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EDUCATION

1982–1985 St. Catherine's College, University of Oxford, B.A. (Hons.), Botany.
1986–1991 Washington University in St. Louis, Ph.D. in Evolutionary and Population
Biology (Peter Raven, *The pollination and floral biology of Adansonia*
(*Bombacaceae*): *A phylogenetic approach*)

APPOINTMENTS

1991–1993 Postdoctoral research fellow (K. Sytsma), Department of Botany, UW-Madison
1993–1994 Postdoctoral research trainee (A. Bleecker), Department of Botany, UW-Madison
1994–1998 Assistant Professor, Department of Organismic and Evolutionary Biology,
Harvard University
1998–2001 Associate Professor, Department of Organismic and Evolutionary Biology,
Harvard University (awarded tenure, May 2000)
2001–2004 Associate Professor, Department of Botany UW-Madison
2004– Professor, Department of Botany, UW-Madison
2014– Fellow, Wisconsin Institute for Discover, UW-Madison

ADMINISTRATIVE ROLES

2021–2022 Chair, Department of Botany, UW-Madison
2015–2017 Chair, Department of Botany, UW-Madison
2012–2014 Interim Associate Director for Students, Wisconsin Institute for Discovery
2010–2013 Director, J. F. Crow Institute for the Study of Evolution, UW-Madison
2008–2012 Chair, Department of Botany, UW-Madison

RESEARCH INTERESTS

Plant evolution and systematics. Evolutionary and Phylogenetic theory. Origin of eukaryotes.
Origin of life.

MAJOR AWARDS AND HONORS

2019 Distinguished Fellow of the UW-Madison Teaching Academy
2016 Kellett Mid-Career Award, UW-Madison
2015 Chancellor's Distinguished Teaching Award, UW-Madison
2010 UW-Madison Teaching Academy, Fellow

2009–2014 Letters and Sciences Hamel Family Faculty Fellowship, UW-Madison
2008 Christiansen Fellowship, St. Catherine’s College, Oxford
2007–2008 John Simon Guggenheim Foundation Fellowship
2006 Elected Fellow of the American Association for the Advancement of Science
1999–2004 National Science Foundation, Career Award.
1996–1999 Alfred P. Sloan Foundation Young Investigator Award in Molecular Evolution

CURRENT GRANTS

University of Wisconsin Graduate School Fall Competition Grant. **The earliest steps towards life: Can chemical ecosystem selection “tame” the messy chemistry of prebiotic chemical reaction systems.** \$73,335. 7/1/21-6/30/22. PI.

National Science Foundation, Division of Environmental Biology (2218817). **Collaborative Research: From ecological dynamics to adaptive evolution during the origin of life.** 06/2022-05-2025 \$1,126,538 (\$1,429,792 total). PI.

PRIOR FEDERAL GRANTS (since 2004)

National Aeronautics and Space Administration, Exobiology (80NSSC17K0296). **The emergence of evolvable surface-associated interacting molecular ensembles: A chemical ecosystem selection approach.** \$2,673,627. 7/26/17-7/25/22. PI (coPIs Katarzyna Adamala, Irving Epstein, Janet Iwasa, Christopher Kempes, Karyn Rogers, Daniel Segrè).

National Aeronautics and Space Administration, Future Investigators in NASA Earth and Space Science and Technology (FINESST) (80NSSC20K1390). **Searching for dynamic biosignatures among lifelike systems isolated by chemical ecosystem selection.** \$90,000. 9/1/20-8/31/23. PI (Fellowship Recipient, Lena Vincent).

National Science Foundation, Systematics Program (DEB-1354793). Collaborative Research: **Multilocus phylogenetics and species delimitation using sequence-capture and next-gen sequencing and its application in *Adansonia* (Malvaceae).** \$670,384. 6/1/2014 - 5/31/2018. PI (co-PIs = Cecile Ané, Corrinne Grover, Jonathan Wendel)

National Science Foundation, Chemistry of Life Processes Program (CHE-1624562). Collaborative Research: **EAGER: A microfluidic platform for the discovery of new, life-like chemical systems.** \$300,000. 8/1/2016 -7/31/2018. PI (co-PIs = David Eddington, Tehshik Yoon, Judith Burstyn, Kalin Vetsigian).

National Science Foundation, Systematics Program (DEB-0949121). **Reconciling gene trees: deciphering the source and extent of genealogical discordance.** \$505,379. 7/1/10-6/30/13. Co-PI (PI=Cecile Ané).

National Science Foundation, Developmental Mechanisms Program (IOS-1021930). **The molecular mechanisms by which genes alter development when moved between closely related species.** \$135,460. 9/1/10-12/30/11. PI

National Science Foundation, Planetary Biotic Inventory Program. **Systematics and Evolution of *Euphorbia*.** \$152,199. 9/1/06-8/30/10. Subcontract PI (overall PI: Paul Berry, University of Michigan).

- National Science Foundation, Developmental Mechanisms Program (IOB-0641428). **The genetic basis of the evolution of rosette flowering in *Leavenworthia***. \$375,000. 7/1/07-6/30/10. PI
- National Science Foundation, REU program (DBI-0552806). **Integrated Biological Sciences Summer Research Program for Undergraduates**. \$440,321. 05/01/06 - 04/30/11. co-PI (PI=Janet Branchaw)
- National Science Foundation, Systematic Biology program (DEB-0608428). Dissertation Research: **Systematics and Biogeography of the *Pedilanthus* clade (*Euphorbia-Euphorbiaceae*)**. \$12,000. 7/1/06-6/30/08. PI (co-PI=Ivalú Cacho).
- National Science Foundation, Systematic Biology program (DEB-0608444). Dissertation Research: **Systematics and evolution of the Malagasy endemic genus *Megistostegium* (*Malvaceae*)**. \$11,998. 7/1/06-8/30/08. PI (co-PI=Margaret Koopman).
- National Science Foundation, Systematic Biology Program (DEB-0416096). **Phylogeny of *Malvatheca* (*Malvaceae*) and the pace and place of its evolution**. \$300,000. 9/1/04-8/30/07. PI.
- National Science Foundation, Developmental Mechanisms Program (IOB-0234118). **Meristem identity genes and the evolution of plant architecture in *Brassicaceae***. \$345,000. 2/15/03-2/14/06. PI
- National Institutes of Health, **Improving Bayesian Phylogeny** (R01: GM068950-01). \$1,449,570. 6/1/03-5/31/07. co-PI (PI=Bret Larget).
- National Science Foundation, Systematic Biology Program (DEB-0309310). Dissertation Research: **Pollinator-mediated evolution of Andean *Solanaceae***. \$11,590. 7/1/03-6/30/06. PI (co-PI=Stacey Smith).

AUTHORED BOOKS

- Baum, D. A. and Smith, S.D. 2012. *Tree-thinking: An Introduction to Phylogenetic Biology*. Roberts & Company, Greenwood Village, CO.

EDITED BOOKS

- Losos, J. Baum, D. A., D. Futuyma, H. Hoekstra, R. Lenski, A. Moore, D. Schluter, and M. Whitlock (eds.). 2013. *The Princeton Guide to Evolution*. Princeton University Press.

RESEARCH ARTICLES AND BOOK CHAPTERS (see Google Scholar [profile](#))

- Sokolskyi, T., Ganju, P., Montgomery-Taylor, R., Baum, D.A. In review. Searching for heritability in prebiotically realistic membrane-bound systems.
- Baum, D. A., Peng, Z., Dolson, E., Smith, D. E., Plum, A. M., and Gagrani, P. In revision. The ecology-evolution continuum and the origin of life. *J. Roy. Soc. Interface*.
- Foreback, M., Leither, S., Dolson, E. and Baum, D. A. 2023. The Role of Abiotic Parameters in the Promotion of Egalitarian Major Evolutionary Transitions. *ALife* 2023. MIT Press. In *ALIFE 2023: Ghost in the Machine: Proceedings of the 2023 Artificial Life Conference*. MIT Press. <https://direct.mit.edu/isal/proceedings/isal/35/78/116809>
- Leither, S., Foreback, M., Dolson, E. and Baum, D. A. 2023. Interaction Strengths Affect Whether Ecological Networks Promote Egalitarian Major Transitions. In *ALIFE 2023*:

- Ghost in the Machine: Proceedings of the 2023 Artificial Life Conference*. MIT Press.
<https://direct.mit.edu/isal/proceedings/isal/35/73/116913>
- Gagrani, P., Blanco, V., Smith, E. and Baum, D. A. 2023. The geometry and combinatorics of an autocatalytic ecology in chemical and cluster chemical reaction networks. arXiv:
<https://arxiv.org/abs/2303.14238>
- Plum, A. and Baum, D. A. 2023. ACEs in spaces: Autocatalytic Chemical Ecosystems in Spatial Settings. ArXiv: <https://arxiv.org/abs/2212.14445>
- Karimi, N., Baum, D. A., Razanamaro, O. H., Léong Pock Tsy, J. M., and Danthu, P. 2022 Malvaceae (Bombacoideae), *Adansonia*, baobab, bozy, fony, renala, ringy, za. In: Goodman, S. M. (ed.), *The new natural history of Madagascar*. Princeton, Princeton University Press.
- Peng, Z., Linderoth, J., Baum, D. A. 2022. The hierarchical organization of autocatalytic reaction networks and its relevance to the origin of life. PLoS Comput Biol 18(9): e1010498.
<https://doi.org/10.1371/journal.pcbi.1010498>
- Jenkins K., Mead, L., Baum, D. A., Bucklin, C, J., Daniel, K. L., Gibson, J. P., Leone, A. and Naegle, E. 2022. Developing the BETTSI: A Tree-Thinking Diagnostic Tool to Assess Individual Elements of Representational Competence. *Evolution* 76: 708-721
<http://doi.org/10.1111/evo.14458>.
- Karimi, N., Grover, C. E., Gallagher, J. P., Conover, J. L., Miller, E. R., Wendel, J. F., and Baum, D. A. 2022. Genetic diversity of Malagasy baobabs: implications for conservation. *Adansonia* 44: 37-47. [[link](#)]
- Karimi, N., Saghafi, S., Keefover-Ring, K., Venter, S. M., and Baum, D. A. (2021). Evidence for hawkmoth pollination in the chiropterophilous African baobab (*Adansonia digitata*). *Biotropica* 54:113–124. [[link](#)]
- Vincent, L., Colón-Santos, S., Henderson J. Cleaves II, Baum, D. A.*, Maurer, S. E. * [co-corresponding author] 2021. The Prebiotic Kitchen: A Guide to Composing Prebiotic Soup Recipes to Test Origins of Life Hypotheses. *Life* 11(11): 1221 [[link](#)].
- Dey, G, Baum, D. A., and Baum, B. 2020. Origin of Eukaryotes. Oxford Bibliographies in Evolutionary Biology (Ed. Karin Pfennig). New York: Oxford University Press [[link](#)]
- Baum, B. and Baum, D. A. 2020. The merger that made us. *BMC Biology* [[link](#)]
- Peng, Z., Plum, A., Gagrani, P., and Baum, D. A. 2020. An ecological framework for the analysis of prebiotic chemical reaction networks. *J. Theoretical Biology* 507:1-15
<https://doi.org/10.1016/j.jtbi.2020.110451>
- Zizka, A., Carvalho-Sobrinho J. G., Pennington, R. T., Queiroz, L. P., Alcantara, S., Baum, D. A., Bacon, C. D., and Antonelli. A. 2020. Transitions between biomes are common and directional in Bombacoideae (Malvaceae). *Journal of Biogeography*. 2020; 47(6): 1310-1321 [[link](#)]
- Karimi, N., Grover, C. E., Ané, C., Gallagher, J. P., Wendel, J. P., and Baum, D. A. 2020. Reticulate evolution helps explain apparent homoplasy in floral biology and pollination in baobabs (*Adansonia*; Bombacoideae; Malvaceae). *Systematic Biology* 69(3): 462–478. [[link](#)]
- Vincent, L., Berg, M., Krismer, M., Saghafi, S., Cosby, J., Sankari, T., Vetsigian, K., Cleaves, H. J. III, and Baum, D. A. 2019. Chemical Ecosystem Selection on Mineral Surfaces Reveals long-term dynamics consistent with the spontaneous emergence of mutual catalysis. *Life*. 9(4), doi:10.3390/life9040080 [[link](#)]

- Baum, D. A. 2019. Plant parts: Processes, structures, or functions? *Gardens Bulletin*, Singapore, 71 (Suppl. 2): 247-258. [[link](#)]
- Mizuuchi, R., Blokhuis, A., Vincent, L., Nghe, P., Lehman, N., and Baum, D. A. 2019. Mineral surfaces select for longer RNA molecules. *Chemical Communications* 10.1039/C8CC10319D [[link](#)]
- Conover, J.L., Karimi, N., Stenz, N., Ané, C., Grover, C.E., Skema, C., Tate, J. A., Wolff, K., Logan, S. A., Wendel, J.F., and Baum, D. A. 2018. A Malvaceae mystery: A mallow maelstrom of genome duplications and maybe misleading methods? *Journal of Integrative Plant Biology* 61(1):12-31 [[link](#)]
- Baum, D. A. 2018. The origin and early evolution of life in chemical complexity space. *Journal of Theoretical Biology*. 456: 295-304 [[link](#)]
- Wright, E. and Baum, D. A. 2018. Exclusivity offers a sound yet practical species criterion for bacteria. *BMC Genomics* 19:724 [[link](#)]
- Dey, G, and Baum, D. A. 2018. Origin of Eukaryotes. *Oxford Bibliographies in Evolutionary Biology* (Ed. Karin Pfennig). New York: Oxford University Press. DOI: 10.1093/OBO/9780199941728-0108 [[link](#)]
- Baum, D. A. 2017. Does the future of systematics really rest on the legacy of one mid-twentieth century German entomologist? *Quarterly Review of Biology* 94:450-453 [[link](#)]
- Baum, D. A. and Lehman, N. 2017. Life's late digital revolution and why it matters for the study of the origins of life. *Life* 7(3), 34: doi: 10.3390/life7030034 [[link](#)]
- Venter, S., Glennon, K. Witkowski, E. Baum, D. A., Cron, G., Tivakudze, R., and Karimi N. 2017. Baobabs (*Adansonia digitata* L.) are self-incompatible and 'male' trees can produce fruit if hand-pollinated. *South African Journal of Botany*. DOI: 10.1016/j.sajb.2017.01.007 [[link](#)]
- Baum, D. A. and K. Vetsigian. 2017. An experimental framework for generating evolvable chemical systems in the laboratory. *Origins of Life and Evolution of Biospheres*, 47:481–497. <https://link.springer.com/article/10.1007/s11084-016-9526-x>
- Cron, G. V., Karimi, N., Glennon K. L., Chukwudi, U., Witkowski, E. T. F., Venter, S. M., Assogbadjo, A. E. and Baum, D. A. 2016. One African baobab species or two? Synonymy of *Adansonia kilima* and *A. digitata*. *Taxon* 65: 1037–1049. [[link](#)]
- Baum, D. A., Ané, C. M., Larget, B., Solís-Lemus, C., Ho, L. S. T., Boone P., Drummond, C., Bontrager M., Hunter S., and Saucier S. 2016. Statistical evidence for common ancestry: Application to primates. *Evolution*. 70: 1354–1363. [[link](#)]
- Carvalho-Sobrinho, J. G., de Queiroz, L. P., Alverson, W. S., Alcantara, S., da Mota, A. C. and Baum, D. A. 2016. Revisiting the phylogeny of Bombacoideae (Malvaceae): novel relationships, morphologically cohesive clades, and a new tribal classification based on multilocus phylogenetic analyses. *Molecular Phylogenetics and Evolution* 101: 56–74. [[link](#)]
- Mazie, A. R., and Baum, D. A. 2016. Changes in selection acting on *BRANCHLESS TRICHOME* in relation to the evolution of stellate trichomes in *Physaria* (Brassicaceae). *Molecular Phylogenetics and Evolution* 100:31-40 [[link](#)].
- Scott, A. D., Stenz, N., Ingvarsson, P. K., and Baum, D. A. 2016. Whole genome duplication in coast redwood (*Sequoia sempervirens*) and its implications for explaining the rarity of polyploidy in conifers. *New Phytologist* 211: 186–193. [[link](#)]
- Scott, A. D. and Baum, D. A. 2016. Phylogenetic Tree. *Encyclopedia of Evolutionary Biology*, vol. 3, pp. 270–276 (R. M. Kliman Ed.). Oxford: Academic Press [[link](#)]

- Baum, D. A. 2015. A comparison of autogenous theories for the origin of eukaryotic cells. *American Journal of Botany*. 102(12): 1-12 [[link](#)]
- Correa, R. and Baum, D. A. 2015. Evolutionary transgenomics: prospects and challenges. *Frontiers Plant Science* 6: 00858. [[link](#)]
- Stenz, N., Larget, B., Baum, D. A. and Ané, C. 2015. Exploring tree-like and non-tree-like patterns using genome sequences: An example using the inbreeding plant species *Arabidopsis thaliana* (L.) Heynh. *Systematic Biology* 64(5):809–823 doi: 10.1093/sysbio/syv039 [[link](#)]
- Baum, D. A. 2015. Selection and the origin of cells. *Bioscience* 65: 678-684 [[link](#)]
- Rangan H., Bell, K. L., Baum, D. A., Fowler, R., McConvell, P., Saunders, T., Spronck, S., Kull, C. A., and Murphy, D. J. 2015. New genetic and linguistic analyses show ancient human influence on baobab evolution and distribution in Australia. *PLoS ONE* 10(4): e0119758. doi: 10.1371/journal.pone.0119758 [[link](#)]
- Baum, D. A. and Baum, B. 2015. We’ve got the evolution of complex cells inside-out. *New Scientist*. 3008: 28-29.
- Baum, D. A. 2015. In Search of Cell Evolution by Franklin Harold [book review]. *Reports of the National Center for Science Education*. 35(3).
- Baum, D. A. and Baum, B. 2014. An inside-out origin of the eukaryotic cell. *BMC Biology* 12:76. doi:10.1186/s12915-014-0076-2 <http://www.biomedcentral.com/1741-7007/12/76> [coverage including [The Economist](#) and [F1000](#) - statistics at [Altmetrics](#)]
- Carvalho-Sobrinho, J. G., Alverson, W. S., da Mota, A. C., Machado, M. C. and Baum, D. A. 2014. A new deciduous species of *Pachira* (Malvaceae, Bombacoideae) from a Seasonally Dry Tropical Forest in northeastern Brazil. *Systematic Botany* 39(1): 260-267.
- Davis, C. C., Schaefer, H., Xi, Z., Baum, D. A., Donoghue, M. J., & Harmon, L. J. 2014. Long-term morphological stasis maintained by a plant–pollinator mutualism. *Proceedings of the National Academy of Sciences*, 111(16): 5914-5919. [[link](#)]
- Baum, D. A. 2013. Developmental causation and the problem of homology. *Philosophy and Theory in Biology*, 5, <http://dx.doi.org/10.3998/ptb.6959004.0005.003> [[link](#)]
- Baum, D. A. 2013. The origin of primary plastids: A pas de deux or a ménage à trois? *The Plant Cell* 25: 4-6.
- Baum, D. A. 2013. Phylogenetics and the History of Life. *In* Losos, J. D. A. Baum, D. Futuyma, H. Hoekstra, R. Lenski, A. Moore, D. Schluter, and M. Whitlock (eds.). 2013. *The Princeton Guide to Evolution*. Princeton University Press.
- Martins, T. R., Berg, J. J., Blinka, S., Rausher, M. D. and Baum, D. A. 2013. Precise spatio-temporal regulation of the anthocyanin biosynthetic pathway leads to petal spot formation in *Clarkia gracilis* (Onagraceae). *New Phytologist* 197: 958–969. [Commentary: *New Phytologist* 197: 687–689]
- Cacho, N. I. and Baum, D. A. 2012. The Caribbean slipper spurge *Euphorbia tithymaloides*, the first example of a ring species in plants. *Proceedings of the Royal Society B-Biological Sciences*. 279: 3377-3383. [Commentary: *Nature* 486, 442]
- Cellinese, N., Baum, D. A., and Mishler, B. D. 2012. Species and phylogenetic nomenclature. *Systematic Biology*. 61(5): 885-891.
- Correa, R. Stanga, J., Larget, B., Roznowski, A., Shu, G., Dilkes, B., and Baum, D. A. 2012. An assessment of transgenomics as a tool for identifying genes involved in the evolutionary differentiation of closely related plant species. *New Phytologist* 193: 494–503.

- Duarte, M.C., Esteves, G. L., Salatino, M. L. F., Walsh, K. C., and Baum, D. A. 2011. Phylogenetic analyses of *Eriotheca* and related genera (Bombacoideae, Malvaceae). *Systematic Botany*. 36: 690–701.
- Prenner, G., Cacho, N. I., Baum, D. A., and Rudall P. J. 2011. Is *LEAFY* a useful marker gene for the flower–inflorescence boundary in the *Euphorbia* cyathium? *Journal of Experimental Biology*. 62: 345–350
- Liu, N., Sliwinski M.K., Correa, R. and Baum, D. A. 2011. Possible contributions of *TERMINAL FLOWER 1* to the evolution of rosette flowering in *Leavenworthia* (Brassicaceae). *New Phytologist* 189:616-28.
- Oyama, R. K., Jones, K. N., and Baum, D. A. 2010. Sympatric sister species of Californian *Antirrhinum* and their transiently specialized pollinators. *American Midland Naturalist* 164(2):337-347.
- Koopman, M. and Baum, D. A. 2010. Isolating nuclear genes and identifying lineages without monophyly: An example of closely related species from Southern Madagascar. *International Journal of Plant Sciences*. 171: 761-771.
- Cacho, N. I., Berry, P. E., Olson, M. E., Steinmann, V. W., and Baum, D. A. 2010. Are spurred cyathia a key innovation? Molecular systematics and trait evolution in the slipper-spurges (Pedilanthus clade - *Euphorbia*, Euphorbiaceae). *American Journal of Botany* 97: 493–510.
- Eckardt, N. A., and Baum, D. A. 2010. The Podostemad Puzzle: The Evolution of Unusual Morphology in the Podostemaceae [commentary]. *The Plant Cell Online*, 22(7): 2104-2104.
- Yue, J.-P., Sun, H., Baum, D. A., Al-Shehbaz, I. L., and Ree, R. 2009. Molecular phylogeny of *Solms-laubachia* (Brassicaceae) s.l., based on multiple nuclear and plastid DNA sequences, and its biogeographic implications. *Journal of Systematics and Evolution* 47(5): 402-415.
- Smith, S. D., Ané, C., and Baum, D. A. 2009. Macroevolutionary tests of pollination syndromes: A reply to Fenster et al. *Evolution* 63: 2763–2767.
- Smith, J. J., Baum, D. A., and Moore A. 2009. The need for molecular genetic perspectives in evolutionary education (and vice versa). *Trends in Genetics* 25: 427-429. [Forum]
- Baum, D. A. 2009. Species as ranked taxa. *Systematic Biology* 58:74–86.
- Mach, J., and Baum, D. A. 2009. Functional and Phylogenetic Analysis of the Glutathione Transferase Gene Family in Poplar [commentary]. *The Plant Cell Online*, 21(12): 3716-3716
- Smith S. D., Izquierado, P., Hall, S.J., and Baum, D. A. 2008. Comparative pollination biology of sympatric and allopatric Andean *Ichroma* (Solanaceae). *Annals of the Missouri Botanical Garden* 95: 600-617.
- Janka, H, von Balthazar, M., Alverson, W. S., Baum, D. A., Semir, J., and Bayer, C. 2008. Structure, development, and evolution of the androecium in Adansonieae (core Bombacoideae, Malvaceae s.l.). *Plant Systematics and Evolution* 275: 69-91
- Koopman, M. M. and Baum, D. A. 2008. Phylogeny and biogeography of Hibisceae (Malvaceae) on Madagascar. *Systematic Botany* 33: 364-374.
- Baum, D. A. and Offner, S. 2008. Phylogenies and tree thinking. *American Biology Teacher* 70: 222-229.

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- Davis, C. C., P. Endress, and Baum, D. A. 2008. The evolution of floral gigantism. *Current Opinions in Plant Biology* 11:49-57.
- Baum, D. A. 2008. Reading a Phylogenetic Tree: The Meaning of Monophyletic Groups. *Nature Education* 1(1). [Web article](#).
- Baum, D. A. 2008. Trait Evolution on a Phylogenetic Tree: Relatedness, Similarity, and the Myth of Evolutionary Advancement. *Nature Education* 1(2). [Web article](#).
- Smith, S. D., Ané, C., and Baum, D. A. 2008. The role of pollinator shifts in the floral diversification of *Iochroma* (solanaceae). *Evolution* 62: 793–806.
- Smith, S. D., Kolberg, V. J., and Baum, D. A. 2008. Morphological and cytological evidence for homoploid hybridization in *Iochroma* (Solanaceae). *Madroño* 55:280–284.
- Baum, D. A. 2008. Foreword. In Wickens, G. E., & Lowe, P. (2008). *The Baobabs: The Pachycauls of Africa, Madagascar and Australia*. Springer.
- Smith, S. D. and Baum, D. A. 2007. Systematics of Iochrominae (Solanaceae): Patterns in floral diversity and interspecific crossability. *Acta Horticulturae*. 745:241-254.
- Sliwinski, M. K., Bosch, J. A., Yoon, H.-S., von Balthazar, M. and Baum, D. A. 2007. The role of two *LEAFY* paralogs from *Idahoia scapigera* (Brassicaceae) in the evolution of a derived plant architecture. *The Plant Journal* 51:211-219 [cover].
- Davis, C.C., Latvis, M., Nickrent, D. L., Wurdack, K. J., and Baum, D. A. 2007. Floral gigantism in Rafflesiaceae. *Science* 315: 1812.
- Baum, D. A. 2007. Concordance trees, concordance factors, and the exploration of reticulate genealogy. *Taxon* 56: 417-426.
- Ané, C., Larget, B., Baum, D. A., Smith, S. D., & Rokas, A. 2007. Bayesian estimation of concordance among gene trees. *Molecular Biology and Evolution* 24: 412-426 (corrigendum - 24:1575).
- Sliwinski, M. K., White, M.A., Maizel, A., Weigel, D., and Baum, D. A. 2006. Evolutionary divergence of *LFY* function in the mustards *Arabidopsis thaliana* and *Leavenworthia crassa*. *Plant Molecular Biology* 62: 279-289.
- Smith, S. D. and Baum, D. A. 2006. Phylogenetics of the florally-diverse Andean clade Iochrominae (Solanaceae). *American Journal of Botany* 93: 1140-1153.
- von Balthazar, M. Schönenberger, J. Alverson, W. S., Janka, H. Bayer, C., and Baum, D. A. 2006. Structure and evolution of the androecium in the Malvatheca clade (Malvaceae s.l.) and implications for Malvaceae and Malvales. *Plant Systematics and Evolution* 260:171-197.
- Baum, D. A. and Hileman, L.C. 2006. A genetic model for the origin of flowers. Chap. 1 in “Flowering and its manipulation” (C. Ainsworth, ed.), Blackwell Publishing, Sheffield, UK.
- Baum, D. A., DeWitt Smith, S., and Donovan, S. S. 2005. The tree thinking challenge. *Science*, 310: 979-980 (Perspectives).
- Baum, D. A., Yoon, H. S., and Oldham, R. L. 2005. Molecular evolution of the transcription factor *LEAFY* in Brassicaceae. *Molecular Phylogenetics and Evolution*, 37:1-14.
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- Baum, D. A. 1992. Phylogenetic species concepts. *Trends in Ecology and Evolution* 7:1-2.
- Baum, D. A. and A. Larson. 1991. Adaptation reviewed: A phylogenetic methodology for studying character macroevolution. *Systematic Zoology* 40:1-18.

CONFERENCE PROCEEDINGS

- Vincent L., Cleaves H. J., and Baum, D. A. 2019. A candidate self-propagating system enriched by chemical ecosystem selection. *ALIFE 2019: The 2019 Conference on Artificial Life, Artificial Life*, 658-659. [[link](#)]

Vincent L., Vetsigian K., and Baum, D. A. 2018. Chemical ecosystem selection approach for generating evolvable chemical systems *in vitro*. In: Artificial Life Conference Proceedings 2018 Jul (pp. 649-650). MIT Press, Cambridge, MA. [[link](#)]

TEACHING RESOURCES

Baum, D. A., and Jenkins, K. (2020). Vertebrate Clade Race. QUBES Educational Resources. doi:10.25334/D9GX-PC46 [[link](#)]

Jenkins K., Mead, L., Baum, D. A. Daniel, K. L., Bucklin, C, J., Leone, A., Gibson, J. P. and Naegle, E. (2020). BETTSI - Basic Evolutionary Tree-Thinking Skills Instrument. QUBES Educational Resources. doi:10.25334/ZQY1-W289 [[link](#)]

Karimi, N., Parks, B. M., Rouse, D., Martin K., Dong, X., Rajangam, P. C., Baum, D. A., and Heitz, J. G. 2017. Building Trees: Introducing evolutionary concepts by exploring Crassulaceae phylogeny and biogeography. CourseSource 04:1-9 [[link](#)]

INVITED SYMPOSIUM TALKS (last 10 years)

The parallelism-convergence continuum and its implications for homology assessment.
Evolution of Repeat. Society for Molecular Biology and Evolution 2023, Ferrara, Italy, July 2023.

In the beginning was a (chemical) ecosystem: Analog evolution and the origin of life. Raper Symposium, University of Wisconsin-Madison, Department of Bacteriology. Sept. 2021.

The artful practice of exclusivity-limited species delimitation. Species in the Theory of Evolution: from concepts to methods and applications. 2nd Joint Congress of Evolutionary biology, Montpellier France, June 2018.

Genealogical individuation in the face of discordant gene trees: Does exclusivity still work?
Species in the Age of Discordance. Evolution 2017 Portland OR, June 2017

Selection before the protocell. Emergence in Chemical Systems 4.0. Anchorage AK, June 2015

RECENT COLLOQUIA (excluding talks at UW-Madison)

University of Maryland – Baltimore County, Department of Biological Sciences. February 2022.

In the beginning was a (chemical) ecosystem: Analog evolution and the origin of life.
Max Planck Institute for Evolutionary Biology, Department of Microbial Population Biology, Plön, Germany, June 2020 (online). *In the beginning was an ecosystem: The onset of evolution at the origin of life.*

University of Wisconsin - Parkside, Department of Biological Sciences, Apr. 2018. *A chemical ecosystem selection paradigm for studying the origin of life.*

Harvard University, Herbaria Seminar Series, Nov. 2017. *Exclusivity and species taxonomy in the face of horizontal gene transfer.*

Boston University, Systems Biology Colloquium, Nov. 2017. *A chemical ecosystem selection paradigm for studying the origin of life.*

Harvard University, Arnold Arboretum, Nov. 2017. *Phylogenomic insights into the evolutionary history of baobabs (Adansonia; Malvaceae).*

RECENT RECORDED CONFERENCE TALKS

Evolution 2023, June 2023, Albuquerque. *Adaptive evolution before genes: Traversing the eco-evo continuum during origins of life*: <https://www.youtube.com/watch?v=2porfj-pjHA>

NAMED LECTURES

University of Wisconsin, Madison, **Director's Lecture**, Sep. 2013

University of Washington, Seattle, **Melinda Denton Lecture**, May 2007

University of Cambridge, **Kenneth Sporne Lecture**, Dept. Plant Sciences, February 2008

OFF CAMPUS SERVICE

Editorial:

Associate editor, *Evolution Outreach and Education*, 2014-

Editorial board, *Life*, 2020-

Associate editor, *Australian Systematic Botany*, 2016-2019

Board of Reviewing Editors, *Science*, 2010-2017

Co-Editor, *The Plant Cell*, 2006-2012

Associate Editor, *International Journal of Plant Sciences*, 2003-2012

Editorial board, *Organisms, Diversity and Evolution*, 2000-2011

Editorial board, *Molecular and Developmental Evolution*. 1999-2012

Review board: *Yearbook of Science and Technology in Society*. 2003-2005

Associate Editor, *Systematic Biology*, 1995-2000

Associate Editor, *Evolution*, 2000-2003

Ad hoc journal/book reviewer for: African Journal of Biotechnology, American Naturalist, American Journal of Botany, Annals of Forest Science, Australian Journal of Botany, Biological Journal of the Linnean Society, Bioessays, Biology Direct, Biological Reviews, BioScience, BMC Evolutionary Biology, BMC Genetics, BMC Plant Biology, Botanical Studies, Bulletin of the Society of Systematic Biologists, Cladistics, Cognitive Science, Columbia University Press, Comptes Rendus Palevol, Developmental Genetics, Genome Biology and Evolution, Evolution, Evolution and Development, Evolutionary Education and Outreach, Fruits, International Association of Wood Anatomists, International Journal of Plant Science, Genetics, , Israel Journal of Ecology and Evolution, Journal of Heredity, Journal of Molecular Evolution, Journal of the Royal Society Interface, Journal of Tropical Ecology, Journal of Tropical Forestry Science, Journal of Undergraduate Science and Technology, Journal of Zoology, Life, Molecular Biology and Evolution, Molecular Phylogenetics and Evolution, Nature, Nature Chemistry, Nature Reviews Genetics, New Phytologist, PeerJ, Philosophy and Theory in Biology, Planta, Plant Journal, Plant Cell, Plant Molecular Biology, Plant Physiology, PLoS, PLoS One, Proceedings of the National Academy of Sciences, Proceedings of the Royal Society - B, Science, Science Advances, Smithsonian Institution Press, Systematic Biology, Systematic Botany, Theory in Biosciences, Trends in Ecology and Evolution, Trends in Plant Science.

Ad hoc grant/foundation reviewer for: AAAS symposium proposals; European Research Council; Guggenheim Foundation; Human Frontiers Science Program; MacArthur Foundation;

Marsden Fund (New Zealand); National Science Foundation (ADVANCE fellows program, ATOL program, Biotic Surveys and Inventories, International Programs, Systematic Biology, Population Biology, Developmental Mechanisms, HBCU Program, Midscale Research Infrastructure); National Research Fund (South Africa); Newnham College Cambridge; Newton Fund (Cambridge University); Royal Society Te Apārangi Marsden Fund; Sloan Foundation; Smithsonian Institution Scholarly Studies Program; UK Basic and Biomedical Science Research Council; USDA-CSREES; UW-Madison Research Forward.

Promotion/tenure reviews: Arizona State University, Barnard College, Brigham Young University, Cambridge University, Harvard University (4), Michigan State University, Oberlin College, Oklahoma State University, Rutgers (2) University, St. John's University (2), Tulane University, University of Alberta, University of Alaska - Fairbanks, University of Florida (2), University of Maryland, University of Minnesota (2), University of Maryland, University of Missouri, University of South Dakota, University of Texas - Austin, Washington State University, Wayne State University, Yale University (2).

Grant panelist: NASA FINESST program; NSF ADVANCE fellows program; NSF Plant Developmental Mechanisms; NSF Assembling the Tree of Life (ATOL) program; NSF NRT program; NSF Systematic Biology Program.

Service to scholarly societies:

Elected:

Society of Systematic Biology: President (elect-active-past) (2022-2024); Council member (2001-2003; 2010-2012)

AAAS: American Association for the Advancement of Science, Council Delegate representing the Section on Biological Sciences (2019-2022); Committee on Council Affairs (2020-2022)

American Genetics Association: Council member (2013-2015)

Appointed:

Botanical Society of America: Education committee (2013-2016); *ad hoc* committee on endowment (1999-2000)

American Genetics Association: Stephen J. O'Brien Awards Committee (2013-2015); Publications Committee.

American Society of Plant Taxonomists: Awards and Nominations Committee (2010-2011)

International Society of Phylogenetic Nomenclature: Nominating Committee (2007-2009)

Multinational Arabidopsis Steering Committee: Comparative Genomics and Natural Variation Subcommittee (2006-2007).

Society of Systematic Biology: Graduate Research Awards Committee (2000); Nominating Committee (2004-2005); Mayr Award Committee (2011); AAAS representative (2010-2012); Joint Committee on Creationism (2005-2007)

Society for the Study of Evolution: Hamilton Award Committee (2011)

Plant Science Research Network, Future of Graduate Training in Plant Science working group, 2016-2017.

Ontology-Based System for Querying Life in a Post-Taxonomic Age, Advisory Board (2015-2017)

Phylotranscriptomics Consortium, Advisory Board (2017-2020)
Research Coordination Network for exploration of life's origins, Steering Committee (2017-)

Volunteer:

Evolution conference, Undergraduate Diversity at Evolution mentor (2022, 2023)
Astrobiology Science Conference Undergraduate Mentor (2022)
SMBE Graduate student excellence and Young Investigator award review committee (2023)

Symposia organized:

From autocatalysis to evolution. 2022 Astrobiology Science Conference, Atlanta GA (co-convener)

Evolving Chemical Systems. 3-day workshop (co-organized with Chris Kempes and Oana Carja), Santa Fe Institute, November 2019.

Evolution in prebiotic and protobiological systems. 2019 Astrobiology Science Conference, Bellevue WA (co-convener)

Multi-level selection and the origins of life Evolution Joint Congress, Montpellier, France (co-organizers: Niles Lehman, Michael Travisano). August 2018.

Advances in the analysis of reticulate population networks SSB Symposium, Evolution, June 2016, Austin Texas (co-organizer with Claudia Solís-Lemus). June 2016.

Beyond Rate My Professors: The Future of Course and Instructor Evaluation. UW-Madison Teaching Academy Winter Retreat, January 2016 (speaker and member of organizing committee).

Enhancing Student Learning through Feedback. UW-Madison Teaching Academy Fall Symposium, October 2013 (Co-Chair of organizing committee)

Grading: From theory to practice. UW-Madison Teaching Academy Fall Symposium, September 2012 (Chair of organizing committee)

Green, Gene, Growing Machines: The Evolutionary Shaping of Plant Form. AAAS Annual Meeting, Chicago IL, February 2009.

Species in Phylogenetic Nomenclature. International Society for Phylogenetic Nomenclature. New Haven CT, June 2006 (with Benoit Dayrat).

Evidence for Evolution: Updating Darwin's Case. UW-Madison Darwin Day Outreach Symposium. Madison, WI, Feb. 11, 2006. (with Dana Geary and others).

Teaching phylogeny at the introductory and precollege levels. Evolution 2005, Fairbanks, AK, 2005. (with S. Donovan)

Developmental regulators and the evolution of plant morphology, Evolution 2004, Fort Collins, CO, 2004. (with C. Richards and P. Reeves)

The genetics of flower evolution, International Botanical Congress, St. Louis, Missouri, 1999. (with P. Cubas)

Outreach Activities:

Science and the origin of life. 90-minute presentation and lab tours with 48 10th graders. AVID/TOPS program, Madison West High School. April 2023.

An animal clade race. 50 minute presentation to 8th-Grade students, Storybook Middle School, Milwaukee, WI (remote). May 2021.

Science Explained: Astrobiology and the Origins of Life. 50 minute session at the Wisconsin Society of Science Teachers Annual Conference, Madison, WI. March, 2019.

- Teaching evolution.* 2hr workshop for AP Biology teachers. June 2018.
- Teaching phylogenies and tree thinking.* 2hr workshop for AP Biology teachers. June 2017.
- Teaching evolution.* 2hr workshop for K-12 teachers. Wisconsin Science Festival, Oct. 2015.
- Evolutionary Biology.* Two-day course for grandparents and grandchildren as part of Grandparents University. Madison WI, July 2012.
- The challenge and importance of teaching tree thinking.* Half-day module in the WI leads (CESA6) workshop for K6-9 teachers. Green Lake, WI, Sep. 2011.
- The challenge and importance of teaching tree thinking.* Half-day module in Crow/NESCent workshop for K6-12 teachers. Madison, WI, Aug. 2011.
- The challenge and importance of teaching tree thinking.* Half-day module for K6-12 teachers at the UW-Madison Darwin Day Outreach Symposium, Madison, WI, Feb. 2011.
- Unity and Diversity of Life.* Science Master's Institute, Madison Metropolitan School District & the University of Wisconsin. Four-day course for middle school teachers. June 2009.
- Unity and Diversity of Life.* Science Master's Institute, Madison Metropolitan School District & the University of Wisconsin. Four-day course for middle school teachers. July 2008.
- Diversity of Life/Cellular Structure and Function.* Science Master's Institute, Madison Metropolitan School District & the University of Wisconsin. Four day course for middle school teachers. July 2007.
- Evolution and tree thinking.* Three-day workshop for South African High School Teachers, July 2005.
- Molecular Systematics.* One-week workshop offered at the University of Madagascar, Antananarivo, Jan. 2005.
- The tree of life: Using phylogenies in the biology classroom.* Wisconsin Teacher Enhancement Program, University of Wisconsin. July 2004.
- The tree of life: Using phylogenies in the high school biology classroom (Genetics 677).* Wisconsin Teacher Enhancement Program, University of Wisconsin. June 2003.
- Phylogeny and Bioinformatics.* One-day module in the Arabidopsis molecular biology course. Cold Spring Harbor Laboratory. July 2003.
- The tree of life: Using phylogenies in the high school biology classroom (5 days full-time).* A course for teachers. Center for Innovation in Urban Education, Northeastern University. July 2000.
- Systematics theory module* (Organization for Tropical Studies, Tropical Plant Systematics course, Costa Rica). August 2000.
- The tree of life: Using phylogenies in the high school biology classroom (5 days full-time).* A course for teachers (for professional development points or graduate credit). Center for Innovation in Urban Education, Northeastern University. July 1999.
- How to build a phylogenetic tree.* Mini-course (2 days full-time), University of Sao Paulo, ESALQ campus, Piracicaba, Brazil. November 1998.
- Systematics theory module* (Organization for Tropical Studies, Tropical Plant Systematics course, Costa Rica). August 1998.
- Systematics theory module* (Organization for Tropical Studies, Tropical Plant Systematics course, Costa Rica). August 1996.

Recent outreach/education presentations

- Darwin and the Tree of Life.* Lakeland Audubon Society. 90-minute lecture and discussion, Jan. 2023.

- The Science of Life's Origin*. Beth Israel Center. 90-minute lecture and discussion, Oct. 2022.
- Darwin and the Tree of Life*. Driftless Dialogue. Kickapoo Valley Reserve. 90-minute lecture and discussion, Oct. 2021. [[lecture video](#)]
- In the beginning was a (chemical) ecosystem: Analog evolution and the origin of life*. Astrobiology Society, University of Manchester, UK. Oct. 2021.
- An inside-out origin of eukaryotes*. The Biology Society, Bangalore, India. Apr. 2021.
- Baobabs: Monstrous productions of the vegetable kingdom*. Presentation at Chilton Elementary/Middle School for Calumet STEAM Fest (Wisconsin Science Festival), Chilton WI. Oct. 2019.
- Building Life from Scratch*, Panel discussant, Interplanetary Festival, Santa Fe, June 2019 [[video](#)].
- Can life arise in the laboratory? A chemical ecosystem selection approach*. SPOC (Science Outreach, Policy, and Communication) Student Organization. Nov. 2018.
- Monstrous productions of the vegetable kingdom: Ecology and evolution of baobabs in Africa, Madagascar, and Australia*. WI Science Festival Lecture, Kettle Moraine State Forest Southern Unit. Oct. 2018.
- The Origin of Life as a Chemical Ecological Problem: New Ideas and New Experiments*. Wednesday Nite at the Lab. May 2018 (video available [here](#))
- The holobiont concept*. Madison Microbiome Meeting (M3), Panelist (Apr. 2018)
- Origins of life: Lessons from the CESPOoL*. 4th Tuesday Club, UW-Madison. March 2018.
- An evolutionary biologist's approach to the origin of life*. One hour lecture to the Biohouse residential learning community. UW-Madison, Nov. 2017
- Skittlebugs activity* (Introduction to natural selection for kids). At *After School Science*, Jan. 2017 and WI Science Festival, Nov. 2016
- Evidence for Evolution*. Presentation at Biologos Workshop for Scientists and Evangelical Pastors, Madison, Sept. 2015.
- Evolutionary trees and their importance*. 1hr+ public presentation for Ashland Science on Tap, Ashland WI. July 2015.
- Active learning in large lecture classes*. 45 minute podcast discussion. March 2013. https://uwmadison.box.com/files/0/f/713162783/1/f_6896633796

Radio/TV

- University of the Air, Wisconsin Public Radio, [The Science of Life's Origin](#), Nov. 21 2021 (50 minute interview)
- Larry Meiller Show, Wisconsin Public Radio, [Research on the Origin of Life Research](#), Aug. 6. 2020 (45 minute call in show – also with Lena Vincent)
- University Place, Wisconsin Public Television, [The Origin of Life as a Chemical Ecological Problem](#), Nov. 23, 2018. (45-minute lecture)
- WORT, Perpetual Motion Machine, Thursday, February 3, 2011 7:01 pm. (30-minute interview)
- Wisconsin Public Radio, University of the Air. Feb. 15, 2009. (60 minute interview on the Darwin Bicentennial).
- University Place, Wisconsin Public Television, [Darwin's Tree of Life](#), Dec. 21, 2011 (45-minute lecture)
- Air America Radio, Lee Wilcox Show, May 5, 2006 (30 minute discussion of evolution)
- Wisconsin Public Radio, University of the Air. Jan. 29, 2006. (60 minute discussion of evidence for evolution)

Wisconsin Student Radio (WSUM), Mad Science, Aug 18, 2006 (45 min discussion)

Consultation

Interviews with media outlets including: Australian Broadcasting Corp. (ABC), British Broadcasting Corp. (BBC), Economist, El Pais (Spain), LA Times, New York Times, National Public Radio (NPR), Offspring Films, Polish Radio, Quanta, Topic Magazine, Washington Post.

Consultant for LiveScience article on photosynthesis (2015): <http://www.livescience.com/51720-photosynthesis.html>

Consultant for LiveScience on taxonomy (2020): <https://www.livescience.com/taxonomy.html>

Consultant on new Advance Placement Tests in Biology, The College Entrance Examination Board. Fall 2010.

Recent outreach Publications

Teaching triggers search for origins of life on Earth: May 5, 2019, Wisconsin State Journal.

UNIVERSITY OF WISCONSIN SERVICE

Current:

Department of Botany Chair.

Department of Botany, committees: Undergraduate and Curriculum Committee Chair (2022-); Personnel Committee (2021-2023); Diversity Equity, Inclusion and Climate Committee (2020-); Colloquium Committee (2022-);

Undergraduate Advisor: Biology Evolution Option and Botany

Distinguished Teaching Awards Committee (2020-2023)

Claudia Solís-Lemus, Mentoring Committee, Department of Plant Pathology (2021-)

Jake Brunkard Mentoring Committee, Laboratory of Genetics (2022-)

Wisconsin Center for Origins Research, Bylaws Committee (2022-2023)

Past:

Department of Botany:

Chair (2008-2012; 2015-2017); Advancement Committee (Chair, 2012-2014); Awards Committee (Chair, 2018-2021); Finance Committee (2013-2014); Plant physiology faculty search committee (2012-2013); Cecile Ané Mentoring Committee (2004-2012); Eve Emshwiller Mentoring Committee (2006-2012); Botany Faculty Search Committee (chair) (2004-2005); TA Evaluation and Awards Committee (2003-2005, chair 2004-2005); Colloquium Committee (chair; 2001-2007); Capital Equipment Committee (2001-2007); Curriculum Committee (2018-2020); Plant Structure Search Committee (2002-2003); Bret Larget Mentoring Committee (2002-2005); Chris Day Mentoring Committee (2004-2007); Marisa Otegui Mentoring Committee (2005-2009). Budget Subcommittee (2003-2005); Curriculum Committee (2003-2006); TA Training Committee (chair, 2004-2008); Space Committee (chair, 2005-2007); Herbarium Director Search Committee (2006-2007); Graduate Program Review Committee (chair, 2006-2007); Faculty Senator (2002-2005), Alternate (2005-2007).

J. F. Crow Institute for the Study of Evolution: **Director (2010-2013)**.

Evolution Coordinating Committee (Chair, 2002-2013; co-chair 2013-2014)

SciMedGRS, AOF review committee (2019, 2020, 2021)
UW Teaching Academy, Executive Committee (2011-2013, 2015-2018), Chair (2016)
Laboratory of Genetics: Genetics Training Program: Admissions Committee (2004); Genetics Training Program: Curriculum Committee (2005-2010): Bret Peyseur Mentoring Committee, Genetics, (2005-2010); Full Professor Promotion Committee, Department of Genetics (2022)
College of Letters and Science: Office of Service Learning & Community Based Research Faculty Advisory Committee (2010): Molecular Biology Major External Review Committee (2004); TA training, 2010: panelist on “TAing lab courses.”
Institute for Cross-College Biology Education Transitional Advisory Committee (2004-2005)
Introductory Biology (151/152) Executive Committee (2006-2007).
Graduate School: Biological Sciences Fellowship committee (2005-2008)
University Book Store Academic Excellence Award Selection Committee (Member 2003-2006; Chair 2005-2006)
Biological Sciences Strategic Planning Committee (2005-2008; Chair, 2006-2007)
Middle School Natural Sciences Education Committee (2006-2007)
Introductory Biology Innovation Committee (2011-2012)
UW Teaching Academy, Assessment Subcommittee (Chair, 2011-2013)
UW-TEaCH: Member, U-CLaSS development team (2015-2016)
Department of Zoology, Evolutionary Biology Faculty Search Committee (2013-2014)
Physics Academic Program Review Committee (2013-2014)
Biology Majors Program Committee (2013-2015; 2019-2022)
Ad hoc de novo tenure review committee (2015-2016)
UW Collaborative for Advancing Teaching and Learning, Executive Committee Member (2016)
Meyerhoff Scholarship Selection Committee, Associated Students of Madison (2016)
Graduate School Future of the Dissertation Committee (2015-16)
Statistics Academic Program Review Committee (2017-2018)
Evolution Coordinating Committee (2002-2021); Undergraduate subcommittee (Fall 2018-2021)
Biology Majors Program Committee (Fall 2018-Fall 2022); Diversity subcommittee (Fall 2020-2022)
Origins of Life Cluster Steering Committee (2021-2022)
Exoplanet Spectroscopy Faculty Search Committee (2021-2022)
Biophysics Curriculum Committee (2023-)
Bio 151/152 Coordinator Search Committee (summer 2023)
UW partnership with Nazarbayev University, Astana, Kazakhstan. Panelist for department chairs (May 2023)

TEACHING INTERESTS

Undergraduate course in introductory biology (genetics and evolution) and biological diversity; graduate courses in evolutionary theory, origin of life, and pedagogy; outreach workshops for teachers on evolutionary biology and tree thinking

TEACHING AWARDS

Distinguished Fellow of the University of Wisconsin Teaching Academy: 2020
University Housing Honored Instructor Award: S2013, S2014, S2018, F2018, F2019
Chancellor's Distinguished Teaching Award, UW-Madison: 2015
Fellow of the University of Wisconsin Teaching Academy: 2010

COURSES (last five years)

Introductory Biology (Bot/Zoo 152). 2 lecture sections. 5 cr. Spring 2022 (33%). ~1000 students

Foundations of Evolution (Bot 820). 2 cr. Fall 2022 (50%). 13 students.

General Botany (Botany 130). 5 cr. Fall 2022 (50%). 192 students.

Astrobiology and Origin of Life Graduate Seminar (Botany 575). 2 cr. Spring 2022 (100%). 10 students.

Introductory Biology (Bot/Zoo 152). 2 lecture sections. 5 cr. Spring 2022 (33%). ~900 students

Foundations of Evolution (Bot 820). 2 cr. Fall 2021 (50%). 9 students.

Evolutionary Biology (Bot 410). 3 cr. Spring 2021 (100%). 78 students.

Introductory Biology (Bot/Zoo 152). 2 lecture sections. 5 cr. Spring 2021 (33%). ~950 students

Foundations of Evolution (Bot 820). 2 cr. Fall 2020 (50%). 14 students.

Introductory Biology (Bot/Zoo 152). 2 lecture sections. 5 cr. Spring 2020 (33%). ~600 students

Freshman Interest Group: Major Transitions in Evolution (Inter-LS 101). 3 cr. Fall 2019 (100%). 18 students

Foundations of Evolution (Bot 820). 2 cr. Fall 2019 (50%). 10 students.

Evolutionary Biology (Bot 410). 3 cr (online). Summer 2019 (50%). 35 students.

Introductory Biology (Bot/Zoo 152). 2 lecture sections. 5 cr. Spring 2019 (33%). ~650 students

Freshman Interest Group: Major Transitions in Evolution (Inter-LS 101). 3 cr. Fall 2018 (100%). 20 students

Foundations of Evolution (Bot 820). 2 cr. Fall 2018 (50%). 10 students.

Evolutionary Biology (Bot 410). 3 cr (online). Summer 2018 (50%). 35 students.

Astrobiology and Origin of Life Graduate Seminar (Botany 575). 2 cr. Spring 2018 (100%). 4 students.

Introductory Biology (Bot/Zoo 152). 2 lecture sections. 5 cr. Spring 2018 (33%). ~650 students

Freshman Interest Group: Major Transitions in Evolution (Inter-LS 101). 3 cr. Fall 2017 (100%). 20 students

Foundations of Evolution (Bot 820). 2 cr. Fall 2017 (50%). 12 students.

Introductory Biology (Bot/Zoo 152). 2 lecture sections. 5 cr. Spring 2017 (33%). ~650 students

Plant Systematics & Evolution Seminar (Bot 940). "History of Phylogenetic Systematics." 1 cr. Spring 2017 (33%)

Freshman Interest Group: Major Transitions in Evolution (Inter-LS 101). 3 cr. Fall 2016 (100%). 19 students

Foundations of Evolution (Bot 820). 2 cr. Fall 2016 (50%). 10 students.

GUEST LECTURES (last 5 years)

What is Life? Biological Life in French Culture and Literature (French 211). Spring 2020, Spring 2022 (Lecture on origins of life).

What is Life? Biological Life in French Culture and Literature (French 211). Spring 2020, Spring 2021 (Lecture on definitions of life).
Evolutionary Biology (Zoology 410). Fall 2019 (Lecture on plant evolution)
Frontiers in Plant Science (Botany 575). Spring 2019 (Lecture on baobabs and their evolution).
Evolution: Origins and Contemporary Questions (Division of Continuing Education 5718-18-LAAS). Spring 2018 (One lecture on Darwin and tree thinking).
Evolutionary Biology (Zoology 410). Fall 2017 (One lecture on plant evolution)
Evolutionary Biology (Zoology 410). Fall 2016 (One lecture on plant evolution)
Integrated Biological Sciences Summer Research Program. Summer 2016 (One lecture on *Evolution: the BIG big idea*)

OTHER TEACHING (last 5 years)

Life: Easy or Hard? Introductory lecture in the MOOC Origins of Life, from complexityexplorer.org Recorded Apr. 2019 [[Lecture link](#)]
What is the meaning of 'life'? Introductory lecture in the MOOC Origins of Life, from complexityexplorer.org Recorded Apr. 2019 [[Lecture link](#)]
A Recipe for Adaptation. Lecture in the MOOC Origins of Life, from complexityexplorer.org Recorded Apr. 2019 [[Lecture link](#)]
Origins of Eukaryotes? Lecture in the MOOC Origins of Life, from complexityexplorer.org Recorded Apr. 2019 [[Lecture link](#)]

ADVISING

Past Scientific Visitors: Kristina Jones (Visiting scientist 1997-2000); Claire Williams (Visiting scientist 1998); James Smith (Sabbatical 2000); Kweon Heo (Sabbatical, 2006); Maria Logacheva (Visiting Post-doc, 2009).
Current postdocs: **Praful Gagrani** (2023-).
Past postdocs (dates; current position): **Elena Conti** (1995-1996; Professor, Institut für Systematische Botanik, Zürich), **William Alverson** (1995-1997; Senior Scientist, University of Wisconsin Botany Department - retired), **Guoping Shu** (1996-1998; Senior Vice President, Beijing Lantron Seed Corp), **Reto Nyffeler** (1997-2000; Curator of Phanerogams, Institut für Systematische Botanik, Zürich), **Ho-Sung Yoon** (1999-2002; Professor, Department of Biology, Kyungpook National University, Daegu, South Korea), **Alan Yen** (1999-2001; Director of Licensing and Business Development, Boston Children's Hospital), **Maria von Balthazar** (2002-2003; Universitätsassistentenstelle, University of Vienna), **Mathieu Perret** (2003; Curator, Conservatoire et Jardin Botaniques de la Ville de Genève). **Marek Sliwinski** (2003-2006; Associate Professor, Univ. of N. Iowa). **Ning Liu** (2007-2009; Professor & Principal Investigator, National Engineering Research Center for Vegetables, Beijing Academy of Agricultural and Forestry Sciences). **John Stanga** (2010-2012; Assistant Professor, Mercer University); **Stephanie Colón-Santos** (2019-2022); **Zhen Peng** (2019-2022; Research Associate, Dept. Bacteriology, U. Wisconsin-Madison).
Current doctoral students: **Tymofii Sokolskyi** (2021-; Ph.D. Astrobiology and Evolution); **Pavani Ganju** (2022-; Ph.D. Botany); **John Anderson** (2023-; Ph.D. Botany).

Previous doctoral students (dates; current position): **Weber Amaral** (1998; Professor, University of Sao Palo ESALQ and CEO, Brazilian Center for Biofuels), **Barbara Whitlock** (2000; Associate Professor, Miami University), **Ryan Oyama** (2002: Research Scientist, Pioneer Hi-Bred, Waimea, Kauai, Hawaii), **Lena Hileman** (2002: Associate Professor, University of Kansas), **Dianella Howarth** (2002; Professor and Chair, St. John's University); **Stacey Smith** (2001-2006 Botany; Associate Professor, University of Colorado - Boulder); **Margaret Hanes** (née Koopman) (2003-2008 Botany; Associate Professor and Herbarium Director, Eastern Michigan University); **Ivalú Cacho** (2003-2009 Botany; Assistant Professor, UNAM, Mexico); **Raúl Correa** (2004-2010 Genetics; Postdoctoral Fellow, Baylor College of Medicine/NASA Astrobiology Institute); **Talline Martins** (2005-2011 Genetics; Director of the Office of Graduate Professional Development, University of Florida, Gainesville); **Pulikesi C. R.** (2008-2015 Plant Breeding/Plant Genetics; National Biodiversity Authority, India); **Abigail Mazie** (2008-2015 Botany, Postdoctoral Fellow, University of Pittsburgh); **Alison Scott** (2010-2017; Botany; Postdoctoral Fellow, Max Planck Institute for Plant Breeding Research); **Nisa Karimi** (2013-2018; Botany, Assistant Scientist, Missouri Botanical Garden); **Lena Vincent** (2017-2022; Ph.D. Astrobiology and Prebiotic Chemistry. NASA Postdoctoral Fellow, JPL); **Melody Sain** (2015-2022; Botany. Burpee Postdoctoral Fellow, Bucknell University); **Praful Gagrani** (2019-2023; Physics. Postdoc, University of Wisconsin-Madison).

Doctoral students advised as interim advisor: **Kobinah Abdul-Salim** (2002; Primary Advisor Peter Stevens), **Charles Davis** (2002; Professor, Harvard University; Primary advisor Michael Donoghue), **Richard Ree** (2001; Curator, Field Museum of Natural History; Primary advisor Michael Donoghue)

Other current doctoral committees: Libby Berryman (Botany); Corbin Bryan (Botany); Alexander Damian (Botany); Myron Child (Genetics); Jaime Cordova (Genetics); Alexa DiNicola (Botany); Evan Eifler (Botany); Tabitha Faber (Botany); Evrim Fer (Microbiology); Lauren Frankel (Botany); Savannah Gentry (Botany); Donny Hoang (Microbiology); Dean Jaroi (Chemistry); Christopher McAllester (Genetics); Madelyn Schaut (Botany); Cecelia Stokes (Botany).

Other previous doctoral committees (year of graduation): Benjamin Adamczyk (Botany – 2009); Carlos Arbizu Berrocal (Plant Breeding/Plant Genetics – 2016); Rafael Arevalo (Botany – 2014); Brent Berger (Botany – 2012); Hayley Boigenzahn (Chemical and Biological Engineering – 2023); Kirsten Bomblies (Genetics – 2004); Jane Bradbury (Botany – 2013); Eric Caldera (Microbiology – 2017); Sara Carlson (Yale University – 2010); Samuel Donovan (Curriculum and Instruction – 2005); Alfonso Doucette (Botany – 2017); Chloe Drummond (Botany – 2018); Megan Frayer (Genetics – 2022); Andrew Gardner (Botany – 2013); Jacob Golan (Botany – 2020); Benjamin Grady (Botany - 2012); Philip Gonsiska (Botany - 2010); Jocelyn Hall (Botany – 2003); Andrew Hipp (Botany – 2004); (Zoology – 2018); Rachel Jabaily (Botany – 2009); Eunsoo Kim (Botany – 2006); Zachary Lemmon (Genetics – 2014); Ruiyan Luo (Statistics – 2007); Brian McCloone (Philosophy – 2016); Stephanie McFarlane (Botany, **2023**); Daniel Minahan (Zoology – 2019); Candace Moore (Botany - 2013); John Pritchard (Plant Breeding/ Plant Genetics – 2004); Ricarda Riina-Olivares (Botany – 2006); Matthew Pace (Botany - 2015); Laura Shannon (Genetics – 2013); Claudia Solis Lemus (Statistics - 2015); Heejung Shim (Statistics – 2010); Terra Theim (Botany – 2006); Benjamin Van

Ee (Botany – 2006); Laura Vaughn (Genetics – 2010); Jay Walker (Botany – 2006); Brian Walsh (Botany – 2014); Shenyi Wang (Botany - 2020); Michael White (Genetics – 2011); Evelyn Williams (Botany - 2011); Erik Wright (Microbiology - 2016); Qiong Zhao (Genetics – 2006); Alejandro Zuluaga (Botany - 2015).

Visiting graduate students: Mariano Avino (2005); Jipei Yue (2006); Anders Larsen (2007); Marilia Duarte (2009); Camille Evin (2023).

Previous Master’s students: **Michael Berg** (2017; Origin of Life [Special Committee Degree]; Associate Scientist, Pharmaceutical Product Development, LLC); **Rebecca Oldham** (Botany - 2006); **Talia Sankari** (2021-2022; Bacteriology).

Other previous Master’s committees: Mathew Nelsen (Botany 2005); Gemma May (Zoology 2004); Kelsey Huisman (Botany 2021); Michael Kartje (Genetics 2021); Kathryn Schmidt (2021-; Microbiology).

Research Interns/Limited Term Employees: **Shawn Christensen** (2017-2018; Graduate student UC-Davis); **Mitchell Krismer** (2018); **Noah Stenz** (2015-2016; Amazon.com); **Alex Plum** (2021; Doctoral Student, UCSD).

Current undergraduate research assistants/independent study: **Emily Jacobson** (2020-; Undergraduate Research Scholars Program); **Rahul Kartha** (2020-; Undergraduate Research Scholars Program); **Ronan Montgomery-Taylor** (2021-); **Keeley Kuru** (2021-); **Esau Allen** (2022-; Undergraduate Research Scholars Program); **Justin Yang** (2022-).

Previous undergraduate research assistants/independent study (years; awards; last known position): **Karen Walsh** (2001-2004; Awarded Hilldale Fellowship and Sophomore Summer Apprenticeship; Master of Public Policy). **Rachel Warrich** (2002). **Tara Mehta** (2002-2004; Undergraduate Research Scholars Program). **Steven Hall** (2002-2004; Awarded Sophomore Summer Apprenticeship and George Enfield Frazer, Jr. Scholarship; Assistant Professor at Iowa State U.). **Nicole Van Abel** (2004-2005; Awarded Sophomore Summer Apprenticeship and Honors Senior Thesis Grant; Doctor of Veterinary Medicine); **Justin Bosch** (2004-2006; Awarded Hilldale Fellowship; PhD UC-Berkeley, post-doc Harvard U); **Adam Clements** (2004-2005; Undergraduate Research Scholars Program); **Mai Xiong** (2004-2005; Undergraduate Research Scholars Program). **Christopher Lizon** (2005); **Vanessa Kolberg** (2005-2006); **Steven Blinka** (2006-2009; L&S Honors Program Research Award; MD-PhD, Primary Care, U. Washington-Seattle); **Kevin Miller** (2006-2008); **David Silverman** (2007); **Raman Kutty** (2007-2008); **Brittany Ota** (2007-2008); **Brandon Weathersby** (2007); **Rebecka Pralle** (2007-2009); **Jacob Smith** (2007-2008); **Arielle Woods** (2008); **Evan Nondorf** (2008); **Jaime Shier** (2008); **Amanda Teschke** (2008-2009); **Jeremy Berg** (2008-2010; Frits Went Research Scholarship; PhD UC-Davis; Assistant Professor of Human Genetics U. Chicago); **Tanjina Shabu** (2008-2011; Masters of Public Health); **Bohkyeong Suh** (2009-2011; Masters of Public Health; Dental School); **Colton Skenandore** (2010); **Caitlin Riegert** (2010); **Aaron Roznowski** (2010-2011; Frits Went Undergraduate Research Scholarship; Postdoc, U. Arizona); **Pa Yiar Khang** (2010-2011; NSF EDEN research internship); **John Kernien** (2010-2011); **Emily Kief** (2010-2013; Graduate Student, Biomedical and Health Information Sciences, UIC); **Morgan Sell** (2010-2011); **Jacob Kream** (2011); **Thomas Coolidge** (2010-2011); **Thiago Braga** (2011); **Ajay Shah** (2011); **Sean Kunderinger** (2011-2012); **Robele Kebede** (2011-2012); **“Mimi” Young Yoon** (2012-2014; Frits Went Research Scholarship; graduate program, U. Chicago); **MacKenzie Taychert** (2012); **Emma Watermolen** (2012-2014); **Noah Stenz**

(2013-2014; Amazon.com); **Wonuk Lee** (2013-2014); **Alexandra Cohn** (2013; L&S Sophomore Summer Apprenticeship; UW-Medical School); **AnaElise Beckman** (2013; L&S Sophomore Summer Apprenticeship); **Richard Muggli** (2013-2014); **Bella Sobah** (2013-2104, JD); **Margaret Habib** (2014-2015); **Xing Dong** (2015-2016; UW-Pharmacy); **Daniel Dryer** (2015-2016); **Michael Hermsen** (2016-2017; L&S Welton Summer Apprenticeship; U. Chicago Medical School); **Rachel Clausen** (2015-2017); **Keith Franke** (2016-2017); **Mitchell Krismer** (2015-2018); **Jacob Cosby** (2017-2020; Undergraduate Research Scholars Program); **Ian McCormick** (2018-); **Erin Seablom** (2018-); **Abby Schweiner**, (2015-2018); **Samuel Saghafi** (2017-2018); **Jakob Meyer** (2018-2019); **Gage Siebert** (2018-2019; Undergraduate Research Scholars Program); **Talia Sankari** (2019-2020); **Jacob Yourich** (2017-2019; Undergraduate Research Scholars Program); **Libby Berryman** (2019-2020; Graduate student in Botany, UW); **Joyce Riphagen** (2020); **Alex Plum** (2017- Undergraduate Research Scholars Program; Sophomore Apprenticeship; Hilldale Fellowship; Rhodes Finalist; graduate student Physics, UCSD). **Brandon Dawning** (2018-2020; Undergraduate Research Scholars Program; Sophomore Summer Apprenticeship); **Brenna Fricke** (2022); **Steven Manos** (2021-2022).

Summer Research Opportunity Students: **Mackenzie Taylor** (Truman State U.; 2006); **John Malloy** (U. Maryland Baltimore County; 2014); **Karla Martin** (Xavier U., SIGNALS SROP; 2016); **Ivelisse Cappiello Cosme** (U. Puerto Rico – Ponce; 2018)

High School interns: **Daniel Wear** (2011, 2012); **Norah Ntambi** (2011; PEOPLE program)