

Department of Natural Sciences, Assumption College, 500 Salisbury St., Worcester, MA, USA
Email: k.fucikova@assumption.edu
Biologist specializing in algal evolution, biodiversity, and genomics.

EDUCATION

2011. Ph.D. Ecology and Evolutionary Biology, University of Connecticut (UConn).
Advisor: Louise Lewis, louise.lewis@uconn.edu.
Dissertation: Monograph of the Genus *Bracteacoccus* (Sphaeropleales, Chlorophyceae), with Systematic Clarification of Taxonomically Related Genera.
2006. M.S. Biology, John Carroll University.
Advisor: Jeffrey Johansen, johansen@jcu.edu.
Thesis: Algae and Cyanobacteria of Selected Subaerial Habitats in the Great Smoky Mountains National Park, U.S.A., and Desmid Flora of the GSMNP.
2004. B.S., Biology, University of South Bohemia.
Advisor: Jan Kaštovský, hanys@prf.jcu.cz.
Thesis: Microvegetation of the top of Roraima Tepui, with emphasis on the order Desmidiiales.

POSTDOCTORAL AND PROFESSIONAL EXPERIENCE

- Current. Assistant Professor, Assumption College.
2016. Adjunct Professor, NHTI, Concord's Community College.
Organizer of the Connecticut State Bioblitz, Center for Conservation and Biodiversity, UConn.
- 2014 - 2015. Postdoctoral Associate, UConn; Estimating the Bayesian Phylogenetic Information Content of Systematic Data (NSF funded).
Advisor: Paul Lewis paul.lewis@uconn.edu and Louise Lewis
- 2012 - 2014. Postdoctoral Associate, UConn; Green Algal Tree of Life (NSF funded).
Advisors: Louise Lewis and Paul Lewis.

RESEARCH INTERESTS

- Evolution of chloroplast and mitochondrial genomes, spread and evolution of introns.
- Systematics, diversity, and distribution of terrestrial and extremophilic algae and cyanobacteria.
- Genetic mechanisms underlying drought tolerance in green plants.
- Diversity and distribution of [Freshwater Algae of New England](#).
- Evolution of simple and complex morphologies in green algae.

TEACHING EXPERIENCE

Instructor:

- Fall 2016. Concepts in Biology (BIO 160 + laboratory), Assumption College
Summer 2016. Introduction to Biology (BIO 100 + laboratory), NHTI, Concord's Community College

Spring 2016. Cell Biology (BIOL 260C + laboratory), NHTI, Concord's Community College

Fall 2013. Modern Topics in Biology (BIOL 1109), UConn.

Teaching Assistant:

Fall 2008, 2010. Biology of the Algae (EEB 3250/5250), UConn.

Fall 2007. Principles of Biology (BIOL 1108), UConn.

Fall 2005. Limnology (BL 424), John Carroll University.

Guest Lecturer:

Spring 2016. Exercise Physiology (BI 201), St. Anselm College; topic: Marathon Training

Spring 2015. Bryology and Lichenology (EEB 3240), UConn; topic: Photobiont Diversity

Fall 2014. Biology of the Algae (EEB 3250/5250), UConn; topic: Algal Biodiversity.

Fall 2014. Introduction to Undergraduate Research (BIOL 2289), UConn; topic: Studying Biodiversity.

Spring 2013. Modern Topics in Biology (BIOL 1109), UConn; topic: Ecology and Evolution of Mini-Plants.

Science Education Training:

Fall 2014. Online course "An Introduction to Evidence-Based Undergraduate STEM Teaching" by

Vanderbilt Univ. on www.coursera.com - earned a statement of accomplishment with distinction.

Spring 2013. Audited seminar EEB 5894 – Teaching Methods.

UNDERGRADUATE MENTORING (♦ = minority student)

Fall 2014 - Fall 2015. ♦Mariedonica Canieso, UConn.

Project: Cell Wall Composition in Selected Green Algae.

Fall 2014 - Spring 2015. Allison Kallberg, UConn.

Project: Desiccation Tolerance in the Green Alga *Scenedesmus*.

Summer 2014. Audrey Farwagi, LeMoyne College.

Project: Mitochondrial Genomes in the Family Hydrodictyaceae; advisor: Hilary McManus.

1 coauthored publication.

Summer 2012 - Spring 2014. Alexis Cordone, UConn.

Project: Species Identification of Oomycete Infections in New England Salamander Eggs.

1 coauthored publication, 1 poster presentation; currently in medical school.

Spring 2013. ♦Wilda Merant, UConn.

Project: Species Diversity in the Genus *Bracteacoccus*.

Awarded \$450 from UConn Office of Undergraduate Research (OUR).

Fall 2008 - Spring 2010. Jared Rada, UConn.

Project: Molecular Systematics of Coccoid Green Algae.

Awarded \$415 from UConn OUR, 2 coauthored publications, 1 poster presentation.

Summer 2007 - Spring 2010. ♦Chien Lo, UConn.

Project: Barcoding-based Identification of Green Algae.

1 coauthored publication, 1 poster presentation; currently a practicing Pharm.D.

Summer 2007. ♦Miracle Tali, UConn Summer Research Program for Minority Students.

Project: Characterizing Green Algae in Desert Soil Crusts.
1 poster presentation.

Fall 2004 - Spring 2006. Margaret Fitzpatrick, John Carroll University.

Project: Cyanobacteria of the Great Smoky Mountains National Park; advisor: Jeffrey Johansen.
2 coauthored publications.

GRANTS AND AWARDS

- 2015. \$1013 Mehrhoff Research Award (New England Botanical Club)
- 2011. \$400 Hoshaw Travel Award (Phycological Society of America)
- 2008. \$1400 Civic Engagement Grant (CT Campus Compact): awarded to “Green Grads”
- 2005. \$100 Best graduate student poster (Microscopical Society of Northeast Ohio)

PROFESSIONAL SKILLS

- DNA sequencing (Sanger) and related molecular genetic methods.
- High throughput sequencing (Illumina platform).
- Bioinformatics: BLAST, Geneious, CLC Workbench, ABySS, custom Python scripts.
- Bayesian and frequentist phylogenetics.
- Photomicroscopy with both bright field and Nomarski DIC optics, fluorescent microscopy.
- Scientific illustration, use of Adobe Photoshop and Illustrator.
- Preparation of herbarium specimens, georeferencing, databasing (BGBase).
- Transmission Electron Microscopy, Scanning Electron Microscopy.
- Field methods in botany and phycology.
- Isolation and maintenance of algal and cyanobacterial cultures.
- Blackboard and Brightspace course management systems.

PEER-REVIEWED PUBLICATIONS (* = undergraduate author)

- Watanabe S, **Fučíková K**, Lewis LA, Lewis PO. 2016. Hiding in plain sight: *Koshicola spirodelophila* gen. et sp. nov. (Chaetopeltidales, Chlorophyceae), a novel green alga associated with the aquatic angiosperm *Spirodela polyrhiza*. **American Journal of Botany** 103: 865-875; selected for AJB highlights.
- Lewis PO, Chen M-H, Kuo L, Lewis LA, **Fučíková K**, Neupane S, Wang Y-B, Shi D. In press. Estimating Bayesian phylogenetic information content. **Systematic Biology**.
- Fučíková K**, Lewis LA, Lewis PO. 2016. Comparative analyses of chloroplast genome data representing nine green algae in Sphaeropleales (Chlorophyceae, Chlorophyta). **Data in Brief** 7: 558-570.
- Fučíková K**, Lewis PO, Lewis LA. 2016. Chloroplast phylogenomic data from the green algal order Sphaeropleales (Chlorophyceae, Chlorophyta) reveal complex patterns of sequence evolution. **Molecular Phylogenetics and Evolution** 98: 176-183.
- Kaštovský J, Veselá J, Bohunická M, **Fučíková K**, Štenclová L, Brewer-Carías C. I 2016. New species of cyanobacteria, green algae and diatoms from the table mountain Churí-tepui, Chimantá Massif (Venezuela). **Phytotaxa** 247: 153–180.
- Fučíková K**, Lahr DJG. 2016. Uncovering cryptic diversity in two amoebozoan species using complete mitochondrial genome sequences. **Journal of Eukaryotic Microbiology** 63: 112-122.

- Fučíková K, Johansen JR, Hall JD. 2015. Contribution to the desmid flora of Southeastern Maine. **Journal of the Torrey Botanical Society** 142: 166-178.
- Rangel TF, Colwell RK, Graves GR, Fučíková K, Rahbek C, Diniz-Filho JAF. 2015. Phylogenetic Uncertainty Revisited: Implications for Ecological Analyses. **Evolution** 69: 1301–1312.
- Fučíková K, Pažoutová M, Rindi F. 2015. Meiotic genes and sexual reproduction in the green algal class Trebouxiophyceae (Chlorophyta). **Journal of Phycology** 51: 419-430.
- Fučíková K. 2015. A new record of the rare freshwater red alga *Tuomeya americana* (Batrachospermaceae, Rhodophyta) from Connecticut. **Rhodora** 117: 342-353.
- Varol M., Fučíková K. 2015. Four new records for the freshwater algae of Turkey. **Journal of Limnology and Freshwater Fisheries Research** 1: 83-88.
- *Farwagi A, Fučíková K, McManus HA. 2015. Phylogenetic patterns of gene rearrangements in four mitochondria genomes from the green algal family Hydrodictyaceae (Sphaeropleales, Chlorophyceae). **BMC Genomics** 16: 826.
- Urban M, Lewis LA, Fučíková K, *Cordone A. 2015. Population of origin and environment interact to determine oomycete infections in spotted salamander populations. **Oikos** 124: 274-284.
- Fučíková K. 2015. A new record of the rare alga *Pachycladella* (Chlorophyceae) in New England. **PhytoKeys** 56: 19-27.
- Fučíková K, Lewis PO, González-Halphen D, Lewis LA. 2014. Gene arrangement convergence, diverse intron content, and genetic code modifications in mitochondrial genomes of Sphaeropleales (Chlorophyta). **Genome Biology and Evolution** 6: 2170-2180.
- Fučíková K, Leliaert F, Cooper ED, Škaloud P, D'Hondt S, De Clerck O, Gurgel CFD, Lewis LA, Lewis PO, Lopez-Bautista JM, Delwiche CF, Verbruggen H. 2014. New phylogenetic hypotheses for the core Chlorophyta based on chloroplast sequence data. **Frontiers in Ecology and Evolution** 2: 63.
- Fučíková K, Lewis PO, Lewis LA. 2014. Putting incertae sedis taxa in their place: a proposal for ten new families and three new genera in the Sphaeropleales. **Journal of Phycology** 50: 14-25, selected for Algae Highlight.
- Fučíková K, Lewis PO, Lewis LA. 2014. Widespread desert affiliations of trebouxiophycean algae (Trebouxiophyceae, Chlorophyta) including discovery of three new desert genera. **Phycological Research** 62: 294-305.
- Fučíková K, Flechtner VR, Lewis LA. 2013. Revision of the genus *Bracteacoccus* Tereg (Chlorophyceae, Chlorophyta) based on a phylogenetic approach. **Nova Hedwigia**: 96:15–59.
- Tippery NP, Fučíková K, Lewis PO, Lewis LA. 2012. Probing the monophyly of the Sphaeropleales (Chlorophyceae) using data from five genes. **Journal of Phycology** 48: 1482–1493.
- McManus HA, Lewis LA, Fučíková K, Haugen P. 2012. Invasion of protein coding genes by green algal ribosomal group I introns. **Molecular Phylogenetics and Evolution** 62:109-116.
- Fučíková K, Lewis LA. 2012. Intersection of *Chorella*, *Muriella* and *Bracteacoccus*: Resurrecting the genus *Chromochloris* Kol & Chodat (Chlorophyceae, Chlorophyta). **Fottea** 12:83-93.
- Rodríguez-Salinas E, Li Z, Fučíková K, Lewis LA, Brand JJ, González-Halphen D. 2012. Lineage-specific fragmentation and nuclear relocation of the mitochondrial *cox2* gene in green algae (Chlorophyta, Chlorophyceae). **Molecular Phylogenetics and Evolution** 64:166–176.
- Fučíková K, *Rada JC, Lukešová A, Lewis LA. 2011. Cryptic diversity within the genus *Pseudomuriella* Hanagata (Chlorophyta, Chlorophyceae, Sphaeropleales) assessed using four barcode markers. **Nova Hedwigia** 93:29-46.
- Bohunická M, Johansen JR, Fučíková K. 2011. *Tapinothrix clintonii* sp. nov. (Pseudanabaenaceae, Cyanobacteria), a new species at the nexus of five genera. **Fottea** 11:127-140.

- Kaštovský J, **Fučíková K**, Hauer T, Bohunická M. 2011. Microvegetation on the top of Mt. Roraima, Venezuela. **Fottea** 11:171-186.
- Fučíková K**, *Rada JC, Lewis LA. 2011. The tangled taxonomic history of *Dictyococcus*, *Bracteacoccus*, and *Pseudomuriella* (Chlorophyceae, Chlorophyta) and their distinction based on a phylogenetic perspective. **Phycologia** 50:422-429.
- Johansen JR, Kováčik L, Casamatta DA, **Fučíková K**, Kaštovský J. 2011. Utility of 16S-23S ITS sequence and secondary structure for recognition of intrageneric and intergeneric limits within cyanobacterial taxa: *Leptolyngbya corticola* sp. nov. (Pseudanabaenaceae, Cyanobacteria). **Nova Hedwigia** 92:283-302.
- Hall JD, **Fučíková K**, *Lo C, Lewis LA, Karol KG. 2010. An assessment of proposed DNA barcodes in freshwater green algae. **Cryptogamie-Algologie** 31: 529-555.
- Fučíková K**, Kaštovský J. 2009. *Vincularia roraimae* (Zygnematophyceae, Desmidiaceae), gen. et sp. nov. from the top of Mt. Roraima, Venezuela. **Nova Hedwigia** 88:49-56.
- Fučíková K**, Hall JD, Johansen JR, Lowe RL. 2008. **Bibliotheca Phycologica** 113: Desmid flora of the Great Smoky Mountains National Park, USA. J. Cramer, Berlin, Stuttgart. 59 pp.
- Johansen JR, Olsen CE, Lowe RL, **Fučíková K**, Casamatta DA. 2008. *Leptolyngbya* species from selected seep walls in the Great Smoky Mountains National Park. **Algological Studies** 126:21-36.
- Johansen JR, Lowe RL, Carty S, **Fučíková K**, Olsen CE, *Fitzpatrick MH, Ressler JA, Furey PC. 2007. New algal species records for Great Smoky Mountains National Park, with an annotated checklist of all reported algal taxa for the park. **Southeastern Naturalist** 6(sp1):99-134.
- Johansen JR, **Fučíková K**, *Fitzpatrick MH, Lowe RL. 2005. The red algal genus *Rhodospira* (Bangiothales, Rhodophyta): first report from North America. **Journal of Phycology** 41:1281-1283.

POPULAR SCIENCE PUBLICATIONS

- Fučíková K**. 2015. Komu se nelení, tomu se červení: zelená řasa Trentepohlia na Vysočině. Sborník Muzejního Spolku v Třešti. 1/205: 28-31. (in Czech)
- Farkas T, **Fučíková K**, Caskenette A, Cisneros L, Medina R, Sezen U, Wade E. 2015. UConn BioBlitz 2015 Post-Blitz Report. Connecticut Wildlife 35: 14-15.

INVITED PRESENTATIONS

2016. Deciphering DNA: Tackling fundamental questions about algae using bioinformatics. Minority Biomedical Research Support seminar, California State University Dominguez Hills, Carson, CA.
2014. Mitochondrial genome evolution in green algae: a balance between variation and conservation. Botany Dept., University of Melbourne, Victoria, Australia.
2013. Big words, small critters: mitochondrial peculiarities of the Chlorophyceae. Academy of Natural Sciences of Drexel University, Philadelphia, PA.
2013. Some Assembly Required: the Green Algal Tree of Life. International Phycological Congress, Orlando, FL.
2009. Ecological, Activist & Community Involvement – Opening plenary speaker, 21st Annual Conference on Women & Gender, Storrs, CT.

OTHER PRESENTATIONS

- 2015. Society for Molecular Biology and Evolution, Vienna, Austria.
- 2014. Northeast Algal Symposium, Newport, RI; Joint Aquatic Sciences Meeting, Portland, OR.
- 2012. Phycological Society of America, Charleston, SC; Northeast Algal Symposium, Winter Harbor, ME.
- 2011. Phycological Society of America, Seattle, WA.
- 2010. Evolution 2010, Portland, OR; Phycological Society of America, East Lansing, MI; Northeast Algal Symposium, Bristol, RI.
- 2009. International Phycological Congress, Tokyo, Japan (poster).
- 2008. Graduate Research Symposium, Storrs, CT.
- 2007. Northeast Algal Symposium, Narragansett, RI.
- 2005. Microscopical Society of Northeast Ohio, University Heights, OH (poster).
- 2004. All Taxa Biodiversity Inventory, Gatlinburg TN (poster).

BROADER IMPACTS AND OUTREACH

- 2016. CT State Bioblitz organizer.
- 2015. UConn Bioblitz – steering committee member, chair of logistics subcommittee.
Charles Barrows STEM Academy 2015 Bioblitz – planning and participation.
iNaturalist taxonomic curator.
- 2012, 2014. Berkshire Bioblitz participant.
- 2013. White Memorial Bioblitz participant.
- 2007, 2009. CT State Bioblitz participant.
- 2008-2011. Co-organizer of waste-reduction program (“Give and Go”).

SERVICE

- 2013 - 2015. Member of the Communications Committee of Phycological Society of America, manager of the PSA twitter account ([@PSAAlgae](#)).
- 2012 - 2014. Judge for the graduate and undergraduate poster awards at Northeast Algal Symposium.
- 2010 - 2011. Chief Financial Officer of the EEB Graduate Student Association.
- 2010 - 2011. Senator in the UConn Graduate Student Senate; Finance Committee member.
- 2009 - 2011. Co-organizer of Graduate Research Symposium, EEB Dept., UConn.
- 2009 - 2010. Chief Organization Officer of the EEB Graduate Student Association.

PROFESSIONAL ASSOCIATIONS

Member: New England Botanical Club, Phycological Society of America, Northeast Algal Society, Society for Molecular Biology and Evolution.

Reviewer: American Journal of Botany, Molecular Phylogenetics and Evolution, Nova Hedwigia, Journal of Phycology, Phycologia, Journal of Systematics and Evolution, Acta Societatis Botanicorum Poloniae, Phytotaxa, Phytokeys, PLoS One, Algae, Fottea.

Section Editor: Phytotaxa (since July 2016).