

ASHLEY N. EGAN

Curriculum Vitae

Assistant Professor and Herbarium Curator; East Carolina University
 Department of Biology and North Carolina Center for Biodiversity,
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EDUCATION

- Doctor of Philosophy**, December 2006 2001-2006
 Brigham Young University, Provo, UT. Department of Microbiology & Molecular Biology.
 Dissertation: “Phylogenetics of North American Psoraleeae (Leguminosae): Rates and Dates
 in a Recent, Rapid Radiation.” Keith A. Crandall, advisor.
- Bachelor of Science**, December 1998 1996-1998
 Utah State University, Logan, UT. Department of Biology. Minor in Chemistry. Honors
 Thesis: “The Resolution of Inter-Simple Sequence Repeat (ISSR) Markers in *Ipomopsis*
aggregata and *I. tenuituba* (Polemoniaceae).” Paul G. Wolf, advisor.

PROFESSIONAL EXPERIENCE

- 2010-present **Assistant Professor**. East Carolina University. Department of Biology.
 Bioinformatics, computational biology, and comparative genomics of polyploids
 and molecular systematics of Phaseoleae tribe (Leguminosae).
- 2010-2013 **Visiting Scholar**. Cornell University. Department of Plant Biology and L.H.
 Bailey Hortorium. Assessing rates of cryptic polyploidy and diploidization in
 phaseoloid legumes (Leguminosae).
- 2010 **Research Associate**. Cornell University. Department of Plant Biology and L.H.
 Bailey Hortorium with Jeff J. Doyle. Phylogenetics and comparative genomics of
 polyploids and Phaseoleae tribe (Leguminosae).
- 2007-2009 **Postdoctoral Associate**. Cornell University. Department of Plant Biology and
 L.H. Bailey Hortorium under Jeff J. Doyle. Phylogenetic systematics of subtribe
 Glycininae (Leguminosae); polyploidy and genomics.
- 2001-2006 **Research & Teaching Assistant**. Graduate Student. Brigham Young University.
 Department of Microbiology and Molecular Biology under Keith A. Crandall.
 Evolution, phylogenetics, and population genetics of tribe Psoraleeae
 (Leguminosae); Laboratory and classroom teaching.
- 2000-2001 **Plant Systematics Lab Manager**. University of Utah. Department of Biology
 under Dr. Lynn Bohs. Systematics of Solanaceae, mentoring and lab
 management.
- 1996-1998 **Howard Hughes Medical Institute Undergraduate Research Fellow**. Utah
 State University. Department of Biology under Paul G. Wolf. Population genetics
 of *Ipomopsis* (Polemoniaceae) and *Erythronium* (Liliaceae).

GRANTS, FELLOWSHIPS, and AWARDS

- 2012 **National Science Foundation.** “MEETING: Growing the Next Generation in Plant Genomics.” 7-11 July, 2012, Columbus, Ohio, USA. IOS, \$7,462
- 2012 **National Science Foundation.** “REU: Assessing the evolutionary history, taxonomy, and genetic diversity of *Pueraria* (Fabaceae: tribe Phaseoleae).” DEB, \$7,500
- 2011 **National Science Foundation.** “Assessing the evolutionary history, taxonomy, and genetic diversity of *Pueraria* (Fabaceae: tribe Phaseoleae).” Sole PI, 2011-2014. \$500,056
- 2011 **Torrey Botanical Society Symposium Award \$1000; Botanical Society of America – Genetics Section \$1200, Botanical Society of America – Systematics Section \$600, and American Society of Plant Taxonomists Symposium Awards \$600**
- 2009 **Postdoctoral Fellowship Award.** National Library of Medicine, Computational Biology. (Declined).
- 2006 **Grant in Aid of Research.** United States Bureau of Land Management. “The Population History and Conservation Genetics of *Pediomelum pariense*, a Rare Utah Endemic (Leguminosae).” \$1,500
- 2006 **Grant in Aid of Research.** Utah Native Plant Society. “The Population History and Conservation Genetics of *Pediomelum pariense*, a Rare Utah Endemic (Leguminosae).” \$1,000
- 2001-2006 **Graduate Research/Teaching Assistantship.** Molecular and Microbiology Department. Brigham Young University. \$85,000
- 2005 **Graduate Studies Research Award.** Brigham Young University Graduate Studies. “Phylogeny, Biogeography, and Diversification of North American Psoraleeae (Leguminosae).” \$6,500
- 2005 **Research Presentation Award,** Brigham Young University Grad Studies. \$400
- 2005 **American Society of Plant Taxonomists Graduate Research Fellowship.** “Phylogenetics and Biogeography of North American Psoraleeae (Leguminosae) Based on Nuclear and Chloroplast DNA Sequences: A Network-Based Approach.” \$700
- 2004 **Society of Systematic Biologists Graduate Fellowship.** “The Impact of Evolution on Essential Oil Content of Nepetoideae Genera (Labiatae).” \$1,900
- 2003 **Brigham Young University Cancer Research Center Graduate Fellowship.** “Correlation of Chemopreventive Ability and Phenolic Content in Labiatae within a Phylogenetic Framework.” \$5,500
- 1998 **Magna cum Laude.** Utah State University.
- 1998 **Undergraduate Research and Creative Opportunities Grant** in Aid of Research. Utah State University Honors Program. Honors thesis entitled “The Resolution of Inter-Simple Sequence Repeat (ISSR) Markers in *Ipomopsis aggregata* and *I. tenuituba* (Polemoniaceae).” \$2,280
- 1998 **Morse Scholarship.** Utah State University Honors Program.
- 1996-1998 **Dean’s List.** Utah State University.
- 1997-1998 **Howard Hughes Medical Institute Undergraduate Research Fellowship.** Howard Hughes Medical Institute. Utah State University. Project entitled “Genetic Differentiation Between Populations of *Erythronium grandiflorum* as Contributed by Isolation by Distance vs. Isolation by Phenology.”

PUBLICATIONS

- Ashfield, T†, **A.N. Egan**,† B.E. Pfeil,† N.W.G. Chen, R. Podicheti, M.B. Ratnaparkhe, C. Ameline-Torregrosa, R. Denny, S. Cannon, J.J. Doyle, V. Geffroy, B.A. Roe, M.A. Saghai Maroof, N.D. Young, R.W. Innes. 2012. “Evolution of a complex disease resistance gene cluster in diploid *Phaseolus* and tetraploid *Glycine*.” *Plant Physiology* 159(1): 336-354. doi: <http://dx.doi.org/10.1104/pp.112.195040> († denotes equal contribution).
- Acuna, R., B.E. Padilla, C.P. Florez, J.D. Rubio, J.C. Herrera, P. Benavides, S.-J. Lee, T.H. Yeats, **A.N. Egan**, J.J. Doyle, J.K.C. Rose. 2012. “Adaptive horizontal transfer of a bacterial gene to an invasive insect pest of coffee.” *Proceedings of the National Academy of Sciences of the United States of America*. doi: 10.1073/pnas.1121190109
- Egan, A.N.** In Press. *Ladeania*. For: Flora of North America Editorial Committee, eds. 1993+. Flora of North America North of Mexico. 12+ vols. New York and Oxford. Vol. 10 & 11.
- Egan, A.N.**, J. Schlueter, and D. Spooner. 2012. “Applications of next-generation sequencing techniques in plant biology.” *American Journal of Botany*. 99(2): 175-185.
- Egan, A.N.** and J.J. Doyle. 2010. “A comparison of global, gene-specific, and relaxed clock methods in a comparative genomics framework: Dating the polyploid history of soybean (*Glycine max*).” *Systematic Biology* 59(5): 534-547.
- Doyle, J.J., and **A.N. Egan**. 2010. “Dating the origins of polyploidy events.” *New Phytologist*. 186(1:Sp. Iss SI)73-85.
- Egan, A.N.** and J.L. Reveal. 2009. “A new combination in *Pediomelum* and a new genus, *Ladeania*, from western North America (Fabaceae, Psoraleeae)”. *Novon* 19(3):310-314.
- Egan, A.N.** and K.A. Crandall. 2008. “Divergence and diversification in North American Psoraleeae (Fabaceae) due to climate change.” *BMC Biology* 6:55.
- Innes R.W., C. Ameline-Torregrosa, T. Ashfield, E. Cannon, S.B. Cannon, B. Chacko, N.W.G. Chen, A. Couloux, A. Dalwani, R. Denny, S. Deshpande, **A.N. Egan**, N. Glover, C.S. Hans, S. Howell, D. Ilut, S. Jackson, H. Lai, J. Mammadov, S. Martin del Campo, M. Metcalf, A. Nguyen, M. O’Bleness, B.E. Pfeil, R. Podicheti, M.B. Ratnaparkhe, S. Samain, I. Sanders, B. Séguens, M. Sévignac, S. Sherman-Broyles, V. Thareau, D.M. Tucker, J. Walling, A. Wawrzynski, J. Yi, J.J. Doyle, V. Geffroy, B.A. Roe, M.A. Saghai Maroof, N.D. Young. 2008. “Differential accumulation of retroelements and diversification of NB-LRR disease resistance genes in duplicated regions following polyploidy in the ancestor of soybean.” *Plant Physiology* 148(4):1740-1759.
- Wawrzynski A., T. Ashfield, N.W.G. Chen, J. Mammadov, A. Nguyen, R. Podicheti, S.B. Cannon, V. Thareau, C. Ameline-Torregrosa, E. Cannon, B. Chacko, A. Couloux, A. Dalwani, R. Denny, S. Deshpande, **A.N. Egan**, N. Glover, S. Howell, D. Ilut, H. Lai, S. Martin del Campo, M. Metcalf, M. O’Bleness, B.E. Pfeil, M.B. Ratnaparkhe, S. Samain, I. Sanders, B. Séguens, M. Sévignac, S. Sherman-Broyles, D.M. Tucker, J. Yi, J.J. Doyle, V. Geffroy, B.A. Roe, M.A. Saghai Maroof, N.D. Young, R.W. Innes. 2008. “Replication of nonautonomous retroelements in soybean appears to be both recent and common.” *Plant Physiology* 148(4):1760-1771.
- Egan, A.N.**, and K.A. Crandall. 2008. “Incorporating gaps as phylogenetic characters across eight DNA regions: ramifications for North American Psoraleeae (Leguminosae).” *Mol. Phylogenet. Evol.* 46(2): 532-546.
- Egan, A.N.** and K.A. Crandall. 2006. *Theory of Phylogenetic Estimation in Evolutionary Genetics: Concepts and Case Studies*. C. W. Fox and J. B. Wolf. London, Oxford University Press.

- Allison, J., M.W. Morris, and **A.N. Egan**. 2006. "A new species of *Pedimelum* (Leguminosae) from the Piedmont area of Georgia and South Carolina." *SIDA, Contributions to Botany*. 22(1): 227-241.

MANUSCRIPTS IN REVIEW OR PREP

- Yahara T et al. In Review. "Global legume diversity assessments: concepts, key indicators, and strategies." *Taxon*.
- Legume Phylogeny Working Group. In Review. "Legume phylogeny and classification in the 21st century: progress, prospects and lessons." *Taxon*.
- Egan, A.N.**, and J.J. Doyle. In Revision. "Parsing Phylogenetic Signal Within and Among Linked Nuclear Genes in Subtribe Glycininae (Leguminosae): A Case of Phylogenetic Incongruence." *Systematic Biology*.
- Egan, A.N.**, M. Brewer, and J.J. Doyle. In Prep. "Investigating polyploidy and differential gene expression in two species of *Erythrina* (Fabaceae) using comparative transcriptomics." *American Journal of Botany*.
- Egan, A.N.**, and J.L. Reveal. In Prep. *Pedimelum*. For: Flora of North America Editorial Committee, eds. 1993+. Flora of North America North of Mexico. 12+ vols. New York and Oxford. Vol. 10 & 11.

INVITED SEMINARS

- 2012 Henan Institute of Science and Technology, Xinxiang, Henan, China, May.
- 2012 University of North Carolina – Charlotte, Charlotte, NC, March.
- 2012 Duke University, Durham, NC. March.
- 2012 Wake Forest University, Winston-Salem, NC. February.
- 2011 Brigham Young University, Provo, UT. November.
- 2010 East Carolina University, Greenville, NC. March.
- 2010 Black Hills State University, Spearfish, SD. January.
- 2009 Arkansas State University – Jonesboro, Jonesboro, AR. April.
- 2009 Winthrop University, Rock Hill, SC. April.
- 2009 University of Memphis, Memphis, TN. February.
- 2008 Hendrix College, Conway, AR. December.
- 2008 Rocky Mountain Research Station, USDA, Provo, UT. November.
- 2008 University of Nebraska – Lincoln, Lincoln, NE. January.
- 2006 Cornell University, Ithaca, NY. October.

PRESENTATIONS

(* invited, ^author but not presenter)

- 14th Biennial Conference on the Molecular & Cellular Biology of the Soybean*** Aug 12-15, 2012
 "Evolution of a complex disease resistance gene cluster in soybeans and relatives" Des Moines, Iowa
- Botanical Society of America Annual Meeting*** July 7-12, 2012
 "Assessing the Polyploid origin of the genus *Erythrina* (Fabaceae)." Columbus, Ohio.
- Planet Under Pressure^** Mar 26-29, 2012
 "Global legume diversity assessment as the first step of global legume diversity assessments." London, England
- Women Evolving Biological Sciences Symposium*** Nov 6-9, 2011

- “Evolutionary history of phaseoloid legumes.” Durham, North Carolina
International Workshop on Global Legume Diversity Assessment* Aug 19-22, 2011
 “Assessing the biodiversity and evolutionary history of phaseoloid legumes.” Fukuoka, Japan
XVIII International Botanical Congress* July 23-30, 2011
 “Investigating the role of recombination in incongruence among datasets using partition
 jackknifing.” Melbourne, Australia
Botanical Society of America Annual Meeting* July 9-14, 2011
 “Comparative genomics of Phaseoleae: what 454 transcriptomics can tell us about
 cryptic polyploidy.” St. Louis, Missouri
Botanical Society of America Annual Meeting* July 9-14, 2011
 “Advances in plant systematics and population genomics: Applications of next generation
 techniques – an introduction.” St. Louis, Missouri
V International Legumes Conference: Advances in the XXI Century* Aug 8-14, 2010
 “Phylogeny of the subtribe Glycininae (Leguminosae).” Buenos Aires, Argentina.
Botanical Society of America Annual Meeting July 25-29, 2009
 “Exploring sources of incongruence among nuclear genes in generic level phylogenies in the
 legume subtribe Glycininae (Fabaceae).” Snowbird, Utah.
Evolution Annual Meeting June 12-16, 2009
 “Investigating sources of incongruence among generic level, nuclear gene phylogenies in the
 legume subtribe Glycininae (Fabaceae).” Moscow, Idaho.
Evolution Annual Meeting June 21-25, 2008
 “Comparative analysis of legume genome evolution: Rates and dates in low copy genes.”
 Minneapolis, Minnesota.
Botanical Society of America Annual Meeting July 7-12, 2007
 “Evolutionary relationships within subtribe Glycininae (Leguminosae) using multiple linked
 nuclear loci.” Chicago, Illinois.
Botanical Society of America Annual Meeting July 28-Aug 2, 2006
 “Macroevolutionary Impactors of Diversification in North American Psoraleeae
 (Leguminosae).” Chico State University, Chico, California.
Evolution Annual Meeting June 23-27, 2006
 “North American Psoraleeae (Leguminosae) Diversification: Rates and Dates.” Stony Brook
 University, Stony Brook, New York.
Botanical Society of America Annual Meeting Aug 13-18, 2005
 “Phylogeny and Biogeography of Psoraleeae (Leguminosae) based on Nuclear and
 Chloroplast Markers.” University of Texas at Austin, Austin, Texas.
American Association for Cancer Research 93rd Annual Meeting Apr 6-10, 2002
 “Antimutagenic Effects of EGCG on Benzo[a]pyrene Treated HepG2 Cells as
 Determined by the Comet Assay.” San Francisco, California.
Howard Hughes Medical Institute Undergraduate Research Colloquium. Nov 1998
 “Genetic Differentiation Between Populations of *Erythronium grandiflorum* as Contributed
 by Isolation by Distance vs. Isolation by Phenology.” Logan, Utah.

PROFESSIONAL SOCIETIES

Society of Systematic Biologists
 American Society of Plant Taxonomists
 Association of Southeastern Biologists
 Botanical Society of America

PROFESSIONAL WORKING GROUPS

Legume Phylogeny Working Group
Global Legume Diversity Assessment Working Group

PROFESSIONAL SERVICES & COMMITTEES

Symposium Organizer:

- *Growing the Next Generation in Plant Genomics: Botany 2012*, Columbus, Ohio.
- *Advances in Plant Systematics and Population Genomics: Applications of Next Generation Techniques; Botany 2011*, St. Louis, Missouri.

Peer Reviewer:

Evolution, BMC Evolutionary Biology, Molecular Ecology, RHODORA, American Journal of Botany, PLoS ONE, GENE, African Journal of Biotechnology, Botanical Journal of the Linnean Society

Grant Reviewer: NSF Systematic Biology and Biodiversity Inventories Cluster, CAREER, Plant Genome Research Program.

NSF Grant Panelist: Plant Genome Research Program, April 2011

Editor: *American Journal of Botany* for Special Issue “Methods and Applications of Next-Generation Sequencing in Botany”, Feb 2012.

Conservation Chair, Cornell Outing Club, 2007-2008

Department Committees:

- 2011-present Graduate Committee; North Carolina Center for Biodiversity (NCCB) Committee
- 2010-present Greenhouse Committee; Biosafety Committee

University Level Committees:

- 2011-present Honors College Faculty Advisory Board; Writing Across the Curriculum Committee

Outreach:

- **Earth Day Activities April 2012**, Conducted two activities – hosted an open lab for public with activities on plant ID and organized a public service project to pull invasive species.
- **4H Entomology Club**, April 2012. Organized for a group of home-schooled children and their families and held at *A Time for Science Nature Center*. I gave a talk on plant/insect interactions and discussed Kudzu and its new pest, the invasive beetle *Megacopta cribraria*. After the talk, I led a one-hour walk hike where we found evidence of and discussed plant/insect interactions. About 30 people attended, ranging from K-12 to adults.
- **STEM MAGIC Girls Conference**, Oct 2011, full day workshop for 100 8th grade girls; I presented 5 workshops on Plant Diversity, Classification, and Phylogenetics.
- **Earth Day Festivities**, April 2011, organized and put on by the NCCB

PROFESSIONAL DEVELOPMENT

* invited

NESCent Academy Next-Gen Sequencing Course* Jun 11-19, 2012
Intense workshop in bioinformatics for NGS data analyses. NESCent, Durham, NC

NSF ADVANCE: Women Evolving Biological Sciences* Nov 6-9, 2011
Intense workshop geared towards early-career academic women in evolution and ecology. Selected participant. NESCent, Durham, NC.

SCALE-UP Teaching Workshop March 24, 2011
Half Day workshop presented by Dr. Beichner on inquiry- and team-based teaching methods. East Carolina University, Greenville, NC.

WAC Academy* January-March, 2011
“Writers teaching writing.” Competitively chosen as one of 9 (out of over 30 applicants) for the Writing Across the Curriculum workshop where participants learned strategies for teaching Writing Intensive courses. East Carolina University, Greenville, NC.

Scientific Writing Workshop September 14, 2010
Organized by the Veterinary College of Cornell University; presented by Dr. John P. Kastelic. Day long training in science writing for publication. Cornell University, Ithaca, NY.

Legume Phylogeny Working Group Workshop: Intro to Perl* May 17-22, 2010
Organized and presented by Drs. Michael Sanderson and Shelley McMahon. Intensive training in PERL scripting for bioinformatics and evolutionary biology. By invitation only. University of Arizona, Tuscon, AZ.

Next Generation Sequencing Workshop 2010 March 10 – April 21, 2010
Organized jointly by the Computational Biology Service Unit (CBSU), the Center for Vertebrate Genomics (CVG), and the Cornell Center for Comparative and Population Genomics (3CPG). Intensive lecture and hands-on training in next generation sequencing technologies, methods, analyses, and informatics. Cornell University, Ithaca, NY.

ASPB Laboratory Leadership Workshop. July 5-7, 2007
Presented by American Society of Plant Biologists. Intensive training on how to manage and lead an active research laboratory, including topics such as mentoring, funding, teaching, and others. Chicago, IL.

Teaching Development Workshops. March 29, April 12, Sept 13, Oct 18 2007
Presented by Instructional Support, Center for Learning and Teaching, Cornell University. Topics included “Grading & assessing student learning”, “Dealing with students in office hours”, “Preparing to teach” and “Effective Presentations.” Cornell University, Ithaca, NY.

Tropical Ethnobotany Practicum* May 2001
Organized and presented by Dr. Paul A. Cox. Intensive three week workshop. National Tropical Botanical Garden, Kauai, HI.

TEACHING EXPERIENCE

* New Course Development

Wilderness Writing (Honr 2011)*

East Carolina University

Spring 2012, 2013

- Honors seminar course of my design co-taught with Stephanie West-Puckett, English Instructor
- Interdisciplinary, experiential-based learning course designed to expose students to Wilderness, Science, and writing to help develop leadership skills and an environmental ethic

Plant Systematics Seminar (Biol 6860)*

East Carolina University

Spring 2012

- Undergraduate and graduate level seminar on major plant families

Field Botany (Biol 3230/3231)

East Carolina University

Fall 2011

- Designed and taught lecture and lab for undergraduates focusing on real-world skills of plant collection, id, and preservation of SE U.S. flora.

Preparing for the Job Market (Biol 6993)*

East Carolina University

Spring 2011

- Designed and taught graduate level course to prepare students for next steps.

Molecular Systematics (BioPl 447)

Cornell University – Jeffrey Doyle, Ph.D

Fall 2007; Spring 2010

- Undergraduate and graduate level course on molecular systematics.
- Guest lectures on Bayesian Inference and divergence dating in Phylogenetics.

Coevolutionary Analysis (MMBIO 651)

Brigham Young University – Byron Adams, Ph.D

Fall 2005

- Graduate level course on coevolution and comparative analyses.
- Taught and demonstrated computer programs such as TreeMap and GeneTree

Population Genetics (InBio 610)

Brigham Young University – Keith A. Crandall, Ph.D

Winter 2005

- Graduate level course on Population Genetics Theory.
- Team-taught the lectures and labs using the Team-Based Learning Approach.
- Helped create PowerPoint lecture slides; taught and demonstrated computer programs including, DNAsp, Arlequin, TCS, and others.

Genomics (InBio 265)

Brigham Young University – Keith A. Crandall, Ph.D

Fall 2003

- Undergraduate level course on theory and application of Genomics.
- Team-taught the lectures and lab portions.

Microbiology Laboratory (MMBio 222)

Brigham Young University – John Lee, M.S.

Winter 2002

- Undergraduate microbiology laboratory.
- Taught lectures on techniques and organism identification and detection.

Cell Biology (MMBio 330)

Brigham Young University – Byron Murray, Ph.D

Fall 2001

- Upper-level undergraduate course on cell biology
- Prepared and taught several PowerPoint lectures as Guest Lecturer

Population Genetics (Bio 517)

Utah State University – Paul G. Wolf, Ph.D.

Winter 1998

- Graduate level course on Population Genetics
- Taught a week-long laboratory module on Isozymes and Allozymes

MENTORING EXPERIENCE

- William Cagle.** August 2011 -- . Major advisor. Masters student at East Carolina University. “Landscape genetics of Kudzu (*Pueraria montana*) in the Southeast U.S. – testing the influence of soil type”.
- Amy Rivera.** June – August 2007. Biology Major at University of Texas – Austin. Summer undergraduate research funded by the Plant Genome Research Program. “Incongruence in the positioning of *Glycine falcata* in phylogenetic analyses using chloroplast DNA and nuclear DNA.” Taught research, laboratory, and analytical techniques.
- Christopher Cardona-Correa.** June – August 2007. Biology Major at University of Puerto Rico. Summer undergraduate research funded by the Plant Genome Research Program. “Expression levels of photoprotective genes (*PsbS*, *ZE*, *VDE*) during photosynthesis in diploid and tetraploid species of *Glycine*.” Taught research, laboratory, and analytical techniques.
- Asher Jones.** May 2006 – January 2007. Biology Major. Undergraduate Research. “Genetic Diversity in *Pediomelum pariense*.” Taught research, laboratory, and analytical techniques. Awarded Office of Research and Creative Opportunities (ORCA) grant for his work.
- Rebecca Schaeffer.** January 2006 – December 2006. Biology Teaching Composite Major. Undergraduate Research. “Phylogenetics of *Pediomelum* based on trnL/F and trnS/G intergenic spacers.” Taught research, laboratory, and analytical techniques. Awarded ORCA grant for her work.
- Jon Edwards.** January 2002 – April 2002. Microbiology Major. Undergraduate honors thesis. “Assessment of Phylogenetic Inertia on the Chemopreventive Properties of Plant Extracts of the Labiatae Family.” Taught him research, laboratory, and analytical techniques. Received an Undergraduate Cancer research fellowship for his work.
- Abby Moore.** January 2000 – August 2000. Biology Major. Undergraduate research. “Phylogenetics of *Balsamorhiza* and *Wyethia* (Asteraceae).” Taught laboratory techniques.

RESEARCH INTERESTS

My passion centers on understanding the planet’s biodiversity and the evolutionary patterns and processes that have shaped it. I am interested in the broad disciplines of evolutionary biology, molecular evolution, bioinformatics, population genetics, phylogenetics, comparative genomics, transcriptomics, and plant systematics. These disciplines allow me the opportunity to explore the interplay between and within living and non-living systems and how external and internal forces shape extant biodiversity. Describing and understanding the earth’s natural assets is pivotal to other scientific work. As a systematist, I strive to contribute to the taxonomy, nomenclature, and classification of plant biodiversity. As a phylogeneticist, population geneticist, and comparative genomicist, I strive to contribute to the understanding of the processes and patterns that have created biodiversity during the course of evolutionary change.

Although poised to study most any plant group, I am especially interested in the legume family (Leguminosae, Fabaceae) with an emphasis on the Psoraleae and Phaseoleae tribes. Leguminosae is one of the most diverse plant families on earth and offers an excellent system in which to study evolutionary forces and interactions. In the systematics discipline, I am intrigued by such topics as adaptation, speciation, endemism, biogeography, polyploidy, and conservation genetics. I am also interested in phylogenetic methodology including the use of insertion/deletion events as phylogenetic characters, the impact of genic variation on divergence dating, and dealing with recombination in phylogeny estimation.

REFERENCES

POSTDOC ADVISOR

Jeffrey J. Doyle, Ph.D.
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