

CENTER FOR SYSTEMATIC BIOLOGY & EVOLUTION

2010 ACTIVITY REPORT



STAFF MEMBERS (2010)

ADMINISTRATION

Dr. Ted Daeschler, Vice President
Steven Dilliplane
Kristen Kepics
Drew Lynford
Lori McCole
Andrew Schneider

BOTANY

Dr. Ernie Schuyler, Curator Emeritus
Dr. Tanya Livshultz, Assistant Curator
Elana Benamy
Alina Freire-Fierro
Amanda Labadie
Dr. Rick McCourt
Miguel Pérez
Lauren Spitz

DIATOM HERBARIUM

Dr. Marina Potapova, Assistant Curator
Jennifer Beals
Alys Kirsch

ENTOMOLOGY

Dr. Daniel Otte, Curator/Chair
Dr. Jon Gelhaus, Curator
Greg Cowper
Alain Maasri
Jason Weintraub

ICHTHYOLOGY

Dr. John Lundberg, Curator, Chaplin Chair
Dr. Katriina Ilves
Kyle Luckenbill
Dr. Mark Sabaj-Pérez

INVERTEBRATE PALEONTOLOGY

John Sime

MALACOLOGY

Dr. Robert Robertson, Curator Emeritus
Dr. Gary Rosenberg, Curator/Pilsbry Chair
Paul Callomon
Judy-Lynn Goldberg
Amanda Lawless
Dr. David Robinson, USDA APHIS

ORNITHOLOGY

Dr. Nate Rice

VERTEBRATE ZOOLOGY

Dr. Ted Daeschler, Associate Curator/Chair
Ned Gilmore
Fred Mullison

VIREO

Doug Wechsler, Director
Daniel Thomas

JESSUP & MCHENRY FELLOWS

Lucja Fostowicz-Frelik
Fabio Laurindo DaSilva
Alexey Reshchikov

BY THE NUMBERS

Research Visitors329
Student Visitors.....321
Other Visitors.....1,873
TOTAL2,523

Outgoing Loans.....295

New Species Described7

Accessions14,914

Specimens/Lots Loaned10,762

Information Requests1,894

FIELD WORK

Botany – *Canada, Chile, Mississippi, New Jersey, Pennsylvania,*

Entomology – *California, Colorado, Mongolia, Nevada, New Jersey, New Mexico, Singapore, Tanzania*

Ichthyology – *Bahamas, Peru, Venezuela*

Malacology – *Philippines*

Ornithology – *Vietnam*

Vertebrate Paleontology – *Pennsylvania*

PROPOSALS

INTERDEPARTMENTAL PROPOSALS

- *Digitization TCN: Collaborative Research: SouthEast Regional Network of Expertise and Collections-All Taxa (SERNEC-AT)*. National Science Foundation. **John Lundberg, Marina Potapova, Gary Rosenberg, Mark Sabaj-Perez.**

BOTANY

- *Digitization of Latin American, African and other type specimens of plants at the Academy of Natural Sciences of Philadelphia, Global Plants Initiative (GPI)*, Mellon Foundation Award.

DIATOMS

- *Algal Research and Ecological Synthesis for the USGS National Water Quality Assessment (NAWQA) Program Cooperative Agreement 3, Year 5*, United States Geological Survey. Co-PI with **Don Charles** (Patrick Center for Environmental Research).
- *Collaborative Research: A phylogenetic analysis of the freshwater monoraphid diatoms*, National Science Foundation.

ENTOMOLOGY

- *Renovation of ANSP Entomology Department Research Collection & Associated Lab*, National Science Foundation, ARI-R²
- *Digital Species Index to The Academy of Natural Sciences' Entomology Collection*, Institute of Museum and Library Services.

MALACOLOGY

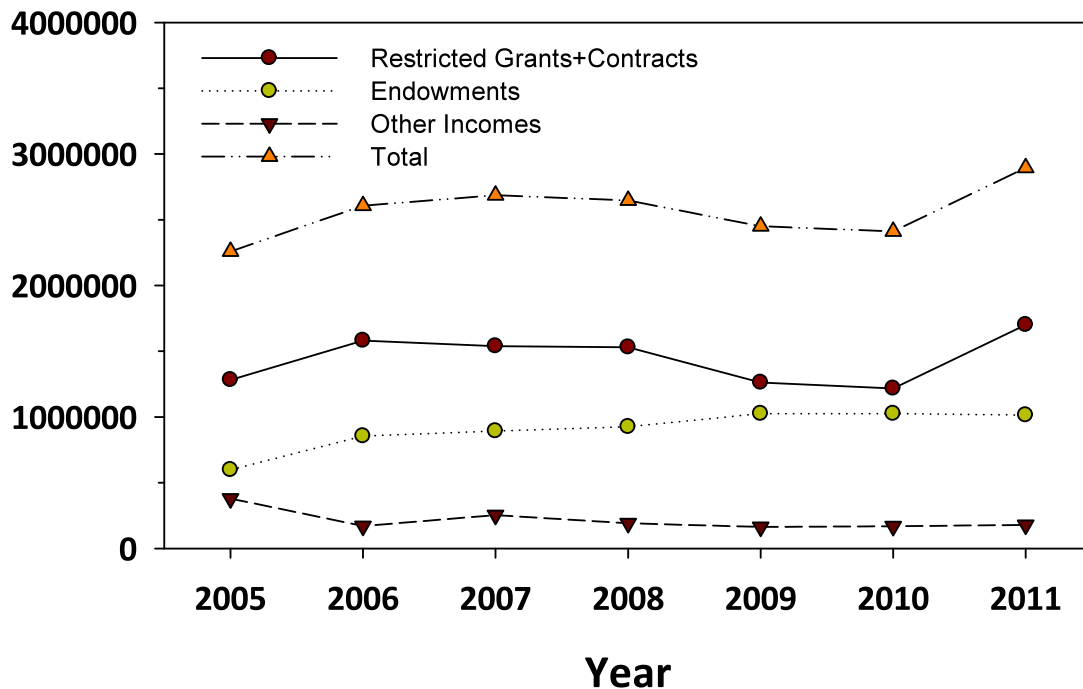
- *Using information and communication technologies (ITC) to enhance quality, effectiveness, and collaboration in the Philippine Mollusk Symbiont-ICBG Subaward*, Oregon Health Sciences University, NIH.
- *Toward a global database of marine mollusks*, Ocean Biogeographic Information System.

VERTEBRATE PALEONTOLOGY

- *Collaborative Research: The Late Devonian Tetrapodomorph Tiktaalik roseae*, National Science Foundation.

REVENUE

Below is the revenue for CSBE from 2005 through 2010. Values for 2011 are projected.



PRESENTATIONS

Allen, R. T. Biogeography of the Diplura of North America. Oral presentation, 8th International Seminar on Apterygota. Siena, Italy. September 12-16.

Callomon, P. "The Natural History Museum in the 21st Century." Talk delivered to representatives of prefectural government at meeting of the Kagawa Museum Society. Takamatsu City, Japan. August 22.

Callomon, P. Talk on Micromollusks. Philadelphia Shell Club. November 18.

Callomon, P. "Oysters and the Ecosystem". Radio Times with Marty Moss-Coane. Phone-in show on WHY (NPR). July 21.

Daeschler, T. "Fossil Discoveries and Great Transitions in the History of Life". Germantown Friends School, April 21.

Daeschler, T. "Great Steps in the History of Life: Exploring the Origin of Limbed Vertebrates". George Washington University, October 23.

Daeschler, T. "Exploring the fish-tetrapod transition with focus on *Tiktaalik roseae* (Tetrapodomorpha, Elpistostegalia)". Natural History Museum, London, December 7.

DoNascimento, C., **J. G. Lundberg**, **M. H. Sabaj Pérez** and N. Milani. "An Unexpectedly Diverse Group of Miniature and Sexually Dimorphic Neotropical Catfishes Representing a New Genus (Siluriformes, Heptapteridae)". Oral presentation, Joint Meeting of Ichthyologists and Herpetologists. Providence, Rhode Island. July 7-12.

- Edlund, M., Kocielek, P., Lowe, R., **Potapova, M.**, Rushforth, S., Spaulding, S. A., Stoermer, E. F. Developing an on-line taxonomic guide to the freshwater diatoms of the United States: scope, process and initial steps. Presentation, 21st International Diatom Symposium. St. Paul, Minnesota. August 29 to 3 September 3.
- Enache, M., **Potapova, M.**, Sheibley, R. and Moran, P. Psammothidium species from lakes of Washington Cascade Mountains, USA. Presentation, 21st International Diatom Symposium. St. Paul, Minnesota. August 29 to September 3.
- Freire-Fierro, A.** El herbario más antiguo de América en la era digital: Experiencia con el proyecto LAPI. Round table, X Latin American Botanical Congress. La Serena, Chile. October 2-8.
- Freire-Fierro, A.** Estudios preliminares en la sistemática de Monnina (Polygalaceae). Poster, X Latin American Botanical Congress. La Serena, Chile. October 2-8.
- Freire-Fierro, A.** Systematics of *Monnia* (Polyglaceae). Poster, Biology Research Annual Retreat. Drexel University, Philadelphia, Pennsylvania. October 30.
- Gelhaus, Jon.** The census of aquatic biodiversity in Mongolia: Results from the Mongolian Aquatic Insect Survey 2002-2010. Oral presentation, First International Conference "Survey of Mongolian Aquatic Ecosystems in a Changing Climate: Results, New approaches and future Outlook". Ulaanbaatar, Mongolia. April 7-10.
- Gelhaus, J. K.** and B. L. Hayford. Relationship between the variation of adult aquatic insects to stream condition in streams from Mongolia. Poster Presentation, Annual Meeting, North American Benthological Society. Sante Fe, New Mexico. June 6-11.
- Ilves, K. L.** and M.J. Hickerson. "Tests of simultaneous divergence across anadromous fishes of the North Atlantic and Gulf of Mexico". Oral presentation, Annual joint meeting of the Society for the Study of Evolution, Society of Systematic Biologists, and American Naturalists Society ("Evolution 2010"). Portland, Oregon. June 25-29.
- Ilves, K.** "Assessing 50-year Change in Bahamian Reef Fish Assemblages". Oral presentation, Joint Meeting of Ichthyologists and Herpetologists. Providence, Rhode Island. July 7-12.
- Keyghobadi, N., **J. D. Weintraub**, D. Koscinski & D. M. Fonseca. The Regal Fritillary butterfly: Genetic analysis of museum specimens reveals the conservation status of populations in a declining species. Oral presentation, 6th International Conference on the Biology of Butterflies. Edmonton, Alberta, Canada. June 28 to July 2.
- Livshultz, T.** and S. Hochleitner. Pollen transfer efficiency in *Apocynum cannabinum* (Apocynaceae): an evolutionary perspective. Oral paper, Botany 2010. Providence, Rhode Island. August 2.
- Livshultz, T.**, L. Struwe, and C. Frasier. Phylogeny of the "rest" of Gentianales (Excluding Rubiaceae): What can we conclude from currently available data? Oral paper, 5th International Rubiaceae and Gentianales Conference. Stockholm, Sweden. September 6-10.
- Luckenbill, K. R.** "Lundberg: A Retrospective Through Figures". Oral presentation, Joint Meeting of Ichthyologists and Herpetologists. Providence, Rhode Island. July 7-12.
- Lundberg, J. G.** "Authentic American Cryptoichthyology". ASIH Past President's Plenary Lecture, Joint Meeting of Ichthyologists and Herpetologists. Providence, Rhode Island. July 7-12.
- Maasri A.** Type-specific reference conditions for streams: a European point of view exposed with a concrete study case. Oral presentation, First International Conference "Survey of

- Mongolian Aquatic Ecosystems in a Changing Climate: Results, New approaches and future Outlook". Ulaanbaatar, Mongolia. April 7-10.
- Maasri, A.** Community structure and foraging behavior of Chironomids in high nutrient enriched streams" Oral presentation, Academy of Natural Sciences Lecture Series. Philadelphia, Pennsylvania. May 28.
- Potapova, M.** Preliminary phylogeny of the freshwater monoraphid diatoms. Presentation, the 21st International Diatom Symposium. St. Paul, Minnesota. August 29 to September 3.
- Rice, N.** History of Ornithology and Conservation at the Academy. Lecture, Sportsman's Dinner. December 1.
- Rosenberg, G.** "Phylogenetic analysis of Jamaican Annulariidae (Mollusca: Gastropoda)". American Malacological Society Annual Meeting. San Diego, California. June 28.
- Rosenberg, G.** "Jamaican Land Shells". Conchologists of America Annual Meeting. Boston, Massachusetts. August 29.
- Rosenberg, G.** "What Will Happen to our Shell Collections?" Panel discussion, Conchologists of America Annual Meeting. Boston, Massachusetts. August 30.
- Rosenberg, G.** "How to identify seashells". Lecture, Philadelphia Shell Club. October 21.
- Sabaj Pérez, M. H.** "John Lundberg: the Man behind the Whiskers". Oral presentation, Joint Meeting of Ichthyologists and Herpetologists. Providence, Rhode Island. July 7-12.

HIGHLIGHTS

INTERDEPARTMENTAL HAPPENINGS

- Science Live programming: **Greg Cowper, Jennifer Beals, Kyle Luckenbill, Nate Rice, Ned Gilmore, Ted Daeschler**
- **Dr. John Lundberg** served as Senior Editor and **Kyle Luckenbill** served as Production/Illustration Editor on two separate volumes (159 & 160) of the Proceedings of the Academy of Natural Sciences of Philadelphia published in Oct and Nov 2010, respectively. Volume 159 included 12 articles on a variety of topics. Volume 160 was a Special Volume honoring the life and legacy of **Dr. Charles W. Reimer** (1923–2008), Curator of the ANSP Diatom Herbarium from 1960–2008, and included 12 articles featuring diatom research and collections.

BOTANY

- Members of the American Philosophical Society made an inventory of the 1893 specimens from the Barton Herbarium.
- Members of the National Taiwan University visited the Academy to scan 6,700 Taiwanese specimens deposited at the herbarium. The images will be available after the signing of a Memorandum of Understanding to be held in Taiwan in June.
- Curator Emeritus **Alfred E. Schuyler** served as an expert witness for Donnelly & Associates, PC. His expertise was requested to determine the value, capacity for regrowth, and privacy benefits of an altered hedgerow thicket in Chester County, Pennsylvania.

- **Alfred E. Schuyler** and **Drew Lynford** consulted for AMEC Earth & Environmental, Inc. Survey for the Northeastern Bulrush (*Scirpus ancistrochaetus* Schuyler) along a planned state access road and gas pipelines in the Tioga State Forest, Pennsylvania.
- **Tanya Livshultz** taught a six-lecture course, “Introduction to Pollination Biology” at the Wagner Free Institute and Pennsylvania Horticultural Society.
- **Tanya Livshultz** participated in the first meeting of the Apocynaceae Working Group, an international collaboration of Apocynaceae researchers established to resolve remaining family-level problems in Apocynaceae phylogeny and evolution.

DIATOMS

- The Diatom Herbarium hosted two NAWQA taxonomic workshops with diatom researchers from the United States and Canada.

ENTOMOLOGY

- Jonathan Koch, Molly Rightmyer & Victor Gonzalez (USDA Bee Lab, Logan, Utah) visited to study Nearctic Apoidea (bees) preserved in the ANSP Entomology Collection.
- Mongolian researcher Ms. Bolortsetseg Erdene spent three months at the Academy conducting research at the Academy and receiving training from **Alain Maasri** on statistical analysis of her aquatic sampling data.

HERPETOLOGY

- The George M. Feirer Collection of over 800 specimens of amphibian and reptiles was donated to the Academy. The Feirer Collection was amassed in the 1940s and 50s both locally (New Jersey) and internationally through a series of scientific contacts.

ICHTHYOLOGY

- In December, Bud Keim, a descendant of Henry W. Fowler, the Academy’s first Curator of Fishes, donated \$25,000 to the Ichthyology Department for the ongoing care and digital imaging of Fowler specimens in the fish collection. **Drs. Lundberg** and **Sabaj Pérez** worked with Amy Marvin in preparing the project proposal solicited by Mr. Keim.
- **Dr. John Lundberg** received the Robert H. Gibbs Jr. Memorial Award for Excellence in Systematic Ichthyology from the American Society of Ichthyologists and Herpetologists (ASIH). With this award, one of the highest honors in ichthyology, Lundberg joined an elite group of 21 other ichthyologists so honored since 1989. At the same meetings, Lundberg also was honored by a special symposium dedicated to his career’s work. Fourteen speakers, including four former students and Lundberg’s spouse Lucinda McDade, gave oral presentations celebrating Lundberg’s decades of fieldwork and many contributions to ichthyology and systematics.
- **Dr. Katriina Ilves** and colleagues had their scientific paper on North Atlantic Ocean phylogeography (Ilves, K. L., W. Huang, J. P. Wares, and M.J. Hickerson. 2010. Molecular Ecology, 19:4505-4519) highlighted in the "News and Views" section of the journal Molecular Ecology. The perspective (Riginos, C. 2010. Molecular Ecology, 19:4389-4390) drew attention to the application of exciting new analytical techniques to address longstanding questions in the field of phylogeography.

- **Dr. Katriina Ilves** and **Kyle Luckenbill**, curatorial assistant, participated in the Academy's third annual Members' Night in September 2010. Ilves presented a tour through the evolution of fishes using Academy specimens and Luckenbill gave a demonstration on creating digital radiographs of type specimens.
- Jessup Fellow Mariangeles Arce, a doctoral student at Pontificia Universidade Católica do Rio Grande do Sul, Porto Alegre, Brazil, conducted 4 months of research in 2010 on the molecular relationships and musculature of thorny catfishes. Working in the ANSP Laboratory for Molecular Systematics and Ecology (LMSE), she compiled sequence data on three genes for about 150 specimens representing all genera and nearly all species in the family Doradidae. This marks the first comprehensive molecular analysis of Doradidae and provided many new insights and hypotheses regarding its evolutionary history and biogeography.
- **Kyle Luckenbill**, curatorial assistant, was featured in The Scientist Magazine (<http://www.the-scientist.com/blog/display/57560/>) in July 2010. The article described Luckenbill's efforts to x-ray primary type specimens in the ANSP fish collection and included a YouTube video spotlighting Luckenbill and his radiographic techniques as well as the type collection itself. About a dozen of Luckenbill's artistic x-rays were displayed in the public space in an exhibit called "All types of Fishes", part of the "Art of Science" series coordinated by Barbara Ceiga.
- **Kyle Luckenbill**, curatorial assistant, prepared the cover image for Systematic Biology volume 59 (issue 4) featuring a photograph, radiograph and CT reconstruction.
- **Drs. John Lundberg** and **Mark Sabaj Pérez**, and **Kyle Luckenbill** hosted the Academy's second "Catfish Weekend" for public programming in June 2010.
- **Dr. Mark Sabaj Pérez** was honored in the naming of a new species of thorny catfish by two Brazilian students, José Birindelli and Leandro Sousa, who conducted part of their research at the Academy with support from the All Catfish Species Inventory. The new catfish, *Leptodoras marki*, is endemic to the Xingu River basin, Brazil, and named for Mark's "dedicated service to the ichthyological community as Collection Manager of Fishes, and for encouraging the study of doradids as a co-principal investigator of the All Catfish Species Inventory."
- At the close of 2010 the ANSP Fish Collection had an estimated 1.4 million cataloged specimens in 136,000 lots.

MALACOLOGY

- **Gary Rosenberg** and Jerry Mead (Patrick Center) visited Jamaica, March 7-13, setting up collaborations for GIS studies of Jamaican snails with faculty at the University of the West Indies (Mona) and the Jamaican Forestry Department.
- The department contributed three exhibits and extensive support to the 28th annual Philadelphia Shell Show (October), including logistical and other aid with the Preview Party fund-raiser that raised \$30,000 for the Academy and the Center for Molluscan Studies.
- Three masters degree students from the Philippines visited the department under funding from the ICBG grant. They were instructed in curatorial procedures and molluscan systematics, and worked on sorting and identifying samples, and helped with constructing a interactive key to Philippines species of Turridae. (Mary Anne Astilla

and Marvin Altamia overlapping from 2009 until mid-January and Gizelle Batomalaque from November 30 into 2011).

MAMMALOLOGY

- A large number of specimens (skulls and skins) from the Mammalogy Collection were put on special display during the Sportsman's Dinner event on the evening of June 10.

MINERALOLOGY

- Thanks to the generosity of the Philadelphia Mineralogical Society and The Coes family, the Seybert Collection mineral cabinet was repaired and restored by furniture conservator Mr. Alan Andersen. The cabinet is now on display in the Academy library.
- For the first time in decades, a selection of 15 beautiful local minerals from the Academy's W.S. Vaux Collection was displayed at the Philadelphia Gem and Fossil Show.

ORNITHOLOGY

- *Presidents Dinner* – 11 May 2010. Dr. Robert S. Ridgely, former ANSP bird curator returned for an event to generate support for the bird department and launch his upcoming “Birds of South America, Vol. 3”. Many dozens of specimens from the collection were used to augment his presentation and highlight the world class standing of the bird collection. The evening was widely considered as being hugely popular for long-term members and new guests alike.
- *Collections Dinner* - 10 June 2010. Mr. Gephart and **Dr. Daeschler** invited personal friends, long-term members, and former members for an evening highlighting the wonderful treasures from the Academy’s collections.
- *Sportsman’s Dinner* – 1 December 2010. **Nate Rice** presented a short talk on the history of the bird department, museum, and our long history of sportsmen supporting our conservation efforts. Nearly 100 bird and mammal specimens were used in the reception and to augment the presentation. The BNY Mellon wealth management group and specifically new board member Ron Clark funded the evening. Many new potential and major donors attended the event.

VERTEBRATE PALEONTOLOGY

- Associate Curator of Vertebrate Biology, **Dr. Ted Daeschler**, served as Acting President and CEO of the Academy for seven months during the search for a new President and CEO.
- The Vertebrate Paleontology Department organized a library display of Ice Age fossil specimens from the Thomas Jefferson Collection for the Paleopalooza festival in 2010. Department staff and volunteers also manned tables to display recently collected Devonian fish fossils, along with fossil great white shark teeth and Eocene-age Green River fish, during the festival weekend.
- **Ted Daeschler** and **Fred Mullison** organized and led a 2-day field trip to north central Pennsylvania to visit and discuss Devonian-age fossil discoveries that Academy teams have made in the region. 22 students and professionals from Japan, China, Australia, Germany, the U.S. and others attended the trip in the days leading up to the annual meeting the Society of Vertebrate Paleontology held in Pittsburgh in October.

VIREO

- Licensed over 1,000 images to The Stokes Field Guide to the Birds of North America and 2,000 images for Audubon Mobile Field Guide Apps.
- Uploaded our 80,000th image online.

PUBLICATIONS

- Balhoff, J. P., W. M. Dahdul, C. R. Kothari, H. Lapp, **J. G. Lundberg**, P. M. Mabee, P. E. Midford, M. Westerfield, and T. J. Vision. 2010. Phenex: Ontological annotation of phenotypic diversity. PLoS ONE 5(5):e10500. doi:10.1371/journal.pone.0010500
- Callomon, P.** and M. A. Snyder. 2010. On some small Fusinus from the East China Sea (Gastropoda: Fascioliidae), with description of a new species and notes on protoconch morphology. Venus 68 (3-4): 101-112.
- Cressler III, W. L., **E. B. Daeschler**, R. Slingerland and D. A. Peterson. 2010. Terrestrialization in the Late Devonian: A palaeoecological overview of the Red Hill site, Pennsylvania, USA. In: Gaël Clement and Marco Vecoli [eds.], The Terrestrialization Process: Modelling Complex Interactions at the Biosphere-Geosphere Interface. The Geological Society, London.
- Daeschler, Ted** and Neil Shubin. 2010. Fossil Discovery and the Origin of Tetrapods. Pp. 297-310 In: In the Light of Evolution; Essays from the Laboratory and the Field, J. Losos (editor), Roberts and Company, Colorado.
- Dahdul, W. M., J. P. Balhoff, J. Engeman, T. Grande, E. J. Hilton, C. R. Kothari, H. Lapp, **J. G. Lundberg**, P. E. Midford, T. J. Vision, M. Westerfield, and P. M. Mabee. 2010. Evolutionary characters, phenotypes and ontologies: curating data from the systematic biology literature. PLoS ONE 5(5):e10708. doi:10.1371/journal.pone.0010708.
- Dahdul, W. M., **J. G. Lundberg**, P. E. Midford, J. P. Balhoff, H. Lapp, T. J. Vision, M. A. Haendel, M. Westerfield, P. M. Mabee. 2010. The Teleost Anatomy Ontology: Anatomical Representation for the Genomics Age. Systematic Biology 59(4):369–383.
- Hayford, B. and **J. Gelhaus**. 2010. The relationship between Grazing, Erosion and Adult Aquatic Insects in Streams in Mongolia. Mongolian Journal of Biological Sciences 8(1): 27-39.
- Hoorn, C., F. P. Wesselingh, H. ter Steege, M. A. Bermudez, A. Mora, J. Sevink, I. Sanmartín, A. Sanchez-Meseguer, C. L. Anderson, J. P. Figueiredo, C. Jaramillo, D. Riff, F. R. Negri, H. Hooghiemstra, **J. Lundberg**, T. Stadler, T. Särkinen and A. Antonelli. 2010. Amazonia Through Time: Andean Uplift, Climate Change, Landscape Evolution, and Biodiversity. Science. 330(6006):927–931.
- Ilves, K. L.**, W. Huang, J. P. Wares, and M. J. Hickerson. Colonization and/or mitochondrial selective sweeps across the North Atlantic intertidal assemblage revealed by multi-taxa ABC. Molecular Ecology 19:4505-4519.
- Keyghobadi, N., **J. D. Weintraub**, D. Koscinski, and D. M. Fonseca. 2010. The Regal Fritillary butterfly: Genetic analysis of museum specimens reveals the conservation status of populations in a declining species. [abstract] p. 46, In: 6th International Conference on the Biology of Butterflies. Program & Abstracts. 86 pp. Edmonton, Canada: University of Alberta.

- Livshultz, T.** 2010. The phylogenetic position of milkweeds (Apocynaceae subfamilies Secamonoideae and Asclepiadoideae): Evidence from the nucleus and chloroplast. *Taxon* 59: 1016-1030.
- Lundberg, J. G., M. H. Sabaj Pérez,** W. M. Dahdul and O. A. Aguilera S. 2010. The Amazonian Neogene fish fauna. p. 281–301 In: C. Hoorn and F. P. Wesselingh, eds. Amazonia—landscape and species evolution: a look into the past. Wiley-Blackwell, 447 p.
- Maasri A., J. K. Gelhaus,** B. Hayford and S. Chuluunbat. 2010. Chemical and Biological status of waterbodies of the Uvs Province, Mongolia. Report to Aimag officials, 21 pp. Available from authors.
- Podeniene, V. and **J. K. Gelhaus.** 2010. The last instar larvae and pupae of Mongolian Limnophilinae from genera Eloephila, Limnophila and Phylidorea (Diptera, Limoniidae). *Proceedings of the Academy of Natural Sciences* 159: 185-204.
- Potapova, M.** 2010. The ANSP Diatom Herbarium: an important resource for diatom research. *Proceedings of the Academy of Natural Sciences of Philadelphia* 160: 3-12.
- Roa-Fuentes, C. A., J. C. Alonso, A. Alfonso, and **M. Sabaj Pérez.** 2010. Pisces, Siluriformes, Doradidae, *Astrodoras* Bleeker, 1862: First record in the Colombian Amazon. Check List, *Journal of Species Lists and Distribution* 6(4):485–487.
- Robertson, R.** 2010. A true Phasianella from the Middle Miocene (Badenian) Central Parathethys of Romania. *Archiv fur Molluskenkunde* 139 (2): 247-253.
- Rodiles-Hernández, R., **J. G. Lundberg,** and J. P. Sullivan, 2010. Taxonomic discrimination and identification of extant blue catfishes (Siluriformes: Ictaluridae: *Ictalurus furcatus* Group). *Proceedings of the Academy of Natural Sciences of Philadelphia* v. 159:67–82.
- Rosenberg, G.** 2010. Description of a new species of *Prionovolva* (Mollusca, Gastropoda, Ovulidae) from East Africa, with reassessment of the composition of the genus. *Proceedings of the Academy of Natural Sciences of Philadelphia* 159: 39-66.
- Sabaj Pérez, M. H.** (editor). 2010. Standard symbolic codes for institutional resource collections in herpetology and ichthyology: an Online Reference. Version 2.0 (8 November 2010). Electronically accessible at <http://www.asih.org/>, American Society of Ichthyologists and Herpetologists, Washington, DC.
- Silva, F. L. . and **J. K. Gelhaus.** 2010. Chironomidae Types (Insecta: Diptera) at The Academy of Natural Sciences, Philadelphia. *Proceedings of the Academy of Natural Sciences* 159: 213-228.
- Snyder, M. A. and **P. Callomon.** 2010. Tapparone-Canefri's type material of fasciolariid gastropoda (Mollusca) at the Genoa Natural History Museum. *Proceedings of the Academy of Natural Sciences of Philadelphia* 159: 31-38. 2010
- Snyder, M. A., W. G. Lyons and **G. Rosenberg.** 2010. The dates of publication of section 16, corrigenda quaedam et addenda, of Dunker's *Novitates Conchologicae*, Series II, Marine Mollusca. *Nautilus* 124: 192-193.
- Spaulding, S. A., Lubinski, D. J. and **M. Potapova.** 2010. Diatoms of the United States. <http://westerndiatoms.colorado.edu> (web publication).
- Thomas, M. R., and **M. H. Sabaj Pérez.** 2010. A new species of whiptail catfish, genus *Loricaria* (Siluriformes: Loricariidae), from the Rio Curuá (Xingu Basin), Brazil. *Copeia* 2010(2):274–283.
- Wesselingh, F. P., C. Hoorn, S. B. Kroonenberg, A. Antonelli, **J. G. Lundberg,** H. B. Vonhof and H. Hooghiemstra. 2010. On the origin of Amazonian landscapes and biodiversity: a

- synthesis. p. 421–431 In: C. Hoorn and F. P. Wesselingh, eds. Amazonia—landscape and species evolution: a look into the past. Wiley-Blackwell, 447 p.
- Wilkinson, M. J., L. G. Marshall, **J. G. Lundberg** and M. H. Kreslavsky. 2010. Megafan environments in northern South America and their impact on Amazon Neogene aquatic ecosystems, p. 162–184 In: C. Hoorn and F. P. Wesselingh, eds. Amazonia—landscape and species evolution: a look into the past. Wiley-Blackwell, 447 p.