

COLIN PURRINGTON
CURRICULUM VITAE

Department of Biology
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Research interests

Evolution of parasitic and twining plants

Education

Ph.D. in Ecology and Evolutionary Biology, Brown University (1994)
B.A. in Biology, Reed College (1988)

Appointments

Teaching Assistant, Dept of Ecology and Evolutionary Biology, Brown Univ.
(1988-1993)
Postdoctoral Res. Assoc., Dept. of Biology, Washington University (1993-1995)
Postdoctoral Res. Assoc., Dept. of Ecol. and Evol., University of Chicago (1995-
1997)
Assistant Professor, Department of Biology, Swarthmore College (1997-2003)
Associate Professor, Department of Biology, Swarthmore College (2003-present)

Grants and awards

Sigma Xi Grant-in-Aid of Research (1989)
New England Botanical Club Award (1991)
NSF Doctoral Dissertation Improvement Grant (1991)
Swarthmore College Fig Leaf Grant (1998)
DuPont Educational Aid Grant (1999)
Lang Faculty Fellowship (2000)

Professional activities

Memberships: Society for the Study of Evolution, Sigma Xi, Botanical Society of
America, American Association for the Advancement of Science
Reviewer: *American Naturalist*, *Evolution*, *Ecology*, *Molecular Ecology*, *Heredity*, *J.*
Ecology, *Am. J. Botany*, *Int. J. Plant Sci.*, *Plant Physiology and Biochemistry*,
Journal of Emerging Diseases
Reviewer: NSF, USDA grant proposals
Panel member: NSF predoctoral fellowships
Coordinator: Pennsylvania Citizens for Science (www.pacfs.org)

Theses

- Purrington, C.B. 1988. The effects of wounding and ethylene on the chemical defenses of bergamot mint. Senior thesis, Reed College.
- Purrington, C.B. 1994. Sexual dimorphism and sex ratio bias in dioecious *Silene latifolia* (Caryophyllaceae). Ph.D. thesis, Brown University.

Publications

- Purrington, C.B. 1993. Parental effects on progeny sex ratio, emergence, and flowering in *Silene latifolia* (Caryophyllaceae). *Journal of Ecology* 81:807-811.
- Purrington, C.B., and J. Bergelson. 1995. Assessing weediness of transgenic crops: Industry plays plant ecologist. *Trends in Ecology and Evolution* 10:340-342.
- Purrington, C.B., and J. Schmitt. 1995. Sexual dimorphism of dormancy and survivorship in buried seeds of *Silene latifolia*. *Journal of Ecology* 83:795-800.
- Bergelson, J., and C.B. Purrington. 1996. Surveying patterns in costs of resistance in plants. *The American Naturalist* 148:536-558.
- Bergelson, J., C.B. Purrington, C. Palm, and J. C. López-Gutiérrez. 1996. Costs of resistance: a test using transgenic *Arabidopsis thaliana*. *Proceedings of the Royal Society of London* 263:1659-1663.
- Purrington, C.B., J. Bergelson. 1997. Fitness effects of genetically engineered antibiotic and herbicide resistance in *Arabidopsis thaliana*. *Genetics* 145:807-814.
- Bergelson, J., G. Wichmann, and C. B. Purrington. 1998. Promiscuity in transgenic plants. *Nature* 395:25.
- Purrington, C.B., and J. Schmitt. 1998. Consequences of sexually dimorphic timing of emergence and flowering in dioecious *Silene latifolia*. *Journal of Ecology* 86:397-404.
- Bergelson, J., J. Winterer, and C. B. Purrington. 1999. Ecological impacts of transgenic plants. Pages 325-343 in *Applied Plant Biotechnology*, edited by V.L. Chopra, V.S. Malik, and S.R. Bhat. Science Publishers, Inc., Enfield.
- Purrington, C.B., and J. Bergelson. 1999. Exploring the physiological basis of costs of herbicide resistance in *Arabidopsis thaliana*. *American Naturalist* 154:S82-S91.
- Purrington, C.B. 2000. Costs of resistance. *Current Opinions in Plant Biology* 3:305-308.
- Bergelson, J., and C.B. Purrington. 2001. Factors affecting the spread of resistant *Arabidopsis thaliana* populations. Pages 17-31 in *Genetically Engineered Organisms: Assessing Environmental and Human Health Effects*, edited by D.K. Letourneau and B.E. Burrows. CRC Press, Boca Raton.
- Cipollini, D.F., C.B. Purrington, and J. Bergelson. 2003. Costs of induced responses in plants. *Basic and Applied Ecology* 4:79-89.
- Frost, A., J.C. López-Gutiérrez, and C.B. Purrington. 2003. Fitness of *Cuscuta salina* (Convolvulaceae) parasitizing *Beta vulgaris* (Chenopodiaceae) grown under different salinity regimes. *American Journal of Botany* 90:1032-1037.
- Purrington. 2003. Antifeedant substances in plants. In, Thomas, B, D. J. Murphy and B. G. Murray (eds), *Encyclopedia of Applied Plant Science*, pp 1140-1145. Academic Press.

Purrington, C.B., and F. Sockwell. 2004. Descent of dissent. *New York Times*; Dec 5; A23.

Purrington, C.B. 2005. The conservation of evolution education at zoos. *Journal of the International Zoo Educators Association* 41:16-19.

Presentations

"Effects of parental nutrient environment and pollen competition on progeny characteristics in *Silene latifolia*" (Population Biologists of New England, 1991).

"Germination sexual dimorphism and sex ratio in the dioecious perennial *Silene latifolia*" (Society for the Study of Evolution, 1992).

"Reviewing the costs of resistance in the ecological and agricultural literature" (Society for the Study of Evolution, 1994).

"Surveying the costs of resistance in plants" (University of Chicago, 1995).

"Cost of transgenic and nontransgenic herbicide resistance genes in *Arabidopsis thaliana*" (Symposium on Environmental Releases of Biotechnology Products, 1995).

"Costs of resistance in plants and their relevance to biotechnology risk assessment" (University of Pennsylvania, 1996).

"Using transgenes to determine the fitness effects and fates of resistance alleles" (Brown University, 1996).

"Using mutants and genetic engineering to understand the evolution of resistance traits in plants" (Swarthmore College, 1996).

"Techniques, goals, and risks of genetic engineering" (University of Chicago Program of Continuing Education for High School Teachers).

"Fitness effects of introduced genes in plants" (University of Chicago Program of Continuing Education for High School Teachers).

"Ecological costs of engineered herbicide resistance in *Arabidopsis*" (Chicago Plant Science Group).

"Using transgenes to study costs of resistance in plants" (Symposium of American Society of Naturalists, 1997).

"Testing adaptation and constraint with genetically engineered plants" (Tri-College Symposium, 1997).

"Playing perfect host to parasitic plants" (Swarthmore College, 1999)

"Ecological and molecular approaches to studying plant resistance strategies" (Dartmouth College, 2000).

"Genetically modified food crops: playing God or feeding the world?" (panel participant, Dartmouth College, 2000).

"Risks of genetically modified crops" (Swarthmore College Alumni College, 2000).

"Imbibition-related germination problems associated with a high-sucrose, low-raffinose soybean mutant" (Dupont Corporation, Wilmington, DE, 2001).

"Factors influencing diet breadth in parasitic plants" (Pennsylvania State University, Department of Entomology, 2002).

- "Ecological consequences of flatulence-reducing carbohydrate mutations in soybeans" (Swarthmore College, 2002).
- "Strategies for preventing plagiarism" (Swarthmore College, 2004).
- "The educational value of publicly mocking Creationists" (Freethought Society of Greater Philadelphia, 2005).
- "Textbook disclaimer stickers" (AAAS annual meetings, 2005).
- "Strategies for getting evolution back into public school curricula" (Philadelphia Area Clear Thinkers, 2005).
- "Why is everyone picking on evolution, for God's sake?" (Swarthmore College, 2005).
- "Evolution is for kids" (Crosslands Retirement Community, 2006).
- "Does religion belong in public schools?" (Swarthmore College, panel discussion, 2006).
- "Evolution education in public schools" (University of Pennsylvania Museum of Archaeology and Anthropology, 2006).
- "Anti-evolution trends in textbooks and state science standards" (Delaware chapter of the ACLU, 2006).
- "Evolution education in the United States" (Valley Forge Christian College, 2006).
- "Evolution is for kids" (Swarthmore Alumni College, 2006).
- "Design of scientific posters" (Environmental Protection Agency's STAR Fellows Conference, Washington, D.C., 2006).
- "Darwin, Science and Religion in the 21st Century" (Academy of Natural Sciences, Philadelphia, 2006).
- "Natural history of chocolate" (Swarthmore Alumni gathering, Swarthmore, PA, June 2007).
- "Presenting your research" (Sigma Xi Annual Meeting, Orlando, FL, November 2007)
- "Genetically modified plants and food" (Swarthmore College Family Weekend, April 2008).
- "Successful science posters" (New York Academy of Sciences and Columbia University, May 2008).
- "Tips and tricks for creating your next scientific poster" (Medical College of Wisconsin, May 2008).

Students mentored

- Ethan Friedman '99 (Honors thesis): "Beetle diversity in northern Piedmont serpentine barrens" (jointly, with Prof. Roger Latham).
- Gordon Roble '99 (Bio 94 independent research): "An examination of carbohydrate preference in dodder using *Cuscuta gronovii* and *Cuscuta salina*."
- Anna Hess '00 (summer research): "Effect of stem surface chemicals on host choice in dodder tendrils".
- Laura Fanucchi '00 (summer research, Bio 94): "Influence of water stress on efficiency of host-parasite carbon transfer."

Russell Gordley '02 (summer research): "Genetic manipulation of mannitol metabolism in *Arabidopsis thaliana*", and "Using primers of the t-DNA region to identify 'remnant' *Agrobacterium* DNA in plant species".

Tracy Powell '01 (summer research; independent research, Bio 93): "Tissue culture of *Cuscuta* spp."

Laura Barker '03 (independent research): "Fitness effects of genetically engineered mannitol production in *Arabidopsis thaliana*."

Clare Harney '03 (independent research): "Intraspecific variability in host-use patterns in the genus *Cuscuta*."

John Fort '03 (independent research): "Using antibiotic-resistant transgenic plants to infer growth inhibitory effects of soil pathogens on plants."

Julie Lindenberg '05 (summer research): "Spectral cues in the host-seeking behavior of *Cuscuta*."

Abigail Frost '04 (summer research): "Constraints on the evolution of handedness in vine circumnutation", and "Effects of salinity on soluble stem contents of beets and carrots."

Constantinos Michaelidis '05 (independent research): "Using a novel artificial seed system to study 'nutritional' resistance in legumes against a seed-eating beetle."

Seeta Sistla '04 (honors thesis): "Regulation of the extent of re-differentiation around a vascular wound in *Coleus blumei*."

Emily Ford '04 (independent research; honors thesis): "Determinants and consequences of handedness in twining vines."

Elizabeth Bogal-Allbritten '09: "Effects of cowpea weevils on fitness of cowpea seeds."

Service

Health Sciences Advisory Committee (1998-2001; 2005-2007)

Science Librarian Search Committee (1999)

Ad hoc committee on Quantitative Reasoning (1999)

Library Committee (1999-2000; 2003-2004; 2005-7)

Environmental Studies Committee (2002-2004)

College Judiciary Committee (2002-2004)

Crum Woods Committee (2008-present)

HHMI grant Departmental Representative (2008-present)

Swarthmore Sigma Xi Chapter President (2008-present)

8/12/08