

## Curriculum Vitae

### Dr. Lena Struwe

Dr. Lena Struwe, FLS | Professor & Director, Chrysler Herbarium | Dept of Ecology, Evolution, and Natural Resources & Dept of Plant Biology | Rutgers University | 237 Foran Hall | 59 Dudley Road | New Brunswick, NJ 08901 | USA | [lena.struwe@rutgers.edu](mailto:lena.struwe@rutgers.edu) | phone (848) 932-6343 | fax (732) 932-9441 | [herbarium.rutgers.edu/](http://herbarium.rutgers.edu/) | [www.rci.rutgers.edu/~struwe/](http://www.rci.rutgers.edu/~struwe/)

#### EDUCATION

Stockholm University, Sweden, Biology and Earth Science, B.Sc. 1991  
Stockholm University, Sweden, Systematic Botany, Ph.D. 1999  
The New York Botanical Garden, NY, Systematic Botany, postdoc 1998-2001

#### APPOINTMENTS (SELECTED)

2017-current Professor, Dept. of Ecology, Evolution, and Natural Resources, and Dept. of Plant Biology and Pathology, Rutgers University, New Brunswick, NJ.  
2007-2017 Associate Professor, Dept. of Ecology, Evolution, and Natural Resources, and Dept. of Plant Biology and Pathology, Rutgers University, New Brunswick, NJ.  
2004-current Director, Chrysler Herbarium, Rutgers University.  
2013-current Elected Member, Rutgers University Senate (representing Graduate School of New Brunswick) & Research, Graduate and Professional Education Committee.  
2012-current Associate Editor, *Botanical Journal of Linnean Society*.  
2009-current Co-PI, Admissions chair (2009-2010, 2013) and Coordinator of *Sustainability and Ecological Impact* Track, NSF-funded IGERT program titled *Renewable and Sustainable Fuels for the 21st Century*, Rutgers.  
2010-2013 Associate Editor, *TAXON*.  
2006-2010 Associate Editor, *Systematic Botany*.  
2001-2007 Assistant Professor, Dept. of Ecology, Evolution, and Natural Resources, and Dept. of Plant Biology and Pathology, Rutgers University.

#### PEER-REVIEWED PUBLICATIONS (SELECTED)

1. Cali6, M. F., K. B. Lepis, J. R. Pirani, & L. Struwe. 2017. Phylogeny of Helieae (Gentianaceae): resolving taxonomic chaos in a Neotropical clade. *Molecular Phylogeny and Evolution* 106: 192-208.
2. Walker, D. M, P. E. Smouse, M. Reginato, & L. Struwe. 2017. Cladal divergence in fungal Ophiognomonia (Gnomoniaceae: Diaporthales) shows evidence of climatic niche vicariance. *Biological Journal of Linnean Society*.
3. Favre, A. , I. Michalak, C.-H. Chen, J.-C. Wang, J. Pringle, S. Matuszak, H. Sun, E. Liu, Y.-M. Yuan, L. Struwe, & A. N. Muellner-Riehl. 2016. Out-of-Tibet: the spatio-temporal evolution of *Gentiana* (Gentianaceae). *Journal of Biogeography* 43: 1967–1978.
4. Frazee, L. J., S. Morris-Marano, J. Blake-Mahmud, & L. Struwe. 2016. Eat your weeds: edible and wild plants in urban environmental education and outreach. *Plant Science Bulletin* Summer 2016: 72-84.
5. Poinar, G., Jr. & L. Struwe. 2016. An asterid flower from neotropical mid-Tertiary amber. *Nature Plants* 2(3): 16005.
6. Lima, R. B. S, G. Frausin, S. Brody, L. Struwe, & A. M. Pohlit. 2015. Gentians used in South America as antimalarial agents. In: *The Gentianaceae, vol. 2: Biotechnology and Applications* (J. J. Rybczyński, M. R. Davey, & A. Mikula, eds.), Springer Verlag, Heidelberg & New York.

7. Mattera, R., T. Molnar, & L. Struwe. 2015. *Cornus* × *elwinortonii* and *Cornus* × *rutgersensis* (Cornaceae), new names for two artificially produced hybrids of big-bracted dogwoods. *PhytoKeys* 55: 93-111.
8. Pollock, N.B, N. Howe, N. I. Irizarry, N. Lorusso, A. Kruger, K. Himmler, & L. Struwe. 2015. Personal BioBlitz: a new way to encourage biodiversity discovery and knowledge in k-99 education and outreach. *BioScience* 65 (12): 1154-1164.
9. Poster, L. S., J. S. Pringle, & L. Struwe. 2015. Identification and descriptions of the Gentianaceae in New Jersey. *Bartonia* 67: 1-34.
10. Pringle, J., L. S. Poster, & L. Struwe. 2015. Nomenclature and typification of the Gentianaceae in New Jersey. *Bartonia* 67: 35-57.
11. Beck, A., P. Divakar, N. Zhang, M. C. Molina, & L. Struwe. 2014. Evidence of ancient horizontal gene transfer between fungi and the terrestrial alga *Trebouxia*. *Organisms, Diversity, and Evolution*. 15:235-248.
12. Struwe, L. 2014. Classification and evolution of the Gentianaceae. Pages: 13-35. In: The Gentianaceae: characterization, conservation, propagation, genetic manipulation and application, vol. 1 (J. J. Rybczyński et al., eds.), Springer Verlag, New York.
13. Struwe, L., V. L. Soza, S. Manickam, & R. Olmstead. 2014. Gelsemiaceae (Gentianales) expanded to include the enigmatic Asian genus *Pteleocarpa*. *Botanical Journal of Linnean Society* 175: 482-496.
14. Struwe, L., L. S. Poster, N. Howe, C. B. Zambell, & P. W. Sweeney. 2014. The hands-on, online learning project Flora of Rutgers Campus: campus floras as a student learning tool for plant systematics. *Plant Science Bulletin* 60: 159-169.
15. Walker, D. M., L. A. Castlebury, A. Y. Rossman, & L. Struwe. 2013. Host conservatism or host specialization? Patterns of fungal diversification are influenced by host specificity in *Ophiognomonia* (Gnomoniaceae, Diaporthales). *Biological Journal of Linnean Society*. 111: 1-16.
16. Eisenman, S. W., A. O. Tucker, & L. Struwe. 2012. Voucher specimens are essential for documenting source material used in medicinal plant investigations. *Journal of Medicinally Active Plants* 1: 30-43.
17. Eisenman, S. W, D. E. Zaurov, & L. Struwe (eds.). 2012. Medicinal Plants of Central Asia: Uzbekistan and Kyrgyzstan. Springer, New York. 340 pp.
18. Molina, J.E., J. Wen, & L. Struwe. 2012. Systematics and biogeography of the non-viny grape relative *Leea* (Vitales). *Botanical Journal of the Linnean Society* 171: 354-376.
19. Popovkin, A. V., K. G. Mathews, J. C. Mendes Santos, M. C. Molina, & L. Struwe . 2011. *Spigelia genuflexa* (Loganiaceae), a new geocarpic species from the Atlantic forest of northeastern Bahia, Brazil. *PhytoKeys* 6: 47-56. Struwe, L., P.E. Smouse, E. Heiberg, S. Haag, & R.G. Lathrop. 2011. Spatial evolutionary and ecological vicariance analysis (SEEVA), a novel approach to biogeography and speciation research, with an example from Brazilian Gentianaceae. *J Biogeo* 38: 1841–1854.
20. Molina, J., & L. Struwe. 2009. Utility of secondary structure in phylogenetic reconstructions using nrDNA ITS sequences - an example from Potalieae (Gentianaceae: Asteridae). *Syst Bot* 34:414-428.
21. Struwe, L., V.A. Albert, M.F. Calió, C. Frasier, K.B. Lepis, K.G. Mathews, & J.R. Grant. 2009. Evolutionary patterns in neotropical tribe Helieae (Gentianaceae): evidence from morphology, chloroplast and nuclear DNA sequences. *Taxon* 58: 479-499.
22. Frasier, C., V.A. Albert, & L. Struwe. 2008. Amazonian lowland, white sand areas as ancestral regions for South American biodiversity: biogeographic and phylogenetic patterns in Potalia (Gentianaceae). *Org Div & Evol* 8: 44-57.
23. Struwe, L. & V. A. Albert (eds.) 2002. Gentianaceae – Systematics and Natural History. Cambridge University Press, Cambridge. 652 pp.

## GRANTS (SELECTED)

- 2016-2020 NSF, DEB, Advancing Digitization of Biodiversity Collections program (ADBC).  
*Collaborative Research: Digitization TCN: The Mid-Atlantic Megalopolis: Achieving a greater scientific understanding of our urban world* (grant no. 1601101). Rutgers PI: Lena Struwe, Rutgers Co-PI: Myla Aronson, Lead PI: Cynthia Skema, University of Pennsylvania. <http://midatlanticherbaria.org/portal/>
- 2015-2017 Rutgers Centers for Global Advancement and International Affairs (GAIA Centers),  
*Formation of a Worldwide Urban Plant Evolution and Education Network*. PI: Struwe, Co-PIs Myla Aronson, Laura Schneider, Wolfram Hoefner, Lauren Frazee.
- 2014-2015 Rutgers Research Council: *Weeds as model organisms: evolution in unnatural habitats*, PI: Struwe.
- 2009-2015 NSF, IGERT: *Solutions for Renewable and Sustainable Fuels in the 21st Century*. PI: Eric Lam, Co-PI Lena Struwe responsible for Thrust Area Sustainability and Ecological Impacts.
- 2008-2009 Beneficia Foundation, Digitization of endangered and invasive bioinformatics data for New Jersey plants. Chrysler Herbarium.

## AWARDS (SELECTED)

- 2016 Warren I. Susman Award for Excellence in Teaching, Rutgers University, New Brunswick, NJ. [highest education award at Rutgers. Motivation: In recognition of her creative approaches to biodiversity education, her deep commitment to active learning, and her ability to engage students in looking at and caring about nature in new and lasting ways. ]
- 2015 Innovation in Plant Systematics Education Prize, American Society for Plant Taxonomists. <http://www.aspt.net/news/2015/08/03/lena-struwe#.V3AC4qJNvjU>
- 2015 Excellence in Teaching, School of Environmental and Biological Sciences, Rutgers University, New Brunswick, NJ.
- 2010 Excellence in Graduate Teaching Award from the Graduate School of New Brunswick, Rutgers.
- 2009 Professor of the Year, selected by the Graduate Students in Plant Biology, Rutgers.
- 2007 Abraham Weisblat Award for Across the Board Excellence in Teaching, Research, and Outreach, School of Environmental and Biological Sciences & New Jersey Agricultural Experiment Station, Rutgers.

## SYNERGISTIC ACTIVITIES

***Gentian Research Network:*** Founder of Gentian Research Network in 2002; international coordinator and first-author of first infrafamilial classification of Gentianaceae in 150 years (published in 2002; third version in 2017); training of students in plant systematics, nomenclature, phylogeny, and histology; taxonomic and phylogenetic treatments on Gentianaceae, Gelsemiaceae, and Loganiaceae worldwide.

***Spatial and Temporal Evolutionary Analysis using Large Datasets:*** Development of software and methods for Spatial Evolutionary and Ecological Vicariance Analysis (SEEVA, in Matlab and R), a large-scale, multi-specimen method using multivariate GIS, climate, specimen collection data, host species and biodiversity data in phylogenetic and spatial frameworks.

***Biodiversity Bioinformatics and Digitization Data Development:*** Digitization and web access of museum herbarium specimens (Chrysler Herbarium's five web portals to digitized data, iDigBio); data-driven biodiversity estimates, biogeography, and species distributions; developed and implemented the world's first Personal Bioblitz project (250+ participants, online using iNaturalist, 5th year in 2018).

***Education and Training Activities:*** Founder of Herbarium Army internship program for undergraduates in Chrysler Herbarium (50+ undergraduates); past Co-PI for *Sustainability and Ecological Impacts Area* in the IGERT grant *Solutions for Renewable and Sustainable Fuels in the 21st Century*; past Associate Leader for *Biodiversity, Training, and Bioinformatics* area in Central Asia ICBG program;

Mentor for PlantingScience; Developed freshman classes on Urban Weeds, Food and Cooking Evolution, and Safety of Herbal Medicine; former Academic Integrity Facilitator at Rutgers.

**Biodiversity and Evolution in Research, Education and Public Outreach:** Developed online *Flora of Rutgers Campus* involving 65+ Rutgers students; Developer of easy-to-use field guides for wild plants for the public; Organizer of Rutgers Evolution Journal Club (over 130 graduate students over 10+ years); Implemented module of DNA barcoding of plants in sophomore evolution lab class; 25+ years of outreach at K-12, college, and post-graduate level and to general public and media. Founder and Writer of *Botanical Accuracy* blog; Developer and Director of Urban Evolution and Biodiversity project: species identification, biomass analysis, anatomy (histology) and bioactivity analysis of urban weeds, island biogeography patterns as related to spatial distributions of urban alpha-biodiversity.

#### **CHRYSLER HERBARIUM RESEARCH ACTIVITIES, WEBSITES AND MILESTONES**

- 2016 Online portal for vascular plant specimen data and specimen images on the National Network of Small Herbaria: Mid-Atlantic Region, serving data to iDigBio and GBIF: <http://nansh.org/portal/collections/misc/collprofiles.php?collid=316>
- 2016 Reorganization of all angiosperms from Cronquist's system to APG III; checking all current names of specimens; formed the undergraduate Herbarium Army
- 2016 Vascular plant and algae collection surpassed 145 000 specimens (was 120 000 in 2000)
- 2015 Newly designed herbarium web site: <http://herbarium.rutgers.edu/>
- 2015 New Facebook page for Chrysler Herbarium: <https://www.facebook.com/chryslerherbarium/>
- 2015-2017 Participant in NFS-funded macroalgae digitization project (NSF TCN grant). <http://macroalgae.org/portal/index.php>
- 2015 Incorporation of Dr. Ilnicki's and NJAES' weed collection into CHRHB
- 2014 Digitization of all Ericaceae in collaboration with The New York Botanical Garden (4200 specimens; NSF-funded TCN grant)
- 2013-2014 Lichens and bryophytes from Chrysler Herbarium digitized in collaboration with The New York Botanical Garden and available through national web portals (9500 specimens; NSF-funded TCN grant)  
Bryophyte portal: <http://bryophyteportal.org/portal/collections/misc/collprofiles.php?collid=32>  
Lichen portal: <http://lichenportal.org/portal/collections/misc/collprofiles.php?collid=47>

#### **COURSES AND CURRICULUM DEVELOPMENT - UNDERGRADUATE (NOT ALL CURRENTLY TAUGHT)**

Evolution of Eukaryotes

First-year Byrne seminar: Food and Cooking through Change - A Spicy Walk

First-year Byrne seminar: Weeds—What are They Good For? Life and Death among Unwanted Plants

First-year Byrne seminar: Medicinal Plants: From Ethnobotany to Pharmacognosy

Fundamentals of Evolution & Fundamentals of Evolution Lab

Honors seminar: Evolution of Food, Crops, and Cooking from Pre-historic Times to Today.

Introduction to Ethnobotany

Practical Experience in Ecology, Evolution & Natural Resources

Research Problems in Ecology, Evolution, and Natural Resources, \

Plant Diversity and Evolution

Plant Diversity and Evolution Lab

#### **COURSES AND CURRICULUM DEVELOPMENT - GRADUATE (NOT ALL CURRENTLY TAUGHT)**

Advanced Evolution (aka “Journal Club in Evolution”)

Plant Systematics & Plant Systematics Lab

Methods in Plant Systematics