphology in Entomology. Annual Meeting of the Entomological Society of America, Reno, NV.
- 2011 **Franz, N.M.** "Phylogenetic and ontology-related obstacles to identifying higher-level insect groups". Entomological Society of America Symposium – Web-Based Digital Insect Identification: Our Progress, Challenges, and Opportunities. Annual Meeting of the Entomological Society of America, Reno, NV.
- 2010 **Franz, N.M.** "Phylogenetic studies in the weevil tribe Eustylini Lacordaire (Coleoptera: Curculionidae: Entiminae)". Annual Meeting of the Entomological Society of America, San Diego, CA.
- 2010 **Franz, N.M.** & D. Thau. "Biological taxonomy and ontology development: scope and limitations". iEvoBioConference 2010, Portland, OR.
- 2009 Cardona-Duque, J. & **N.M. Franz**. "Description and phylogeny of a new Neotropical genus of Acalyptini associated with cyclanth inflorescences (Coleoptera: Curculionidae: Curculioninae)". Annual Meeting of the Entomological Society of America, Indianapolis, IN.
- 2009 Girón, J.C. & **N.M. Franz**. "Revision and phylogeny of the Caribbean weevil genus *Apodrosus* Marshall (Coleoptera: Curculionidae: Entiminae)". Annual Meeting of the Entomological Society of America, Indianapolis, IN.
- 2009 Mazo Vargas, A. & **N.M. Franz**. "Molecular insights into the phylogeny of Caribbean entimine weevils (Coleoptera: Curculionidae: Entiminae)". Annual Meeting of the Entomological Society of America, Indianapolis, IN.
- 2009 Girón, J.C. & **N.M. Franz**. "Historia taxonómica de la subfamilia Entiminae

- (Coleoptera: Curculionidae): un vistazo a los caracteres". 36th Congress of the Sociedad Colombiana de Entomología, Medellín, Colombia.
- 2009 **Franz, N.M., J.C. Girón & A. Mazo Vargas.** "Avances en la sistemática de la tribu Eustylini (Coleoptera: Curculionidae: Entiminae)". 36th Congress of the Sociedad Colombiana de Entomología, Medellín, Colombia.
- 2009 **Franz, N.M.** "Interacciones reproductivas entre *Asplundia uncinata* Harling (Cyclanthaceae) y su picudo polinizador (Curculionidae)". 36th Congress of the Sociedad Colombiana de Entomología, Medellín, Colombia.
- 2009 **Franz, N.M., J.C. Girón & A. Mazo Vargas.** "Advances in the systematics of Caribbean entimine weevils". Simposio Flora Fauna Caribe, Humacao, PR.
- 2008 **Franz, N.M.** "Reassessment of critical type species in the Eustylini (Entiminae) and update on the Caribbean *Exophthalmus* project". Annual Meeting of the Entomological Society of America, Reno, NV.
- 2008 **Franz, N.M.** "Lessons taken from the CollectionsWeb Workshop I (Small Collections)." Annual Meeting of the Entomological Collections Network, Reno, NV.
- 2008 **Ruiz, D., J. Cardona & N.M. Franz.** "Inventario de coleópteros de Isla Mona, Puerto Rico". Alianza para el Aprendizaje de Ciencias y Matemáticas (AIACiMa) – Simposio Verano, Río Piedras, PR.
- 2008 **Girón, J.C. & N.M. Franz.** "Estado del conocimiento de la subfamilia Entiminae (Curculionidae) en Puerto Rico". 35th Congress of the Sociedad Colombiana de Entomología, Santiago de Cali, Colombia.
- 2007 **Franz, N.M.** "Reproductive trade-offs in a specialized cyclanth weevil pollination system (Coleoptera: Curculionidae)". Entomological Society of America Symposium – New Minds for Weevil Systematics. Annual Meeting of the Entomological Society of America, San Diego, CA.
- 2007 **Franz, N.M.** "University of Puerto Rico at Mayagüez Insect Collection – then and now". Annual Meeting of the Entomological Collections Network, San Diego, CA.
- 2007 **López, J. & N.M. Franz.** "Diversidad de insectos atraídos por lámparas de mercurio y luz ultravioleta en Bosques Estatales de Guánica, Susúa y Maricao". Alianza para el Aprendizaje de Ciencias y Matemáticas (AIACiMa) – Simposio Verano, Río Piedras, PR.
- 2007 **Franz, N.M. & C.W. O'Brien.** "Hacia un inventario de los escarabajos herbívoros de Maricao". Simposio Flora Fauna Caribe, Humacao, PR.
- 2006 **Franz, N.M., X. Liu, R.K. Peet & L. Downey.** "Using ConceptMapper to trace the evolution of taxonomic perspectives". Annual Meeting of the Entomological Society of America, Indianapolis, IN.
- 2006 Liu, X., R.K. Peet, **N.M. Franz** & L. Downey. "ConceptMapper: a tool to link concept relationships across taxonomic classifications". 5th International Conference on Ecological Informatics, Santa Barbara, CA.
- 2006 Peet, R.K., A. Weakley, **N.M. Franz** & X. Liu. "The transition to taxon concepts in a world of legacy data". Annual Meeting of the Taxonomic Database Working Group, Saint Louis, MO.
- 2004 **Franz, N.M.** "Towards a phylogenetic system of New World derelomine flower weevils". Annual Meeting of the Entomological Society of America, Salt Lake

- City, UT.
- 2004 **Franz, N.M.** & R.K. Peet. "Towards a language for indicating relationships among taxonomic concepts". Annual Meeting of the Taxonomic Database Working Group, Christchurch, New Zealand.
- 2004 **Franz, N.M.** & R.M. Valente. "Evolutionary trends in derelomine flower weevils: from associations to homology". XXII International Congress of Entomology, Brisbane, Australia.
- 2003 **Franz, N.M.** "Reference". 22nd Annual Meeting of the Willi Hennig Society, New York, NY.
- 2003 **Franz, N.M.** "Pushing the limits of homology". Graduate Student Symposium, Cornell University, Ithaca, NY.
- 2001 **Franz, N.M.** "Weevils as pollinating seed predators: evolution of the derelomine-*Carludovica* association". Annual Meeting of the Entomological Society of America, San Diego, CA.
- 2001 **Franz, N.M.** "Empiricism, realism, and descent with modification". 20th Annual Meeting of the Willi Hennig Society, Corvallis, OR.
- 2000 **Franz, N.M.** & C.W. O'Brien. 2000. "Evolution of derelomine flower weevils (Coleoptera: Curculionidae) in association with palms and cyclanths". XXI International Congress of Entomology, Iguassu Falls, Brazil.
- 2000 **Franz, N.M.** "Where to go when? Foraging success and individual learning in *Ectatomma ruidum* (Formicidae: Ponerinae)". Graduate Student Symposium, Cornell University, Ithaca, NY.
- 1999 **Franz, N.M.** "How to study coevolution? Weevils as pollinating seed predators of Cyclanthaceae". Smithsonian Tropical Research Institute – Tupper Symposium, Barro Colorado, Panama.
- 1997 **Franz, N.M.** "Caracterización de algunos plaguicidas de origen natural en el mercado Costarricense". VIII Congress of Integrated Pest Management, Guatemala City, Guatemala.
- 1997 **Franz, N.M.** "Biología reproductiva de algunas ciclantáceas y de los picudos asociados". IV Congress of Entomology, San José, Costa Rica.

III. Conference Posters

- 2020 Yule, K.M., E.E. Gilbert, A. Husain, M.A. Johnston, L. Rocha Prado, L. Steger & **N.M. Franz**. "The NEON Biorepository as a tool for monitoring ecological and evolutionary responses to change". American Naturalists 2020, Paacific Grove, CA.
- 2019 **Franz, N.M.**, E.E. Gilbert, A. Husain, M.A. Johnston, L. Rocha Prado, L. Steger & K.M. Yule. "Introducing the NEON Biorepository data portal". 3rd Annual Digital Data Conference, Yale University, New Haven, CO.
- 2018 Arguez, K.M. & **N.M. Franz**. "Comparison of beetle diversity collected in two styles of DIY flight intercept traps". Annual Meeting of the Entomological Collections Network, Vancouver, BC.
- 2016 Zhang, G., S. Lee, B. Obayomi, J. Hunter, S. Anzaldo & **N.M. Franz**. "Building an accessible weevil tissue collection for genomic research at ASUHIC". Annual Meeting of the Entomological Collections Network, Orlando, FL.
- 2016 **Franz, N.M.** "Representing taxonomy and phylogeny as logically tractable

- variables". Annual Summit of the Phenotype Research Coordination Network, Biosphere2, Oracle, AZ.
- 2015 Walton, A., C. Tellez, L.E. Jech, C. Reuter, L.R. Black, R.N. Foster, **N. Franz** & S. Lee. "Developing least disruptive management methods for rangeland grasshopper ecosystems – trial year 2014". Annual Meeting of the Entomological Society of America, Minneapolis, MN.
- 2015 Zhang, G. & N. Franz. "Systematics of Eustylini and Geonemini (Curculionidae: Entiminae)". Annual Meeting of the Entomological Society of America, Minneapolis, MN.
- 2015 Zhang, G. & N. Franz. "Systematics of Eustylini – reclassification of the *Exophthalmus* genus complex (Curculionidae)". Joint Annual Meeting, Entomological Societies of Canada and Québec, Montréal, Canada.
- 2015 Basham A., A. Mast, **N.M. Franz** & K.H. Holmes. "Libraries of Life: connecting collections with community via Augmented Reality and specimen-based learning applications". 30th Annual Meeting, Society for the Preservation of Natural History, Gainesville, FL.
- 2015 Gilbert, E., B. Brandt, D. Fleming & **N. Franz**. "Emergence of three voucher-based Neotropical biodiversity portals". 30th Annual Meeting, Society for the Preservation of Natural History, Gainesville, FL.
- 2014 Anzaldo, S. & N. Franz. "A survey of the conoderine weevils (Coleoptera: Curculionidae) of Panama with notes on their behavior, natural history, and taxonomy". Annual Meeting of the Entomological Society of America, Portland, OR.
- 2014 Basham, M., Y. Özarslan & **N. Franz**. "Beyond a bug in a box: connecting collections with community via augmented reality and specimen-based learning applications". Annual Meeting of the Entomological Society of America, Portland, OR.
- 2014 Zhang, G., J. Pourturk & N. Franz. "Weevil-plant associations revealed by multi-locus plant DNA barcoding". Annual Meeting of the Entomological Society of America, Portland, OR.
- 2014 Lücking, R., E. Gilbert, **N. Franz**, P. Morris, S. Bates, B. Thiers & C. Gries. "The Symbiota Portal for North American collections of plants, fungi, and lichens: how to address the problem of incorrect taxon identifications in large on-line specimen repositories". 10th International Mycological Congress, Bangkok, Thailand.
- 2014 Basharat, U., G. Zhang & N. Franz. "Remarkable colonization from West Indies to Neotropical mainland in weevils". Society for the Study of Evolution Annual Meeting, Raleigh, NC.
- 2013 **Franz, N.M.** C.W. O'Brien, S. Shirota & M. Shillingburg. "WoNA - Weevils of North America: a virtual, specimen-based platform using Symbiota". Annual Meeting of the Entomological Society of America, Austin, TX.
- 2013 Girón, J. & N.M. Franz. "A review of distributional data on Colombian entimine weevils (Coleoptera: Curculionidae: Entiminae)". Annual Meeting of the Entomological Society of America, Austin, TX.
- 2012 **Franz, N.M.** An mx-based revision of the Caribbean weevil genus *Artipus* Sahlberg (Coleoptera: Curculionidae: Entiminae)". Annual Meeting of the

- Entomological Society of America, Knoxville, TN.
- 2012 Montoya, A.L. & **N.M. Franz.** "Phylogenetic analysis and taxonomic revision of the Neotropical genus *Argentinomyia* Lynch Arribálzaga, 1891 (Diptera: Syrphidae: Syrphinae): preliminary results". Annual Meeting of the Entomological Society of America, Knoxville, TN.
- 2012 Vázquez-Vélez, L.M. & **N.M. Franz.** "Distributional patterns for species groups of *Pselaphomorphus* Motschulsky (Staphylinidae: Pselaphinae, Jubini), in Central and South America". Annual Meeting of the Entomological Society of America, Knoxville, TN.
- 2011 Cardona-Duque, J., L. Gómez-Murrillo & **N.M. Franz.** "Phylogenetic reassessment of *Cyclanthura*, a Neotropical genus of Acalyptini associated with arum and cyclanth inflorescences (Coleoptera: Curculionidae: Curculioninae)". Annual Meeting of the Entomological Society of America, Reno, NV.
- 2011 Girón, J.C. & **N.M. Franz.** "*Lachnopus curvipes* Fabricius 1787 and its radiation in the Caribbean region (Coleoptera: Curculionidae: Entiminae)". Annual Meeting of the Entomological Society of America, Reno, NV.
- 2011 López Mejía, N.M. Franz, J.M. Thaxton & S.L. Whitmire. "Correlation between parasitoid wasp diversity and vegetation diversity and structure in a degraded dry forest in Puerto Rico". Annual Meeting of the Entomological Society of America, Reno, NV.
- 2011 Montoya, A.L. & **N.M. Franz.** "Modelling the distribution of *Ornidia obesa* Fabricius, 1775 (Diptera: Syrphidae) in the Neotropical region". Annual Meeting of the Entomological Society of America, Reno, NV.
- 2011 Vélez-Bravo, A.H. & **N.M. Franz.** "Revision and phylogeny of neotropical velvet cockroaches (Dictyoptera: Blattellidae: Nyctiborinae)". Annual Meeting of the Entomological Society of America, Reno, NV.
- 2010 Genaro, J.A. & **N.M. Franz.** "An updated catalogue of the bees of Cuba (Hymenoptera: Apoidea: Anthophila)". Annual Meeting of the Entomological Society of America, San Diego, CA.
- 2010 Girón, J.C. & **N.M. Franz.** "Preliminary insights into the phylogeny of the genus *Lachnopus* Schoenherr 1840 (Coleoptera: Curculionidae: Entiminae)". Annual Meeting of the Entomological Society of America, San Diego, CA.
- 2010 Montoya, A.L. & **N.M. Franz.** "The flower flies (Diptera: Syrphidae) of Puerto Rico". Annual Meeting of the Entomological Society of America, San Diego, CA.
- 2009 **Franz, N.M.** & C.W. O'Brien. "New records of weevils (Coleoptera: Curculionoidea) from Mona Island, Puerto Rico, with special consideration of *Apotomoderes* Dejean". Annual Meeting of the Entomological Society of America, Indianapolis, IN.
- 2009 Mazo Vargas, A. & **N.M. Franz.** "Phylogeography of the citrus root weevil, *Diaprepes abbreviatus* (Coleoptera: Curculionidae: Entiminae), in Puerto Rico and surrounding islands". Annual Meeting of the Entomological Society of America, Indianapolis, IN.
- 2009 Mazo Vargas, A. & **N.M. Franz.** "Filogenia del complejo de género *Exophthalmus* Schoenherr (Coleoptera: Curculionidae: Entiminae) en el Caribe". 36th Congress of the Sociedad Colombiana de Entomología, Medellín,

- Colombia.
- 2009 Cardona-Duque, J. & N.M. Franz. "Hacia la descripción y filogenia de un nuevo género de Acalyptini (Coleoptera: Curculionidae)". 36th Congress of the Sociedad Colombiana de Entomología, Medellín, Colombia.
- 2009 Mazo Vargas, A., M.J. Cafaro & N.M. Franz. "Phylogeny of the *Exophthalmus* genus complex (Coleoptera: Curculionidae: Entiminae) from the Caribbean". Simposio Flora Fauna Caribe, Humacao, PR.
- 2008 Girón, J.C. & N.M. Franz. "Towards a revision of the genus *Apodrosus* Marshall (Coleoptera: Curculionidae: Entiminae)". Annual Meeting of the Entomological Society of America, Reno, NV.
- 2008 Cardona, J., N.M. Franz & D. Tuberquia. "New reports of acalyptine flower weevils (Coleoptera: Curculionidae) from the northern region of the Central Colombian Andes". Annual Meeting of the Entomological Society of America, Reno, NV.
- 2008 **Franz, N.M.** & J.A. Genaro. "The bees of Puerto Rico with notes on the Antillean fauna (Hymenoptera: Apoidea: Anthophila)". Annual Meeting of the Entomological Society of America, Reno, NV.
- 2008 **Franz, N.M., J.C. Girón & A. Mazo.** "Towards a systematic and evolutionary synthesis of the Neotropical *Exophthalmus* genus complex". Research Initiation Grants/Career Advancement Awards Meeting, National Science Foundation, Arlington, VA.
- 2007 **Franz, N.M.** & P.E. Skelley. "A new species of *Pharaxonotha* (Coleoptera: Erotylidae) pollinating two species of *Zamia* in Puerto Rico". Annual Meeting of the Entomological Society of America, San Diego, CA.
- 2007 Girón, J.C. & N.M. Franz. "A morphological review and key to the Entiminae (Coleoptera: Curculionidae) housed at the Museum of Entomology, Universidad del Valle, Colombia". Annual Meeting of the Entomological Society of America, San Diego, CA.
- 2006 **Franz, N.M.** & C.W. O'Brien. "An inventory of weevils inhabiting the State Forest of Maricao, Puerto Rico (Coleoptera: Curculionoidea)". Annual Meeting of the Entomological Society of America, Indianapolis, IN.
- 2000 **Franz, N.M.** & W.T. Wcislo. "Foraging success and individual learning of orientation and timing in *Ectatomma ruidum* (Formicidae: Ponerinae)". XXI International Congress of Entomology, Iguassu Falls, Brazil.

Select Curatorial Achievements

- 2006 – 2011 **UPR Mayagüez Invertebrate Collection:** rescued, reactivated, and increased collection holdings from ca. 130,000 to 180,000 specimens; successful NSF-BRC grant led to complete infrastructure renewal, with institutional matches into space renovation; trained 58 undergraduate and six graduate students; established first *Specify*-based collection database; established website at <http://uprm-invecol-project.tumblr.com/>.
- 2011 – present **ASU Hasbrouck Insect Collection:** rescued, reactivated, and increased collection holdings from ca. 700,000 to 1,000,000 accessioned specimens; complete renovation (2011) and (2014) relocation to

Alameda collections spaces; ca. 80% of existing cabinetry replaced, and overall cabinetry/drawer capacity more than doubled (ca. 3000 drawers in use). More than 60 under-graduate students trained. Completely transferred the ~1.25 million specimen-strong Charles W. & Lois B. O'Brien Insect Collection, with reactivation and recuration/digitization ongoing (2018 – present). See also Virtual Products, Mentoring, and Outreach and Community Service sections.

Field- and Museum-Based Research

I. Field Work (alphabetical order)

- Brazil (2000)
- Costa Rica (1996–2003; > 12 months total)
- Colombia (2009)
- Cuba (2012)
- Dominica (2009)
- Dominican Republic (2008)
- Germany (1993–1996)
- Jamaica (2008)
- Mexico (2011, 2017, 2018, 2019)
- Mona Island, Puerto Rico (2008)
- Panama (1998, 1999, 2012, 2013, 2014; > 5 months total)
- Puerto Rico (2006–2011)
- Spain (2000)
- Saint Thomas (2006)
- United States: AZ, CA, CO, FL, MD, NC, NJ, NM, NV, NY, OR, PA, SC, UT, WA (1999 – present)
- Venezuela (2002);
- Vieques Island, Puerto Rico (2007, 2009)

2. Museum Research (alphabetical order)

- A.J. Cook Arthropod Research Collection, Michigan State University, MI
- American Museum of Natural History, New York, NY
- Bohart Museum, University of California at Davis, CA
- California Academy of Sciences, San Francisco, CA
- Canadian Museum of Nature, Ottawa, Canada
- Centro Oriental de Ecosistemas y Biodiversidad, Santiago de Cuba, Cuba
- Charles W. O'Brien Collection, Green Valley, AZ
- Cornell University Insect Collection, Ithaca, NY
- Denver Museum of Nature and Science, Denver, CO
- Entomology Research Museum, University of California at Riverside, CA
- Essig Museum, University of California at Berkeley, CA
- Field Museum of Natural History, Chicago, IL
- Florida State Collection of Arthropods, Gainesville, FL

- Frank M. Hasbrouck Insect Collection, Tempe, AZ
- Insect Collection, Illinois Natural History Survey, Champaign, IL
- Instituto Nacional de Biodiversidad, Heredia, Costa Rica
- Julio A. Micheli Collection, Ponce, Puerto Rico
- McGuire Center for Lepidoptera and Biodiversity, University of Florida, FL
- Museo de Entomología y Biodiversidad Tropical, Río Piedras, Puerto Rico
- Museo de Insectos, Universidad de Costa Rica, San José, Costa Rica
- Museo del Instituto de Zoología Agrícola, Universidad Central de Maracay, Venezuela
- Museo Nacional de Costa Rica, San José, Costa Rica
- Museo Nacional de Historia Natural, Santo Domingo, Dominican Republic
- Museu de Zoologia da Universidade de São Paulo, São Paulo, Brazil
- Museum of Comparative Zoology, Harvard University, MA
- Northern Arizona University Insect Collection, Flagstaff, AZ
- Entomology Collection, Queensland Museum, Brisbane, Australia
- Insect Collection, Santa Barbara Museum of Natural History, CA
- Insect Collection, Smithsonian Tropical Research Institute, Ancón, Panama
- Snow Entomological Museum, University of Kansas, KS
- Universidad de Antioquia, Medellín, Colombia
- Universidad Autónoma de Santo Domingo, Santo Domingo, Dominican Republic
- Universidade Federal do Paraná, Curitiba, Brazil
- Universidad de la Sierra, Moctezuma, Sonora, Mexico
- Universidad Nacional Autónoma de México, Mexico
- Universidad de Puerto Rico – Recinto Universitaria de Mayagüez, Puerto Rico
- Universidad de Puerto Rico – Recinto Universitaria de Río Piedras, Puerto Rico
- University of Arizona Insect Collection, Tucson, AZ
- University of the West Indies at Mona, Kingston, Jamaica
- University of Georgia Collection, Athens, GA
- United States National Museum of Natural History, Washington, DC
- Zoologisches Institut und Zoologisches Museum, Universität Hamburg, Germany

Teaching Experience

I. School of Life Sciences – Arizona State University (2012 – present)

1. Course: **BIO 189 – Life Sciences Career Paths – Discover New Insect Species**
Offered: Fall 2014, Fall 2016, Fall 2017
2. Course: **BIO 345 – Organic Evolution (On-Line)**
Offered: Summer 2018
3. Course: **BIO 386 – General Entomology**
Offered: Fall 2012, Fall 2013, Fall 2014, Fall 2015, Fall 2016, Fall 2017, Fall 2019
4. Course: **BIO 494a/b – Fundamentals of Tropical Biology & Tropical Research**
Offered: Summer 2014

5. Course: **BIO 494 & EVO 598 – Discovering Biodiversity: Field to Database**
Offered: Spring 2016
6. Course: **EVO 598 – Seminar: Current Topics in Systematics**
Offered: Fall 2014, Spring 2015, Fall 2015, Spring 2016, Spring 2017, Spring 2020

II. Department of Biology – University of Puerto Rico at Mayagüez (2006 – 2011)

BIOL 4901/2	Special Problems in Zoology	Every semester
BIOL 4446	Introduction to Entomology	Spring 2007, 2008, and 2010
BIOL 4925	Undergraduate Seminar	Spring 2006
BIOL 6015	Insect Morphology	Fall 2010
BIOL 6990	Graduate Seminar	Fall 2007
BIOL 6992	Phylogenetic Systematics Lab	Fall 2008
BIOL 6993	Biological Nomenclature	Spring 2007
BIOL 6994	Biological Systematics	Fall 2007, Spring 2010
CIBI 3032	Biological Science for Non-Majors	Spring 2006 (two sections)
ZOOL 6058	Insect Taxonomy	Fall 2006, Spring 2009

III. Informal Courses Offered (2001 – present)

2019	Lead Organizer and Instructor, <i>The Weevil Course III</i> , Merriam Powell Research Station, Flagstaff, AZ
2014	Lead Organizer and Instructor, <i>The Weevil Course II</i> , Southwest Research Station, Portal, AZ – 16 participants URL: http://taxonbytes.org/weevil-course-2014-running-notes/
2012	Lead Organizer and Instructor, <i>The Weevil Course</i> , Southwest Research Station, Portal, AZ – 22 participants
2012	Lead Instructor, <i>Taller de Cladística</i> , Museo de Historia Natural Tomás Romay, Santiago de Cuba, Cuba – 24 participants
2010	Workshop Instructor, <i>USDA Southern Plant Diagnostic Network Weevil Workshop</i> , University of Georgia, Athens, GA – 28 participants
2006	Course Instructor, <i>Science Environment for Ecological Knowledge (SEEK) Postdoctoral Workshop in Biodiversity Informatics</i> , University of New Mexico, NM – 14 participants
2001	Course Instructor, <i>Coleoptera Parataxonomists Course</i> , Instituto Nacional de Biodiversidad (INBio), Costa Rica – 35 participants

Mentoring Experience

I. Postdoctoral mentees (ASU)

2012 – 2014 **Aaron D. Smith, Ph.D.** – Postdoctoral Researcher; with funding from

- ASU Franz Lab and from jointly submitted NSF-DEB 1258154 grant: "ARTS: Systematics of the Darkling Beetle Genus *Eleodes*".
- 2013 – 2017 **Guanyang Zhang, Ph.D.** – Postdoctoral Researcher; funding from NSF-DEB 1155984 grant: "CAREER: Systematics of Eustyline and Geonemine Weevils". Website: <http://www.somanyinsects.org/>.
- 2015 **Matthew L. Gimmel, Ph.D.** – Postdoctoral Researcher; funding from ASU Franz Lab to conduct research towards creating a Coleoptera Anatomy Ontology, applied to revisionary taxonomy publications.
- 2019 – present **Atriya Sen, Ph.D.** – Postdoctoral Researcher; funding from ASU Special Initiative Fund "Biodiversity Data Science Initiative". Website: <https://www.linkedin.com/in/atryasen/>
- 2020 – present **Nathan S. Upham, Ph.D.** – Assistant Research Professor & Associate Curator of Mammalogy; funding from ASU Special Initiative Fund "Biodiversity Data Science Initiative". Website: <https://n8u.org/>

II. Graduate Student Mentees

A. University of Puerto Rico at Mayagüez

→ Theses available at: <http://grad.uprm.edu/oeg/TesisDisertacionesDigitales/Biologia/> (login required).

- 2006 – 2007 **Neis J. Martínez Hernández** – *Member* of M.Sc. Committee. Thesis: "Composición y estructura de la fauna de escarabajos (Insecta: Coleoptera) en los remanentes de bosque del Recinto Universitario de Mayagüez, Puerto Rico, con énfasis en la superfamilia Scarabaeoidea".
- 2007 – 2010 **Jennifer C. Girón Duque** – *Chair* of M.Sc. Committee. Thesis: "Revision and phylogeny of the Caribbean genus *Apodrosus* Marshall, 1922 (Coleoptera: Curculionidae: Entiminae)".
- 2008 – 2011 **Juliana Cardona-Duque** – *Chair* of M.Sc. Committee. Thesis: "Description and phylogeny of *Azotoctla*, a new Neotropical genus of Acalyptini (Coleoptera: Curculionidae: Curculioninae) associated with the staminodes of Cyclanthaceae".
- 2008 – 2011 **Anyimilehidi Mazo-Vargas** – *Chair* of M.Sc. Committee. Thesis: "Untangling the effects of biogeography and host plant associations: phylogenetic and phylogeographic studies in the *Exophthalmus* genus complex".
- 2009 – 2012 **Laura M. Vásquez-Vélez** – *Chair* of M.Sc. Committee (until 2011, then *Member*). Thesis: "Revision and phylogeny of the genus *Pselaphomorphus* Motschulsky, 1855 (Staphylinidae, Pselaphinae: Jubini)".
- 2010 – 2012 **Augusto L. Montoya Giraldo** – *Chair* of M.Sc. Committee (until 2011, then *Member*). Thesis: "Phylogenetic analysis and taxonomic revision of the Neotropical genus *Argentinomyia* Lynch Arribálzaga, 1891 (Diptera: Syrphidae)".

2010 – 2012 **Andrés H. Vélez-Bravo** – *Chair* of M.Sc. Committee (until 2011, then *Member*). Thesis: "Revision and phylogeny of the Neotropical subfamily Nyctiborinae (Dictyoptera: Blattaria: Ectobiidae)"

B. Arizona State University

2012 – 2014 **M. Andrew Jansen** – *Chair* of M.Sc. Committee. Thesis: "A phylogenetic revision of *Minyomerus* Horn, 1876 and *Piscatopus* Sleeper, 1960 (Curculionidae: Entiminae: Tanymecini: Tanymecina)". URL: <https://repository.asu.edu/items/25115>

2013 – 2018 **M. Andrew Johnston** – *Chair* of Ph.D. Committee. Thesis: "Diversity and distribution of the desert stink beetles: Systematics of the Amphidorini LeConte, 1862 (Coleoptera: Tenebrionidae)". URL: <https://repository.asu.edu/items/51646>

2013 – 2019 **Salvatore S. Anzaldo** – *Chair* of Ph.D. Committee. "Systematics, morphology, and evolution of the New World Conoderinae Schoenherr, 1833 (Coleoptera, Curculionidae)". URL: <https://repository.asu.edu/items/55464>

2014 – 2019 **M. Andrew Jansen** – *Chair* of Ph.D. Committee. "Evolutionary biomechanics of the rostrum of *Curculio* Linnaeus, 1758 (Coleoptera, Curculionidae)". URL: <https://repository.asu.edu/items/53836>

2015 – present **Edward E. Gilbert** – *Chair* of Ph.D. Committee. "Designing and testing a global, decentralized model for high-quality data aggregation: Development of specimen-based biodiversity information infrastructures".

2015 – present **Brian C. Reily** – *Chair* of M.Sc. Committee. "Systematic revision of the West Indian weevil genus *Pachnaeus*".

2016 – 2017 **Albatool Albediwi** – *Member* of M.Sc. Committee. "Developing a virtual flora portal for vascular plants of Saudi Arabia".

2018 – present **Katherine M. Arguez** – *Chair* of M.Sc. Committee (2018 – 2019) and *Chair* of Ph.D. Committee (2019 – present). "Systematics of the New World weevil genus *Rhyssomatus*".

2018 – present **Brennan T. Hays** – *Chair* of M.Sc. Committee. "Southwest insect diversity patterns and trends inferred from digitized collections data".

2019 – present **Charles Wallace** – *Member* of Ph.D. Committee. "How do differences in the background theories people bring to Dictyoptera inform how they classify and value biological groups within it?"

2019 – present **Evan S. Waite** – *Chair* of Ph.D. Committee. "Systematics, evolution and ecology of ground beetles".

C. Membership in External Graduate Committees

- 2011 – 2015 **Julio C. Lazcano Cara** – *Member* of Ph.D. Committee, Departamento de Biología, Universidad de Puerto Rico – Río Piedras. Thesis: "The reproductive biology of *Zamia* (Cycadales: Zamiaceae) in Puerto Rico: implications for patterns of genetic structure and species conservation". URL: <http://gradworks.umi.com/37/04/3704490.html>
- 2012 – 2014 **Mingmin Chen** – *Member* of Ph.D. Committee, Department of Computer Science, University of California at Davis. Thesis: "Reasoning about queries and constraints". URL: <http://gradworks.umi.com/36/85/3685189.html>
- 2012 – 2017 **Shizhuo Yu** – *Member* of Ph.D. Committee, Department of Computer Science, University of California at Davis. "Reasoning about taxonomies with Region Connection Calculus".

III. Undergraduate Honors Thesis Advisees (ASU)

- 2012 **Dustin H. Daniel** – *Chair* of Honors Thesis Committee. Thesis: "An interactive key to the genera of entimine weevils of Arizona (Curculionidae: Entiminae)". URL: <http://mx.speciesfile.org/projects/85/public/site/asu/home>
- 2014 **Samantha Hauserman** – *Chair* of Honors Thesis Committee. Thesis: "Cocladogenesis – a thesis in three parts". URL: <https://repository.asu.edu/items/22788>
- 2019 **Chad Hauck** – *Co-Chair* of Honors Thesis Committee: Thesis: "A flora catalogue of the alleyways of Tempe".

IV. Undergraduate Research Mentees (ASU)

Total = 60 undergraduate students mentored on the following research themes: (1) Hasbrouck Insect Collection reactivation, curation, expansion, and digitization; (2) Madrean Archipelago insect fauna inventory project; (3) Weevils of North America project; (4) virtual 3D-AR apps for collection outreach; (5) phylogenetic revision of *Minyomeres* project; (6) phylogenetic revision of *Eleodes* project; (7) curation and morphological systematics of Neotropical entimine weevils; (8) molecular phylogenetics and evolution of Neotropical entimine weevils; (9) DNA barcoding of weevil gut contents for host plant information; (10) next-generation sequencing of weevil gut contents for bacterial endosymbionts; (11) Lepidoptera of North America (LepNet) project; (12) USDA grasshopper project; (13) O'Brien Collection project; (14) Weevils of Sonora project; (15) NEON Biorepository project. **Bold font = presently in graduate school (or completed).**

- 2019 Katherine Barnes¹⁴, Savanna Benson¹, Jamal Broussard¹⁵, Klara Boules¹, Edgar Camberos¹¹, Courtney Curtis¹², Emmy Garipey¹⁵, **Brennan Hays**^{1,11}, Travis Hitchner¹², Trinity Johnson¹³, Khalil Khalil¹³, Rachel Kulich¹⁵, Paulina Labesa¹¹, Avneet Nagra¹³, Maya Peremislov¹¹, Luis Romero¹¹, Eda Sezen¹⁵, Suraya Sidique^{11,12}, Cody Smith¹⁵, Jeffrey Sneed¹¹, Benjamin Shockley¹⁴
- 2018 Edgar Camberos¹¹, **Brennan Hays**^{1,11}, Travis Hitchner¹², Trinity Johnson¹³, Rachel Kulich¹⁵, Charles Malm¹³, Avneet Nagra¹³, Maya Peremislov¹¹, Noah Redwood¹¹, Luis Romero¹¹, Benjamin Shockley¹⁴, Sofia Soto¹¹, Ethan

- Stahura¹², Kelsie Wilder¹³
- 2017 Yasmin Aghili¹¹, Dylan Cooper¹¹, Boris Dimov¹⁰, Chad Hauck¹¹, Brennan Hays¹¹, Travis Hitchner^{6,12}, José Martínez¹, Luc McConnell¹¹, Justin Nguyen¹, Luis Romero¹¹, Sarah Rydberg^{3,12}, Spencer Scott¹¹, Ethan Stahura¹², Zachary Stevens¹¹, Brian Takimoto¹, Don Tram¹⁰, Sydney Wuerker⁶
- 2016 Dylan Cooper⁶, **Joseph Hunter**⁷, Zachariah Lott¹⁰, Collin McMartin¹, John Nguyen¹, **Shinji Otsuru**¹, Sara Tanveer⁸, Richard Thomas⁷, Lester Villalobos Mendoza¹, Don Tram¹⁰, Mary Walsh⁷
- 2015 Abigail Howell¹, Joseph Hunter⁷, John Nguyen¹, **S.M. Bukola Obayomi**⁷, Lin Pan⁷, Pavithra Paravastu⁸, Natalia Rahman⁸, Ashley Sanders¹, Mohamad-Sari Sbai¹, Sara Tanveer⁸, Richard Thomas⁷, Lester Villalobos Mendoza¹
- 2014 **Usmaan Basharat**⁸, Kellie Elliott³, **Zhen Geng**¹⁰, Christopher Henny⁶, **Kody Holmes**⁴, Joseph Hunter⁷, Lin Pan⁷, Juyan Pourturk⁹, Ashlee Prettyman³, Chelsey Tellez¹, Andrea Walton¹, Kevin Wang⁷
- 2013 Usmaan Basharat⁸, Omron Blauo⁸, Kevin Demater⁴, Hayley Dull⁶, **Soon Flynn**^{1,3}, Jennifer Guzzardi¹, Evan Hook³, **Madalyn Karamooz**⁴, Catherine Mercado¹, **Naomi Pier**¹, **Karina Ramirez**³, Michael Shillingburg¹, Sarah Shiota³, William Sides⁷, Chelsey Tellez³, Daniel Vargas⁷, Andrea Walton¹
- 2012 Stephanie Delgado⁶, David Fleming¹, Soon Flynn³, Catherine Mercado¹, **Joshua Persson**^{1,4}, Naomi Pier¹, Michael Shillingburg¹, Sarah Shiota³
- 2011 Adam Cegla¹, **Martha Camacho**², **Dustin Daniel**¹, **Don Quach**², Gregory Lloyd², **Harry Grissom**¹, Stephanie Varelas¹

IV. High School Mentees (ASU)

- 2019 **Talia Perea** – trained in North American spider diversity and identification.
- 2018 **Sofia Soto** – trained in insect collection curation methods.
- 2014 **Ushrayinee Sarker** – trained in insect collection curation methods.
→ Accepted in 2015 into the ASU Barrett Honors College to study Biomedical Sciences.

Professional Service

I. Editorial and *Ad Hoc* Review Service

- 2019 *Ad Hoc* Reviewer for Schuh & Brower, *Biological Systematic – Principles and Applications, Third Edition*, Cornell University Press.
- 2018 – present Academic Editor for *PLoS ONE* (insect systematics, biodiversity informatics)
- 2017 – present Subject Editor for Biodiversity Informatics, *Insect Systematics and Diversity* (Entomological Society of America/Oxford Academic)
- 2016 Guest Editor, Special Issue on Semantics for Biodiversity, *Semantic Web – Interoperability, Usability, Applicability, an IOS Press Journal*
- 2015 – 2017 Editor, *Knowledge Representation in Systematic Biology*, Edited Volume

- to appear in the Taylor & Francis Group/CRC Press "Species and Systematics" Series
 URL: <https://www.crcpress.com/Species-and-Systematics/book-series/CRCSPPEANDSYS>
- 2012 – 2013 Subject Editor for Coleoptera, *Annals of the Entomological Society of America*
- 2009 – 2017 Editorial Committee Member, *Solenodon – Antillean Journal of Zoological Taxonomy*
- 2009 – 2012 Editor for the Subject Area Coleoptera: Curculionoidea, *Zootaxa*
- 2001 – 2009 Editor, *CURCULIO – International Newsletter for Curculionoidea Research*
 URL: http://www.coleopsoc.org/default.asp?Action=Show_Resources&ID=Curculio
- 2001 – present *Ad hoc* manuscript reviewer, *Acta Biotheoretica*, *Biodiversity Data Journal*, *Biological Journal of the Linnean Society*, *Biology & Philosophy*, *Boletín del Museo de Entomología de la Universidad del Valle*, *Canadian Entomologist*, *Caribbean Journal of Science*, *Cladistics*, *Coleopterists Bulletin*, *Diversity*, *Entomapeiron-Paleoentomology*, *Florida Entomologist*, *Insecta Mundi*, *Invertebrate Systematics*, *Israel Journal of Entomology*, *Journal of Agriculture of the University of Puerto Rico*, *Journal of Science and Technology Education Research*, *Journal of Tropical Ecology*, *Methods in Ecology and Evolution*, *Molecular Biology and Evolution*, *Molecular Phylogenetics & Evolution*, *Paleontologia Electronica*, *PeerJ*, *PLoS Biology*, *PLoS ONE*, *Proceedings of the Entomological Society of Washington*, *Revista Brasileira de Entomologia*, *Revista de Biología Tropical*, *Revista de la Sociedad Entomológica Argentina*, *Semantic Web Journal*, *Solenodon*, *Systematic Biology*, *Systematic Entomology*, *Taxon*, *ZooKeys*, *Zoologia Neocaledonica*, *Zoological Journal of the Linnean Society*, *Zootaxa*

II. Grant Reviews

- 2009 – present Presential service on seven NSF grant review panels; including these programs: Biological Research Collections (BRC), Cyber-Innovation for Sustainability Science (CyberSEES), Doctoral Dissertation Improvement Grants (DDIG, twice), Genealogy of Life (GoLife), and Systematics and Biodiversity Science (SBS, twice)
- 2006 - present At least 26 *ad hoc* reviews of NSF proposal in the areas of systematics, biodiversity, evolutionary ecology, and informatics

III. Symposium and Workshop Organization

- 2019 Workshop Co-Organizer, *Closing the Feedback Loop between Biodiversity Data and Decision Making*, Global Futures Laboratory Workshop, ASU SkySong, Scottsdale, AZ
- 2019 Workshop Co-Organizer, *Workshop W53 – Using NEON Workshop W53 – Using NEON Samples and Data in Biodiversity Research*, Biodiversity Next 2019, Leiden, The Netherlands.
- 2018 Workshop Co-Organizer, *Catalyzing the Taxonomic Intelligence*

- Knowledge Base for Next-Generation Biological Data Discovery and Integration*, Marine Biological Laboratory, Woods Hole, MA
- 2017 Workshop Co-Organizer, *The Future of Systematics in Data-Centric Biology*, Marine Biological Laboratory, Woods Hole, MA
- 2017 Workshop Leader, *Workshop on Phylo-References*, Sponsored by NSF FuturePhy and OpenTree projects, Duke University, Durham, NC
- 2016 Symposium Organizer, *Building the Biodiversity Knowledge Graph for Insects*, XXV International Congress of Entomology (ICE 2016), Orlando
URL: <https://esa.confex.com/esa/ice2016/meetingapp.cgi/Session/24482>
- 2016 Workshop Leader, *Workshop on Tree-Data Integration for Phytophagan Beetles*, Sponsored by NSF FuturePhy, OpenTree, and Arbor projects, University of Florida, Gainesville, FL
URL: <https://github.com/OpenTreeOfLife/clade-workshops>
- 2016 Co-Organizer (ASU Co-Lead), *Introduction to Galaxy Workshop*, School of Life Sciences, Arizona State University, Tempe, AZ
URL: <https://wiki.galaxyproject.org/Events/ASU2016>
- 2015 Co-Organizer (ASU Lead), *iDigBio Workshop on Managing Natural History Collections Data for Global Discoverability*, Natural History Collections, Arizona State University, Tempe, AZ
URL: <https://www.idigbio.org/content/asu-hosts-managing-nhc-data-global-discoverability>
- 2013 Co-Organizer, *Third International Tenebrionoidea Symposium*, School of Life Sciences, Arizona State University, Tempe, AZ
URL: <http://www.insectbiodiversitylab.org/3ITS.html>
- 2012 Co-Organizer (ASU Lead), *Inaugural All-Hands Meeting of SCAN – Southwest Collections of Arthropods Network*, School of Life Sciences, Arizona State University, Tempe, AZ
- 2009 – 2010 Committee Member, Organizing Committee of the 2011 Entomological Society of America – Southeastern Branch Meeting (ESA-SEB), Río Piedras, PR
- 2007 Symposium Organizer, *Section A Symposium "New Minds for Weevil Systematics"*, Annual Meeting of the Entomological Society of America, San Diego, CA
- 2004 Assistant Coordinator, *Phytophaga Symposium*, XXII International Congress of Entomology, Brisbane, Australia

IV. Institutional Services

- 2019 – present Focal Area Co-Lead for Biosystems, Global Futures Laboratory, Arizona State University, Tempe, AZ
- 2019 – present Director of Biocollections, School of Life Sciences, Arizona State University, Tempe, AZ
- 2017 – present Committee Member, SoLS Director Search Committee, School of Life Sciences, Arizona State University, Tempe, AZ
- 2016 – 2017 Committee Member, Septennial Academic Program Review, Self-Study Report Committee, School of Life Sciences, Arizona State University, Tempe, AZ

<i>2013 – present</i>	Committee Member, Interdisciplinary Ph.D. Program in Evolutionary Biology, School of Life Sciences, Arizona State University, Tempe, AZ
<i>2013 – 2018</i>	Lead Coordinator, Natural History Collections, School of Life Sciences, Arizona State University, Tempe, AZ
<i>2011 – 2014</i>	Associate Director for Revisions and Monography, International Institute for Species Exploration, Arizona State University, Tempe, AZ
<i>2011 – 2013</i>	Member, Natural History Collections, School of Life Sciences, Arizona State University, Tempe, AZ
<i>2012 – 2013</i>	Advisory Board Member, Ecosystem Conservation and Resilience Initiative (ECRI), School of Life Sciences, Arizona State University, Tempe, AZ
<i>2011 – present</i>	Voting Member, Faculty of Genomics, Evolution, and Bioinformatics, School of Life Sciences, Arizona State University, Tempe, AZ
<i>2009 – 2011</i>	President, Informatics Committee, Department of Biology, University of Puerto Rico at Mayagüez, PR
<i>2006 – 2009</i>	Committee Member, Computer Committee & Toro Negro Field Station Committee, Department of Biology, University of Puerto Rico at Mayagüez, PR
<i>2001</i>	Seminar Coordinator, Jugatae Entomology Seminar Series, Department of Entomology, Cornell University, NY

V. Other Service Appointments and Roles

<i>2013 – present</i>	Research Associate, Smithsonian Tropical Research Institute, Balboa, Ancón, Republic of Panamá
<i>2012 – present</i>	Lead Domain Scientist Member, "Euler/X Multi-Taxonomy Alignment Project" and "Explorer of Taxon Concepts (ETC) Project", University of California at Davis and University of Arizona
<i>2011 – present</i>	Core Participant, Phenotype Ontology Research Coordination Network and Annual Meetings, National Evolutionary Synthesis Center, Durham, NC, and Biosphere2, Oracle, AZ
<i>2009 – 2010</i>	Councilor, The Coleopterists Society
<i>2008 – 2011</i>	Core Participant, Research Coordination Network – CollectionsWeb
<i>2008</i>	Invited Participant, Research Coordination Network – CollectionsWeb Workshop I, Michigan State University, East Lansing, MI
<i>2006 – present</i>	Annual Student Competition Judge and/or Systematics, Evolution, and Behavior Session Moderator, Annual Meetings of the Entomological Society of America
<i>1999 – present</i>	Active Society Member: Coleopterists Society, Entomological Society of America, Society of Systematic Biologists, Willi Hennig Society

Outreach and Community Service

Outreach and community service is an integral part of my functions as Curator of the Hasbrouck Insect Collection, Founding Director of the Biodiversity Knowledge Integration Center (BioKIC), Director of Biocollections / Principal Investigator of the NEON Biorepository. Our Center's event calendar is posted here: <https://biokic.asu.edu/calendar>. Since 2013 we hold 10-35

themed events that reach 1,500-6000 persons annually in the community, and more than 10,000 users of our 3D-AR apps. Highlights for 2019 include:

"Check it Out: NEON Biorepository is Open for Business"

<https://www.neonscience.org/observatory/observatory-blog/check-it-out-neon-biorepository-open-business>