

Curriculum Vitae (summary)

Holly L. Gorton

Education,

Ph.D., October, 1981, Biological Sciences, Stanford University, Palo Alto, CA.
BA, May, 1976, Biology, Reed College, Portland, OR.

Appointments

2011 – present: Chair, Department of Biology, St. Mary's College of Maryland
2010 – present: Adjunct Professor, Department of Plant Biology, University of Vermont.
2009 – 2010: Visiting Researcher, University of Vermont, Sabbatical leave with Dr. Tom Vogelmann.
2002 – 2003 Visiting Research Fellow, Research School of Biological Sciences, Australian National University, Canberra, Australia. Sabbatical leave with Dr. Marilyn Ball
1998 – present: Professor, Biology, St. Mary's College of Maryland
1995 – 1996: Sabbatical leave with Dr. Tom Vogelmann, University of Wyoming, Laramie, WY
1991 – 1998: Associate Professor, Department of Biology, St. Mary's College of Maryland
1988 – 1991: Assistant Professor, Department of Biology, St. Mary's College of Maryland
1985 – 1988: Assistant Professor, Department of Biology, Trinity College, Hartford, CT
1981 – 1985: Postdoctoral Fellow with Dr. Ruth Satter, University of Connecticut

Selected Publications

Vogelmann, T. C. and H. L. Gorton. In press. Leaf: Light capture in the photosynthetic organ. in *The Structural Basis of Biological Energy Generation, Advances in Photosynthesis and Respiration*. M. Hohmann-Marriott, ed. Springer.
Gorton, H. L., C. R. Brodersen, W. E. Williams and T. C. Vogelmann. 2010. Measurement of the optical properties of leaves under diffuse light. *Photochemistry and Photobiology*. 86:1076-1083.
Gorton, H. L. 2010. Biological Action Spectra. *Photobiological Sciences Online*, K.C. Smith, ed., <http://photobiology.info/Gorton.html>
Brodersen, C.R., T.C. Vogelmann, W.E. Williams, and H.L. Gorton. 2007. A new paradigm in plant photosynthesis: direct and diffuse light are not equal. *Plant, Cell and Environment*. 31: 159-164.
Barker, D.H, B.R. Loveys, J.J.G. Egerton, H.L. Gorton, W.E. Williams, and M.C. Ball. 2005. CO₂ enrichment predisposes foliage of a eucalypt to freezing injury and reduces spring growth. *Plant, Cell, and Environment*. 28:1506-1515.
Gorton, H.L. 2005. The holly wears the crown. *The River Gazette* 5(6):17.
Evans, J.R., T.C. Vogelmann, W.E. Williams, and H.L. Gorton. 2004. Sunlight Capture: Chloroplast to leaf. in *Photosynthetic Adaptation: Chloroplast to Landscape*, W.K. Smith, T.C. Vogelmann, and C. Critchley, eds. Springer, New York, pp. 15-41
Williams, W.E., H.L. Gorton, and S.M. Witiak. 2003. Chloroplast movements in the field. *Plant, Cell and Environment*. 26:2005-2014.
Gorton, H.L, S.K. Herbert, and T.C. Vogelmann. 2003. Photoacoustic analysis indicates that chloroplast movement does not alter liquid-phase CO₂ diffusion in leaves of

- Alocasia brisbanensis*. Plant Physiology. 132:1529-1539.
- Gorton, H. L. and T.C. Vogelmann. 2003. Ultraviolet radiation and the snow alga, *Chlamydomonas nivalis* (Bauer) Wille. Photochemistry and Photobiology. 77:608-615.
- Williams, W. E., H. L. Gorton, and T. C. Vogelmann 2003 Surface gas-exchange processes of snow algae. Proceedings of the National Academy of Sciences USA. 100:652-566.
- Willoughby, E.J., M. Murphy, and H.L. Gorton. 2002 Molt, plumage abrasion, and color change in Lawrence's Goldfinch. Wilson Bulletin 114:380-392.
- Gorton, H.L., W.E. Williams, and T.C. Vogelmann. 2001 The light environment and cellular optics of the snow alga *Chlamydomonas nivalis* (Bauer) Willie. Photochemistry and Photobiology 73:611-620.
- Gorton, H.L., W.E. Williams, and T.C. Vogelmann. 1999. Chloroplast movement in *Alocasia macrorrhiza* (L.) G. Don. Physiol Plant. 106:421-428.
- Williams, W. E. and H. L. Gorton. 1998. Circadian rhythms have insignificant effects on plant gas exchange under field conditions. Physiol Plant 103: 247-256.
- Gorton, H.L and T.C. Vogelmann. November 1996. Effects of epidermal cell shape and pigmentation on optical properties of *Antirrhinum* petals at visible and ultraviolet wavelengths. Plant Physiol. 879-888.
- Gorton, H.L., W. E. Williams, and S. M. Assmann. 1993. Circadian rhythms in stomatal responsiveness to red and blue light. Plant Physiol. 103:399-406.
- Gorton, H.L. 1990. A comparison of pulvinar and stomatal movements. in The Pulvinus: Motor Organ for Leaf Movement. R.L. Satter, H.L. Gorton, and T.C. Vogelmann, eds. American Society of Plant Physiologists. pp. 223-237.
- Gorton, H.L., W.E. Williams, M.E. Binns, C.N. Gemmell, E.A. Leheny and A.C. Shepherd. 1989. Circadian stomatal rhythms in epidermal peels from *Vicia faba*. Plant Physiol 90: 1329-1334.
- Gorton, H.L., W.E. Williams and M.E. Binns. 1989. Repeated measurements of aperture for individual stomates. Plant Physiol 89: 387-390.
- Gorton, H.L. 1987. Water relations in pulvini from *Samanea saman*. II. Effects of excision of motor tissues. Plant Physiol 83: 951-955.
- Gorton, H.L. and R.L. Satter. 1984. Extensor and flexor protoplasts from *Samanea* pulvini. II. X-ray analysis of K, Cl, S, P, and Ca. Plant Physiol 76: 685-690.
- Gorton, H.L. and W.R. Briggs, 1980. Phytochrome responses to end-of-day irradiations in light-grown corn seedlings grown in the presence and absence of Sandoz 9789. Plant Physiol 66: 1024-1026.

External Grants

- Lumina Foundation 2011-2013. "Course Redesign: Principles of Biology" H.L. Gorton and S.L. Elliott \$20,000.
- National Science Foundation 2001-2005 "REU Supplement to Chloroplast Movement Grant" H.L. Gorton and W.E. Williams \$10,700.
- National Science Foundation, 2000-2003, "Chloroplast Movements as a Mechanism for Protection Against Radiation Stress" H.L. Gorton and W.E. Williams \$230,000.
- United States Department of Agriculture, 1998-1999, "A Spectroradiometer for Plant Physiology Research at St. Mary's College of Maryland" H.L. Gorton \$26,972
- National Science Foundation, Summer 1998, "Development of a Scanning Photoacoustic Instrument with Microscopic resolution for studies of leaf structure-function and photosynthesis within tissues" (P.I. Thomas Vogelmann, University of Wyoming) \$14,470.
- United States Department of Agriculture Strengthening Program, 1995-1996,

- "Quantifying Channels and Hot Spots of UV Penetration into Leaves" H.L. Gorton \$63,934
- National Science Foundation, 1991-1995. "RUI: Adaptive Significance of Circadian Rhythms in Stomatal Function and Photosynthesis." W.E. Williams and H.L. Gorton \$165,000
- Research Corporation, Cottrell College Science Grant, 1990: "Circadian Rhythms in Guard Cell Protoplasts." H.L. Gorton \$2,147.
- National Science Foundation College Science Instrumentation Program, 1986-1988: "A Plant Physiology Program for Trinity College." H.L. Gorton \$21,620.
- Research Corporation, Cottrell College Science Grant, 1987: "Circadian Rhythms in Stomatal Opening and Responsiveness in Epidermal Peels of *Vicia faba*. H.L. Gorton \$7,500.
- Whitehall Foundation, 1987-1991. "Adaptive Significance of Circadian Rhythms in Stomatal Function." W.E. Williams and H.L. Gorton \$72,675.