

CURRICULUM VITAE

Barbara Demmig-Adams

Academic Positions

- 1998 Promotion to Full Professor, Department of EPO Biology, University of Colorado
- 1994-98 Associate Professor, Department of EPO Biology, University of Colorado
- 1994 Visiting Fellow, Research School of Biological Sciences, Australian Natl. University
- 1990-94 Assistant Professor, Department of EPO Biology, University of Colorado
- 1989-90 Research Associate, Department of EPO Biology, University of Colorado
- 1986-89 Habilitation candidate, Lehrstuhl für Botanik II, University of Würzburg, Germany

Postgraduate Education

- 1984-86 Dr. rer. nat. habil. in Plant Biology (Degree awarded after international review of research and teaching); University of Würzburg, Germany
- 1984-86 Postdoctoral Fellow, Department of Plant Biology, Carnegie Institution of Washington, Stanford, CA

Undergraduate and Graduate Education (University of Würzburg, Germany)

- 1980-84 Dr. rer. nat. (same as PhD) in Plant Biology
- 1974-79 Staatsexamen in Biology (same as BA/MA) and Chemistry (same as BA)

Academic Awards

- Highly Cited Researcher** in the Plant & Animal Science category by the Institute for Scientific Information (comprising less than 0.5 percent of all publishing researchers). See: <<http://isihighlycited.com/>>
- Two papers among the top five honored as the most highly cited during the previous ten years in the Australian Journal of Plant Physiology (January 2003 issue of Functional Plant Biology).
- One paper among the top twenty honored as most highly cited during the 30 years Australian Journal of Plant Physiology / Functional Plant Biology have been published (March 2003 issue of Functional Plant Biology)
- Faculty Fellowship, Jan 1997 to Dec 1997
- Fellowship in Science and Engineering from the David and Lucile Packard Foundation, Oct 1992 to Oct 1997
- "The Academy Award for Biology 1987" from the Academy of Sciences at Göttingen, Germany, Nov1987
- Postdoctoral Fellowship from the Carnegie Corporation of New York, Nov 1985 to Apr 1986
- Postdoctoral Fellowship from the McKnight Foundation, Mar 1985 to Nov 1985
- Postdoctoral Fellowship from the Deutsche Forschungsgemeinschaft (DFG), Mar 1984 to Mar 1985

Fellowships and Grants Funded

- Supplementary Research Opportunity Award to Collaborative Research: Photosynthetic Acclimation, Photoprotection, and Phloem Loading (2005) \$24,952 from the National Science Foundation. Co-PI with W. Adams

- Collaborative Research: Photosynthetic Acclimation, Photoprotection, and Phloem Loading (2003-2006). \$454,007 from the National Science Foundation. Co-PI with W. Adams & R. Turgeon
- Seasonal Changes in the Productivity of Evergreen Forests: Toward an Understanding of what it Takes to be "Evergreen" and How Seasonal Changes are Orchestrated (2002-2005). \$260,000 from the Andrew W. Mellon Foundation. Co-PI with W. Adams
- Protein Phosphorylation and Xanthophyll Cycle Dynamics dependent on Lifeform" (2000-2003) \$150,000 from the United States Department of Agriculture. PI with W. Adams
- Protein Phosphorylation and Photoprotection during Winter Stress (1999-2001) \$100,000 from the National Science Foundation. Co-PI with W. Adams
- Photoprotection during Winter Stress (1996-1998) \$200,486 from the National Science Foundation. Co-PI with W. Adams
- Biosphere/Atmosphere Interactions: Biochemical Causes to Global Implications (1994-1999) \$1,699,837 from the National Science Foundation. Co-PI with 21 other investigators
- Faculty Fellowship (1997) \$51,229 (plus \$3,787 in Grants-in-Aid) from the University of Colorado Council on Research and Creative Work.
- Interaction of Photoprotective Processes in Plants (1994-1997) \$185,000 from the United States Department of Agriculture. PI with W. Adams
- Replacement and Modernization of Greenhouse Facilities (1994-1996) \$202,500 from the National Science Foundation. Co-PI with 4 other investigators
- Fellowship in Science and Engineering from the David and Lucile Packard Foundation (1992-1997) \$500,000.
- Carotenoids and Photoprotection in CAM Plants (1992-1995) \$126,000 from the National Science. Co-PI with W. Adams
- Improvement of Laboratories in Plant Physiology and Plant Ecophysiology at the University of Colorado in Boulder (1993-1994) \$90,000 from the National Science Foundation and the University of Colorado. Co-PI with 2 other investigators
- The Relative Roles of Photoprotective Energy Dissipation and Repair Processes in Plants under High Light Stress (1992-1993) \$4,500 from the University of Colorado Council on Research and Creative Work.
- Remote Sensing of Actual Photosynthesis Rates of Vegetation under Changing Environmental Conditions (1991-1992) \$17,971 from the University of Colorado Global Change & Environmental Quality Program.
- Carotenoids and Photoprotection in Various Crop Species (1990-1992) \$100,000 from the United States Department of Agriculture. PI with W. Adams
- Purchase of Nine Controlled Environment Growth Chambers (1990-1991) \$113,015 from the National Science Foundation. Co-PI with 5 other investigators

List of Publications

DEMMIG-ADAMS B, ADAMS WW III 2006 Photoprotection in an ecological context: the remarkable complexity of thermal dissipation. *New Phytologist* (Tansley Review), in press

ZARTER CR, ADAMS WW III, EBBERT V, CUTHBERTSON, D ADAMSKA I, DEMMIG-ADAMS B 2006 Winter downregulation of intrinsic photosynthetic capacity coupled with upregulation of Elip-like proteins and persistent energy dissipation in a subalpine forest. *New Phytologist*, in press

- ZARTER CR, DEMMIG-ADAMS B, EBBERT V, ADAMSKA I, ADAMS WW III 2006 Photosynthetic capacity and light harvesting efficiency during the winter-to-spring transition in subalpine conifers. *New Phytologist*, in press
- DEMMIG-ADAMS B, EBBERT V, ZARTER CR, ADAMS WW III 2006 The relationship between photoinhibition and thermal dissipation. *In* B Demmig-Adams, WW Adams III, AK Mattoo (eds) Photoprotection, Photoinhibition, Gene Regulation, and Environment. *Advances in Photosynthesis and Respiration*. Springer, Dordrecht, pp. 39-48
- ADAMS WW III, ZARTER CR, MUEH KE, AMIARD V, DEMMIG-ADAMS B 2006 Energy dissipation and photoinhibition: a continuum of photoprotection. *In* B Demmig-Adams, WW Adams III, AK Mattoo (eds) Photoprotection, Photoinhibition, Gene Regulation, and Environment. *Advances in Photosynthesis and Respiration*. Springer, Dordrecht, pp. 49-64
- DEMMIG-ADAMS B, EBBERT V, MELLMAN DL, MUEH KE, SCHAFFER L, FUNK C, ZARTER CR, ADAMSKA I, JANSSON S, ADAMS WW III 2006 Modulation of PsbS and flexible versus sustained energy dissipation by light environment in different species. *Physiologia Plantarum* **127**: 670-680
- ZARTER CR, EBBERT V, ADAMS WW III, ADAMSKA I, JANSSON S, DEMMIG-ADAMS B 2006 Winter acclimation of PsbS and related proteins in the evergreen *Arctostaphylos uva-ursi* as influenced by altitude and light environment. *Plant, Cell and Environment* **29**, 869-878
- DEMMIG-ADAMS B 2005 Linking the xanthophyll cycle with photoprotective energy dissipation. *In* Govindjee, JT Beatty, H Gest, JF Allen (eds) *Discoveries in Photosynthesis*. Springer, Dordrecht, pp. 923-930
- MACCARRONE M, BARI M, GASPERI V, DEMMIG-ADAMS B 2005 The photoreceptor protector zeaxanthin induces cell death in neuroblastoma cells. *Anticancer Research* **25**, 3871-3876
- DANI J, BURRILL C, DEMMIG-ADAMS B 2005 The remarkable role of nutrition in learning and behaviour. *Nutrition & Food Science* **35**(4), 258-263
- MCCAULEY L, DEMMIG-ADAMS B 2005 Breast cancer, Asian diet, and soy genistein – a matter of all or nothing? *Nutrition & Food Science* **35**(1), 28-34
- DEMMIG-ADAMS B, MCCAULEY L 2005 Breast cancer, estrogen, and other dietary factors – towards an understanding of their mechanistic interactions *Nutrition & Food Science* **35**(1), 35-42
- AMIARD V, MUEH KE, DEMMIG-ADAMS B, EBBERT V, TURGEON R, ADAMS WW III 2005 Anatomical and photosynthetic acclimation to the light environment in species with differing mechanisms of phloem loading. *Proceedings of the National Academy of Science USA* **102**: 12968-12973

- ADAMS WW III, AMIARD VSE, BACHMANN KEM, TURGEON R, DEMMIG-ADAMS B 2005 Phloem loading type and photosynthetic acclimation to light. *In* A van der Est, D Bruce (eds) *Photosynthesis: Fundamental Aspects to Global Perspectives*. Allen Press, Lawrence, pp. 814-816
- DEMMIG-ADAMS B, EBBERT V, ADAMS WW III 2005 Photoinhibition in evergreens: Involvement of sustained thermal dissipation and PSII protein phosphorylation. *In* A van der Est, D Bruce (eds) *Photosynthesis: Fundamental Aspects to Global Perspectives*. Allen Press, Lawrence, pp. 634-636
- EBBERT V, ADAMS WW III, MATTOO AK, SOKOLENKO A, DEMMIG-ADAMS B 2005 Upregulation of a PSII core protein phosphatase inhibitor and sustained D1 phosphorylation in zeaxanthin-retaining, photoinhibited needles of overwintering Douglas fir. *Plant, Cell & Environment* **28**, 232-240
- HERDER R, DEMMIG-ADAMS B 2004 The power of a balanced diet and lifestyle in preventing cardiovascular disease. *Nutrition in Clinical Care* **7**(2), 46-55
- BACHMANN KM, EBBERT V, ADAMS WW III, VERHOEVEN AS, LOGAN BA, DEMMIG-ADAMS B 2004 Effects of lincomycin on PSII efficiency, non-photochemical quenching, D1 protein and xanthophyll cycle during photoinhibition and recovery. *Functional Plant Biology* **31**(8), 803-813
- ADAMS WW III, DEMMIG-ADAMS B 2004 Chlorophyll fluorescence as a tool to monitor plant response to the environment. *In* GC Papageorgiou, Govindjee (eds) *Chlorophyll a Fluorescence: A Signature of Photosynthesis*. Advances in Photosynthesis. Volume 19. Springer, Dordrecht, pp. 583-604
- DEMMIG-ADAMS B, EBBERT V, ADAMS WW III 2004 Stress and Photosynthesis. *In* RM Goodman (ed) *Encyclopedia of Plant & Crop Science*, Marcel Dekker, New York, pp. 901-905
- ADAMS WW III, ZARTER CR, EBBERT V, DEMMIG-ADAMS B 2004 Photoprotective strategies of overwintering evergreens. *BioScience* **54**, 41-49
- DEMMIG-ADAMS B, ADAMS WW III 2003 Photoinhibition. *In* B Thomas, D Murphy, B Murray (eds) *Encyclopedia of Applied Plant Science: Environmental Regulation of Growth and Development*, Academic Press, London, pp. 707-714
- DEMMIG-ADAMS B, ADAMS WW III 2003 Photoprotection against excess light via zeaxanthin-dependent energy dissipation. *In* W Larcher (ed) *Physiological Plant Ecology. Ecophysiology and Stress Physiology of Functional Groups*, 4th edition. Springer, Berlin, pp. 359-361 and 501-502
- DEMMIG-ADAMS B 2003 Linking the xanthophyll cycle with photoprotective energy dissipation. *Photosynthesis Research* **76**, 73-80

- BARKER DH, ADAMS WW III, DEMMIG-ADAMS B, LOGAN BA, VERHOEVEN AS, SMITH SD 2002 Nocturnally retained zeaxanthin does not remain engaged in a state primed for energy dissipation during the summer in two *Yucca* species growing in the Mojave Desert. *Plant, Cell and Environment* **25**, 95-103
- ADAMS WW III, ROSENSTIEL TN, DEMMIG-ADAMS B, EBBERT V, BRIGHTWELL AK 2002 Photosynthesis and photoprotection in overwintering plants. *Plant Biology* **4**, 545-557
- DEMMIG-ADAMS B, ADAMS III WW 2002 Antioxidants in photosynthesis and human nutrition. *Science* **298**, 2149-2153
- DEMMIG-ADAMS B, WW ADAMS III 2001 Starklichtstreß: Photoprotektion durch Umwandlung der Xanthophylle. *In* W Larcher (ed) *Ökophysiologie der Pflanzen*. 6th edition. Eugen Ulmer, Stuttgart, pp 293-295
- ADAMS WW III, DEMMIG-ADAMS B, ROSENSTIEL TN, EBBERT V 2001 Dependence of photosynthesis and energy dissipation activity upon growth form and light environment during the winter. *Photosynthesis Research* **67**, 51-62
- EBBERT V, DEMMIG-ADAMS B, ADAMS WW III, MUEH KE, STAEHELIN LA 2001 Correlation between persistent forms of zeaxanthin-dependent energy dissipation and thylakoid protein phosphorylation. *Photosynthesis Research* **67**, 63-78
- ADAMS WW III, DEMMIG-ADAMS B, ROSENSTIEL TN, EBBERT V, BRIGHTWELL AK, BARKER DH, ZARTER CR 2001 Photosynthesis, xanthophylls, and D1 phosphorylation under winter stress. *In* PS2001 Proceedings: 12th International Congress on Photosynthesis. CSIRO Publishing: Melbourne, Australia, 2001. Available at <http://www.publish.csiro.au/ps2001>
- DEMMIG-ADAMS B, ADAMS WW III 2000 Harvesting sunlight safely. *Nature* **403**, 371-374
- ADAMS WW III, DEMMIG-ADAMS B, LOGAN BA, BARKER DH, OSMOND CB 1999 Rapid changes in xanthophyll cycle-dependent energy dissipation and photosystem II efficiency in two vines, *Stephania japonica* and *Smilax australis*, growing in the understory of an open *Eucalyptus* forest. *Plant, Cell & Environment* **22**, 125-136
- VERHOEVEN AS, ADAMS WW III, DEMMIG-ADAMS B 1999 The xanthophyll cycle and acclimation of *Pinus ponderosa* and *Malva neglecta* to winter stress. *Oecologia* **118**, 277-287
- VERHOEVEN AS, ADAMS WW III, DEMMIG-ADAMS B, CROCE R, BASSI R 1999 Xanthophyll cycle pigment localization and dynamics during exposure to low temperatures and light stress in low and high light-acclimated *Vinca major*. *Plant Physiology* **120**, 727-737
- LOGAN BA, ROSENSTIEL TN, DEMMIG-ADAMS B, ADAMS WW III 1999 Effect of nitrogen limitation on foliar antioxidants in relationship to other metabolic characteristics. *Planta* **209**, 213-220

- LOGAN BA, DEMMIG-ADAMS B, ADAMS WW III 1999 Acclimation of photosynthesis to the environment. *In* GS Singhal, G Renger, SK Sopory, K-D Irrgang, Govindjee (eds) Concepts in Plant Photobiology: Photosynthesis and Photomorphogenesis. Narosa Publishing House, New Dehli, India, pp 477-512
- DEMMIG-ADAMS B, ADAMS WW III, EBBERT V, LOGAN BA 1999 Ecophysiology of the xanthophyll cycle. *In* HA Frank, AJ Young, G Britton, RJ Cogdell (eds) The Photochemistry of Carotenoids. Advances in Photosynthesis vol. 8. Kluwer, Dordrecht, pp 245-269
- BARKER DH, LOGAN BA, ADAMS WW III, DEMMIG-ADAMS B 1998 Photochemistry and xanthophyll cycle-dependent energy dissipation in differently oriented cladodes of *Opuntia stricta* during the winter. Australian Journal of Plant Physiology **25**, 95-104
- DEMMIG-ADAMS B, MOELLER DL, LOGAN BA, ADAMS WW III 1998 Positive correlation between levels of retained zeaxanthin + antheraxanthin and degree of photoinhibition in shade leaves of *Schefflera arboricola* (Hayata) Merrill. Planta **205**, 367-374
- DEMMIG-ADAMS B 1998 Survey of thermal energy dissipation and pigment composition in sun and shade leaves. Plant and Cell Physiology **39**, 474-482
- LOGAN BA, GRACE SC, ADAMS WW III, DEMMIG-ADAMS B 1998 Seasonal acclimation of xanthophyll cycle and antioxidants in *Mahonia repens* growing in different light environments. Oecologia **116**, 9-17
- LOGAN BA, DEMMIG-ADAMS B, ADAMS WW III, GRACE SC 1998 Antioxidants and xanthophyll cycle-dependent energy dissipation in *Cucurbita pepo* and *Vinca major* acclimated to four growth PPFs in the field. Journal of Experimental Botany **49**, 1869-1879
- LOGAN BA, DEMMIG-ADAMS B, ADAMS WW III 1998 Antioxidants and xanthophyll cycle-dependent energy dissipation in *Cucurbita pepo* and *Vinca major* upon a sudden increase in growth PPF in the field. Journal of Experimental Botany **49**, 1881-1888
- VERHOEVEN AS, ADAMS WW III, DEMMIG-ADAMS B 1998 Two forms of sustained xanthophyll cycle-dependent energy dissipation in overwintering *Euonymus kiautschovicus*. Plant, Cell & Environment **21**, 893-903
- LOGAN BA, BARKER DH, ADAMS WW III, DEMMIG-ADAMS B 1997 The response of xanthophyll cycle-dependent energy dissipation to sunflecks in a subtropical rainforest. Australian Journal of Plant Physiology **24**, 27-33
- VERHOEVEN AS, DEMMIG-ADAMS B, ADAMS WW III 1997 Enhanced employment of the xanthophyll cycle and thermal energy dissipation in spinach exposed to high light and N stress. Plant Physiology **113**, 317-324

- DEMMIG-ADAMS B, ADAMS WW III 1996 The role of xanthophyll cycle carotenoids in the protection of photosynthesis. *Trends in Plant Science* **1**, 21-26
- DEMMIG-ADAMS B, GILMORE A, ADAMS WW III 1996 *In vivo* functions of carotenoids in higher plants. *The FASEB Journal* **10**, 403-412
- DEMMIG-ADAMS B, ADAMS WW III 1996 Xanthophyll cycle and light stress in nature: uniform response to excess direct sunlight among higher plant species. *Planta* **198**, 460-470
- VERHOEVEN AS, ADAMS WW III, DEMMIG-ADAMS B 1996 Close relationship between the state of the xanthophyll cycle and photosystem II efficiency during recovery from winter stress. *Physiologia Plantarum* **95**, 567-576
- LOGAN BA, BARKER DH, ADAMS WW III, DEMMIG-ADAMS B 1996 Acclimation of leaf carotenoid composition and ascorbate levels to gradients in the light environment within an Australian rainforest. *Plant, Cell & Environment* **19**, 1083-1090
- DEMMIG-ADAMS B, ADAMS WW III 1996 Chlorophyll and carotenoid composition in leaves of *Euonymus kiautschovicus* acclimated to different degrees of light stress in the field. *Australian Journal of Plant Physiology* **23**, 649-659
- DEMMIG-ADAMS B, ADAMS WW III, BARKER DH, LOGAN BA, BOWLING DL, VERHOEVEN AS 1996 Using chlorophyll fluorescence to assess the fraction of absorbed light allocated to thermal dissipation of excess excitation. *Physiologia Plantarum* **98**, 253-264
- ADAMS WW III, DEMMIG-ADAMS B, BARKER DH, KILEY S 1996 Carotenoids and photosystem II characteristics of upper and lower halves of leaves acclimated to high light. *Australian Journal of Plant Physiology* **23**, 669-677
- ADAMS WW III, DEMMIG-ADAMS B 1996 Energy dissipation and the xanthophyll cycle in CAM plants. *In* K Winter, JAC Smith (eds) *Crassulacean Acid Metabolism. Biochemistry, Ecophysiology and Evolution. Ecological Studies vol. 114. Springer, Berlin, pp 97-114*
- ADAMS WW III, HOEHN A, DEMMIG-ADAMS B 1995 Chilling temperatures and the xanthophyll cycle. A comparison of warm-grown and overwintering spinach. *Australian Journal of Plant Physiology* **22**, 75-85
- DEMMIG-ADAMS B, ADAMS WW III, LOGAN BA, VERHOEVEN AS 1995 Xanthophyll cycle-associated energy dissipation and flexible PSII efficiency in plants acclimated to light stress. *Australian Journal of Plant Physiology* **22**, 249-260
- ADAMS WW III, DEMMIG-ADAMS B, VERHOEVEN AS, BARKER DH 1995 'Photoinhibition' during winter stress: Involvement of sustained xanthophyll cycle-associated energy dissipation. *Australian Journal of Plant Physiology* **22**, 261-276

- DEMMIG-ADAMS B, ADAMS WW III 1994 Capacity for photoprotective energy dissipation in leaves with different xanthophyll cycle pools. *Australian Journal of Plant Physiology* **21**, 575-588
- ADAMS WW III, DEMMIG-ADAMS B 1994 Carotenoid composition and down regulation of photosystem II in three conifer species during the winter. *Physiologia Plantarum* **92**, 451-458
- ADAMS WW III, DEMMIG-ADAMS B 1994 The xanthophyll cycle and sustained thermal energy dissipation activity in *Vinca minor* and *Euonymus kiautschovicus* during the winter. *Plant, Cell & Environment* **18**, 117-127
- BJÖRKMANN O, DEMMIG-ADAMS B 1994 Regulation of photosynthetic light energy capture, conversion and dissipation in leaves of higher plants. *In* E-D Schulze, MM Caldwell (eds) *Ecophysiology of Photosynthesis*. Ecological Studies 100, Springer Verlag, Berlin, pp 17-47
- DEMMIG-ADAMS B, ADAMS WW III 1994 Light stress and photoprotection related to the xanthophyll cycle. *In* C Foyer, P Mullineaux (eds) *Photooxidative Stresses in Plants: Causes and Amelioration*. CRC Press, Boca Raton, pp 105-126
- ADAMS WW III, DEMMIG-ADAMS B, LANGE OL 1993 Carotenoid composition and metabolism in green and blue-green algal lichens in the field. *Oecologia* **94**, 576-584
- DEMMIG-ADAMS B, ADAMS WW III 1993 The xanthophyll cycle, protein turnover, and the high-light tolerance of sun-acclimated leaves. *Plant Physiology* **103**, 1413-1420
- DEMMIG-ADAMS, B, ADAMS WW III 1993 The xanthophyll cycle. *In* A Young, G Britton (eds) *Carotenoids in Photosynthesis*. Chapman and Hall, London, pp 206-251
- DEMMIG-ADAMS B, ADAMS WW III 1993 The xanthophyll cycle. *In* RG Alscher, JL Hess (eds) *Antioxidants in Higher Plants*. CRC Press, Boca Raton, pp 91-110
- ADAMS WW III, DEMMIG-ADAMS B 1993 Energy dissipation and photoprotection in leaves of higher plants. *In* HY Yamamoto and CM Smith (eds) *Photosynthetic Responses to the Environment*. Current Topics in Plant Physiology: An American Society of Plant Physiologists Series, Rockville, Maryland, pp 27-36
- DEMMIG-ADAMS B, ADAMS WW III 1992 Photoprotection and other responses of plants to high light stress. *Annual Review of Plant Physiology and Plant Molecular Biology* **43**, 599-626
- ADAMS WW III, DEMMIG-ADAMS B 1992 Operation of the xanthophyll cycle in higher plants in response to diurnal changes in incident sunlight. *Planta* **186**, 390-398
- DEMMIG-ADAMS B, ADAMS WW III 1992 Carotenoid composition in sun and shade leaves of plants with different life forms. *Plant, Cell & Environment* **15**, 411-419

- ADAMS WW III, VOLK M, HOEHN A, DEMMIG-ADAMS B 1992 Leaf orientation and the response of the xanthophyll cycle to incident light. *Oecologia* **90**, 404-410
- DEMMIG-ADAMS B, ADAMS WW III 1991 Light, photosynthesis, and the xanthophyll cycle. *In* EJ Pell, KL Steffen (eds) *Active Oxygen/Oxidative Stress and Plant Metabolism. Current Topics in Plant Physiology: An American Society of Plant Physiologists Series, Vol 6*, Rockville, Maryland, pp 171-179
- DEMMIG-ADAMS B 1990 Carotenoids and photoprotection in plants: A role for the xanthophyll zeaxanthin. *Reviews on Bioenergetics, Biochimica & Biophysica Acta* **1020**, 1-24
- ADAMS WW III, DEMMIG-ADAMS B, WINTER K, SCHREIBER U 1990 The ratio of variable to maximum chlorophyll fluorescence from photosystem II, measured in leaves at ambient temperature and at 77K, as an indicator of the photon yield of photosynthesis. *Planta* **180**, 166-174
- DEMMIG-ADAMS B, ADAMS WW III, HEBER U, NEIMANIS S, WINTER K, KRÜGER A, CZYGAN F-C, BILGER W, BJÖRKMAN O 1990 Inhibition of zeaxanthin formation and of rapid changes in radiationless energy dissipation by dithiothreitol in spinach leaves and chloroplasts. *Plant Physiology* **92**, 293-301
- ADAMS, WW III, DEMMIG-ADAMS B, WINTER K 1990 Relative contributions of zeaxanthin-related and zeaxanthin-unrelated types of "high-energy-state" quenching of chlorophyll fluorescence in spinach leaves exposed to various environmental conditions. *Plant Physiology* **92**, 302-309
- DEMMIG-ADAMS B, MÁGUAS C, ADAMS WW III, MEYER A, KILIAN E, LANGE OL 1990 Effect of high light on the efficiency of photochemical energy conversion in a variety of lichen species with green and blue-green phycobionts. *Planta* **180**, 400-409
- DEMMIG-ADAMS B, ADAMS WW III, CZYGAN F-C, SCHREIBER U, LANGE OL 1990 Differences in the capacity for radiationless energy dissipation in green and blue-green algal lichens associated with differences in carotenoid composition. *Planta* **180**, 582-589
- CLELAND RE, DEMMIG-ADAMS B, ADAMS WW III, WINTER K 1990 Phosphorylation state of the light-harvesting chlorophyll-protein complex of photosystem II and fluorescence characteristics in *Monstera deliciosa* Liebm. and *Glycine max* (L.) Merrill in response to light. *Australian Journal of Plant Physiology* **17**, 589-599
- DEMMIG-ADAMS B, ADAMS WW III 1990 The carotenoid zeaxanthin and "high-energy-state" quenching of chlorophyll fluorescence. *Photosynthesis Research* **25**, 187-197
- DEMMIG-ADAMS B, ADAMS WW III, GREEN TGA, CZYGAN F-C, LANGE OL 1990 Differences in the susceptibility to light stress in two lichens, one possessing and one lacking the xanthophyll cycle. *Oecologia* **84**, 451-456

- NASH TH III, REINER A, DEMMIG-ADAMS B, KILIAN E, KAISER WM, LANGE OL 1990 The effect of atmospheric desiccation and osmotic water stress on photosynthesis and dark respiration of lichens. *New Phytologist* **116**, 269-276
- DEMMIG-ADAMS B 1990 Zeaxanthin-associated energy dissipation and the susceptibility of various organisms to light stress. *In* Baltscheffsky, M (ed) *Current Research in Photosynthesis*, vol. II, pp 357-364. Kluwer Academic Publishers, The Netherlands
- DEMMIG-ADAMS B, ADAMS WW III, WINTER K, MEYER A, SCHREIBER U, PEREIRA JS, KRÜGER A, CZYGAN F-C, LANGE OL 1989 Photochemical efficiency of photosystem II, photon yield of O₂ evolution, photosynthetic capacity, and carotenoid composition during the "midday depression" of net CO₂ uptake in *Arbutus unedo* growing in Portugal. *Planta* **177**, 377-387
- DEMMIG-ADAMS B, WINTER K, KRÜGER A, CZYGAN F-C 1989 Light response of CO₂ assimilation, dissipation of excess excitation energy, and zeaxanthin content of sun and shade leaves. *Plant Physiology* **90**, 881-886
- DEMMIG-ADAMS B, WINTER K, KRÜGER A, CZYGAN F-C 1989 Zeaxanthin and the induction and relaxation kinetics of the dissipation of excess excitation energy in leaves in 2% O₂, 0% CO₂. *Plant Physiology* **90**, 887-893
- DEMMIG-ADAMS B, WINTER K, KRÜGER A, CZYGAN F-C 1989 Zeaxanthin synthesis, energy dissipation, and photoprotection of photosystem II at chilling temperatures. *Plant Physiology* **90**, 894-898
- DEMMIG-ADAMS B, WINTER K, WINKELMANN E, KRÜGER A, CZYGAN F-C 1989 Photosynthetic characteristics and the ratios of chlorophyll, β -carotene, and the components of the xanthophyll cycle upon a sudden increase in growth light regime in several plant species. *Botanica Acta* **102**, 319-325
- DEMMIG-ADAMS B, WINTER K, KRÜGER A, CZYGAN F-C 1989 Light stress and photoprotection related to the carotenoid zeaxanthin in higher plants. *In* Briggs, WR (ed) *Photosynthesis*, pp 375-391. Alan R. Liss, New York
- DEMMIG-ADAMS B 1989 Lichtstreß und Lichtschutz bei Pflanzen. *Naturwissenschaften* **76**, 262-267
- DEMMIG B, WINTER K 1988 Light response of CO₂ assimilation, reduction state of Q, and radiationless energy dissipation in intact leaves. *Australian Journal of Plant Physiology* **15**, 151-162
- DEMMIG B, WINTER K 1988 Characterisation of three components of non-photochemical fluorescence quenching and their response to photoinhibition. *Australian Journal of Plant Physiology* **15**, 163-177

- BJÖRKMAN O, DEMMIG B, ANDREWS TJ 1988 Mangrove photosynthesis: Response to high-irradiance stress. *Australian Journal of Plant Physiology* **15**, 43-61
- DEMMIG B, WINTER K, KRÜGER A, CZYGAN F-C 1988 Zeaxanthin and the heat dissipation of excess light energy in *Nerium oleander* exposed to a combination of high light and water stress. *Plant Physiology* **87**, 17-24
- ADAMS WW III, TERASHIMA I, BRUGNOLI E, DEMMIG B 1988 Comparisons of photosynthesis and photoinhibition in the CAM vine *Hoya australis* and several C₃ vines growing on the coast of eastern Australia. *Plant, Cell & Environment* **11**, 173-181
- DEMMIG B 1988 Lichtstreß und Lichtschutz bei Pflanzen. *Jahrbuch der Akademie der Wissenschaften zu Göttingen 1987*, Vandenhoeck & Rupprecht, Göttingen, pp 27-33
- BJÖRKMAN O, DEMMIG B 1987 Photon yield of O₂ evolution and chlorophyll fluorescence characteristics at 77K among vascular plants of diverse origins. *Planta* **170**, 489-504
- DEMMIG B, BJÖRKMAN O 1987 Comparison of the effect of excessive light on chlorophyll fluorescence (77K) and photon yield of O₂ evolution in leaves of higher plants. *Planta* **171**, 171-184
- DEMMIG B, CLELAND RE, BJÖRKMAN O 1987 Photoinhibition, 77K chlorophyll fluorescence quenching and phosphorylation of the light-harvesting chlorophyll-protein complex of photosystem II in soybean leaves. *Planta* **172**, 378-385
- DEMMIG B, WINTER K, KRÜGER A, CZYGAN F-C 1987 Photoinhibition and zeaxanthin formation in intact leaves. A possible role of the xanthophyll cycle in the dissipation of excess light energy. *Plant Physiology* **84**, 218-224
- WINTER K, DEMMIG B 1987 Reduction state of Q and nonradiative energy dissipation during photosynthesis in leaves of a Crassulacean acid metabolism plant, *Kalanchoë daigremontiana* Hamet et Perr. *Plant Physiology* **85**, 1000-1007
- DEMMIG B, WINTER K 1986 Sodium, potassium, chloride and proline concentrations of chloroplasts isolated from a halophyte, *Mesembryanthemum crystallinum* L. *Planta* **168**, 421-426
- DEMMIG B, GIMMLER H 1984 Permeability properties of the chloroplast envelope for monovalent inorganic ions and their distribution between the intact chloroplast and the external medium in the light and dark. *In* C Sybesma, ed, *Proc Int Congr Photosynth 6th*, Vol 2. Nijhoff/Junk Publishers, The Hague, pp 317
- DEMMIG B, GIMMLER H 1983 Properties of the isolated intact chloroplast at cytosolic K⁺ concentrations. Light-induced cation uptake into intact chloroplasts is driven by an electrical potential difference. *Plant Physiology* **73**, 169-174

- DEMMIG B, WINTER K 1983 Photosynthetic characteristics of chloroplasts isolated from *Mesembryanthemum crystallinum* L., a halophilic plant capable of Crassulacean acid metabolism. *Planta* **159**, 66-76
- DEMMIG B, WINTER K 1983 Chloroplasts from *Mesembryanthemum crystallinum* L., a halophilic plant capable of Crassulacean acid metabolism. *Hoppe-Seyler's Zeitschrift für Physiologische Chemie* **364**, 1115-1116
- GIMMLER H, HEILMANN B, DEMMIG B, HARTUNG W 1981 The permeability coefficients of the plasmalemma and the chloroplast envelope of spinach mesophyll cells for phytohormones. *Zeitschrift für Naturforschung* **36c**, 672-678
- GIMMLER H, DEMMIG B, KAISER WM 1980 The role of K⁺ and H⁺ fluxes across the envelope for photosynthetic CO₂ fixation. *In* G Akoyunoglou, ed, *Proc Int Congr Photosynth* 5th, Vol 4. Balaban Int Sciences Services, Philadelphia, pp 599-608
- GIMMLER H, DEMMIG B 1980 The effect of divalent cations on the permeability of the chloroplast envelope and on photosynthesis. *In* RM Spanswick, WJ Lucas, J Dainty, eds, *Plant Membrane Transport: Current Conceptual Issues*. Elsevier Biomedical Press, Amsterdam, pp 445-446
- DEMMIG B, GIMMLER H 1979 Effect of divalent cations on cation fluxes across the chloroplast envelope and on photosynthesis of intact chloroplasts. *Zeitschrift für Naturforschung* **34c**, 233-241

Edited Books

- DEMMIG-ADAMS B, ADAMS WW III, MATTOO AK (eds) 2006 Photoprotection, Photoinhibition, Gene Regulation, and Environment. *Advances in Photosynthesis and Respiration*, Volume 21. Springer, Dordrecht

Invited Talks

- “Novel genes in photoprotection and stress adaptation?”. Collaborative Plant Biology in the Rocky Mountain / Midwest: Impacts and Future Prospects for Plant Genomics. University of Wyoming, 1-3 June 2006. Authors (presenting*): B Demmig-Adams*, V Ebbert, K Danna, W Adams
- “Novel genes in photoprotection and stress adaptation of evergreen species”. Keystone Conference on “Plant Responses to Abiotic Stress”, Copper Mountain, Colorado, 8-12 April 2006. Authors (presenting*): B Demmig-Adams*, V Ebbert, W. Adams
- “Photosynthesis / photoprotection and the whole plant: Uncovering new links”, Department of Biology, Colorado State University, 6 September 2005. B Demmig-Adams

- "Seasonal adjustments in photosynthesis and photoprotection", Keynote Speaker for symposium entitled: Responses to Winter - from Ecosystem to Gene, XVII International Botanical Congress, Vienna, Austria, 18-23 July 2005. Authors (presenting*): W Adams*, CR Zarter, V Ebbert, KE Mueh, VSE Amiard, & B Demmig-Adams
- "Photoprotective energy dissipation and the bigger picture", Keynote Speaker for symposium entitled: Antioxidants, gene regulation, and environment, XVII International Botanical Congress, Vienna, Austria, 18-23 July 2005. Authors (presenting*): B Demmig-Adams*, W Adams
- "The remarkable role of plant antioxidants in plant survival and human health: Case study of the carotenoid zeaxanthin", Department of Integrative Physiology, University of Colorado at Boulder, 3 March 2005. B Demmig-Adams
- "Multiple mechanisms of zeaxanthin function in thermal dissipation, photoinhibition, and signal transduction", 13th International Congress of Photosynthesis, Symposium on "Photosynthetic acclimation: Ecophysiology, diverse environments", Montréal, Canada, August 29-September 3, 2004. Authors (presenting*): B Demmig-Adams*, V Ebbert, CR Zarter, A Sokolenko, AK Mattoo, WW Adams III
- "Role of phloem loading type in the plasticity of photosynthetic acclimation to light environment", 13th International Congress of Photosynthesis, Montréal, Canada, 29 August - 3 September 2004. Authors (presenting*): WW Adams III*, VSE Amiard, KEM Bachmann, R Turgeon, & B Demmig-Adams
- "Role of phloem loading type in the plasticity of photosynthetic acclimation to light environment", Plasmodesmata 2004, Asilomar, CA, 17-21 August 2004. Authors (presenting*): VSE Amiard*, KEM Bachmann, R Turgeon, B Demmig-Adams & WW Adams III
- "Seasonal adjustments in photosynthesis and photoprotection in a subalpine forest", Annual meeting of the Guild of the Rocky Mountain Population Biologists, 17-18 September 2004. Authors (presenting*): CR Zarter*, V Ebbert, WW Adams III & B Demmig-Adams
- "Photosynthesis and photoprotection during winter", Annual Meeting of the American Society of Plant Biologists, Denver, CO, August 3-7, 2002. Authors (presenting*): B Demmig-Adams* & WW Adams III
- "Growth form and light environment determinants of photosynthetic acclimation to winter stress", Symposium on "Photoprotection and Acclimation", 12th International Congress on Photosynthesis. Brisbane, Australia, August 18-23, 2001. Authors (presenting*): WW Adams III* & B Demmig-Adams
- "Modulation of the xanthophyll cycle by the environment" and "Zeaxanthin retention, sustained energy dissipation, and protein phosphorylation", European Science Foundation (ESF) Workshop on "Non-Photochemical Quenching and the Xanthophyll Cycle – Mechanisms

- and Implications”, Weizmann Institute of Science, Rehovot, Israel, October 12-15, 1999. Authors (presenting*): B Demmig-Adams* & WW Adams III
- “How is continuous energy dissipation maintained under stress? From the whole plant to the chloroplast” Symposium on “Light and Photosynthesis: From the Molecule to the Globe” sponsored by the Carnegie Institution of Washington, Napa, CA, August 28-30, 1999. Authors (presenting*): B Demmig-Adams* & WW Adams III
- "Role of zeaxanthin in photoinhibition during shade to sun transfer", XIth International Congress on Photosynthesis, Budapest, Hungary, August 17-22, 1998. Authors (presenting*): B Demmig-Adams* & WW Adams III
- "Relationships among zeaxanthin, photoinhibition, and carbohydrate status in shade leaves exposed to high light", 7th Western Photosynthesis Conference, Asilomar Conference Center, Pacific Grove, CA, January 8-11, 1998. Authors (presenting*): B Demmig-Adams* & WW Adams III
- "Lichtschutzreaktionen und Streßtoleranz: Vom Molekül zur ganzen Pflanze", Heinrich-Heine-Universität Düsseldorf, Düsseldorf, Germany, December 19th, 1997
- "Protection by carotenoids: From Photosynthesis to the human eye", Annual Meeting of the Packard Fellows, Monterey, CA, September 3-6, 1997
- "New insights into antioxidation in plants, and implications for human health and nutrition", Nutrition Seminar Series sponsored by the Center for Human Nutrition, University of Colorado Health Sciences Center in Denver, CO, April 3, 1997
- "Protection against intense light and oxidative stress: Lessons from four billion years of experience", Departmental Colloquium, Department of Molecular, Cellular, and Developmental Biology, University of Colorado at Boulder, December 5, 1996
- "The xanthophyll cycle and regulation of the efficiency of solar energy conversion", International Conference on 'Molecular to Global Photosynthesis'. Imperial College of Science, London, United Kingdom, March 28-29, 1996. Authors (presenting*): B Demmig-Adams* & WW Adams III
- "Involvement of the xanthophyll cycle in the phenomenon of photoinhibition", Fifth Western Photosynthesis Conference. Asilomar Conference Center, Pacific Grove, January 9-12, 1996. Authors (presenting*): B Demmig-Adams* & WW Adams III
- "Xanthophyll cycle and diurnal PSII regulation", Special Mini-Symposium on "The Xanthophyll Cycle and Photoprotective Energy Dissipation". Annual Meeting of the American Society of Plant Physiology. Charlotte, NC, August 2, 1995. Authors (presenting*): B Demmig-Adams* & WW Adams III
- "Involvement of the xanthophyll cycle in the acclimation of plants to light stress", Integrative Photosynthesis Seminar Series. University of Illinois, Urbana, April 20, 1995

- "Using chlorophyll fluorescence to assess the dynamics of xanthophyll-associated energy dissipation", Robertson Symposium on "Chlorophyll Fluorescence". Research School of Biological Sciences, Australian National University, Canberra, Australia, May 27-29, 1994. Authors (presenting*): B Demmig-Adams* & WW Adams III
- "Dynamics of the xanthophyll cycle and its relationship to photoinhibition", Carnegie-Stanford Plant Science Seminar Series. Stanford, California, February 28, 1994
- "Carotenoids and photoprotection of photosynthesis", Plant Biology Seminar Series: Current Topics in Plant Ecophysiology. University of California, Davis, February 25, 1994
- "Photoprotection and the xanthophyll cycle: Capacity for energy dissipation in leaves with different xanthophyll cycle pools sizes", 4th Western Regional Photosynthesis Conference, Asilomar Conference Center, Pacific Grove, CA, January 4-7, 1994. Authors (presenting*): B Demmig-Adams* & WW Adams III
- "High light stress and the xanthophyll Cycle", XVth International Botanical Congress, Tokyo (Yokohama), Japan, August 28-September 3, 1993. Authors (presenting*): B Demmig-Adams* & WW Adams III
- "Photoprotection of the photosynthetic apparatus through the carotenoid zeaxanthin", Photosynthetic Responses to the Environment, Satellite meeting for the IX International Congress on Photosynthesis, Kona, Hawaii, August 25-27, 1992. Authors (presenting*): B Demmig-Adams* & WW Adams III
- "Zeaxanthin function in photosynthetic organisms", Gordon Research Conference on Chemistry and Biology of Carotenoids, Oxnard, CA, March 9-13, 1992. Authors (presenting*): B Demmig-Adams* & WW Adams III
- "The carotenoid zeaxanthin and photoprotection of the photosynthetic apparatus", Sixth Annual Penn State Symposium in Plant Physiology, May 23-25, 1991. Authors (presenting*): B Demmig-Adams* & WW Adams III
- "Carotenoids and photoprotection in plants", Department of Biochemistry, Colorado State University, Fort Collins, April 15, 1991
- "Zeaxanthin and photoprotective energy dissipation", Molecular Biophysics Supergroup Program, University of Colorado, Boulder, December 5, 1990.
- "Photoinhibition and photoprotective responses: the xanthophyll cycle", Plant Physiology Seminar, Department of Botany, Duke University, Durham, March 30, 1990. Authors (presenting*; joint seminar): WW Adams III* & B Demmig-Adams*
- "Carotenoids and photoprotection in plants", Center for the Study of Early Events in Photosynthesis, Arizona State University, Tempe, February 8, 1990

- "The carotenoid zeaxanthin and photoprotection", Seminar series on cancer (melanoma) research, University Hospital, Denver, January 24, 1990
- "Zeaxanthin formation and avoidance of PS II damage from combined high light and water stress", Rockefeller Foundation meeting on 'The Potentials of Biotechnology for Improving Grain Yield of Rice under Water Limited Conditions', Bellagio Study and Conference Center, Bellagio, Italy, September 18-22, 1989. Authors (presenting*): B Demmig-Adams* & WW Adams III
- "Zeaxanthin-associated energy dissipation in leaves and isolated chloroplasts", International Workshop on 'The Use of Chlorophyll Fluorescence and other Non-Invasive Spectroscopic Techniques in Plant Stress Physiology', Wageningen, The Netherlands, August 14-16, 1989. Authors (presenting*): B Demmig-Adams* & WW Adams III
- "Light stress, photoprotective energy dissipation, and the carotenoid zeaxanthin", VIIIth International Congress on Photosynthesis, Stockholm, Sweden, August 6-11, 1989. Authors (presenting*): B Demmig-Adams* & WW Adams III
- "Light stress and photoprotection in plants - zeaxanthin as a lightning rod", Department of Organic Chemistry, Würzburg University, Würzburg, Germany, December 19, 1988
- "Dissipation of excess excitation energy", C. S. French Photosynthesis Symposium "Toward a Broad Understanding of Photosynthesis. Multiple Approaches to a Common Goal" Carnegie Institution of Washington, Stanford, CA, USA, July 17-22, 1988
- "Light stress and photoprotection in plants", Annual meeting of the Göttingen Academy of Science, Göttingen, Germany, November 20, 1987
- "Photoinhibition and shade-sun acclimation of photosynthesis: damage or protection?" XIV International Botanical Congress, Berlin, Germany, July 24 - August 1, 1987
- "Light stress in plants", Department of Physical Chemistry, Würzburg University, Würzburg, Germany, July 2, 1987
- "Photoinhibition of photosynthesis: Two different syndromes", Robertson Symposium "Ecology of Photosynthesis in Sun and Shade" Canberra, Australia, February 1987
- "Photoinhibition of photosynthesis in sun and shade leaves", Robert-Hill-Symposium, Würzburg, Germany, July 2-6, 1986
- "Water stress and photoinhibition of photosystem II", US-Australian conference on the "Structure, function and photoinhibition of photosystem II and plant response to stress", Honolulu, Hawaii, September 1985

Invited session chair

Chair, Symposium on "Antioxidants, Gene Regulation, and Environment", XVII International Botanical Congress, Vienna, Austria, July 2005

Chair, Symposium on "Photoprotection and Acclimation", 12th International Congress on Photosynthesis. Brisbane, Australia, August 18-23, 2001

Poster presentations (from 2002)

"Antioxidants in photosynthesis and human nutrition – A review". Butcher Symposium in Genomics and Biotechnology. The Future of Biomedicine in Colorado – A workshop of the Possible. Broomfield, CO, November 3-4, 2002. Autor: B Demmig-Adams

"Photosynthesis and Photoprotection during Winter". Annual Meeting of the American Society of Plant Biologist, Denver, CO, August 3-7, 2002. Authors: WW Adams III, B Demmig-Adams, V Ebbert, CR Zarter, AK Brightwell

"Response of D1, PsbS, and the xanthophyll cycle to light environment in the tropical model plant *Monstera deliciosa*". Annual Meeting of the American Society of Plant Biologists, Denver, CO, August 3-7, 2002. Authors: V Ebbert, B Demmig-Adams, DL Mellman, RL Knobel, CR Zarter, Adams WW III

**Books/textbooks in which our research
has been featured by other authors**

- 1) Aro E-M, Andersson B (editors) (2001) *Regulation of Photosynthesis*. Kluwer Academic Publishers, Dordrecht. pp. 279, 434, 439-440, 442-443, 475, and 501-502.
- 2) Blankenship RE (2002) *Molecular Mechanisms of Photosynthesis*. Blackwell Science, Oxford. pp. 91-93.
- 3) Carpentier R (ed) (2004) *Photosynthesis Research Protocols*. Methods in Molecular Biology, Vol. 274. Humana Press, Totowa. Chapter 15.
- 4) Dey PM, Harborne JB (1997) *Plant Biochemistry*. Academic Press, San Diego. p. 431.
- 5) Ensminger PA (2001) *Life Under the Sun*. Yale University Press, New Haven. Chapter 15 (pp. 173-182) and pp. 255-257. I went over several drafts of this chapter for Peter.
- 6) Fitter AH, Hay RKM (2002) *Environmental Physiology of Plants*. 3rd edition. Academic Press, London. p. 58.
- 7) Frank HA, Young AJ, Britton G, Cogdell RJ (editors) (1999) *The Photochemistry of Carotenoids*. Kluwer Academic Press, Dordrecht. pp. 4, 12, 23-24, 33, 274, 287, 294, and 296.
- 8) Hall DO, Rao KK (1999) *Photosynthesis*. 6th edition. Cambridge University Press, Cambridge. pp. 181-182 (citation on p. 209).
- 9) Heldt H-W (1997) *Plant Biochemistry & Molecular Biology*. Oxford University Press, Oxford. pp. 102-103.
- 10) Hopkins WG, Huner NPA (2004) *Introduction to Plant Physiology*. 3rd edition. John Wiley & Sons, Inc., New York. p. 87.
- 11) Inz é D, Van Montagu M (editors) (2002) *Oxidative Stress in Plants*. Taylor & Francis, London. pp. 12, 37, and 89.
- 12) Lambers H, Chapin FS III, Pons TL (1998) *Plant Physiological Ecology*. Springer, New York. pp. 40-42, 221, and 223.

- 13) Larcher W (2001) *Okophysiologie der Pflanzen*. 6th edition. Verlag Eugen Ulmer, Stuttgart. pp. 293-295 and 400-401.
- 14) Lawlor DW (2001) *Photosynthesis*. 3rd edition. Springer-Verlag, New York. Chapters 3 and 5.
- 15) Lüttge U (1998) *Physiological Ecology of Tropical Plants*. Springer, Berlin. pp. 114-117.
- 16) McDonald MS (2003) *Photobiology of Higher Plants*. John Wiley & Sons, Chichester. pp. 23, 24, 31, 128, 140, and 145.
- 17) Mulkey SS, Chazdon RL, Smith AP (editors) (1996) *Tropical Forest Plant Ecophysiology*. Chapman & Hall, New York. pp. 26-27.
- 18) Mohr H, Schopfer P (1995) *Plant Physiology*. Springer, Berlin. pp. 174-175.
- 19) Nilsen ET, Orcutt DM (1996) *The Physiology of Plants Under Stress. Abiotic Factors*. John Wiley & Sons, Inc., New York. pp. 428-429 and 527-529.
- 20) Papageorgiou GC, Govindjee (editors) (2004) *Chlorophyll a Fluorescence A Signature of Photosynthesis*. Springer, Dordrecht. Chapters 1, 2, 3, 10, 11, 18, 19, 20, 21, 24, 28, & 29
- 21) Pessaraki M (editor) (1997) *Handbook of Photosynthesis*. Marcel Dekker, Inc., New York. pp. 236, 418, 448, 451, 457, 576, 587-588, 877-879, 912, 915, and 921.
- 22) Press MC, Scholes JD, Barker MG (editors) (1999) *Physiological Plant Ecology*. Blackwell Science, Oxford. Chapter 1.
- 23) Pugnaire FI, Valladares F (editors) (1999) *Handbook of Functional Plant Ecology*. Marcel Dekker, Inc., New York. pp. 39, 64-65, 283, 291, 307-308, 363, 373, 828, and 837.
- 24) Rama Das, VS (2004) *Photosynthesis Regulation under Varying Light Regimes*. Science Publishers, Inc., Enfield. Chapters 1-4.
- 25) Schopfer P, Brennicke A (1999) *Pflanzenphysiologie*. Springer, Berlin. 5th edition. pp. 588-590.
- 26) Taiz L, Zeiger E (2002) *Plant Physiology*. 3rd edition. Sinauer Associates, Inc., Sunderland. pp. 137-138 and 180-181.
- 27) Yunus M, Pathre U, Mohanty P (eds) (2000) *Probing Photosynthesis Mechanisms, Regulation and Adaptation*. Taylor & Francis, London & New York, Chapter 15.

Teaching

Formal Courses 1998-2006

<u>Term</u>	<u>Course</u>	<u>Instructor / Course Rating</u>
06 Sp	EBIO 3980 EBIO Honors Intro Seminar; 4	A+/A
06 Sp	EBIO 4980 EBIO Honors Thesis Seminar; 9	A+/A+
05 F	EBIO 4800/5800 Diet, Genes, Health, and Mood; 24	A/A
05 Sp	EBIO 3980 EBIO Honors Intro Seminar; 3	A+/A+
05 Sp	EBIO 4980 EBIO Honors Thesis Seminar; 9	A/A-
05 Sp	EBIO 4990 EBIO Honors Research; 2	A-/A+
04 F	(Sabbatical)	
04 Sp	EPOB 4800/5800 Diet, Gene, Health, Mood; 27	A+/A
03 F	EPOB 3530 Essentials in Plant Physiology; 34	A-/A
03 Sp	EPOB 4800/5800 Food, Genes, Mood, and Health; 27	A+/A
02 F	EPOB 3530 Essentials of Plant Physiology	A/A
02 Sp	Guest lecture in EPOB 2060	
02 Sp	EPOB 4800/5800 Antioxidants and Health	A/A

01 F	EPOB 3530 Essentials of Plant Physiology	A-/A
01 Sp	EPOB 4800/5800 Antioxidants and Health	A+/A+
01 Sp	Guest lecture in EPOB 2060	
00 F	EPOB 3530 Essentials of Plant Physiology	A/A-
00 Sp	EPOB 6300 Environmental signal transduction	A-/A-
00 Sp	Guest lecture in EPOB 2060	
99 F	EPOB 3530 Essentials of Plant Physiology	A-/A-
99 F	EPOB 5330 Integrative Physiology	B+/B+
99 Sp	EPOB 4800/5800 Plants, Light, and Stress	A+/A
98 F	EPOB 3530 Essentials of Plant Physiology	A-/A
98 Sp	EPOB 4800/5800 Plants, Light, and Stress	A-/A
98 Sp	EPOB 6200 Environmental control of gene expression	A/A-

Advising of Graduate Research (Principal Dissertation/Thesis Advisor)

- Dr. Barry Logan (co-advised with Prof. W. Adams) graduated 1997
Current position: Assistant Professor at Bowdoin College, Brunswick, Maine
- Dr. Amy Verhoeven (co-advised with Prof. W. Adams) graduated 1998
Current position: Assistant Professor at University of St. Thomas, St. Paul, MN
- Dr. Kristine Mueh (MAI 1998; PhD 2005 co-advised with Prof. W. Adams)
Position: Middle school science teacher, Boulder Valley
- David Mellman (MAI) graduated 2003
Currently in PhD Program in Molecular Biology at the University of Wisconsin, Madison
- Todd Rosenstiel (PhD candidate; co-advised with Prof. W. Adams) 1995-1999
- Mark Longo (MAII; co-advised with Prof. W. Adams) graduated 1998
- Graham Cummins (PhD candidate) 1997-1998
- Dr. Ryan Zarter (co-advised with Prof. W. Adams) graduated 2005
- Ms. Amy Watson (co-advised with Prof. W. Adams) PhD candidate, 2005-present
- Ms. MaryKay Herzenach (co-advised with Prof. W. Adams) PhD candidate, 2006-present
- Mr. Matthew Dumlao (co-advised with Prof. W. Adams) PhD candidate, 2006-present

Advising of Postdoctoral Research Associates

- Dr. Volker Ebbert, 1996-2006
- Dr. Véronique Amiard, 2003-2005
- Stephen C. Grace, 1994-1996