

Bees of the Big Thicket National Preserve (Insecta: Hymenoptera: Apoidea)

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Introduction

Bees comprise an essential group of pollinators in virtually all terrestrial ecosystems (Buchman & Nabahn 1996). Although the importance of introduced honey bees is generally well known by most, fewer are familiar with the vast diversity of native bees, most of which also provide crucial pollinator services in both natural and agricultural settings. From minute to large, solitary to social, these bees include a large variety of behaviors and floral relationships, most of which remain largely unstudied. Furthermore, many bee species have undergone notable declines in recent years (Burkle et al. 2013), adding to the urgency for studies focused on these insects.

Worldwide, the diversity of bees comprises seven families, 443 genera, and about 18,000 described species (Michener 2007). In America north of Mexico, about 4,000 described species are currently recognized. One of us (JP) is compiling the first checklist of bees for Texas, an effort that presently recognizes 942 species for the state, second only to California. Despite their importance as keystone species crucial to the reproduction of many species of flowering plants, there have been few studies in Texas that have systematically surveyed bee communities of a specific locality over the course of a full season. In Big Thicket National Preserve (BTNP), limited collecting over a handful of days from 2010 to 2012 produced 191 bee specimens representing 22 species (National Park Service Project Update 2016). We expect that the number of bee species occurring in BTNP and adjacent natural areas is at least four times greater than this value.

Most of the previously collected bees in BTNP represent species with transcontinental or eastern North American distributions. However, one documented species, *Perdita asteris*, is a western species whose occurrence in Big Thicket represents the eastern margin of its range. Whether or not additional western or southern species occur in Big Thicket, and the degree to which Big Thicket can be interpreted as a regional crossroads for insects generally, hinges upon the execution of additional, comprehensive surveys and a more complete understanding of the entomofauna of southeastern Texas.

Herein, we propose the first comprehensive, multi-season survey of bees occurring within longleaf pine forests protected by BTNP. This ecosystem is of extreme conservation concern and is well known to contain a high diversity of flowering herbs (Matos and Rudolph 1985). In order to understand the critical plant-insect interactions underpinning this remarkable floral diversity, and in order to more fully understand the significance of pollinators in Texas longleaf pine habitats, rigorous surveys of bees and other pollinating insects are needed.

Specific objectives of the proposed study are the following:

1. **Checklist.** We will publish a checklist of bee species known to occur in BTNP. Both investigators have a background in the study of the insect order Hymenoptera and are qualified to identify bees to genus. Furthermore, one of us (JP) has invested substantial effort in recent years developing expertise in the identification of Texas bee species and has built a large reference collection of Texas bees at Sam Houston State University (SHSU).
2. **Site comparisons.** Specific sites sampled will be determined in coordination with NPS personnel. A likely scenario is to maintain two transects in each of at least two target locations, e.g., longleaf pine restoration areas in the Big Sandy Creek Unit near Dallardsville and the Sandy Hill Trail in the Turkey Creek Unit.
3. **Phenology.** The project will provide data concerning the seasonal occurrence of bee species.
4. **Collection building.** Publicly available reference collections for bees of BTNP will be housed in the natural history collections at both SHSU and Stephen F. Austin State University (SFASU).
5. **Illuminate rare and/or species of conservation concern.** There are no federal or state endangered species of bees outside of Hawaii, though 18 are recorded on the Texas Parks and Wildlife list of Species of Greatest Conservation Need. The presence of any rare and/or sensitive species will be communicated to appropriate agencies including Texas Parks and Wildlife.
6. **Student training thesis development.** SFASU graduate student Meghan Alkins and at least one SFASU undergraduate student will receive training in entomological field techniques. Furthermore, data from this project will provide the basis for Ms. Alkins' master's thesis. At least one student from SHSU will receive training in insect curatorial methods.
7. **Promote future studies.** The proposed checklist and reference collections will increase the potential for further investigations on pollinator networks and pollinator dynamics of plant taxa of conservation concern.
8. **Facilitate data sharing.** Information concerning pollinators will be shared between SFASU, SHSU, NPS, the Big Thicket Association, Texas Parks and Wildlife, and any other interested parties.

Methods

Sampling techniques. There are a variety of techniques available to sample bees and related insects. We will employ hand netting (sweeping and individual specimen capture) and at least one passive trapping technique: pan traps. This simple method has been successfully used in numerous bee surveys (e.g., Geroff et al. 2014). Pan traps consist of small colored bowls or cups filled with soapy water, which ensnare flower-visiting insects. In this study, two 150–200m transects will be established in each of two-three target sites. In each transect, 30 3.5-ounce Solo cups, 10 each colored white, fluorescent yellow, and fluorescent blue, will be placed on the ground and alternately on an elevated pole 2m above the ground about every 5m. These will be filled with soapy water and set in place for 24 hours. Additionally, hand netting will occur during each collecting event by employing at least 30 minutes of sweep netting along each of the transects. At the SHSU Center for Biological Field Studies in Walker County, Texas, use of similar techniques found distinct bee communities for each of these sampling methods (Pascarella and Ordenez, Ecological Society of America 2016 Annual Meeting, <https://eco.confex.com/eco/2016/webprogram/Paper59244.html>). Bi-monthly sampling events will occur from March through October on or about the 2nd and 4th weekend of each month.

Specimen processing and archival. Collected bees will be sorted out from bulk samples in the entomology laboratory at SFASU. They will then be transferred to the entomology laboratory at SHSU for pinning, labeling, and identification. If samples provide overwhelming numbers of specimens, a series of at least ten individuals of each morphospecies will be sorted from each sample for pinning. The remainder will be tallied and preserved in bulk ethanol storage lots. Pinned specimens will be shared among participating institutions. Non-bee specimens will be selectively pinned and labeled as time and funds allow. All bycatch will be archived at SFASU and/or SHSU and made available to interested parties.

Expected results. If the project produces results similar to other recent bee surveys in the U.S. (e.g., Geroff et al. 2014), we expect to capture at least 2,000 specimens representing about 100 species of bees. Anticipating results is fraught with difficulty, however, and there are reasons to believe that the results could be lower or higher than estimated. On the one hand, we suspect BTNP to be rich in bee species. On the other hand we will be sampling for only one year in a limited selection of habitats.

We expect that the vast majority of bee genera collected will be readily identified to the species level. However, there are a few speciose groups of bees that are notoriously difficult and require revisional studies of a regional scale before keys are available (e.g., *Lasioglossum*, *Sphecodes*, *Nomada*). With these genera, morphospecies concepts may be employed. Where possible, we will draw on the expertise of other bee taxonomists to aid with the identification of difficult groups.

Division of labor. To achieve project objectives, tasks will be divided among the principal investigators. Bennett and his team will be responsible for establishing field sites, carrying out collecting events over the course of one season, and the initial sorting of bees from samples. Pascarella and his team will be responsible for pinning, labeling, and identification of bees. Data analysis and dissemination tasks will be shared.

Timeline and Benchmarks

The proposed project will begin when transects are established and traps are deployed in late February 2017. Processing of specimens will commence shortly after collections begin and continue through the end of 2017. Expenditure of funds is proposed for one year, however, species-level identifications will continue through 2018 and the first half of 2019. The following benchmarks will signify that the goals of the project are being met:

- 2017: September annual report indicating deployment of traps, ongoing fieldwork and specimen processing, early stages of specimen identification, and student training in field techniques and curatorial methods.
- 2018: September annual report indicating completion of fieldwork, completion of specimen processing, about 50% completion of species-level identification work, a preliminary checklist of taxa, and continued student training in curatorial methods.

- 2019: September final report indicating completion of species-level identification and checklist, sharing of data with Big Thicket Association, NPS, other agencies as appropriate, and indication of plans for data dissemination in a peer-reviewed journal and scientific conference.

Budget

Funds requested from the Big Thicket Association and Texas Commission on Environmental Quality (TCEQ) funding categories are shown in Table 1. This distribution of funds represents a single year of expenditure and will allow for: 1) at least 17 two-day sampling events over the course of three seasons conducted by teams of two-three individuals and; 2) processing and archival of the substantial amount of specimens expected. Funds directed to SHSU will be routed via a subcontract from SFASU Office of Research and Sponsored Programs.

TCEQ Funding Category	Environmental Project Category	Quantity	Price Per Item	Total Per Item
Funding Category - 2	Undergraduate student contractors (SFASU)	450 hours	\$10.20/hour	\$4590
Funding Category - 2	Undergraduate student contractors (SHSU)	450 hours	\$10.20/hour	\$4590
Funding Category - 3	Truck rental fees and fuel to access field sites (SFASU)	34 days	\$114/day	\$3876
Total direct cost:				\$13,056

Table 1. Funds sought from the Big Thicket Association required to survey native bees of longleaf pine forests within the Big Thicket National Preserve.

References

Buchman, S.L., & G.P. Nabhan. 1996. The forgotten pollinators. Island Press, Washington.

Burkle, L.A., J.C. Marlin, and T.M. Knight. 2013. Plant–pollinator interactions over 120 years: loss of species, co-occurrence, and function. *Science* 339:1611–1615.

Geroff, R.K., J. Gibbs, & K.W. McCravy. 2014. Assessing bee (Hymenoptera: Apoidea) diversity of an Illinois tallgrass prairie: methodology and conservation considerations. *Journal of Insect Conservation* 18: 951–964.

Matos, J.A., & D.C. Rudolph. 1985. The Vegetation of the Roy E. Larsen Sandylands Sanctuary. *Castanea* 50: 228–229.

Michener, C.D. 2007. *The Bees of the World*, 2nd edition. Johns Hopkins University Press.

National Park Service Project Update. 2016. Project Update: Bees on the Brink.

DANIEL J. BENNETT

Curriculum Vitae, August 2016

Assistant Professor

Department of Biology, Stephen F. Austin State University
P.O. Box 13003 SFA Station, Nacogdoches, TX 75962-3003 USA
(936) 468-5163; bennettdj@sfasu.edu

EDUCATION

Ph.D. Entomology (Honors), University of Kansas, Lawrence, KS. Advisor: Michael Engel.
Dissertation: *Phylogenetics of Crabronini, with a Consideration of the Evolution of Predatory and Nesting Behaviors (Insecta: Hymenoptera: Crabronidae)*

M.A. Entomology, University of Kansas, Lawrence, KS. Advisor: Michael Engel.
Thesis: *A Cladistic Analysis of the Hawaiian Ophioninae (Hymenoptera: Ichneumonidae)*

B.S. Zoology, University of Washington, Seattle, WA.

RESEARCH INTERESTS

- Systematics, behavior, and geological history of Hymenoptera
- Biodiversity surveys & inventories
- Biological collections management

PROFESSIONAL POSITIONS

August 2012–present. Assistant Professor, Department of Biology, Stephen F. Austin State University.

March 2011–March 2012. Postdoctoral Researcher, Department of Ecology & Evolutionary Biology, University of Kansas.

2002–2006. Graduate Research Assistant, Division of Entomology, Natural History Museum, University of Kansas; Fall 2002–Summer 2003; Spring 2004–Fall 2006.

TEACHING EXPERIENCE

2012– present. Instructor, Department of Biology, Stephen F. Austin State University

- BIO 121 Concepts of Biology: Fall 2012; Fall 2014; Fall 2015.
- BIO 133 Principles of Zoology: Spring, Fall 2013; Spring 2014, 2015, 2016.
- BIO 225 Local Fauna: Fall 2015.
- BIO 353/353L Economic Entomology: Spring, Fall 2013; Spring 2014, 2015, 2016.
- BIO 430 Invertebrate Natural History: Fall 2014.
- BIO 475 Special Problems: Spring 2014, 2015; Fall 2014.

2012– present. Graduate Student Mentorship, Stephen F. Austin State University

- Meghan Sutton-Alkins (current), committee chair, Department of Biology, M.S.
- Hannah Lockwood (current), junior committee member, Department of Biology, M.S.
- Stephanie Aills (current), junior committee member, Department of Biology, M.S.
- Avleen Vishram (current), junior committee member, Department of Biology, M.S.

- Dinesh Adhikary (graduated 2013), junior committee member, Department of Biology, M.S.
- Lauris Hollis (graduated 2013), junior committee member, Department of Biology, M.S.

2012– present. Undergraduate Student Mentorship, Stephen F. Austin State University

- March 2014–present: Archie Sauls, undergraduate hourly student worker.
- August 2014–May 2015: Emily Benton, undergraduate research project: Bees of Stephen F. Austin State University Gardens.
- January–May 2014: Marcos Villareal, undergraduate research project: Bees of Stephen F. Austin State University Gardens.
- June 2013–April 2014: Chase Anaya, undergraduate hourly student worker.
- June –August 2013: Chase Gee, undergraduate hourly student worker.
- September–December 2012: Zack Elser, undergraduate research project: Identification of local ticks harboring *Rickettsia parkeri*.

2011–2012 present. Undergraduate Student Mentorship, University of Kansas

- June 2011–April 2012: Reed Niemack, undergraduate research project: Orchid bees of the Los Amigos Field Station, Peru
- June –August 2011: Thomas Radocy, undergraduate research project: Mosquitoes of the Los Amigos Field Station, Peru
- May–June 2011: Ernesto Razuri, field assistant, arthropod trapping techniques
- August –December 2011: Kaitlyn West, Snow Entomological Museum Collection undergraduate student employee, receiving training in arthropod curatorial methods
- August 2011–March 2012: Aimee Roberts, Snow Entomological Museum Collection undergraduate student employee, receiving training in arthropod curatorial methods
- October 2011–March 2012: Riley Wertenberger, Snow Entomological Museum Collection undergraduate student employee, receiving training in arthropod curatorial methods

2003–2010. Graduate Teaching Assistant, Department of Ecology & Evolutionary Biology, University of Kansas

- Biology of Spiders: Fall 2007, 2008, 2009
- External Morphology of Insects: Fall 2009
- Introduction to Systematics: Spring 2009
- Invertebrate Zoology: Spring 2008
- Laboratory in Insect Biology and Diversity: Fall 2007, 2008
- Principles of Biology Laboratory (non-majors): Fall 2003, Fall 2010
- Principles of Organismal Biology Laboratory (Honors majors): Spring 2010
- Principles of Organismal Biology Laboratory (majors): Spring 2007, 2008, 2009

SERVICE

University Service, Stephen F. Austin State University

- Curator, William W. Gibson Entomarium, Department of Biology, 2012–present.
- University Undergraduate Council, 2013–present.
- College Council, College of Science and Mathematics, 2013–present.
- Miller Science Renovations Committee (Chair), 2015–present.
- Long-Range Planning Committee, 2015–present.
- Program Learning Assessment Committee (“Scientific Method”) 2013–present.
- Curriculum Committee (Chair, 2014–2015), Department of Biology, 2013–2015.
- Peer Evaluation Committee, Department of Biology, 2014–2015.

- Scholarship Committee, Department of Biology, 2013–2015.
- Biology 133 Committee, Department of Biology, 2012–2015.
- Faculty Teaching Rubric Committee, Department of Biology, 2013–2014.
- Zoology & Human Biology Lab Coordinator Search Committee, 2013.
- Anatomy & Physiology Lab Coordinator Search Committee, 2013.

Community Service

- Entomology project mentor to Brian Humphreys, Silver Hornaday Conservation Medal winner, Boy Scouts of America (October 2013–April 2015).
- Boys & Girls Club entomology presentation (April 2015).
- Presentation to Beta Beta Beta Biological Honor Society, Stephen F. Austin State University Chapter, Nacogdoches, Texas (April 2014).
- Christ Episcopal 5th grade science fair judge, Nacogdoches, Texas (February 2014).
- Judge for student presentations, National Science Foundation Summer Science Institute, Jarvis Christian College, Hawkins, Texas (July 2013).
- Showcase Saturday Biology Department representative, Stephen F. Austin State University, Nacogdoches, Texas (April 2013; February 2015).
- Future Farmers of America insect identification contest co-organizer, Nacogdoches, Texas (March 2013).
- Grassland Heritage Foundation volunteer: assisted with fieldtrips and introduced schoolchildren to Kansas prairie insects, Lawrence, Kansas (April 2011).
- Judge for student presentations, annual meeting of the Central States Entomological Society, Lawrence, Kansas (April 2011).

Manuscript reviewer: Acta Biológica Colombiana, African Entomology, Annales Zoologici, Cretaceous Research, Journal of the Kansas Entomological Society, Pan-Pacific Entomologist, Systematic Entomology, ZooKeys, Zootaxa.

PUBLICATIONS

21. Canterbury, S., **D. Bennett**, & R.J. Wiggers. 2015. Frequency of ticks carrying *Rickettsia* sp. bacteria in eastern Texas. *Archives of Medicine* 8(1): 1–4.
20. **Bennett, D.J.**, V. Perrichot, & M.S. Engel. 2014. A new genus and species of pemphredonine wasp in Late Cretaceous Vendean amber (Hymenoptera: Crabronidae). *Paleontological Contributions* 10: I. 41–45.
19. Lohrmann, V., Z.H. Falin, D.J. **Bennett**, & M. S. Engel. 2014. Recent findings of *Olixon banksii* in North America with notes on its biology (Hymenoptera: Rhopalosomatidae). *Journal of the Kansas Entomological Society* 87(2): 258–260.
18. Engel, M.S., I.A. Hinojosa-Diaz, & **D.J. Bennett**. 2012. New species of macrocephalic halictine bees (Hymenoptera: Halictidae). *Annales Zoologici* 62(2): 297–307.
17. Pietsch, T.W., V.V. Bogatov, S. Yu. Storozhenko, A.S. Lelej, V. Yu. Barkalov, H. Takahashi, S.L. Joneson, S.K. Kholin, K.A. Glew, J.A. Harpel, P.V. Krestov, E.A. Makarchenko, N. Minakawa, M. Ôhara, **D.J. Bennett**, T.R. Anderson, R.L. Crawford, L.A. Prozorova, Y. Kuwahara, S.V. Shedko, M. Yabe, P.J. Woods, & D.E. Stevenson. 2012. Biodiversity and Biogeography of Sakhalin Island, Russian Far East. pp. 11–78, In: S. Y. Storozhenko (editor), Flora and fauna of the Northwest Pacific islands: Materials Resulting from the International Kuril Island and International Sakhalin Island Projects, Russian Academy of Sciences, Far Eastern Branch, Institute of Biology and Soil Science, Dalnauka, Vladivostok.
16. Niemack, R., I.A. Hinojosa-Diaz, **D.J. Bennett**, & C.S. Chaboo. 2012. A contribution to the knowledge of the orchid bees of the Los Amigos Biological Station, Peru (Hymenoptera, Apidae,

- Euglossini). *Check List* 8(2): 215–217.
15. **Bennett, D.J.** 2011. A new species of *Quexua* (Hymenoptera, Crabronidae) from southeastern Peru. *ZooKeys* 141: 65–70.
 14. Ortega-Blanco J., **D.J. Bennett**, X. Delclòs, & M.S. Engel. 2009. A primitive aphidiine wasp in Albian amber from Spain and a northern hemisphere origin for the subfamily (Hymenoptera: Braconidae: Aphidiinae). *Journal of the Kansas Entomological Society* 82(4): 273–282.
 13. Engel, M.S., J. Ortega-Blanco, & **D.J. Bennett**. 2009. A remarkable tiphiiiform wasp in mid-Cretaceous amber from Myanmar (Hymenoptera: Tiphidae). *Transactions of the Kansas Academy of Science* 112(1/2): 1–6.
 12. Ohl, M. & **D.J. Bennett**. 2009. A new genus and species of apoïd wasps from Saxonian amber (Hymenoptera: Apoidea: Crabronidae). *Denisia* 26: 145–150.
 11. **Bennett, D.J.** & M.S. Engel. 2008. *Anoblepsis*, a new bizarre braconid wasp genus in Dominican amber (Hymenoptera: Braconidae). *Journal of the Kansas Entomological Society* 81(4): 368–372.
 10. **Bennett, D.J.** 2008. The ophionine wasps of Hawaii (Hymenoptera: Ichneumonidae). *Journal of Hymenoptera Research* 17(1): 1–43.
 9. **Bennett, D.J.** & M.S. Engel. 2008. *Pison menkei*, a new crabronid wasp in Dominican amber. *Beiträge zur Entomologie* 58(1): 113–119.
 8. **Bennett, D.J.** & M.S. Engel. 2006. A new moustache wasp in Dominican amber, with an account of apoïd wasp evolution emphasizing Crabroninae (Hymenoptera: Crabronidae). *American Museum Novitates* 3529: 1–10.
 7. **Bennett, D.J.** & M.S. Engel. 2005. A primitive sapygid wasp in Burmese amber (Hymenoptera: Sapygidae). *Acta zoologica cracoviensia* 48B (1–2): 1–9.
 6. Gonzalez, V.H., M. Ospina, & **D.J. Bennett**. 2005. *Abejas altoandinas de Colombia: Guía de campo*, 1st. Edition, Bogota, Colombia, Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, 80 pp.
 5. Sharkey, M.J. & **D.J. Bennett**. 2004. The Agathidinae (Hymenoptera: Braconidae) of Sakhalin and the Kuril Islands. *Species Diversity* 9: 151–164.
 4. Minakawa, N., T.I. Arefina, T. Ito, T. Nozaki, N. Kuhara, H. Nishimoto, M. Uenishi, V.A. Teslenko, **D.J. Bennett**, R.I. Gara, K.L. Kurowski, P.B.H. Oberg, T.I. Ritchie, & L.J. Weis. 2004. Caddisflies (Trichoptera) of the Kuril Archipelago. pp. 49–80, In: H. Takahashi and M. Ôhara (editors), *Biodiversity and Biogeography of the Kuril Islands and Sakhalin*, Vol. 1, Hokkaido University Museum, Sapporo, Japan.
 3. Davis, B.E., K.E. Perez, & **D.J. Bennett**. 2004. *Euglandina rosea* (Férussac, 1821) is found on the ground and in trees in Florida. *The Nautilus* 118(3): 127–128.
 2. Pietsch, T.W., V.V. Bogatov, K. Amaoka, Y.N. Zhuravlev, V.Y. Barkalov, S. Gage, H. Takahashi, A.S. Lelej, S.Y. Storozhenko, N. Minakawa, **D.J. Bennett**, T.R. Anderson, M. Ohara, L.A. Prozorova, Y. Kuwahara, S.K. Kholin, M. Yabe, D.E. Stevenson, & E.L. MacDonald. 2003. Biodiversity and biogeography of the islands of the Kuril Archipelago. *Journal of Biogeography* 30(9): 1297–1310.
 1. **Bennett, D.J.** & A.S. Lelej. 2003. To the knowledge of trigonalid wasps (Hymenoptera: Trigonalidae) of Sakhalin. *Far Eastern Entomologist* 130:8.

PRESENTATIONS

- Benton, E.E. & D.J. Bennett. 2015. Bees of the Stephen F. Austin State University Gardens. Stephen F. Austin State University Undergraduate Research Conference, Nacogdoches, Texas. Submitted poster contribution.
- Bennett, D.J. 2012. New management of the Gibson Entomarium: Present status and future directions. East Texas Forest Entomology Seminar, Stephen F. Austin State University, Nacogdoches, Texas. Submitted oral contribution.

- Niemack, R.S., D.J. Bennett, I. Hinojosa-Diaz, & C.S. Chaboo. 2012. The orchid bee fauna of the Los Amigos Biological Station, Madre de Dios, Peru (Hymenoptera: Apidae, Euglossini). University of Kansas Undergraduate Research Symposium, Lawrence, Kansas. Submitted poster contribution.
- Bennett, D.J. 2012. The evolution of wasps: phylogenetics, behavior, and collection building in the digital age. Stephen F. Austin State University, Department of Biology, Nacogdoches, Texas. Invited seminar.
- Bennett, D.J. 2011. An overview of the genus *Quexua*, with a description of a new species from southeastern Peru (Hymenoptera: Crabronidae: Crabronini). Annual meeting of the Central States Entomological Society, Lawrence, Kansas. Submitted oral contribution.
- Bennett, D.J. 2010. Phylogenetics of Crabronini, with a consideration of the evolution of predatory and nesting behaviors. University of Kansas Department of Ecology and Evolutionary Biology dissertation defense.
- Bennett, D.J. 2009. Meet the mustache wasps: Phylogenetics and nesting behavior of the Crabronina (Hymenoptera: Crabronidae: Crabronini). Annual meeting of the Entomological Society of America, Indianapolis IN. Submitted oral contribution.
- Bennett, D.J. 2009. Meet the mustache wasps: Phylogenetics and nesting behavior of the Crabronina (Hymenoptera: Crabronidae: Crabronini). University of Kansas Entomology Program seminar series.
- Bennett, D.J. 2006. Diversity and evolution of Hawaiian ophionine wasps (Hymenoptera: Ichneumonidae). Congress of the International Society of Hymenopterists, Sun City, South Africa. Submitted oral contribution.
- Bennett, D.J. 2005. Diversity and evolution of Hawaiian ophionine wasps (Hymenoptera: Ichneumonidae). Annual meeting of the Central States Entomological Society, Lawrence, Kansas. Submitted oral contribution.
- Bennett, D.J. 2005. Diversity and evolution of Hawaiian ophionine wasps (Hymenoptera: Ichneumonidae). Sigma Xi, KU chapter, student research oral competition.
- Bennett, D.J. 2004. A synopsis of Hawaiian ophionine wasps. Graduate student retreat, University of Kansas. Submitted oral contribution.
- Bennett, D.J. 2004. A cladistic analysis of Hawaiian Ophioninae. Master's thesis defense. University of Kansas.
- Bennett, D.J. 2004. Biogeography and biodiversity of the Kuril Archipelago. Annual meeting of the Central States Entomological Society, Lincoln, Nebraska. Submitted oral contribution.
- Bennett, D.J. 2004. Biogeography and biodiversity of the Kuril Archipelago. University of Kansas Entomology Program seminar series. Submitted oral presentation.
- Bennett, D.J. 2003. A synopsis of the Hawaiian Ophioninae (Hymenoptera: Ichneumonidae). Annual meeting of the Kansas Entomological Society. Submitted poster Presentation.
- Bennett, D.J. 2002. Argentine ants in Maui's Haleakala National Park. University of Kansas Entomology Program seminar series, Lawrence, Kansas. Submitted oral contribution.
- Bennett, D.J. 2001. Taxon curves as a means of estimating the efficiency of insect collecting during the International Kuril Island Project. International symposium for Kuril Island biodiversity, Sapporo, Japan. Invited oral contribution.
- Bennett, D.J. 1997. Comparative bone microstructure of fossil and recent vertebrates. Annual meeting of the Society of Vertebrate Paleontology, Chicago, Illinois. Submitted poster contribution.

John B. Pascarella, PhD

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Education

University of Miami. 1995.
PhD in Biology

University of Kansas. 1990.
BS in Biology (Systematics and Ecology)
BA in Latin American Studies (History, Spanish and Portuguese)
Graduation with Distinction, Departmental Honors, and Completion of Honors Program
Completed one year of study abroad at Universidad de Costa Rica, San José, Costa Rica (1987)

Academic, Professional, and Research Appointments

Sam Houston State University, Huntsville, TX (2012-present)

Dean of the College of Science and Engineering Technology and Professor of Biological Sciences (tenured).

Strategic leadership for seven academic departments (Agricultural Sciences and Engineering Technology, Biological Sciences, Chemistry, Computer Science, Geography and Geology, and Physics). College previously included the School of Nursing which moved in 2013 to the College of Health Sciences.

Led college efforts for programming and design for four buildings: Vivarium-Animal Care Facility (\$1,650,000) (project completed), Fred Pirkle Engineering Technology Building (\$21,600,000) (in construction, opens January 2017), Biology Laboratory Building (\$64,000,000-in construction, completion Spring 2018), and Equine Science and Rodeo Complex (\$21,000,000-completed programming phase, awaiting donor funding).

Developed new undergraduate academic programs in Agricultural Communications, Electronics and Computer Engineering Technology, Software Engineering Technology, Digital Forensics Engineering Technology and graduate academic program in MS in Sustainable Agriculture and Food Environment. Revised existing BS programs in Composite Science and Environmental Science.

Submitted proposal for PhD in Digital Forensics and Cyber Security (approved by Texas State University System, in review at Texas Higher Education Coordinating Board).

Proposed and developed Engineering Transfer program (2+2) with the University of Texas-Tyler College of Engineering.

Developed with the College of Health Sciences a new Office of Pre-Health Professional

Advising (OPPA) for students interested in health-related professional school.

Developed and managed ~\$16,000,000 annual budget.

Recommended appointment, tenure, promotion, disciplinary action, and merit for ~ 105 tenure-track/tenured faculty and supervised 24 staff and ~40 adjuncts.

Hired 31 tenure-track faculty since 2012, including obtaining funding for 13 new TT faculty positions and 8 staff positions.

Supported fundraising with Advancement office and Alumni Affairs. Accomplishments include first endowed professorship for College in Biological Sciences (\$500,000), stewardship of Pirkle gift (\$25,000,000), \$3-million-dollar gift for Engineering Technology Endowed Chairs from Quantas Energized Systems, and donation of rare book collection of natural history and science from Biology alumni (\$250,000). Attended CASE Development for Deans Workshop (2015).

Developed and funded Undergraduate Research Awards Program (\$15,000 per year).

Developed Recognition of Excellence Program in Teaching, Research, and Service for College faculty and students.

Developed and Funded Career Advancement Awards for Tenured Associate Professors to support research excellence.

Funded Summer Graduate Student Research Stipends for Thesis students.

Reviewed student complaints/concerns and reviewed probationary and suspended students.

Direct supervisor of seven department chairs, 2 associate deans and 4 full-time staff members.

Developed new formal relationships for academic exchange and study abroad with UNIBE (Iberoamerican University of Health Sciences, Heredia, Costa Rica) for Biological Sciences, Firat University (Elazig, Turkey) and Zhejiang Police College for Computer Science, and Beijing Mining and Technology (Beijing, China) for Mathematics and Statistics.

Board Representative-Texas Association of Deans of Liberal Arts and Sciences (TADLAS); Member-Texas State University System Scientific Advisory Committee for the Christmas Mountains;

Taught one graduate course in Biology and served on 3 MS thesis committees in Biological Sciences and Geography. Mentored two undergraduate students in research.

Kansas State University-Olathe, Olathe, KS (2010-2012)

Associate Dean of Academic and Research Programs (K-State Olathe) and Professor of Biology (tenured)

Worked with faculty and administrators on academic affairs planning for a new branch campus in Olathe, KS dedicated to graduate programs and research in the area of Animal Health and Food Safety. Programs since implemented include MS and Phd in Adult and Continuing Education, MS in Horticulture with an emphasis on Urban Food Systems, MS in Agribusiness for Animal Health Professionals, MS in Food Science, MS in Veterinary Biomedical Science, and Professional Science Masters (PSM) program in Applied Science and Technology.

Designed and implemented outreach programs in Animal Health and Food Safety to Johnson County public school districts and greater Kansas City metropolitan area.

Developed position descriptions, conducted search, and hired the Director of Sensory and Consumer Research Center and the Director of K-12 Science Education Partnerships.

Developed requirements for the Johnson County Education Research Triangle (JCERT) Scholarship; managed annual academic budget of ~\$1,000,000 M.

Assisted with grant proposal writing to support university initiatives.

Community outreach as a Board Member for Blue Valley School District Center for Advanced Professional Studies and Science Pioneers (Greater Kansas City Science and Engineering Fair).

Direct supervisor of Director of Food Programs and Services, Director of K-12 Science Education Partnerships, and Administrative Assistant.

Georgia Southern University, Statesboro, GA (2008-2010)

Associate Dean of Faculty and Research Programs (College of Science and Technology, now the College of Science) and Professor of Biology (tenured)

Managed faculty affairs (recruitment, retention, promotion, & tenure) for 8 departments (Biology, Chemistry, Geology and Geography, Mathematical Sciences, Physics, Mechanical and Electrical Engineering Technology, Construction Management and Civil Engineering Technology, Army ROTC) and >150 faculty;

Promoted scholarly activity through management of internal research awards and college faculty and staff awards of excellence;

Managed summer and part-time budgets (~\$1,250,000 M);

Direct supervisor of the Directors of the College Office of Undergraduate Research and College Office of Sustainability;

Grant writing and proposal development;

Developed proposal for new graduate programs (Professional Science Masters in Physical Science) and developed core research themes for college;

Maintained an externally funded research program;

Taught undergraduate and graduate courses;

Mentored undergraduate and graduate students in research.

Valdosta State University, Valdosta, GA (1997-2008)

Coordinator, Center for Applied Research (2007-2008), College of Arts & Sciences

Promoted linkage of VSU faculty with community and business needs;

Provided outreach to community organizations;

Ran an Internal Faculty Research Grants program.

Administrative Intern (2006-2007), Office of Vice-President for Academic Affairs

Managed external research and contract proposals in the Research Office.

Developed benchmarking study of research offices and funding at peer universities.

Attended Presidential Cabinet meetings.

Professor; Associate Professor; Assistant Professor (1997-2008, Tenured 2003). Department of Biology, Valdosta State University, Valdosta, GA.

Taught undergraduate majors and non-majors courses in Biology and Environmental Science;

Developed an externally funded research program.

Service on department, university, and professional committees.

Other Professional Positions

National Science Foundation. 2005-2006. American Association for the Advancement of Science (AAAS) Science & Technology Policy Fellow, Directorate for Biological Sciences, National Science Foundation, Arlington, VA.

Wrote “A Strategic Plan for Broadening Participation in the BIO directorate”; Member of Broadening Participation Working Group; Research Initiation Grants/Career Advancement Awards for Broadening Participation; Revision of Undergraduate Mentoring in Biology; Federal Program Agency Review Team for RUI/ROA programs; Outreach to minority serving institutions.

Adjunct Research Associate. 2000-2010. Fairchild Tropical Botanical Garden, Coral Gables, FL
Collaborated on long-term demographic studies of endangered plants in South Florida.

Research Associate. 1996-1997. Department of Biology, University of Miami, Coral Gables, FL
Researched pollination ecology in Everglades National Park, Florida (PI- K. Waddington).

Research Associate. 1995-1996. Department of Biology, University of Puerto Rico-Rio Piedras, San Juan, PR

Researched tropical forest ecology and restoration in Puerto Rico (PI-T. Aide, J. Zimmerman).

Student Assistant Director of University of Kansas Study Abroad Program in Costa Rica. 1990.
Universidad de Costa Rica, San Jose, Costa Rica

Supervised academic affairs and organized cultural activities for 60 undergraduate students.

Fellowships and Scholarships

American Association for the Advancement of Science (AAAS) Science & Technology Policy
Fellowship (2005-06)

National Science Foundation (NSF) Graduate Fellowship, University of Miami

Robert E. Maytag Graduate Fellowship, University of Miami

Summerfield and University Scholarships, University of Kansas

Teaching

Sam Houston State University

Directed Research for Biology

Population Ecology (Graduate)

Georgia Southern University

Introductory Biology for Majors

Population Biology (Graduate)

Valdosta State University

Introductory Biology for Non-Majors
Introductory Biology for Majors
Botany
Ecology
Population Biology
Senior Seminar
Environmental Issues
Natural History of Georgia for Middle School Teachers

Other teaching

University of Miami: Lecturer, Elementary Botany for Non-Majors;
Invited Lecturer in Tropical Botany, Organization for Tropical Studies Course 1993-7, Costa Rica.

Member of the Graduate Faculty at SHSU (2012-present), KSU (2010-2012), GSU (2009-2010), and VSU (1998-2008).

Peer-Reviewed Publications >1600 citations on Google Scholar

J. B. Pascarella, J. Maschinski, and S. Wright. 2011. Soil seed banks in the endangered Florida Beach Jacquemontia (*Jacquemontia reclinata* House (Convolvulaceae)). **Native Plants Journal** 12 (3): 233-240.

J.B. Pascarella. 2011. The relationship between soil environmental factors and flowering phenology in two sympatric SE *Gelsemium* species-Does habitat specialization determine differences in flowering time. **Castanea** 76: 410-425.

J. B. Pascarella and K.D. Waddington. 2011. A description of the male of *Hylaeus graenicheri* Mitchell (Hymenoptera: Colletidae). **Journal of Apicultural Research** 50 (4): 316-320.

J.B. Pascarella. 2011. Scientific Note: Historical pollination records of a federally endangered plant, *Amorpha herbacea* Walter var. *crenulata* (Rydberg) Isely. **Florida Scientist** 74 (4): 273-274.

Flynn, D., M. Uriarte, T.Crk, J. B. Pascarella, J. Zimmerman, TM. Aide, and M.C. Ortiz. 2010. Hurricane disturbance alters secondary forest recovery in Puerto Rico. **Biotropica** 42: 149-157.

J. B. Pascarella. 2010. Pollination Biology of *Gelsemium sempervirens* L. (Ait.) (Gelsemiaceae): Do Male and Female *Habropoda laboriosa* F. (Hymenoptera, Apidae) Differ In Pollination Efficiency? **Journal of Apicultural Research** 49:170-176.

Riggs, P.T., J.B. Pascarella, and D.L. Bechler. 2010. The ethno- and research history of the Lake Louise Field Station, Valdosta State University, Valdosta, GA. **Georgia Journal of Science** 68: 149-165.

- J.B. Pascarella, J. Maschinski, and S. Wright. 2008. Effects of Hurricanes Francis and Jean (2004) on the Population Biology of the Endangered Beach Plants *Cyperus pedunculatus* (Cyperaceae) and *Okenia hypogaea* (Nyctaginaceae) in South Florida. Pp. 112-127 in “**Proceedings of the 34th Annual Conference on Ecosystem Restoration and Creation**”, Hillsborough Community College, Plant City, FL.
- J.B. Pascarella. 2007. Mechanisms of prezygotic reproductive isolation between two sympatric species, *Gelsemium rankinii* and *Gelsemium sempervirens* (Gelsemiaceae), in the southeastern United States. **American Journal of Botany** 94: 468-476.
- J. B. Pascarella, T.M. Aide, and J. K. Zimmerman. 2007. The demography of *Miconia prasina* (Melastomataceae) during secondary succession in Puerto Rico. **Biotropica** 39: 54-61.
- J.B. Pascarella. 2007. Foraging patterns of the southeastern blueberry bee *Habropoda laboriosa* (Apidae, Hymenoptera): Implications for understanding oligolecty. **Journal of Apicultural Research** 46: 19-27.
- C. C. Horvitz, S. Tuljapurkar, and J.B. Pascarella. 2005. Plant-animal interactions in random environments: habitat-stage elasticity, seed predators and hurricanes. **Ecology** 86: 3312-3322.
- J.B. Pascarella, T. M. Aide, and J. K. Zimmerman. 2004. Short-term response of secondary forests to hurricane disturbance in Puerto Rico, USA. **Forest Ecology and Management** 199: 379-393.
- S. Tuljapurkar, C.C. Horvitz, and J.B. Pascarella. 2003. The many growth rates and elasticities of populations in random environments. **The American Naturalist** 162: 489-503.
- J.B. Pascarella, K.D. Waddington, and P.R. Neal. 2001. Non-apoid flower-visiting fauna of Everglades National Park, Florida. **Biodiversity and Conservation** 10: 551-566.
- J.K. Zimmerman, J.B. Pascarella, and T.M. Aide. 2000. Barriers to forest regeneration in an abandoned pasture in Puerto Rico. **Restoration Ecology** 8: 350-360.
- T.M. Aide, J.K. Zimmerman, J.B. Pascarella, L. Rivera, and H. Marcano-Vega. 2000. Forest regeneration in a chronosequence of tropical abandoned pastures: implications for restoration ecology. **Restoration Ecology** 8: 328-338.
- J.B. Pascarella, T.M. Aide, M.I. Serrano, and J.K. Zimmerman. 2000. Land use history and forest regeneration in the Cayey mountains, Puerto Rico. **Ecosystems** 3: 217-228.
- J.B. Pascarella. 2000. A new record for the rare and endangered tree *Eugenia haematocarpa* (Myrtaceae) in the Sierra de Cayey, Puerto Rico. **Caribbean Journal of Science** 36: 146.

J.B. Pascarella, K.D. Waddington, and P.R. Neal. 2000. The bee fauna (Hymenoptera: Apoidea) of Everglades National Park, Florida and adjacent areas: Distribution, Phenology, and Biogeography. **The Journal of the Kansas Entomological Society** 72: 32-45.

J.B. Pascarella and C.C. Horvitz. 1999. Seed and seedling ecology of the invasive non-indigenous shrub *Ardisia elliptica* (Thunb.) (Myrsinaceae) in south Florida. In “**Proceedings of the 25th Annual Conference on Ecosystem Restoration and Creation**”. Eds F. Webb and P. Cannizzaro. Hillsborough Community College, FL

J.B. Pascarella and C.C. Horvitz. 1998. Hurricane disturbance and the population dynamics of a tropical understory shrub: megamatrix elasticity analysis. **Ecology** 79: 547-563.

J.B. Pascarella. 1998. Hurricane disturbance, plant-animal interactions, and the reproductive success of a tropical shrub. **Biotropica** 30:416-424.

C.C. Horvitz, J.B. Pascarella, S. McMann, A. Freedman, and R. Hofstetter. 1998. Functional roles of invasive non-indigenous plants in hurricane-affected subtropical hardwood forests. **Ecological Applications** 8: 947-974.

J.B. Pascarella. 1998. Resiliency and response to hurricane disturbance in the tropical shrub *Ardisia escallonioides* (Myrsinaceae). **American Journal of Botany** 85: 1207-1215.

J.B. Pascarella. 1997. Hurricane disturbance and the regeneration of *Lysiloma latisiliquum*: A tropical tree in south Florida. **Forest Ecology and Management** 92: 97-106.

J.B. Pascarella. 1997. Mating system of the neotropical shrub *Ardisia escallonioides* (Myrsinaceae). **American Journal of Botany** 84: 456-460.

J.B. Pascarella. 1997. Breeding systems of *Ardisia* Sw. (Myrsinaceae). **Brittonia** 49: 45-53.

J.B. Pascarella. 1997. Pollination ecology of *Ardisia escallonioides* (Myrsinaceae). **Castanea** 62: 1-7.

J.B. Pascarella. 1996. The biology of *Periploca* sp. (Lepidoptera: Cosmopterigidae): A specialized gall maker on *Ardisia escallonioides* (Myrsinaceae). **Florida Entomologist** 79: 606-610.

J.B. Pascarella. 1996. Reproductive ecology of *Picramnia pentandra* (Picramniaceae) in south Florida. **Caribbean Journal of Science** 32: 99-104.

J.B. Pascarella. 1994. Additions to the flora of south Florida: Four new species of naturalized tropical trees. **Florida Scientist** 57: 173-176.

J.B. Pascarella. 1992. Notes on flowering phenology, nectar robbing, and pollination of *Symphonia globulifera* (Clusiaceae) in a lowland rain forest in Costa Rica. **Brenesia** 38: 83-86.

J.B. Pascarella and M.S. Gaines. 1991. Feeding preferences of the prairie vole (*Microtus ochrogaster*) for seeds and plants. **Transactions of the Kansas Academy of Sciences** 94: 3-11.

Technical publications and reports

Maschinski, J., S. J. Wright, K. Wendelberger, J. Roncal, J. B. Pascarella, and B. Schaffer. 2007. Ongoing efforts to reintroduce and study two endangered plant species, beach jacquemontia and crenulate lead-plant. Final report to the U.S. Fish and Wildlife Service for Grant Agreement 401815G033, South Florida Ecological Services Office, Vero Beach, FL.

J. Pipoly, J. Maschinski, J. B. Pascarella, S.J. Wright, and J. Fisher. 2006. Demography of Coastal Dunes Vines: Endangered *Jacquemontia reclinata*, *Okenia hypogaea* and *Cyperus pedunculatus* from South Florida. Final report to Florida Fish and Game Contracted Projects NG 02-012.

J. Maschinski, J. Fisher, J.B. Pascarella, C. Lane, S. J. Wright, H. Thornton, E. Pinto-Torres, and S. Carrara. 2003. Restoration of *Jacquemontia reclinata* to the South Florida Ecosystem, Final Report to the United States Fish and Wildlife Service for Grant Agreement 1448-40181-99-G-173. April 30, 2003. Fairchild Tropical Botanical Garden, Coral Gables, FL. 220 p.

Book Reviews

J. B. Pascarella. 2007. Plant Ecology. **Plant Science Bulletin** 53 (1):23-24

J. B. Pascarella. 2005. Multimedia Tool Kit for Educators in the Plant Sciences. Vol. 1: Basic Biological Principles and Plant Structure. Vol. II: Botanical Diversity. **Plant Science Bulletin** 51: 21-22

J. B. Pascarella. 2002. Mathematical Ecology, **Plant Science Bulletin** 48: 105

J. B. Pascarella. 2000. Australian Rain Forests, **Plant Science Bulletin** 46: 96

J. B. Pascarella. 1998. Tropical Forest Remnants, **Plant Science Bulletin** 44: 19

J. B. Pascarella. 1993. Grass evolution and domestication, **Plant Science Bulletin** 39: 30

Scientific Web Pages

J. B. Pascarella. 2002. Web Page, Bees of Florida. <http://entnemdept.ifas.ufl.edu/hallg/melitto/intro.htm>

Professional Presentations

J.B. Pascarella and M.O. Bautista. 2016. Sampling Method Influence on Bee Biodiversity Surveys at the Sam Houston State University Center for Biological Field Studies (Walker County, Texas). **Ecological Society of America**, Ft. Lauderdale, FL.

Allain, L., H. Baldwin, S. Hartley, and J.B. Pascarella. 2016. Monitoring Pollinators and Pollinator Habitat within the Historic Range of Coastal Prairie. **Louisiana Department of Wildlife and Fisheries**, Lafayette, LA.

Horvitz, C., J.B. Pascarella, and S. Tuljapurkar. 2015. Hurricanes, seed-predators and elasticities: Global patterns with local consequences. **Ecological Society of America**, Baltimore, MD.

J.B. Pascarella. 2015. Supporting the Sciences in Colleges of Arts and Sciences. **Texas Association of Deans of Liberal Arts and Sciences 2015 Conference**, Huntsville, TX.

J.B. Pascarella. 2015. Bee Diversity in Big Bend National Park and Brewster County, Texas. **Christmas Mountains Research Symposium**, Terlingua Ranch, TX.

J. Ledezma and J.B. Pascarella. 2015. Sampling Methods and Bee Diversity at the Sam Houston State University Center for Biological Field Studies, Walker County, Texas. **Big Thicket and West Gulf Coastal Plain Science Conference**. Nacogdoches, TX.

J.B. Pascarella. 2015. Bee Diversity in the Piney Woods of Texas. **Big Thicket and West Gulf Coastal Plain Science Conference**. Nacogdoches, TX.

J.B. Pascarella. 2013. Restoration of endangered *Baptisia arachnifera* at an *ex situ* site in Georgia. **Botanical Society of America**, New Orleans, LA.

J.B. Pascarella. 2012. Invited Seminar-Plant pollinator interactions in longleaf pine forests in the Southeastern United States. **Joseph W. Jones Ecological Research Center**, Newton, GA.

J.B. Pascarella. Invited Seminar-Urban and rural plant conservation case studies in the Southeastern U.S.A. 2011-Division of Biology, **Kansas State University**, Manhattan, KS; 2012: Department of Biology-North **Georgia College and State University**, Dahlonega, GA; Department of Biology-Middle **Tennessee State University**, Murfreesboro, TN; Department of Biology and Environmental Science-Texas **A&M Commerce**, Commerce, TX; 2013-Sam **Houston State University**, Huntsville, TX.

T.J. Estep, L.M. Leege, and J.B. Pascarella. 2011. Factors relating to germination and seedling success in *Baptisia arachnifera*. **Georgia Academy of Science**, Gainesville, GA.

J. B. Pascarella, K. Mincey, and K. Perry. 2010. Quantifying success in a restoration outplanting of the endangered Beach Jacquemontia (*Jacquemontia reclinata*): comparisons with nearby natural populations. **Florida Native Plant Society**. Tallahassee, FL.

J. B. Pascarella. 2009. *Ex situ* restoration of the federally endangered Georgia endemic *Baptisia arachnifera* (Fabaceae): the first five years (2004-2009). **Georgia Plant Conservation Alliance**, Folkston, GA.

J.B. Pascarella and R. Goddard. 2009. Evidence of hybridization between an endangered plant (*Baptisia arachnifera*) and a native congener (*Baptisia lecontei*) at an *ex situ* conservation planting. **Botanical Society of America**, Snowbird, Utah.

J. B. Pascarella, J. Maschinski, and S. J. Wright. 2009. Soil seed banks in the endangered Florida Beach Vine *Jacquemontia reclinata* (Convolvulaceae). **Florida Native Plant Society**, West Palm Beach, FL

P.T. Riggs, J.B. Pascarella, and D Bechler. 2008. The history, scientific, and educational significance of the Lake Louise Field Station. **Georgia Academy of Science**, Jacksonville, FL.

J.B. Pascarella. 2008. Restoration of *Jacquemontia reclinata* (Convolvulaceae) to the South Florida ecosystem: a comprehensive approach. *Invited speaker*: **University of Louisiana-Monroe**, Monroe, LA; **Georgia Southern University**, Statesboro, GA.

J.B. Pascarella. 2007. The role and future of faculty/student collaborative and creative activity at an undergraduate/comprehensive university. *Invited speaker*, **University of Wisconsin-Eau Claire**, Eau Claire, WI; **North Georgia College and State University**, Dahlonega, GA

J. B. Pascarella, J. Maschinski, and S.Wright. 2007. Restoration of *Jacquemontia reclinata* (Convolvulaceae) to the South Florida Ecosystem: Involving Land Managers in Habitat Restoration. *Invited Speaker*, **National Arbor Day Foundation Restoring Native Ecosystems National Conference**, Nebraska City, NE

J.B. Pascarella, J. Maschinski, and S. Wright. 2007. Effects of Hurricanes Francis and Jean (2004) on the Population Biology of the Endangered Beach Plants *Cyperus pedunculatus* (Cyperaceae) and *Okenia hypogaeae* (Nyctaginaceae) in South Florida. **Ecosystem Restoration and Creation Conference**, Hillsborough Community College, Plant City, FL

J. B. Pascarella. 2006-2007. Restoration of the federally endangered Georgia endemic *Baptisia arachnifera* (Fabaceae) at the Lake Louise Biological Station, Lowndes County, Ga. **Georgia Academy of Science**, Albany, GA *Invited Speaker*: **Georgia Plant Conservation Alliance**, Atlanta, GA

J. B. Pascarella, J. Maschinski, and S. Wright. 2007. Population viability analysis of the federally endangered beach clustervine *Jacquemontia reclinata* (Convolvulaceae): the impact of restored populations on extinction probabilities. **Florida Native Plant Society**, Gainesville, FL

J. B. Pascarella and K.D. Waddington. 2006. Community ecology of plant-pollinator interactions in Everglades National Park, Florida. **Ecological Society of America**, Memphis, TN

J. B. Pascarella. 2005. Do Blueberry bees (Apidae-*Habropoda laboriosa*) prefer to visit blueberries? **Georgia Academy of Science**, Barnesville, GA

C.C. Horvitz, S. Tuljapurkar, and J.B. Pascarella. 2004. Plant-animal interactions in random environments. **Association for Tropical Biology**, Miami, FL

J.B. Pascarella, S. Buchmann, and A.J. Donovan. 2003. Pollinator biodiversity in the Southeastern U.S. **Ecological Society of America**, Savannah, GA

J.B. Pascarella. 2003. Plant-pollinator interactions in the Southeastern U.S: Concerns, data, and future approaches. *Invited Speaker*, **Valdosta State University Science Seminar**, Valdosta, GA

J.B. Pascarella. 2002. Bee Biodiversity in North Florida/South Georgia-A comparative study. **Pollinator Conservation and Biodiversity Workshop for the Southeastern United States**, Valdosta State University, Valdosta, GA

J.B. Pascarella. 2000. Causes and consequences of reproductive isolation in two sympatric *Gelsemium* species in the Southeastern United States. **Botanical Society of America**, Portland, OR

J. H. Tepper, J. B. Pascarella, and H.D. Grissino-Mayer. 2000. Lake Louise: Developing multidisciplinary teaching and research program's at VSU's outdoor laboratory. **Georgia Academy of Science**, Valdosta, GA

J.B. Pascarella, T.M. Aide, M.I. Serrano, and J.K. Zimmerman. 1997-2001. Land use history and regeneration of tropical forests in the Cayey Mountains of Puerto Rico.

2001. *Invited presentation*-**Connecticut College** Dept. of Biology, New London, CT

2000. *Invited presentation*-**Governors State University** Dept. of Biology, Chicago, IL

1998. *Invited presentation*-**Kennesaw State University** Science Dept., Kennesaw, GA

1998. *Invited presentation*-**Joseph W. Jones Ecological Research Center**, Newton, GA

1998. **Association for Tropical Biology**, Baltimore, MD

1997. *Invited presentation*-**Fairchild Tropical Garden**, Coral Gables, FL

T.M. Aide, J.K. Zimmerman, T. Philippi, J. B. Pascarella, H. Marcano, and L.Rivera. 1999. Patterns of secondary succession in abandoned agricultural lands in four lifezone/geology regions of Puerto Rico. *Invited symposium presentation*-Tropical forest regeneration in abandoned agricultural lands: Implications for restoration ecology, **Tropical Restoration for the New Millennium** International Conference, San Juan, PR

J.B. Pascarella, K.Waddington, and P. Neal. 1999. The ecology of plant-pollinator interactions in Everglades National Park, Florida. *Invited presentation*-**Florida State University Friday Natural History Seminar**, Tallahassee, FL

J.B. Pascarella and C.C. Horvitz. 1998. Soil seed bank, seed rain, germination biology, and seedling growth of the invasive exotic shrub *Ardisia elliptica* Thunb. (Myrsinaceae) in south Florida. **Annual Conference on Ecosystems Restoration and Creation**, Tampa, FL

J.B. Pascarella and K.D. Waddington. 1997. Historical and current data on bee species of south Florida. *Invited symposium presentation*-Restoration of Pollinator Communities. **Society for Ecological Restoration**, Ft. Lauderdale, FL

C.C. Horvitz, S. Tuljapurkar, and J.B. Pascarella. 1997. *Invited speaker*, Habitat elasticity (and other elasticities) of the megamatrix: a work (very much) in progress. **Ecological Society of America**, Albuquerque, NM

J.K. Zimmerman, J.B. Pascarella, C. Gonzalez, A.C. Suarez, and T.M. Aide. 1997. Arrival and survival of woody plants in an abandoned Puerto Rican pasture.
Association for Tropical Biology, San Jose, Costa Rica
Ecological Society of America, Albuquerque, NM

J.B. Pascarella. 1993-1997. Impact of Hurricane Andrew on population dynamics of the tropical understory shrub *Ardisia escallonioides* (Myrsinaceae) in south Florida.

1997. *Invited presentation*-**Valdosta State University** Biology Dept., Valdosta, GA

1995. *Invited presentation*-**University of Puerto Rico** Biology Dept., San Juan, PR

1995. *Invited presentation*-**Fairchild Tropical Garden**, Coral Gables, FL

1994. **Ecological Society of America**, Knoxville, TN

1994. **Florida Native Plant Society**, Cocoa Beach, FL

1993. *Invited presentation*-**Dade County Natural Areas**: Post-Hurricane Research and Resource Management Conference, Fairchild Tropical Garden, Coral Gables, FL

1993. **2nd Annual Meeting Florida Ecological and Evolutionary Scientists**, Archbold Biological Station, Venus, FL

1993. **South Florida Plant Biologists Meeting**, University of Florida Institute of Food and Agricultural Sciences, Davie, FL

J.K. Zimmerman, T. M. Aide, H. Marcano, L. Herrera, and J.B. Pascarella. 1996. Past land-use as an important determinant of species composition in secondary forests of Puerto Rico. *Invited symposium presentation*-Ecology of lowland tropical secondary forests. **Ecological Society of America**, Providence, RI

C.C. Horvitz and J.B. Pascarella. 1994. Sensitivity analysis for plants in hurricane-prone forests: matrix models analysis. *Invited symposium presentation*-Use of ecological concepts in conservation biology: Lessons from Southeastern ecosystems, **Ecological Society of America**, Knoxville, TN

J.B. Pascarella. 1994. Regeneration of the tropical canopy tree, *Lysiloma latisiliquum*, following hurricane disturbance in south Florida,

Botanical Society of America, Knoxville, TN

Natural Areas Management Conference, Palm Beach Gardens, FL

Funded Grants and Contracts (\$832,819)

Texas Military Department (2016): \$72,281. Invertebrate planning level survey at two Texas Army National Guard Training Sites: Camp Bowie and Eagle Mountain Lake Maneuver”, K. Gary, J. Cook, C. Hargrave, and J.B.Pascarella.

- Educate Texas Regional STEM Degree Accelerator Initiative (2015):** \$15,000. Planning Grant for Statewide Competition. I am the representative from SHSU, with the PI being Lee College.
- Valdosta State University (2011-2012),** \$1500. Multivariate Community Composition Analysis of Prescribed Burning of Vegetation Units, Moody Air Force Base, Georgia. J.B. Pascarella.
- Georgia Department of Natural Resources (2009-2011).** \$18,000. *Baptisia arachnifera* Response to Fire and Potential for Restoration in a Natural Site. L. Leege and J.B. Pascarella.
- Georgia Native Plant Society (2006-2010).** \$1900. Ecological studies of the population structure and dynamics of a restored population of the federally endangered Georgia endemic *Baptisia arachnifera* (Fabaceae). J.B. Pascarella.
- U.S. Military Research Acquisition Authority.** (2007-2009). \$157,000. Effects of fire on forest communities at Moody Air Force Base. R. Carter and J.B. Pascarella.
- Onyx Corporation.** (2007-2009) \$190,000. Collaborative research between Valdosta Optics Laboratory, Inc. (VOLI) and Valdosta State University. J.B. Pascarella, J. Spencer, and B. Hojjatie.
- University System of Georgia Office of Economic Development ICAPP Innovation Program Proposal.** (2007-2008) \$9824. Development of a Course in Organic Agriculture. E. Cantonwine and J. B. Pascarella.
- Florida Native Plant Society,** (2007) \$1000. Comparative demography of restored and natural populations of the federally endangered Beach Jacquemontia (*Jacquemontia reclinata*, Convolvulaceae). J. B. Pascarella, J. F. Maschinski, and S. Wright
- U.S. Fish and Wildlife Service,** (2005-2008): \$293,000. Demography of endangered *Jacquemontia reclinata* in South Florida. J. Maschinski, J. Fisher, and J. B. Pascarella
- Florida Fish and Wildlife Conservation Commission** (2004-2005): \$19,858. Demography of coastal dune vines: endangered *Jacquemontia reclinata*, endangered *Okenia hypogea*, and threatened *Cyperus pedunculatus*, from South Florida. J. Maschinski, J. Pipoly, J. Fisher, and J.B. Pascarella.
- Georgia Native Plant Society** (2003): \$330. Floral preferences in the Southeastern Blueberry Bee (*Habropoda laboriosa*)-The importance of alternative floral hosts in rural and urban areas in Georgia. J. B. Pascarella.
- National Science Foundation,** Field Station and Marine Lab Improvement Program (2001): \$6,000. "Planning Grant for the Lake Louise Field Station Valdosta State University", D. Bechler and J. B. Pascarella.
- National Fish and Wildlife Foundation,** Native Plant Conservation Initiative (2001-2002): \$25,000. Conservation biology of coastal plain pollinators. S. Buchmann, A.J. Donovan and J. B. Pascarella.

Fairchild Tropical Botanical Garden (1999-2003): \$3,000. Demography of rare and endangered plants in South Florida coastal ecosystems. . J.B. Pascarella.

Ogden Environmental (1999-2000): \$3600. Wetland Restoration Study for AGL coal gasification site, Valdosta, GA. J. B. Pascarella.

University of Puerto Rico and Columbia University (1997-2007): \$14,376. Restoration of Tropical Forests in Puerto Rico. J. B. Pascarella

University System of Georgia Board of Regents, Teaching and Learning Grants (1999): \$1,150. Incorporating ecological simulation software in the teaching of undergraduate ecology. J. B. Pascarella

Membership in Academic and Professional Associations

American Association for the Advancement of Science
Botanical Society of America
Council of Colleges of Arts and Sciences
Ecological Society of America
Sigma Xi
Southern Appalachian Botanical Society
Texas Association of Deans of Liberal Arts and Sciences

Professional Service

Editor-in-Chief, *Castanea*: The Journal of the Southern Appalachian Botanical Society (2009-2014)
Editorial Board, *Florida Scientist* (2008-2011)

Invited journal peer reviewer: *Acta Oecologia, American Journal of Botany, American Naturalist, Annales Zoologici Fennici, Annals of Botany, Biological Conservation, Biotropica, Botany (Canadian Journal of Botany), Caribbean Journal of Science, Climatic Change, Council of Undergraduate Research Quarterly, Ecological Applications, Ecology, Entomological Society of Washington, Florida Entomologist, Florida Scientist, Forest Ecology and Management, Georgia Academy of Sciences, Haseltonia, Israel Journal of Plant Sciences, Journal of Ecology, Journal of Forest Research, Journal of the Kansas Entomological Society, Journal of Tropical Ecology, Journal of Vegetation Science, Lindleyana, Plant Ecology, Plant Systematics and Evolution, Public Library of Science, Revista Interciencia, & Wetlands*

Invited grant and fellowship peer reviewer:

American Association for the Advancement of Science-Research Partnership Initiative
National Science Foundation:
Broadening Participation
Doctoral Dissertation Improvement Grants (DDIG)
Ecology Panel

Graduate Research Fellowship
International Programs
Research at Undergraduate Institutions
Research Experience for Undergraduates
Chilean Government CONyCIT (National Commission for Science and Technology)
Chilean Government Ecological Research Station in Patagonia
Chilean Government Science and Technology grant review
EPA “High Performance Computing Technology” STAR grants program, "STAR Graduate Fellowships Program"
National Fish and Wildlife Foundation Challenge Grants
US Army Corps of Engineers Engineer Research & Development Center

Service on Professional Boards

Science Pioneers (Greater KC Science Fair) (2011)
Blue Valley (KS) School District Center for Advanced Professional Studies (CAPS) Advisory Board (2010-2012)
Shawnee Mission (KS) School District Research and Development Advisory Board (2011-2012)
Kansas BIO Talent Development and Education Committee (2010-2012)
Vice President of the Georgia Academy of Science (2007-2008)
Member, Georgia Plant Conservation Alliance (2000-2010)

University Service as Member or Chair*

Sam Houston State University (2012-present): Council of Academic Deans; Search Committee for Dean of College of Humanities and Social Sciences*, Dean of Graduate Studies*, Promotion and Tenure Policy Revision Committee, Faculty Compensation Study Committee.

Kansas State University (2010-2012): Higher Learning Commission Accreditation; K State Online Advisory Council; Associate Dean Council.

Georgia Southern University (2008-2010): Promotion and Tenure*; Posttenure*; International Affairs, Intellectual Property; College Technology, Associate Dean Council.

Valdosta State University (1997-2008): Curriculum, Non-Majors*, Greenhouse*, College Promotion and Tenure, Web Page, Connell Lecture*, Assessment*, Multiple Faculty Search (Mycology*), Council for Undergraduate Research, Faculty Research and Professional Development, Interdisciplinary Science, and Natural Areas*.

University of Miami (1991-1995); Curator of the Gifford Arboretum

Undergraduate Mentoring

Mentored 23 VSU undergraduates (18 minority students), 3 GSU undergraduates, and 2 minority SHSU undergraduate students in research.

Graduate Committee Member (MS thesis)

Rodriguez, Victoria. In progress. Genetic analysis of potential hybridization between the endangered *Gambusia nobilis* and invasive *Gambusia geiseri*, in Texas. Sam Houston State University.

Hoffpauir, David. In progress. GIS analysis of current and historical vegetation communities in Southeast Texas. Sam Houston State University.

Bayat, Soheila. 2015. Molecular phylogenetic study of the genus *Buchnera* L. Sam Houston State University.

Vondran, Jodi. 2013. A two pan feeding trial with companion dogs: Considerations for future testing. Kansas State University, Manhattan, KS. 104 p.

Martin, J.R. 2011. Population Genetics of Isolated Cyprinid Minnow, Pearl Dace (*Margariscus margarita*) on Isle Royale, MI. Valdosta State University, Valdosta, GA. 58 p.

Estep, T.J. 2011. Evaluating restoration potential of *Baptisia arachnifera*, an endangered legume: shade and litter effects on early life stages. Georgia Southern University, Statesboro, GA. 75 p.

Spiegel, K. S. 2010. Impacts of laurel wilt disease on redbay (*Persea borbonia*) population structure and forest communities in the coastal plain of Georgia. Georgia Southern University, Statesboro, GA. 134 p.

Hardy, M. 2009. Phenotypic variation in populations of *Silene latifolia*. Georgia Southern University, Statesboro, GA.

Community Service

Presented outreach talks to local environmental groups, garden clubs; served as Science Fair judge; gave College and Career Day presentation at High School; Volunteer for Potomac Gorge BioBlitz biological survey; Participated in Preparing Future Faculty Workshops at Valdosta State University and Howard University; maintained web site and answered e-mail questions from public about bees and pollinators.

Honors and Awards

Promoted to Full Member of Sigma Xi (2006)

Awarded VSU Sabbatical Research Leave (2005)

Distinguished Student Service Award, University of Miami (1996)

Certifications and Additional Coursework

Completed 5 undergraduate business courses at VSU (Macroeconomics, Microeconomics, Accounting I, Accounting II and Finance, GPA 4.0). (2007, 2008)

Associate Certificate in Program Management, George Washington University (2006)

Languages

Fluent in Spanish-all aspects.

Basic knowledge of Portuguese-written and spoken.