

**Year in Review, 2023**

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January 2024

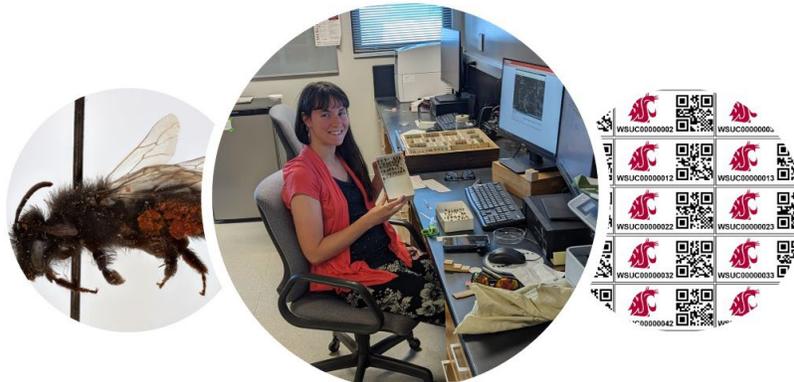
<https://museum.entomology.wsu.edu/>

**History and Personnel:** Begun in 1892, the M. T. James Entomological Collection serves as an important regional resource and is an actively growing collection with especially strong representation in Lepidoptera, Coleoptera, and Diptera and a newfound focus on Hymenoptera. The collection's holdings number in the millions and are of significant historical and scientific importance.

**Personnel:** The museum-associated faculty and staff are Elizabeth Murray (Assistant Professor and Director), Richard Zack (Professor and Curator and longtime museum associate), Silas Bossert (Assistant Professor and Curator), and Joel Gardner (Collections Manager, started at WSU in November 2022).

Prior to hiring Joel, there had not been a collections manager in the museum for several years, though Rich had been growing, curating, and managing the collection along with his administrative and faculty responsibilities. Joel undertakes collection care and management and functions as the primary coordinator for the daily operations of the museum. In the past year, among other achievements, he has organized the museum, rehoused our type specimens, finished a profile of the status of the collection using the McGinley system, updated our loan management and tracking system, and is evaluating a new dermestid monitoring system (while still freezing all drawers on a continuous basis). Joel also undertakes data cleaning and provides quality control for our digitized records.

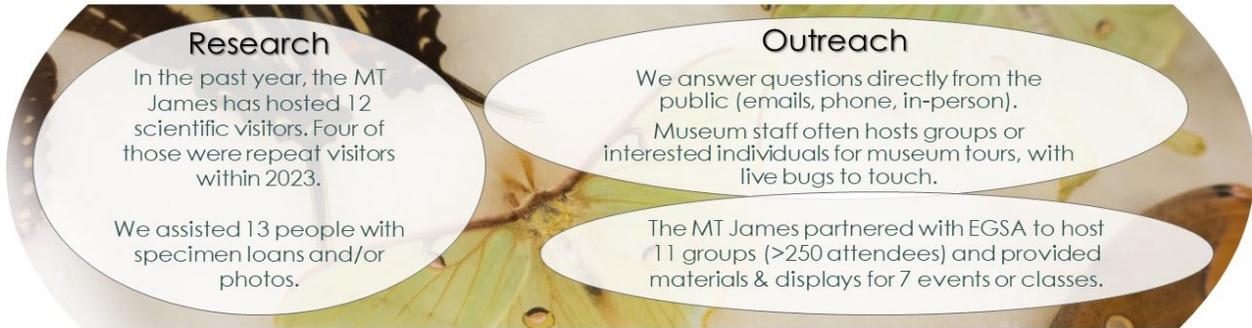
Additionally, we currently have two students associated with the collection: one undergraduate student, Kylie McGuire, who is working on an NSF grant-funded initiative to database collection bees, and one PhD graduate student, Nathaniel Green, who contributes time as digitization supervisor; Nate is funded through Murray's research assistantship.



**Digitization:** Until recently, the collection has not had the capacity to digitize specimens for upload to a public database. We did not have the personnel or a system for doing so. In 2022, WSU transitioned into the digitization era, kickstarted by funding specifically for bee and pollinator digitization. We have since digitized the labels of many thousands of specimens and have refined our workflow.

We devised a spreadsheet entry system for upload to SCAN-bugs.org and developed digitization protocols for WSU. We designed labels and devised a numbering system with a QR code. Undergraduate students database bees in our collection, image specimens, and complete other tasks as needed associated with the curating of the pinned specimens. We now have ~25,000 bee specimens digitized!

**Museum visitors and outreach:** We hosted several scientific visitors. As a research museum, WSU is gaining visibility for bee research in the Pacific Northwest, and several of our late-2023 visitors were here in support of their bee projects and for Joel Gardner's identification expertise. We also welcome visitors from the public into our museum. For instance, this year we welcomed groups including: 30 undergrad students through the WSU International Center 'Coffee Hour', the Summer Break Kids Kamp of Moscow of 25 6- to 12-year-olds, and the Community Child Care Center, with 18 5- to 11-year-olds. We also contribute to campus-related needs. We took part in The Spark's 'One Great Thing' exhibit of items from collections on campus, and Rich identified arthropods on sticky traps from a local museum to assist their survey for pest species in the displays.



**Loans:** We are now using the Symbiota collection management system (through SCAN) to track loans and gifts. All specimens are databased before being lent. We request that WSU be mentioned in publications involving our material. Furthermore, Rich is still organizing and returning loans of Dr. Bill Turner.

**Type Specimens:** Joel has rehousing our type specimens and will soon start the process to database and digitize the specimens. The last assessment of our type collection was published in 1986 in "Melanderia" reporting we had 152 holotype specimens and many other various type specimens (esp. numerous in paratypes). In 2023, Jim LeBonte deposited paratypes of the new beetle genus *Medusapyga* with the M.T. James. Two holotypes of clerid beetles from Guatemala were also accessioned into the collection.

**Acquisitions:** In 2023 we acquired six personal collections of varying size. Two of the larger collections were those of Dr. Paul Schroeder of Pullman (Coleoptera) and the collection of Dennis Strenge, formerly of Tri-Cities and a researcher at Hanford (Lepidoptera). James Dillman, of Tri-Cities, donated his collection of some 5,000 Lepidoptera, and Cody DeYoung, a former WSU student, donated a collection of approximately 10,000 staphylinid beetles and Hemiptera. Dan Suomi, a former WSU employee and retired WSDA scientist, donated his collection of specimens, books, and photographic slides mainly centered on urban pests. Alan D. Mudge bequeathed his beetle collection of 48 Cornell drawers to WSU. Most of the donated collections are in Cornell drawers and unit trays, while our collection uses USNM sized ones – which presents a challenge for rehousing specimens.

**Funding and Donor Support:** Our museum operates on donor support and our four endowments. In December 2023, we received a generous \$40,000 gift from Terry and Faye Whitworth as a contribution to their established museum endowment fund. The Collection Manager position was fully funded from endowments in 2023.

#### **Collaborations and Projects:**

**Guatemala Biodiversity Initiative:** Rich Zack has spent decades sampling insects in Guatemala with longtime collaborator Dr. José Monzón (Universidad del Valle de Guatemala). Rich had a treehopper species named after him this year, *Ceresinoidea zacki*, because he collected the holotype and paratype. We have arguably one of the best two collections of insects from Guatemala in the world.

**Bee Atlas:** Joel Gardner is a bee taxonomist and is working to manage the M.T. James' acquisition, identification, and curation of the bees of Washington state. He participates with WSDA (esp. Dr. Karen Wright) as they coordinate trained volunteers to collect, curate, and identify bees from across the state, through the WA Bee Atlas program. Bees collected by Bee Atlas volunteers will eventually be deposited in our WSU insect museum, and we are tasked with their care in perpetuity. WSU will co-host a Bee Atlas event May 17-19, 2024, including training at WSU on microscope use and bee identification.

**Washington State Bee List:** Elizabeth, Silas and Joel are collaborating with WSDA entomologists Dr. Chris Looney and Chanda Bartholomew to assemble a list of the bees recorded from the state. The data come from online databases of museum records and iNaturalist records, published literature, and the WSUC collection. We have determined there are >600 bee species in the state, and several new state records at WSU. A paper will be submitted to a peer-reviewed scientific journal in spring 2024.

**Fairchild Air Force Base insect survey:** Rich, Elizabeth, and Silas secured a grant of \$50,000 from the US Fish and Wildlife Service in 2022 to undertake a survey of the Fairchild AFB. Rich and master's student Alexis Menth are the primary surveyors, and one or both of them traveled to the Base every week for the six months of the field season. We have collected > 9,000 specimens representing over 100 insect families. Joel is assisting in identifying the bees of this project. The survey will continue until June 2025.

#### **Publications:**

In 2023, the faculty and staff of the museum published 18 papers or book chapters, some as co-authors.

#### **Partial list of publications using M.T. James Entomological Collection material in 2023**

Bossert, S., Monzón-Sierra, J., Zack, R.S., García, A.C. and Murray, E.A. (2023). Melittological notes from Guatemala (Hymenoptera: Anthophila), 1. New country records for *Centris* Fabricius (Apidae) and *Zikanapis* Moure (Colletidae). *Insecta Mundi*, 1022:1-8. <https://journals.flvc.org/mundi/article/view/135033/139257>

García, A.C., Bossert, S., Armas Quiñónez, A.G., Zack, R.S., & Monzón Sierra, J. (2023). Capítulo 8. Las abejas de las orquídeas de Guatemala (Apidae: Euglossini) [The Orchid Bees of Guatemala (Apidae: Euglossini)]. In *Biodiversidad de Guatemala* (ed. by J.C.Y. Schuster, Jiichiro & J. Monzón Sierra), pp. 139-153. Publicado por Universidad del Valle de Guatemala, Guatemala, Guatemala.

LaBonte, J.R. & Maddison, D.R. (2023) *Medusapyga* LaBonte and Maddison, a new genus of Anillini (Coleoptera: Carabidae: Trechinae) from the Pacific Northwest of the United States. *Proceedings of the California Academy of Sciences, Series 4*, 67, 401–432. [paratypes deposited in WSUC]

Rifkind, J. (2023) Two new species of Guatemalan *Colyphus* Spinola (Coleoptera: Cleridae: Clerinae). *Insecta Mundi*, 1003: 1-4. [types deposited in WSUC]. <https://journals.flvc.org/mundi/article/view/134676/138640>

Shepard, William D., and Robin Kundrata. (2023). "A Review of *Araeopidius monachus* (LeConte, 1874) (Coleoptera: Dryopoidea: Ptilodactylidae), with Main Emphasis on Its Biology and Ecology" *Diversity* 15, no. 2: 131. <https://doi.org/10.3390/d15020131>

Zack, R.S., Monzón, J., Huether, J.P., Huether, M.K. and Landolt, P.J. (2023). New country records of blister beetles (Coleoptera: Meloidae) from Guatemala with distributional notes on other meloid species and a record of human blistering caused by *Epicauta (Macrobasis) forticornis* Haag-Rutenberg, 1880. *The Pan-Pacific Entomologist*, 99(3), pp.169-182. <https://doi.org/10.3956/2022-99.3.169>

Zack, R.S., Monzón, J., Sites, R.W. and Landolt, P.J. (2023). Capítulo 9, The cotton stainers (Hemiptera: Heteroptera: Pyrrhocoridae) of Guatemala. *Biodiversity of Guatemala*, Volume III. Pp. 154-167, In, J. C. Schuster, J. Yoshimoto, and J. Monzón Sierra eds., *Biodiversidad de Guatemala*, Volume III. Universidad del Valle de Guatemala, <https://www.uvg.edu.gt/servicios/libros-editorial-universitaria>