

SIBYL RAE BUCHELI

ASSISTANT PROFESSOR

Sam Houston State University
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Major Research Interests

Molecular and Morphological Evolution of Lepidoptera.
Evolution and Speciation of Lepidoptera and their Host-Plants.
Lepidoptera as Indicator Species and Biological Surveys.

Use of Ecological and Behavioral Data in Phylogenetic Studies.

Evolution of Insect Genitalia and their Utility as Phylogenetic Characters.

Insect Succession on Carrion in Southwestern, Subtropical Texas.

Academic Employment

2008-Present	Assistant Professor, Sam Houston State University.
2007-2008	Visiting Assistant Professor, Sam Houston State University.
2005-2007	Post-doctoral Researcher, The Ohio State University, Dr. John Wenzel. Evolution of the Lepidopteran superfamily Gelechioidea.

Education

2005	The Ohio State University, Department of Entomology, Doctor of Philosophy, Advisor: John W. Wenzel.
1999	The Ohio State University, Department of Entomology, Master of Science, Advisor: John W. Wenzel .
1996	Hiram College, Department of Biology, Bachelor of Arts.

Publications

1. **BUCHELI, S.R.**, J.-F. LANDRY, AND J.W. WENZEL. 2002. Cladistic Analysis of Larval Case Architecture and Implications of Host-Plant Associations for North American *Coleophora* (LEPIDOPTERA: COLEOPHORIDAE), *Cladistics* 18, 71-93.
2. **BUCHELI, S.R.** AND J.W. WENZEL. 2005. Gelechioidea (Insecta: Lepidoptera) systematics: A reexamination analysis using combined morphology and mitochondrial DNA data, *Molecular Phylogenetics and Evolution* 35, 380-394.
3. **BUCHELI, S.R.**, D. HORN, AND J.W. WENZEL. 2006. Biodiversity of Gelechioidea (microlepidoptera): An assessment of a re-established Appalachian forest in southern Ohio, *Biodiversity and Conservation* 15 (1), 503 – 516. *Themed Issue: Looking after the Woof and Weft of Life: Arthropod Diversity and its Conservation.*
4. **BUCHELI, S.R.**, J.A. BYTHEWAY, S.M. PUSTILNIK, AND J. FLORENCE. 2009. Insect successional pattern of a corpse in cooler months of subtropical southeastern Texas: A case report. *Journal of Forensic Sciences* 54 (2), 452 – 455.
5. **BUCHELI, S.R.** 2009. Annotated review and discussion of phylogenetically important characters for families and subfamilies of Gelechioidea (Insecta: Lepidoptera). *Zootaxa* 26(1), 23 – 35.
6. SONG, H. AND **S.R. BUCHELI**. 2010. The utility of insect genitalia in morphological analyses. *Cladistics* 26(1), 23-35. Published Online: Aug 25 2009 5:18AM.
7. **BUCHELI, S.R.**, J. FLORENCE, D. GANGITANO AND J.A. BYTHEWAY. The Ecological Niche Seeker: *Tinea pellionella* Linnaeus (Lepidoptera: Tineidae) Finds a Unique Niche. In press; *Journal of Forensic Sciences*.
8. LINDGREN, N.K., **S.R. BUCHELI**, A.D. ARCHAMBEAULT, AND J.A. BYTHEWAY. Exclusion of forensically important flies due to burying behavior by the red imported fire ant (*Solenopsis invicta*) in southeast Texas. In press; *Journal of Forensic Science International*.
9. **BUCHELI, S.R.**, S.C. PASSOA AND J.W. WENZEL. Morphological evolution, host-plant selection, and geographic distribution of *Depressaria* Haworth moths (Elachistidae: Depressariinae) with a systematic treatment of the subfamily Depressariinae. In prep.
10. LANDRY, J.-F. AND **S.R. BUCHELI**. New species of *Scythris* Hübner (Xyloryctidae; Scythridinae) of the Galapagos Islands. In prep.

Grants

- 2010 Enhancement Research Grant, Investigation of Calliphoridae across the 10 ecoregions of Texas; \$12,558.
- 2009 Faculty Research Grant, Systematics and Diversity of Gelechioidea (Lepidoptera); \$5,000.
- 2008 Beckman-Coulter Inc. Genomics Educational Grant, Prepared jointly with Dr. Christopher Randle, Dr. Raelynn Deaton, Dr. Anne Gaillard, and Dr. Todd Primm; \$100,000.
- 2004 National Science Foundation # 0415061 Grant "Collaborative Research: A Global Framework for the Phylogeny of Gelechioid Moths, a Megadiverse Radiation of Herbivores", Prepared jointly with Dr. John W. Wenzel and Dr. Richard Brown; \$150,000.
- 2004 Alumni Grants for Graduate Research and Scholarship, The Ohio State University.
- 2001 DeWind Award for Lepidoptera Research and Conservation, Xerces Society; \$2,000.
- 2000 Theodore Roosevelt Memorial Fund, American Museum of Natural History; \$2,000.

Presentations

Invited and Workshops:

- 2009 Forensic Science Educational Conference, Sam Houston State University in conjunction with The American Academy of Forensic Science.
- 2007 The Field Museum, Chicago, Illinois.
- 2006 University of California, Riverside, California.
- 2006 Sam Houston State University, Huntsville, Texas.
- 2006 Entomological Society of America, Indianapolis, Indiana.
- 2005 Entomological Society of America, Ft. Lauderdale, Florida.

Oral:

- 2009 National Entomological Society of America Annual Meeting, Indianapolis, Indiana (3 titles).
- 2009 North American Association of Forensic Entomologists, Miami, Florida.
- 2008 National Entomological Society of America Annual Meeting, Reno, NV.
- 2008 The Lepidopterists Society Annual Meeting, Starkville, Mississippi.
- 2007 The Willi Hennig Society Meetings, XXV, New Orleans, Louisiana.
- 2006 The Lepidopterists Society Annual Meeting, Gainesville, Florida.
- 2006 The Willi Hennig International Meetings, XXIV, Oaxaca, Mexico.
- 2005 Presented in partial fulfillment of the Doctor of Philosophy at The Ohio State University
- 2005 *Symposium presentation*, National Entomological Society of America Annual Meeting, Fort Lauderdale, Florida.
- 2004 *Harry Clench Award*, The Lepidopterists' Society Annual Meeting, College Park, Maryland.
- 2004 National Entomological Society of America Annual Meeting, Salt Lake City, Utah.
- 2003 National Entomological Society of America Annual Meeting, Cincinnati, Ohio.
- 2002 The Lepidopterists Society Annual Meeting, Charleston North Carolina.
- 2000 Evolution Annual Meeting, Bloomington, Indiana.
- 2000 National Entomological Society of America Annual Meeting, Montreal, Quebec.

1999 Presented in partial fulfillment of the Degree of Masters of Science at The Ohio State University.

Poster:

2009 National Entomological Society of America Annual Meeting, Indianapolis, Indiana (2 titles).
2009 North American Association of Forensic Entomologists, Miami, Florida (3 titles).
2008 National Entomological Society of America Annual Meeting, Reno, NV (2 titles).
2008 The Lepidopterists Society Annual Meeting, Starkville, Mississippi.
2005 The Lepidopterists Society Annual Meeting, Sierra Vista, Arizona.
2004 The Lepidopterists Society Annual Meeting, College Park, Maryland.
2002 The Willi Hennig International Meetings, XXI, Helsinki, Finland.
2001 National Entomological Society of America Annual Meeting, San Diego, California.
1998 National Entomological Society of America Annual Meeting, Las Vegas, Nevada.
1999 *President's Prize Award Winner*, National Entomological Society of America Annual Meeting, Atlanta Georgia.
1996 The Ohio Academy of Sciences, Undergraduate Thesis.

Awards

2004 Dean's Award for Excellence as Graduate Teaching Assistant.
2004 Edward J. Ray Travel Award for Scholarship and Service.
2004 Graduate Teaching Associate Graduate Assistant Teaching Award.
2004 Harry Clench Award for Best Student Talk. Lepidopterists Society of America, College Park, Maryland.
2003 DeLong Research Award, Ohio State University, Department of Entomology.
2002 Fred W. Hink Research Award, Ohio State University, Department of Entomology.
2002 Professional Development Fund, Ohio State University, Graduate Committee.
2002 Clive Edwards Travel Fund, Ohio State University, Department of Entomology.
2002, 2004 Knull Fund, Ohio State University, Department of Entomology, Insect Collection.
1999 Introductory Biology Program Student Teaching Award.
1999 President's Prize for Best Student Poster, First Place; Entomological Society of America, Atlanta, Georgia.

Symposia Organized

2005 "Issues of Homology", First Annual Student Symposium, The Lepidopterist's Society of America, with Jennifer Zaspel.
2005 "The Phallic Cult", Program Symposium and Section Symposium, National Entomological Society of America, with Hojun Song.

Teaching Experience

- Lecturer** 2007 – Present. Sam Houston State University. Contemporary Biology BIO134; Economic Entomology BIO364; Forensic Entomology BIO530, General Entomology BIO431; Invertebrate Zoology BIO471; Introduction to Evolutionary Biology BIO461; Insect Evolution BIO571.
- Graduate Teaching Assistant** 1999 – 2004. The Ohio State University. General Biology for Nonmajors BIO101; Nonmajors Plant Biology BIO101; Nonmajors Entomology ENT101; Human Biology BIO102, Head Graduate Teaching Associate; General Biology for Majors BIO114, Head Graduate Teaching Associate; Evolution BIO440; Entomology for Science Teachers ENT520; Advanced Economic Entomology ENT620; Insect Systematics ENT621; Insect Morphology ENT632; Insect Ecology ENT641; Medical Entomology ENT680.
- Seminars Designed** 1999 – 2005. The Ohio State University. Trends in Insect Evolution ENT795 (2004); Model-based Phylogenetics ENT795 (2006); Modern Techniques of Entomological Illustration (part of Insect Morphology ENT632).

Student Advising

- Graduate Research**
- Natalie Lindgren, Major Advisor, Sam Houston State University.
- Alan Archambeault, Major Advisor, Sam Houston State University.
- Brent Rahlwes, Major Advisor, Sam Houston State University.
- Juan Garcia, Major Advisor, Sam Houston State University.
- Jovanne Cole, Graduate Committee Member, Sam Houston State University.
- Stacy Stoops, Graduate Committee Member, Sam Houston State University.
- Undergraduate Research**
- Melissa Sisson, BIO 495 (Fall 2009), Sam Houston State University.
- Eric Mikolajchak, BIO495 (Summer 2009), Sam Houston State University.
- Orry Martin, BIO495 (Spring 2009), Sam Houston State University. An investigation of the free-living lifestyle of Planaria with special attention paid to personal observations.

Alan Archambeault, BIO495 (Fall 2008), Sam Houston State University. Molecular characterization of filth flies in Texas.

Savannah Witt, BIO495 (Fall 2008), Sam Houston State University. A survey of current techniques used in insects collection.

Natalie Lindgren, Independent Research (2008), Sam Houston State University. "The Thicket of Life" All Taxon Bioinventory (ATBI).

Alan Archambeault, Independent Research (2008), Sam Houston State University. "The Thicket of Life" All Taxon Bioinventory (ATBI).

Juan Garcia, McNair Scholar (2008), Sam Houston State University. Molecular and morphological evolution of Gelechioidea (Lepidoptera).

Olinda Cardenas, BIO495 (Fall 2007), Sam Houston State University. Postmortem Interval determination of a carcass using insect developmental rate models and insect successional models.

Phillip Torres, Research Experience for Undergraduates (Summer 2007), Sam Houston State University. Diversity of Lepidoptera at the Center for Biological Field Studies, Sam Houston State University.

Professional Society Memberships

North American Association of Forensic Entomologists, current.

Entomological Society of America, current.

Lepidopterists' Society of America, current.

Willi Hennig Society, past.

Society for the Study of Evolution, past.

Committees Served

2009	Forensic Science Educational Conference Steering Committee, Sam Houston State University in conjunction with The American Academy of Forensic Science.
2009 – Present	HAVEN a GLTBQ safe zone program, Sam Houston State University Student-run Committee.
2009 – Present	Master of Science Forensic Science Committee, Sam Houston State University.
2008 – Present	Scientific Advisory Committee, The Big Thicket National Preserve.
2008 – Present	Curriculum Committee, Sam Houston State University.
2008 – Present	Field Station Committee, Sam Houston State University.
2007 – Present	Graduate Committee, Sam Houston State University.
2007 – Present	Student Research Award Committee, Sam Houston State University.

2004 – Present	Awards Committee, The Lepidopterist's Society of America.
2002 – 2005	Graduate Studies Committee Graduate Student Representative, Voting Member.
1998 – 2000	Entomology Graduate Student Association: Secretary, President.

Manuscript Reviewing

The Washington Entomological Society; The Journal of the Lepidopterists' Society; Annals of the Entomological Society of America; Invertebrate Systematics; Biological Journal of the Linnaean Society; Cladistics.

Grant Reviewing

National Science Foundation External Reviewer.
 National Science Foundation Panel Reviewer.
 Texas Academy of Science Student Research Award.
 Women in Science Student Research Award.

Major Collections Studied

The Canadian National Collection, Ottawa, Canada.
 The Carnegie Museum, Pittsburgh, Pennsylvania.
 The National Museum of Natural History, Smithsonian Institute, Washington, DC.
 The Smithsonian Tropical Research Institution, Panama City, Panama.
 The Missouri Botanical Gardens, St. Louis, Missouri.
 The University of Arizona Herbarium and Insect Collection.
 Kirshtenbosch Botanical Gardens, Cape Town, South Africa.
 Museum National d'Histoire Naturelle, Paris, France.
 The Finnish Museum of Natural History, Helsinki, Finland.

Field Experience

Ohio and surrounding states.
 Ontario, Canada.
 Sonoran Desert, Arizona (permit holder).
 Chihuahuan Desert, Arizona and New Mexico (permit holder).
 Chiricuan Mountains, Arizona (permit holder).
 Western Cape, South Africa (permit holder).
 All Taxon Bio-Inventory of the Great Smoky Mountain National; Park, Lepidoptera branch, Twig Leader (permit holder).
 All Taxon Bio-Inventory of local Columbus Parks, Columbus, OH.

All Taxon Bio-Inventory of Hocking Hills area, Hocking County, OH.
Arthropods of Le Salva All Taxon Bio-Inventory, Costa Rica (permit holder).
Big Bend National Park, Texas (permit holder).
"Thicket of Life" All Taxon Bio-Inventory of The Big Thicket National Preserve, TX (PI).

Internet Resources

Bucheli, S.R. 2006. www.gelechioidea.info; Information website designed to summarize current systematic and taxonomic information for the Lepidopteran superfamily Gelechioidea. Maintained in conjunction with The Mississippi State University Entomological Museum and supported by NSF grant # 0415061.

Featured in Popular Media

Science News Web Edition: Tuesday, November 18th, 2008 "[Forensics' next tool: Hair-collecting caterpillars](#)", Susan Milius.

Science News Print Edition: December 20th, 2008 "[Clothes moths offer forensic clues by building fuzzy, hair-flecked cases](#)", Susan Milius.

Artistic Exhibitions

Entomology Display Cases for use by The C. A. Triplehorn Insect Collection, Ohio State University Department of Entomology.

Community Service

Naturalist for Boy Scouts and Girl Scouts of America, Columbus, OH.
Insect Outreach Program with local grade schools, Columbus, OH.
Docent, Columbus Zoo, Annual Insect Fair, Columbus, OH.
Founding member of Graduate Women in Science, The Ohio State University, Columbus, OH.
Science Fair Judge Duties included judging science projects for area school, Columbus, OH.