

CURRICULUM VITAE

Mitchell B. Cruzan

(3/1/10)

BIOGRAPHICAL INFORMATION

Current position: Associate Professor
Department Biology
Portland State University
Portland, OR 97207
U.S.A.
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Citizenship: U.S.A.

EDUCATION

1981 B.A. in biology.
California State University, Fullerton.
(with honors)

1983 M.A. in biology (Botany).
California State University, Fullerton.

Thesis title: "The effect of stigmatic position, pollen density and source on pollen tube growth in *Nicotiana glauca*."

Advisor: C. Eugene Jones.

1989 Ph.D. in biology (Ecology and Evolution).
State University of New York at Stony Brook.

Thesis title: "Post-pollination selection in *Erythronium grandiflorum*."

Advisor: James D. Thomson.

SCHOLARSHIPS, AWARDS, AND HONORS

- 2002 CNRS Visiting Professor Fellowship, Terrestrial Ecology Laboratory, Universit Paul Sabatier, Toulouse, France
- 1988 Graduate School Dissertation Fellowship, State University of New York at Stony Brook.
- 1983 Departmental Associations Council Scholarship, California State University, Fullerton.
- 1982 Southern California Botanists Award for Research in the Botanical Sciences.
- 1980 Ralph Barton Scholarship for the Botanical Sciences, California State University, Fullerton.

RESEARCH EXPERIENCE AND EMPLOYMENT

- 2002-pres. Associate professor, Portland State University.
- 1994-2002 Assistant professor, University of Tennessee, Knoxville.
- 1991-1993 Post-doctoral research associate with Michael L. Arnold and James L. Hamrick in the Department of Genetics at the University of Georgia. I used molecular markers to analyze the genetic structure and mating systems of hybrid Louisiana iris populations.
- 1989-1991 Post-doctoral fellow with Dr. Spencer C.H. Barrett in the Department of Botany at the University of Toronto. I collaborated with Dr. Barrett on investigations of pollen-style interactions using microscopy and genetic marker techniques with the tristylous *Eichhornia paniculata*.
- 1983-1987 Research assistant for Dr. James D. Thomson at the State University of New York at Stony Brook. Duties included the spectrophometric analysis of sugar content in nectar samples, analysis of pollen samples using an electronic particle counter, an electrophoretic survey of enzyme variation in *Erythronium grandiflorum*, and statistical data analysis.
- 1984-1986 Summer research assistant for Dr. James D. Thomson and Dr. Lev Ginzburg at the Rocky Mountain Biological Lab: Established field plots and conducted a three year census on four rare or endemic plant species in Colorado to assess the amount of variation in life history parameters. The information collected was used to help produce models to predict the probability of extinction of rare species.

RESEARCH PROPOSALS

- NSF Plant Genome Research Program (PGRP) “Ecological genomics of the emerging model system, the *Piriqueta caroliniana* complex.” (\$1,350,000 for 5 years) Pending.
- NSF URM Program: “Undergraduate Mentoring in Environmental Biology at Portland State University.” With Luis Ruedas. and Ken Stedman In revision. (\$600,000) Submit date: fall 2008
- NSF Division of Environmental Biology (IOS) “Collaborative Proposal: Costs and benefits of plasticity to temporally variable environments in the *Piriqueta caroliniana* Complex.” Resubmit date: 7/10/08.
- NSF Division of Environmental Biology (DEB) “Demographic and Genetic Effects on Range Expansion in a Newly Invasive Species.” In collaboration with D. Rosenthal at PSU Resubmit date: 7/10/08.

RESEARCH GRANTS

- 2004 USDA/CSREES National Research Initiative grant: “Evolution of invasive species: A test study using the newly invasive grass, *Brachypodium sylvaticum*.” \$400,000 for three years (with Alisa Ramakrishnan).
- 2004 National Science Foundation Small Grants for Exploratory Research. “SGER: mRNA expression traits in the *Piriqueta caroliniana* complex.” \$26,033 for one year.
- 2004 National Science Foundation REU supplement on the *Piriqueta* grant. \$6,000 one year.
- 2003 National Science Foundation REU supplements on the *Piriqueta* and *Arabidopsis* grants. \$12,000 for one year.
- 2001 National Science Foundation REU supplements on the *Piriqueta* and *Arabidopsis* grants. \$10,000 for one year.
- 2001 National Science Foundation. "Co-evolution of shade avoidance and response to photoperiod in *Arabidopsis thaliana*." \$330,000 for three years (with M. Pigliucci).
- 2000 National Science Foundation. "Geographic variation and hybridization in the *Piriqueta caroliniana* complex." \$293,000 for three years.
- 1998 USAF/TNC. “Ecological Genetics of *Helianthus eggertii*.” \$266,000 for three years.
- 1998 FWS/TDEC “Population genetics of *Pityopsis ruthii* and *Astragalus bibulattus* .” \$17,500 for one year.

- 1998 National Wetlands Research Center/USGS. "Population genetics of red mangroves in Florida." \$7000 for one year (with Susan Grace).
- 1996 FWS/ Tennessee Department of Environment and Conservation. "Phylogeographic population genetic studies in *Scutellaria montana*." \$17,000 over three years.
- 1996 FWS/ Tennessee Department of Environment and Conservation. "Demography and ecological genetics of *Pityopsis ruthii*." \$7,000 over two years.
- 1986 National Science Foundation Dissertation Improvement Grant. "Post-pollination selection in *Erythronium grandiflorum*." \$6800 for a two years.

REFEREED PUBLICATIONS (50 publications with > 1,400 citations)

- Machado, H.E. and M.B. Cruzan. 2010. Intraspecific variation in gene expression under prolonged drought in *Piriqueta* hybrids and their parental taxa. Plant Sciences. In press.
- Ramakrishnan, A. P., T. Musial, and M. B. Cruzan. 2010. Shifting dispersal modes at an expanding species' range margin. Molecular Ecology 19:1134-1146.
- Picotte, J.J., J.M. Rhode, and M.B. Cruzan. 2009. Leaf morphological responses to variation in water availability for plants in the *Piriqueta caroliniana* complex. Plant Ecology 200:267-275.
- Rosenthal, D.M., A.P. Ramakrishnan, and M.B. Cruzan. 2008. Evidence for multiple sources and intraspecific hybridization at early stages of the invasion of *Brachypodium sylvaticum* (Hudson) Beauv. in North America. Molecular Ecology 17:4657-4669.
- Ramakrishnan, A.P., D.M. Rosenthal, T. Musial, and M.B. Cruzan. 2008. Isolation and characterization of nine microsatellite markers for *Brachypodium sylvaticum* (Huds.) Beauv., a recently invasive grass species in Oregon. Molecular Ecology Resources 8:1297-1299.
- Picotte, J.J., D.M. Rosenthal, J.M. Rhode, and M.B. Cruzan. 2007. Plastic responses to temporal variation in moisture availability: consequences for water use efficiency and plant performance. Oecologia 153:821-832.
- Banta, J., J. Dole, M.B. Cruzan, and M. Pigliucci. 2007. Local adaptation to conditions besides the photoperiodic regime in *Arabidopsis thaliana*. Evolution 61:2419-2432.
- Benz, B.R., J.M. Rhode, and M.B. Cruzan. 2007. Aerenchyma development and elevated alcohol dehydrogenase activity as alternative responses to hypoxic soils in the *Piriqueta caroliniana* complex. American Journal of Botany 94: 542-550.

- Rhode, J. M., and M. B. Cruzan. 2005. Contributions of heterosis and epistasis to hybrid fitness. *The American Naturalist* 166:E124-E139
- Cruzan, M. B. 2005. Patterns of introgression across an expanding hybrid zone: analyzing historical patterns of gene flow using non-equilibrium approaches. *New Phytologist* 167:267-278.
- Baucom, R. S., J. C. Estill, and M. B. Cruzan. 2005. The effect of deforestation on the genetic diversity and structure in *Acer saccharum* (Marsh): Evidence for the loss and restructuring of genetic variation in a natural system. *Conservation Genetics* 6:39-50.
- Handy, S.M., K. McBreen, and M.B. Cruzan. 2004. Patterns of fitness and fluctuating asymmetry across a broad hybrid zone. *International Journal of Plant Sciences* 165: 973-981.
- Morris A.B., R.L. Small, and M.B. Cruzan. 2004. Variation in frequency of clonal reproduction among populations of *Fagus grandifolia* Ehrh. in response to disturbance. *Castanea* 69:38-51.
- McBreen, K. and M.B. Cruzan. 2004. A Case of Recent Long-Distance Dispersal in the *Piriiqueta caroliniana* Complex. *Journal of Heredity*: 95: 356-361.
- Pigliucci, M., H. Pollard, and M.B. Cruzan. 2003. Comparative studies of evolutionary responses to light environments in *Arabidopsis*. *American Naturalist* 161:68-82.
- Morris A.B., R.L. Small, and M.B. Cruzan. 2003. Investigating the relationship between *Cryptococcus fagisuga* and *Fagus grandifolia* in Great Smoky Mountains National Park. *Southeastern Naturalist* 1:415-424.
- Morris, A.B., R. Baucom, and M.B. Cruzan. 2002. Stratified analysis of the soil seed bank in the cedar glade endemic, *Astragalus bibullatus*: Evidence for historical changes in genetic structure. *American Journal of Botany* 2002: 89 29-36.
- Cruzan, M.B. 2001. Population size and fragmentation thresholds for the maintenance of genetic diversity in the endemic, *Scutellaria montana* (Lamiaceae). *Evolution* 55:1569-1580.
- Estill, J.C., and M.B. Cruzan. 2001. Phytogeography of rare plant species endemic to the Southeastern United States. *Castanea* 66:3-23.
- Pollard, H., M. Pigliucci, and M.B. Cruzan. 2001. Evolution of phenotypic plasticity in response to photoperiod. *Evolutionary Ecology Research* 3:129-155.
- Cruzan, M.B., and A.R. Templeton. 2000. Paleoecology and coalescence: analysis of phylogeographic hypotheses from the fossil pollen record. *Trends in Ecology and Evolution* 15:492-497.

- Templeton, A.R., S.D. Maskas, and M.B. Cruzan. 2000. Gene trees: A powerful tool for exploring the evolutionary biology of species and speciation. *Plant Species Biology* 15:211-222.
- Maskas, S.D. and M.B. Cruzan. 2000. Intraspecific diversification in the *Piriqueta caroliniana* complex in Florida and the Bahamas. *Evolution* 54:815-827.
- Martin, L.J. and M.B. Cruzan. 1999. Patterns of hybridization in the *Piriqueta caroliniana* complex in central Florida: Evidence for an expanding hybrid zone. *Evolution* 53:1037-1049.
- Cruzan, M.B. and M.L. Arnold. 1999. Consequences of cytonuclear epistasis and assortative mating for the genetic structure of hybrid populations. *Heredity* 82:36-45.
- Jones, C.E. and M.B. Cruzan. 1999. Floral morphological changes and reproductive success in deer weed. *American Journal of Botany* 86:273-277.
- Gavrilets, S. and M.B. Cruzan. 1998. Neutral gene flow across single locus clines. *Evolution* 52:1277-1284.
- Wang, J. and M.B. Cruzan. 1998. Interspecific mating in the *Piriqueta caroliniana* (Turneraceae) complex: effects of pollen load size and composition. *American Journal of Botany* 85:1172-1179.
- Cruzan, M.B. 1998. Genetic markers in plant evolutionary ecology. *Ecology* 79:400-412.
- Cruzan, M.B. and J.D. Thomson. 1997. Pollen-style interactions and pollen competition in *Erythronium grandiflorum*: consequences for offspring vigor. *Journal of Evolutionary Biology* 10:295-314.
- Barrett, S.C.H., W.C. Cole, J. Arroyo, M.B. Cruzan, and D.G. Lloyd. 1997. Sexual polymorphisms in *Narcissus triandrus* (Amaryllidaceae): Is this species tristylous? *Heredity* 78:135-145.
- Cruzan, M.B. and S.C.H. Barrett. 1996. Post-pollination mechanisms influencing mating patterns and fecundity: an example from *Eichhornia paniculata*. *American Naturalist* 147:576-598.
- Cruzan, M.B. and M.L. Arnold. 1994. Assortative mating and natural selection in an *Iris* hybrid zone. *Evolution* 48:1946-1958.
- Carney, S.A. M.B. Cruzan, and M.L. Arnold. 1994. Patterns of pollen tube growth and fertilization in hybridizing irises. *American Journal of Botany* 81:1169-1175.

- Cruzan, M.B., J.L. Hamrick, M.L. Arnold, and B.B. Bennett. 1994. Mating system variation in hybridizing irises: effects of phenology and floral densities on family outcrossing rates. *Heredity* 72:95-105.
- Cruzan, M.B. and M.L. Arnold. 1993. Ecological and genetic associations in an *Iris* hybrid zone. *Evolution* 47:1432-1445.
- Cruzan, M.B. 1993. Pollen-style interactions in *Petunia hybrida*: consequences for male reproductive success. *Sexual Plant Reproduction* 6:275-281.
- Cruzan, M.B. and S.C.H. Barrett. 1993. The contribution of cryptic incompatibility to the mating system of *Eichhornia paniculata* (Pontederiaceae). *Evolution* 47:925-944.
- Cruzan, M.B., M.L. Arnold, S.E. Carney, and K.R. Wollenberg. 1993. CPDNA inheritance in interspecific crosses and its effect on evolutionary inference in Louisiana irises. *American Journal of Botany* 80:344-350.
- Harder, L.D., M.B. Cruzan, and J.D. Thomson. 1993. Unilateral incompatibility and the potential consequences of interspecific pollination for *Erythronium americanum* and *Erythronium albidum* (Liliaceae). *Canadian Journal of Botany* 71:353-358.
- Rigney, L.P., J.D. Thomson, M.B. Cruzan, and J. Brunet. 1993. Differential success of pollen donors in a self-compatible lily. *Evolution* 47:915-924.
- Harder, L.D. and M.B. Cruzan. 1990. An evaluation of the physiological and evolutionary influences of inflorescence size on nectar production. *Functional Ecology* 4: 559-572.
- Cruzan, M.B. 1990. Variation in pollen size, fertilization ability, and postfertilization siring ability in *Erythronium grandiflorum*. *Evolution* 44: 843-856.
- Cruzan, M.B. 1990. Pollen-pollen and pollen-style interactions during pollen tube growth in *Erythronium grandiflorum* (Liliaceae). *American Journal of Botany* 77: 116-122.
- Cruzan, M.B. 1989. Pollen tube attrition in *Erythronium grandiflorum*. *American Journal of Botany* 76: 562-570.
- Thomson, J.D., M. McKenna, and M.B. Cruzan. 1989. Temporal patterns of nectar and pollen production in *Aralia hispida*: implications for reproductive success. *Ecology* 70: 1061-1068.
- Cruzan, M.B., P.R. Neal, and M.F. Willson. 1988. Floral display in *Phyla incisa*: consequences for male and female reproductive success. *Evolution* 42: 505-515.
- Cruzan, M.B. 1985. Pollen tube distributions in *Nicotiana glauca*: evidence for density dependent growth. *American Journal of Botany* 73: 902-907.

Harder, L.D., J.D. Thomson, M.B. Cruzan, and R. Unnasch. 1985. Pollination, selfing, and sexual allocation in *Erythronium americanum*. *Oecologia* 67: 286-291.

BOOK CHAPTERS

Cruzan, M. B., and J. M. Rhode. 2004. Experimental analysis of adaptive landscape topographies. Pp. 61-69 in Q. C. B. Cronk, J. Whitton, R. H. Ree and I. E. P. Taylor, eds. *Plant Adaptation: Molecular Genetics and Ecology*. National Research Council of Canada, Vancouver, B.C.

Cruzan, M.B. 2001. Adaptive landscapes. In: *Encyclopedia of Genetics*, S. Brenner and J.H. Miller, (eds.). Academic Press.

Barrett, S.C.H. and M.B. Cruzan. 1994. Incompatibility in heterostylous plants. In: *Genetic Control of Incompatibility and Reproductive Development in Flowering Plants*, E.G. Williams, R.B. Knox, and A.E. Clarke (eds.). Kaluwer.

Barrett, S.C.H., J.R. Kohn, and M.B. Cruzan. 1992. Experimental studies of mating-system evolution: the marriage of marker genes and floral biology. In: *Ecology and Evolution of Plant Reproduction: New Approaches*, R. Wyatt (ed.). Chapman and Hall.

BOOK REVIEWS

Cruzan, M.B. 2001. Pollen and Pollination. A. Dafni, M. Hesse, and E. Pacini (eds.). *The Quarterly Review of Biology* 76: 358-359.

MANUSCRIPTS IN PROGRESS (5 in review, 5 in preparation)

Cruzan, M.B. J. Dole, and M. Pigliucci. Cryptic genetic lineage structure across *Arabidopsis thaliana* populations in Europe.

Andalo, C., Cruzan, M.B. Cazette, C. Burros, M. and C. Thébaud. In revision. Weak, symmetric and population independent post-pollination crossing barriers between two *Antirrhinum* taxa.

Cruzan, M.B., K.A. Anton, B.R. Benz, J.J. Picotte, and J.M. Rhode. Adaptive plasticity and environmentally-dependent hybrid breakdown in the *Piriqueta caroliniana* complex. (in preparation).

Cruzan, M.B. and J.M. Rhode. Genetic architecture of hybrid breakdown in the *Piriqueta caroliniana* complex. (in preparation).

Fortner, A., Rhode, J.M., and M.B. Cruzan. Fitness consequences of cytonuclear epistasis in *Piriqueta* hybrids. (in preparation)

INVITED SEMINARS

- 2006 Department of Biology, Washington State University, Vancouver.
- 2006 Department of Botany and Plant Pathology, Oregon State University, Corvallis OR.
- 2004 Department of Botany, University of Toronto.
- 2004 Department of Biology, University of Guelph
- 2004 Department of Biology, Willamette University, Salem OR.
- 2003 Department of Biology, Reed College, Portland OR.
- 2003 Department of Botany and Plant Pathology, Oregon State University, Corvallis OR.
- 2002 University of British Columbia, Vancouver, Canada. Symposium: Plant Adaptation.
- 2002 Missouri Botanic Garden, St. Louis, MO. Symposium: Conservation Genetics, annual Missouri Botanic Garden Systematics Symposium.
- 2002 Universite Paul Sabatie, Toulouse, France.
- 2002 Department of Biology, Rutgers University, New Brunswick, NJ.
- 2002 Department of Biology, San Diego State University, San Diego, CA.
- 2002 Department of Biology, Portland State University, Portland, OR.
- 2002 Department of Biology, University of Mississippi, Oxford, MS.
- 2001 Biodiversity Symposium, Kaohsiung, Taiwan.
- 2001 Department of Biology, University of Kentucky, Lexington, KY.
- 2001 Department of Biology, University of New Orleans, New Orleans, LA.
- 2001 Department of Biology, California State University, San Jose, CA.
- 2000 Department of Biology, University of South Florida, Tampa, FL.
- 1999 Department of Biology, University of Florida, Gainesville, FL.
- 1999 ASB symposium on Southeastern Endemics, Wilmington, SC.
- 1998 Department of Biology, Western Carolina University, Cullowhee, NC.
- 1997 Department of Biology, Colorado State University, Fort Collins, CO
- 1997 University of Florida, Sea Grant Extension Service. St. Petersburg, FL.
- 1997 Ecological Society of America, Albuquerque NM. Symposium on the ecology of pollen.
- 1997 Southeastern Section of the Botanical Society of America/Association of Southeastern Biologists, Regional Meeting.
- 1996 16th annual meeting for the American Society for Reproductive Immunology. University of Tennessee, Knoxville.
- 1996 E.O. Groundset Lecture Series. Southern College, Collegedale, TN.
- 1995 Department of Biological Sciences, East Tennessee State University.
- 1994 Department of Biology, Vanderbilt University, Nashville, Tennessee.
- 1994 Rocky Mountain Biological Laboratory, Crested Butte, Colorado.
- 1992 XII International Congress on Sexual Plant Reproduction. Univ. of Ohio, Columbus.
- 1991 Department of Biology, Queens University, Kingston, Ontario.
- 1990 Plant Development and Morphology Workshop, Royal Ontario Museum, Toronto.
- 1989 Department of Biology, York University, North York, Ontario.
- 1989 Rocky Mountain Biological Laboratory, Crested Butte, Colorado.

PAPERS PRESENTED AT NATIONAL MEETINGS

Cheeke, T.E., T. Rosenstiel, and M.B. Cruzan 2008. Effects of nutrient stress on the

- colonization of mycorrhizal fungi in transgenic Bt corn. Annual meeting of the Ecological Society of America, Milwaukee, WI.
- Rosenthal, D.M. and M.B. Cruzan. 2007. Biological invasions: do genetic bottlenecks matter? Society for the Study of Evolution annual meeting, Christchurch, NZ.
- Henderson, A and M.B. Cruzan 2007. Costs and benefits of plasticity to temporally variable environments in the *Piriqueta caroliniana* complex. Annual meeting of the Ecological Society of America, San Jose, CA.
- Sochacki, P., J.M. Rhode, and M.B. Cruzan 2007. Effects of different mycorrhizal associations on performance within a plant-hybrid complex. Annual meeting of the Ecological Society of America, San Jose, CA.
- Machado, H.E., and M.B. Cruzan 2007. Drought-induced differences in gene expression in parental and hybrid plants of the *Piriqueta caroliniana* complex. Annual meeting of the Ecological Society of America, San Jose, CA.
- Ramakrishnan, A, Dobberstein, T. and M.B. Cruzan. 2007. Patterns of gene flow and population evolution during a recent range expansion of an invasive plant. Annual meeting of the Ecological Society of America, San Jose, CA.
- Rosenthal, D.M., M.B. Cruzan, A. Ramakrishnan, and T. Dobberstein. 2006. Phylogeographic origins of an invasive species: a role for hybridization? Society for the Study of Evolution annual meeting, Stony Brook, NY.
- Rosenthal, D.M., A. Ramakrishnan and M.B. Cruzan 2005. Discovering the origin of a recently invading grass *Brachypodium sylvaticum* (Beauv.): a phylogeographic analysis. Society for the Study of Evolution, Fairbanks, Alaska.
- Cruzan. M.B., K.A. Anton, B.R. Benz, J.J. Picotte, and J.M. Rhode. 2005. Evidence of adaptive plasticity in *Piriqueta caroliniana* recombinant hybrids. Society for the Study of Evolution annual meeting, Fairbanks, Alaska.
- Ramakrishnan, A., Dobberstein, T., and M.B. Cruzan. 2005. Range expansion: Edge vs. central populations in a newly invasive species. Society for the Study of Evolution annual meeting, Fairbanks, Alaska.
- Rhode, J.M., and M.B. Cruzan. 2004. Genotype x environment interactions affect survival and performance of plants in the *Piriqueta caroliniana* hybrid complex. Ecological Society of America, Portland, Oregon.
- Ramakrishnan, A., and M.B. Cruzan. 2003. Nested clade analysis of phenotypic associations. Society for the Study of Evolution annual meeting, Chico, California.
- Rhode, J.M., and M.B. Cruzan. 2003. Consequences of cytonuclear interactions for plant hybrid zone expansion. Society for the Study of Evolution annual meeting, Chico, California

- Dole, J., M. Pigliucci, and M.B. Cruzan. 2003. Patterns of AFLP diversity among wild populations of *Arabidopsis thaliana*. Society for the Study of Evolution annual meeting, Chico, California.
- Cruzan, M.B. and J.M. Rhode. 2003. Hybrid fitness distributions: evidence for adaptive landscape topography. Society for the Study of Evolution annual meeting, Chico, California.
- McBreen, K. and M.B. Cruzan. 2001. Origin of an anomalous population: evidence for recent long-distance dispersal. Society for the Study of Evolution annual meeting, Knoxville, Tennessee.
- Cruzan, M.B. 1999. Intraspecific diversification; plants as model systems for phylogeographic studies. XVI International Botanical Congress, St. Louis, Missouri.
- Pigliucci, M. and M.B. Cruzan. 1999. Evolution and mechanistic basis of phenotypic plasticity in *Arabidopsis thaliana*. XVI International Botanical Congress, St. Louis, Missouri.
- Cruzan, M.B. 1998. Geographic variation and hybridization in the *Piriqueta caroliniana* complex. Society for the Study of Evolution annual meeting, Vancouver, Canada.
- Cruzan, M.B. 1996. Mating locus effects on pollen fertility in the distylous *Piriqueta caroliniana*. Society for the Study of Evolution annual meeting, St Louis, MO.
- Cruzan, M.B. and M.L. Arnold. 1993. Selection and assortative mating in an iris hybrid zone. Society for the Study of Evolution annual meeting, Snowbird, Utah. (by Cruzan).
- Cruzan, M.B. and M.L. Arnold. 1992. Ecological and genetic associations of cpDNA and RAPD markers in a hybrid iris population. Society for the Study of Evolution annual meeting, Berkeley, California. (delivered by Cruzan).
- Cruzan, M.B. and S.C.H. Barrett. 1992. Ecological and physiological determinants of the mating system in *Eichhornia paniculata*. Society for the Study of Evolution annual meeting, Berkeley, California. (delivered by Cruzan).
- Cruzan, M.B. and S.C.H. Barrett. 1990. The contribution of pollen-style interactions to disassortative mating in tristylous *Eichhornia paniculata*. Society for the Study of Evolution annual meeting, College Park, Maryland. (delivered by Cruzan).
- Cruzan, M.B. 1989. Female choice and partial compatibility in plants. Society for the Study of Evolution annual meeting, College Park, Pennsylvania.
- Cruzan, M.B. 1989. Styler selection and pollen competition in *Erythronium grandiflorum*: consequences for offspring vigor. Botanical Society of America annual meeting, Toronto, Ontario, Canada.
- Cruzan, M.B. 1988. Pollen tube attrition in *Erythronium grandiflorum*. Botanical Society of

America annual meeting, Davis, California.

Cruzan, M.B. 1987. Variation in pollen grain size and its consequences for fertilization ability. Society for the Study of Evolution annual meeting, Bozeman, Montana.

Cruzan, M.B., J.D. Thomson, and L.D. Harder. 1985. Comparative breeding systems in *Erythronium*: the role of seed abortion and pollen tube growth in incompatibility. Ecological Society of America annual meeting, Minneapolis, MN (by Thomson).

Cruzan, M.B. and J.D. Thomson. 1985. Allocation of resources to sexual function in *Erythronium grandiflorum*: relationship of gamete ratios to fruit set probabilities. Botanical Society of America annual meeting, Gainesville, Florida. (by Cruzan).

Stratton, D.L., M.B. Cruzan, and J.D. Thomson. 1985. Pollen tube growth rate and outcrossing distance in *Erythronium grandiflorum*. Botanical Society of America annual meeting, Gainesville, Florida. (delivered by Stratton).

Neal, P.R. and M.B. Cruzan. 1985. Patterns of herbivory within and between sexes in dioecious plants. Society for the Study of Evolution annual meeting, Chicago, IL. (by Neal).

GRADUATE ADVISING

Completed Degrees:

Jiongqian Wang (MS, spring 1997). Reproductive interactions among species of hybridizing *Piriqueta*.

Lori Martin (MS, fall 1997). Patterns of hybridization in the *Piriqueta caroliniana* complex in central Florida.

Stephanie Maskas (MS, summer 1998). Phylogeography of the *Piriqueta caroliniana* complex in the southeastern United States and the Bahamas.

Maureen Cunningham (PhD, fall 1999). Status survey, characterization of habitats and hosts, and monitoring for *Aureolaria patula*.

Ashley Morris (MS, fall 2000). Clonal population genetics of American beech.

Bryan Benz (MS, fall 2006). Adaptive responses to flooding in the *Piriqueta caroliniana* hybrid complex.

Josh Picotte (MS, fall 2006). Leaf morphological responses to environmental change in the *Piriqueta caroliniana* complex.

Heather Machado (MS, fall 2007). Patterns of gene expression in response to drought in the *Piriqueta caroliniana* complex.

Kristin Anton (MS, winter 2008). Pollinator responses to floral morphological variation in the *Piriqueta caroliniana* complex.

Trieste Musial (MS, Spring 2009). Landscape and population genetics of the North American mountain lion (*Puma concolor*) in Oregon (co adviser- Luis Ruedas).

Current Students:

Alisa Ramakrishnan (PhD candidate)

Tanya Cheeke (PhD candidate)

Paul Sochacki (MS candidate)
Laura Taylor (MS candidate)
Gina Marchini (MS candidate)
Caitlin Lee (PhD candidate)
Laura Templeton (MS candidate)

Graduate committees:

Amy McCaskill (MS completed in December 1995).
John Young (MS completed in December 1995).
Ellen Russell (MS completed in August of 1996).
Stacy Smith (MS completed in August 1998).
Jessica Bier (MS completed in August 1999).
Heidi Pollard (MS completed in December 1999).
Carolyn Wells (MS completed in June 2001).
Monica Beals (MS completed in August 2001).
Corey Samuels (Ph.D. completed in June 2001).
Anna Maleszyk (Ph.D. completed in December 2002).
Diego Vazquez (Ph.D. completed in August 2002).
Bruce Barbarash (MS completed in June 2005, ESR Department, PSU)
Toni Pennington (Ph.D. candidate, ESR Department, PSU)
Sharon Stanton (Ph.D. candidate)
Brian Knaus (Ph.D. candidate, Department of Botany and Plant Pathology, OSU)
David Chuba (Ph.D. Candidate)
Amy Sutton (MST candidate)
Sarah Courbis (Ph.D. candidate)
Camile Graves (MS candidate)
Charlene Mercer (MS candidate)

UNDERGRADUATE MENTORING

Regina Baucom **. Genetic consequences of historical land use practices in the Great Smoky Mountains National Park. 1999. Current in the graduate program at the University of Georgia Department of Genetics.

Charles Price. Concerted evolution in the rDNA multigene family in *Piriqueta* hybrids. 2000. Currently in the graduate program in ecology and evolution at the University of Arizona.

Sara Handy **. Patterns of fitness and fluctuating asymmetry across a broad hybrid zone. 2001. Currently in the graduate program in biology at the University of Delaware.

Allison Fortner*. Fitness consequences of cytonuclear epistasis in *Piriqueta* hybrids. 2002. Currently in the graduate program in biology at Oklahoma State University.

Bryan Benz **. Flood adaptations in parental and hybrid genotypes of the *Piriqueta caroliniana* complex. 2003. Completed a MS degree at Portland State University.

Jon Martin. Development of an enriched genomic library for SSR development in *Piriqueta*. 2003. Currently in the graduate program in biology at Portland State University.

Kristin Anton*. Floral morphological variation in parental and hybrid genotypes of the *Piriqueta caroliniana* complex. 2004. Completed a MS degree at Portland State University.

Paul Sochacki*. Mycorrhizal associations in parental and hybrid genotypes of the *Piriqueta caroliniana* complex. 2004. Currently applying to graduate school.

Heather de Glanville* Development of a cDNA library for mRNA expression in the *Piriqueta caroliniana* complex. 2005. Completed a MS degree at Portland State University.

Trieste Musial**. Inference of small scale dispersal patterns using SSR markers in a newly invasive grass species in the Willamette Valley. 2005. Currently in the graduate program in biology at Portland State University.

Jennifer Lawson*. Demography and seedling fitness for source and sink populations in metapopulations of the newly invasive species, *Brachypodium sylvaticum*.

Brian Pace. Mycorrhizal associations in transgenic corn.

Matthew LaPlant. Mycorrhizal associations in transgenic corn.

Key:*= author on ms in preparation; **=author on published manuscript.

HIGH SCHOOL MENTORING

Amanda Henderson. Clackamas High School. Plasticity responses to temporal variation environmental variation in modular organisms.

SYMPOSIA ORGANIZED

1999 "Intraspecific Phylogeography." XVI International Botanical Congress. St Louis, Missouri. (in collaboration with Kunihiro Ueda and Silvia Fineschi).

MEETING - ORGANIZER

- 2010 Joint annual meeting of the Society for the Study of Evolution, the American Society of Naturalists, and the Society of Systematic Biologists. Oregon Conference Center, Portland, Oregon. (Sponsored by Portland State University Department of Biology).
- 2001 Joint annual meeting of the Society for the Study of Evolution, the American Society of Naturalists, and the Society of Systematic Biologists. UT Conference Center. Knoxville, TN. (Co-organizer with M. Pigliucci).
- 1998 Annual meeting of the Southeastern Population Ecology and Genetics Group. Wesley Woods Camp. Townsend, TN. (Co-organizer with M. Pigliucci).
- 2010 Joint annual meeting of the Society for the Study of Evolution, the American Society of Naturalists, and the Society of Systematic Biologists. Portland State University and the Oregon Convention Center, Portland, OR.

PROFESSIONAL SERVICE

- 2006 NSF/DEB Evolutionary Genetics, panel member.
- 2003 USDA CSREES Biology of Invasive Species, panel member.
- 2001 Joint annual meeting of the Society for the Study of Evolution, the American Society of Naturalists, and the Society of Systematic Biologists. UT Conference Center. Knoxville, TN. (Co-organizer with M. Pigliucci).
- 2000 Federal Insecticide, Fungicide, and Rodenticide Act Scientific Advisory Panel. "Preliminary Risk & Benefit Assessments for *Bt* Plant-Pesticides" session on "Outcrossing and Hybridization." U.S. Environmental Protection Agency.
- 1997 Southeastern Population Ecologists and Genetics Group, host and organizer for the annual meeting.
- 1995-1997 National Science Foundation Panel: Postdoctoral Research in Environmental Biology.

Reviews for refereed journals: The American Naturalist, Evolution, Molecular Ecology, American Journal of Botany, Ecology, Canadian Journal of Botany, Biological Journal of the Linnean Society, Castanea, Journal of Heredity, Sexual Plant Reproduction, Plant Ecology, International Journal of the Plant Sciences, Journal of Arid Environments.

ACADEMIC SERVICE

- 2006-2007 UNST Executive Council
- 2005-2006 AAUP Executive Council
- 2004-2005 AAUP/PSU Administrative Joint Compensatory Task Force
- 2004-2005 Department of Biology, Search Committee Chair: "Plant Systematics."
- 2004-2005 Department of Biology, Search Committee Chair: "Plant Physiology."
- 2003-2004 Department of Biology, Search Committee Chair: "Plant Ecology."
- 2002-2003 Department of Biology, Search Committee Member: "Genomics."
- 2002-present Department of Biology, Futures Committee Chair.
- 2002-2005 Department of Biology, Tenure and Promotion Committee.
- 1996-1999 Department of Botany: Graduate admissions committee.
- 1996-2000 Department of Ecology and Evolutionary Biology: Graduate admissions.
- 1999 Department of Ecology and Evolutionary Biology, seminar coordinator
- 1996 Preparation and editing of the "General Ecology Lab Manual."
- 1995-1996 Department of Ecology and Evolutionary Biology: Graduate curriculum revision committee.
- 1995 Department of Botany, search committee: "Plant Ecologist."
- 1995 Department of Botany, departmental seminar coordinator.
- 1995-present Threshold Program in the Biological Sciences, mentor.
- 1995 Upward Bound Math and Science Regional Center, mentor.

AFFILIATIONS

Botanical Society of America
Society for the Study of Evolution
Sigma Xi
American Association of University Professors

Rocky Mountain Biological Lab
American Society of Naturalists
National Center for Science Education