|  |
| --- |
| http://www.serc.si.edu/images/letterhead.serc.gif |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Curriculum Vitae**BERT G. DRAKEPlant PhysiologistSmithsonian Environmental Research CenterP.O. Box 28, Edgewater, MD 21037-0028Office: (443) 482-2294Home: (410) 867-1957FAX: (443) 482-2380E-mail: **drakeb@si.edu****I. Education, research interests and support**

|  |  |
| --- | --- |
|   | University of Maine, Orono, Maine B.S. 1961Colorado State University, Ft. Collins, M.S. 1967Utah State University, Logan, Utah Ph.D. 1970Plant Research Laboratory, Michigan StateUniversity, Research Associate, 1970-71 |
| **Research Interests :** |   |
|   | Rising atmospheric CO2, climate change, and ecological processes.Impact of environmental stress on plant physiology and photosynthesis. |
| **External Grants** |
|   | 1. The effect of rising atmospheric CO2 on vegetation and ecosystem processes in a Chesapeake Bay Wetland. September 1985-November 1994. Department of Energy: $1,950,000.2. Mellon Foundation (with Dr Steve Long and Dr Roger Gifford) 1994-2000. $159,000.3. The effect of rising atmospheric CO2 concentration on carbon and nutrient cycling in terrestrial ecosystems. Department of Energy: $1,332,000 March 1995-March 1998.4. State Department grant to collaborate with Dr Felix Dakora, University of Cape Town, South Africa, $10,000. September 1994.6. Rising atmospheric CO2 and long-term carbon storage in terrestrial ecosystems: An empirical carbon and nitrogen budget validation.(with Dr Patrick Megonigal, Co-PI) September, 1997- August, 2007. Department of Energy. $1,457,9068. The Effect of Rising Atmospheric CO2 on Carbon, Water and Nutrient Balance in a Florida Scrub-Oak Ecosystem.(with BA Hungate; D. Johnson; F. Day; R. Hinkle). March 1998 March 2007. Department of Energy, $4,500,000 |

**II. Other professional activities**

|  |
| --- |
| ***Awards*** |
|  | **Smithsonian Institution: Distinguished Science Lecturer, 2005.** This award was given in recognition of significant research contributions over more than 30 years and for a demonstrated excellence in public outreach and science education. |
| ***Editorial Review Boards*** |
|   | Plant Cell and Environment; Vegetation; Global Change Biology; Crop Science |
| ***Consulting*** |
|   | Dynamac Corporation, August, 1995-; Aspects of global climate change and effects of rising CO2Testimony on the effects of rising atmospheric CO2 before the Senate Committee on the Environment, Senator Gore, presiding, US Senate, 9 April, 1992Review and site visit team, NASA Specialized Centers for Research and Training, 1990Review panel, DOE Free Air Carbon Enrichment study, January 1990, 1991, 1992USDA Competitive Grants, photosynthesis review board, 1989NASA Controlled Environment Life Support System program (CELSS), 1987 presentLawrence Livermore National Laboratory on effects of elevated CO2 on photosynthesis and plant growth, 1985 1987. |
| ***Teaching*** |   |
|  | Guest Professor, Universite Paris Sud; Orsay, France; May, 1999Guest Professor, Institute for Plant Physiology, University of Vienna, Vienna Austria, September-November, 1992Adjunct Professor, College of Marine Studies University of Delaware, Newark, Delaware 1982 to present. Collaborative research, graduate research committees, research consultant.NSF Chataucqua Short Course for College Teachers, 1980. Solar Energy Conversion by Green Plants.Adjunct Professor of Botany, American University, 1979. Marine Optics and Productivity.Adjunct Professor of Botany, George Washington University, 1974, Plant PhysiologyAdjunct Professor of Biology, Northern Virginia Community College, 1973-1975.Mathematics and Biology, Colorado Rocky Mountain School, Carbondale, Colorado, 1962-1965. |
| ***Other experience*** |
|  | U.S. Army, 1961-1962; Certified Ski Instructor, Professional Ski Instructors Association of America,1963-1972; Radio and television production, WAGM, Presque Isle, Maine 1955-1958; Maine Guide, 1953-1958; Jazz musician, 1952-1960 |

**III. Publications total (106); since 1999 (50)**

|  |
| --- |
| J. -H. Li, P.Dijkstra, R. Hinkle, R.M. Wheeler and B.G. Drake, 1999. Photosynthetic acclimation to elevated atmospheric CO2 concentration in the Florida scrub-oak species Quercus geminata and Quercus myrtifolia. Tree Physiology 19:229-234.Stiling, P., Rossi, A.M., Hungate, B. Dijkstra, P., Hinkle, R., Knott, WM, III, and B.G. Drake. 1999. Decreased leaf-miner abundance in elevated CO2: Reduced leaf quality and increased parasitoid attack. Ecological Applications, 9:240-244.D. Loustau, B. Hungate and BG Drake, 1999. Effects of water and rising atmospheric CO2 on net primary and net ecosystem production of terrestrial ecosystems: interactions with nutrient limitations. In: Roy, Saugier and Mooney, Eds. Global Production, GCTE volume, Ch 9.Hungate,B.A, Dijkstra, P.. Johnson,D., Hinkle,R., and BG Drake. 1999. Elevated CO2 increases nitrogen fixation and decreases soil nitrogen mineralization in Florida scrub oak. Global Change Biology. 5:781-789.B.G. Drake, Azcon-Bieto, J., Berry, J., Bunce, J., Dijkstra, P., Farrar, J., Gifford, R.M., Gonzalez-Meler, M.A., Koch, G., Lambers, H., Siedow, J., and Wullschleger, S. 1999. Does elevated atmospheric CO2 concentration inhibit mitochondrial respiration in green plants? Plant Cell and Environment 22:649-657.Schortemeyer, M., Dijkstra, P., Johnson, D. and BG Drake. 2000. Effects of elevated atmospheric CO2 concentration on C and N pools and rhizosphere processes in a Florida scrub oak community. Global Change Biology. 6:383-391.Ball, A.S., E. Milne and B.G. Drake. 2000. Elevated atmospheric -carbon dioxide concentration increases soil respiration in a mid-successional lowland forest. Soil Biology & Biochemistry. 32:721-723.Li, J.-H., Dijkstra, P., and B.G. Drake 2000. Leaf senescence and new growth of Quercus myrtifolia Small. grown at elevated CO2 in Florida scrub-oak ecosystem.Global Change Biology, 6:727-733Dakora, F. and B.G. Drake. 2000. Elevated CO2 stimulates associative N2 fixation in a C3 plant of the Chesapeake Bay wetland. Plant Cell and Environment, 23:943-953.Hymus GJ, Dijkstra P, Baker NR, Drake BG, Long SP (2001). Will rising CO2 protect plants from the mid-day sun? A study of photoinhibition of Quercus myrtifolia in a scrub-oak community in two seasons. Plant, Cell and Environment. 24, 1361-1368.Johnson DW, Hungate BA, Dijkstra P, Hymus G, Drake BG (2001). Effects of elevated CO2 on soils in a Florida Scrub Oak Ecosystem. Journal of Environmental Quality. 30. 501-507.Lodge RJ, Dijkstra P, Drake BG, Morison JIL (2001). Stomatal acclimation to increased CO2 concentration in a Florida scrub oak species Quercus myrtifolia Willd. Plant Cell and Environment 24 77-88.Buckley PT (2001) Isoprene emissions from a Florida scrub oak species grown in ambient and elevated carbon dioxide. Atmospheric Environment, 35, 631-634.Dilustro JH, FP Day, and BG Drake. 2001. Effects of elevated atmospheric CO2 on root decomposition in a scrub oak ecosystem. Global Change Biology 7:581-589.Dijkstra P, Hymus GJ, Colavito D, Vieglais D, Cundari C, Johnson DP, Hungate BA, Hinkle CR, Drake BG (2002). Elevated atmospheric CO2 stimulates shoot growth in a Florida scrub oak ecosystem. Global Change Biology, 8, 90-103.Hungate, BA, M. Reichstein, P. Dijkstra, D. Johnson, G. Hymus, J D Tenhunen, and B. G. Drake (2002) Evapotranspiration and soil water content in a scrub-oak woodland under carbon dioxide enrichment. Global Change Biology. 8. 289-298.Hymus GJ, Snead T, Johnson D, Hungate B, Drake BG. 2002. Acclimation of photosynthesis and respiration to elevated CO2 in two scrub-oak Species. Global Change Biology.8:317-328.Stiling P, Cattell M, Moon DC, Rossi A, Hungate B, Hymus G, Drake B. 2002 Elevated atmospheric CO2 lowers herbivore abundance but increases leaf abscission rates. Global Change Biology 8:658-667.Hymus GJ, Pontailler J-Y, Li J-H, Stiling P, Hinkle C R, Drake BG. 2002 Seasonal Variability in the Effect of Elevated CO2 on Ecosystem Leaf Area Index in a Florida Scrub Oak Ecosystem. Global Change Biology.8:931-940.Drake, B.G. Global change and stomatal research- 21st century agenda. 2002 New Phytologist 152:365-374.Ainsworth EA, Davey PA, Hymus GJ, Drake BG, Long SP. 2002. Long-term response of photosynthesis to elevated carbon dioxide in a Florida scrub-oak ecosystem. Ecological Applications. 12:1267-1275.Langley JA, Hungate BA, and Drake BG. (2002) Extensive belowground carbon storage supports roots and mycorrhizae in regenerating scrub oaks. Oecologia.131:542-548.Hungate BA, and GW Koch 2002. Global Environmental Change: Biospheric Impacts and Feedbacks. In: J Houlton, J Pyle, and J Curie (eds.) Encyclopediea of Atmospheric Science, Academic Press, Ltd. Pp876-885.Dilustro JJ, Day FP, Drake BG and Hinkle CR (2002). Abundance and distribution of fine roots under elevated C02 conditions in an oak-scrub ecosystem. Environmental and Experimental Botany. 48:149-159.Rasse, DP, R Stolaki, G Perest and BG Drake. 2002. Patterns of canopy air CO2 concentration in a brackish wetland: analysis of a decade of measurements and the simulated effects on the vegetation. Agricultural and Forest Meteorology 114:59-73.Klamer, M, MS Roberts, LH Levine, BG Drake and JL Garland. 2002. Influence of elevated CO2 on the fungal community in a coastal scrub oak forest soil investigated with terminal-restriction fragment length polymorphism analysis. Applied and Environmental Microbiology. 68:4370-4376.Vann, C. D. and Megonigal, J. P. Productivity responses of Acer rubrum and Taxodium distichum seedlings to elevated CO2 and flooding. Environmental Pollution 116, S31-S36. 2002.Dore, S, Hymus G.J., D.P. Johnson, C. R. Hinkle, Riccardo Valentini, and B.G. Drake. 2003 Cross validation of open-top chamber and eddy covariance measurements of ecosystem CO2 exchange in a Florida scrub-oak ecosystem. Global Change Biology. 9:84-94Li J-H, Dugas WA, Hymus GJ, Johnson, DP, Hinkle, CR, Drake, BG, and BA Hungate. 2003. Direct and indirect effects of elevated CO2 on transpiration from Quercus myrtifolia in a scrub oak ecosystem. Global Change Biology 9:96-105Vann, CD and JP Megonigal. 2003. Effects of elevated CO2 and water depth on methane emissions: comparison of a woody and non-woody wetland plant species. Biogeochemistry. 63:117-134.Ainsworth, EA, PJ Tranel, BG Drake and SP Long. 2003. The clonal structure of Quercus geminate revealed by conserved microsatelite loc1. Molecyular Ecology 12:527-532.Rasse,DP, J.-H. Li and BG Drake. 2003. Wetland sedge community has high CO2 fixation capacity under ambient and elevated CO2 : measurements and model analysis. Functional Ecology 17: 222-230.Stiling, P, Moon DC, Hunter, MD, Rossi, AM, Hymus, GJ, and BG Drake. 2003. Elevated CO2 lowers relative and absolute herbivore density across all species of a scrub oak forest. Oecologia 134:82-87.Drake, BG, Rasse, D.P (2003)The effects of elevated CO2 on plants: Photosynthesis, transpiration, primary production and biodiversity Ch. 7 In: T Lovejoy and L. Hannah,eds. Climate Change and Bibodiversity: Synergstic Impacts. Yale University PressLangley JA, Hungate BA and. Drake BG.2003 Ectomycorrhizal colonization, biomass and production in a regenerating scrub oak forest under elevated CO2. Ecosystems.Hymus GJ, Johnson DP, Dore S, Dijkstra P, Anderson HP, Hinkle CR, and Drake BG. 2003.Effects of elevated Atmospheric CO2 on Net Ecosystem CO2 exchange of a scrub-oak ecosystem. Global Change Biology 9:1802-1812Johnson, DW, BA Hugate, P. Dijkstra, GJ Hymus, CR Hinkle, P. Stiling, and BG Drake. 2003. The Effects of elevated CO2 on nutrient distribution in a fire adapted scrub oak forest. Ecological Applications 13:1388-1399.Pendall, E, Bridgham, S., Hanson, P. J., Hungate, B., Kicklighter, D. W., Johnson, D. W., Law, B. E., Luo, Y., Megonigal, J. P., Olsrud, M., Ryan, M. G., and Wan, S. Below-ground process responses to elevated CO2 and temperature: A discussion of observations, measurement methods, and models. New Phytologist 162(2), 311–322. 2004.Davey, PA, Hunt, S., Hymus, G., DeLucia, E., Drake, BG, Karnosky, DF, and S.P. Long. 2004. Respiratory Oxygen Uptake is Not Decreased by an Instantaneous Elevation of [CO2], but is Increased with Long-Term Growth in the field at Elevated [CO2]. Plant Physiology 134:520-527.Bruce A. Hungate, Peter D. Stiling, Paul Dijkstra, Dale W. Johnson, Michael E. Ketterer, Graham J. Hymus, C. Ross Hinkle, Bert G. Drake.2004 CO2 elicits long-term decline in nitrogen fixation. ScienceTatiana Cornelissen, P. Stiling and BG Drake. 2004 Elevated CO2 decreases leaf fluctuating asymmetry and herbivory by leaf miners on two oak species. Global Change Biology 10:27-36Stiling P, Moon DC, Hymus GJ, and BG Drake. 2004. Elevated CO2 increases acorn production in a scrub oak forest. Global Change Biology 10:228-232Cotrufo, MF, BG Drake, and J. Ehleringer. 2004 Palatability trials on hardwood leaf litter grown under elevated atmospheric CO2. OecologiaRasse DP, Peresta, G, Saunders, CJ and BG. Drake. 2005. Seventeen-years of elevated CO2 exposure in a Chesapeake Bay Wetland: sustained but contrasting responses of plant growth and CO2 uptake. Global Change Biology 11:369-377Hungate BA, Stiling PD, Dijkstra P, Johnson DW, Ketterer ME, Hymus GJ, Hinkle CR, Drake BG, 2005. CO2 elicits long-term decline in nitrogen fixation. Science, 304:1291.Hungate BA, Johnson DW, Dijkstra P, Hymus GJ, Stiling P, Megonigal JP, Pagel A, Moan JL, Day F, Li J-H, Hinkle CR, Drake BG, 2005. Nitrogen cycling during seven years of atmospheric CO2 enrichment. Ecological Applications.Drake, B. G., L. Hughes, E. A. Johnson, B. A. Seibel, M. A. Cochrane, V. J. Fabry, D. Rasse, and L. Hannah. 2005. Synergistic Effects. In: Climate Change and Biodiversity. T. E. Lovejoy and L. Hannah, eds. Yale University Press, New Haven, CT. pp 296-316.Marsh, A. S., Rasse, D. P., Drake, B. G., and Megonigal, J. P. 2005. Effect of elevated CO2 on carbon pools and fluxes in a brackish marsh. Estuaries 28:695-704 .Hall, M.C., Stiling,P., Moon, DG, Drake, BG, and Mark D. Hunter. 2005. Effects of elevated CO2 on foliar quality and herbivore damage in a scrub oak system. Journal of Chemical Ecology 31: 267-286.Day, F.P.,Stover, D.B.,Pagel, A., Hungate, B.A., Dilustro, J.J., Herbert, B.T., Drake, B.G., and C.R.Hinkle. 2006. Rapid root closure after fire limits fine root responses to elevated atmospheric CO2 in a scrub oak ecosystem in central Florida. Global Change Biology 12: 1047-1053. |

**V. Papers presented at meetings and conferences 1993-1998.**

|  |
| --- |
| IV International CO2 Conference, Carqueriane, France, September, 1993. Drake, B.G. and R.W. Dahlman. The effect of rising atmospheric carbon dioxide on the growth of vegetation and the accumulation of carbon in terrestrial ecosystems.Workshop on The Effect of Rising Atmospheric CO2 on Terrestrial Ecosystems. San Miniato, Italy, October, 1993, GCTE summary volume. Drake, B.G. The long-term effect of elevated atmospheric CO2 on a wetland ecosystem: net ecosystem CO2 exchange, biomass production and nitrogen concentration. ProceedingsFirst Global Change and Terrestrial Ecosystems Workshop. Woods Hole, Massachusetts, May, 1994. SEVEN YEARS OF ELEVATED CO2 EXPOSURE ON A CHESAPEAKE BAY WETLAND. B. G. Drake, M. Gonzalez-Meler, J. Jacob, G. Peresta and G. Thompson. Smithsonian Environmental Research Center, P.O. Box 28, Edgewater, Maryland, USA.NATO Advanced Workshop "Prospects for Carbon Sequestration in the Biosphere". Paper: Carbon Sequestration in Wetlands: A Case Study". July, 1994Annual Meeting, Ecological Society of America, Knoxville, TN, August, 1994. Chair, session of effects of elevated CO2 on Plants in which the following papers were presented. |
|   | DRAKE, BERT G., PERESTA, GARY J. AND ESTHER BEUGELING. No decline in effect of elevated atmospheric CO2 on net ecosystem CO2 exchange (NCE), biomass production and tissue nitrogen concentration [N] of a C3 plant community in a Chesapeake Bay wetland after 7 years.DACEY, JOHN W.H. and BERT G. DRAKE. Stimulation of methane emission by atmospheric carbon dioxide enrichment in marsh vegetation.WIELINGA, PETER, GUY B. THOMPSON and BERT G. DRAKE. Dark respiration of CO2 and C4 high marsh perennials is modified by atmospheric CO2 concentration during growth in open top chambers.JACOB, JAMES and BERT G. DRAKE. Rubisco concentration and total leaf carboxylase activity was reduced but leaf and canopy photosynthesis remained high in *Scirpus olneyi* grown in the field at elevated atmospheric CO2 for seven years.GONZALEZ MELER, MIQUEL A., MIQUEL RIBAS CARBӠ, XAVIER ARANDA, JOAQUIM AZCӎ BIETO, BERT G. DRAKE, JAMES JACOB, ARTUR PALET AND JAMES N. SIEDOW Increasing CO2 concentration inhibits cytochrome c oxidase (cytox) in vitro, cytochrome pathway (cytpath) activity in plant mitochondria and dark respiration in plant tissues.THOMPSON, G., WHIGHAM, D. and BG DRAKE. Decomposition of plants grown in elevated CO2 on a Chesapeake Bay Wetland. |
| ECOCRAFT: The likely impact of rising CO2 and temperature on European Forests., Dourdan, France, October, 1994.Paper, How does Atmospheric CO2 concentration regulate dark respiration?Invited Speaker, Xth International Congress on Photosynthesis, Montpelier, France, August, 1995Invited Speaker, GCTE Workshop on the effects of rising atmospheric CO2 on carbon accumulation in soils, Oxford University, September, 1995Invited Speaker, COST 619 meeting, Effects of atmospheric CO2 increase on carbon fluxes in grassland ecosystems, University of Essex, Colchester,UK 22-24 Nov, 1996.150th Anniversary Celebration: SI Road show, Portland Oregon, April 14-20, 1997 9 lectures at local Colleges(Lewis and Clark, Reed College, University of Portland, Community College, and local schools)Plenary speaker, Australian Society of Plant Physiology and Molecular Biology, Annual Meeting, Melbourne Australia, October, 1997Keynote speaker: Global Change and Terrestrial Ecosystems, Duke University, October, 1997Keynote speaker, National Engineers week, University of Maine, Orono, 27 Feb, 1999Invited speaker, Global Warming: Science and Policy. Symposium at James Baker Insitute, Rice University, Houston, TX, 7 September, 2000 |

**VI. Training**

|  |
| --- |
| **A. Students** |
|   | Willem Arp. Free University, Amsterdam, The Netherlands, November, 1991. Dissertation title: "Vegetation of a North American Salt Marsh and Elevated Atmospheric Carbon Dioxide"Miquel Gonzales-Meler; Graduate Student; department of Plant Physiology; University of Barcelona, Spain; Smithsonian Institution Pre-doctoral Research Fellow June, 1993; effects of elevated CO2 on the biochemistry of dark respiration. PhD. expected Spring, 1995.Roser Matamala-Paradida; Graduate student, Department of Plant Physiology; University of Barcelona, Spain:-Pre-doctoral research technician, June 1993 to present. PhD. April, 1997.Colin Osborne, Graduate Student, Department of Biology, University of Essex, Colchester, UK; July-September, 1993.Stephanie Wand, National Botanical Institute, Cape Town, South Africa, work/learn student, July-September, 1994.Guy Midgley, National Botanical Institute, Cape Town, South Africa, short-term graduate student, September, 1995.Colin Saunders, Duke University, PhD student, 1997- |
| **B. Post-docs:** |
|   | \* SI Fellow\*Dr. David Ward, 1984-1985.Dr. Peter Curtis, 1986-1989.\*Dr. Lewis Ziska, 1988-1989\*Dr. Felix Dakora, 1989-1990\*Dr. Gace Ju, 1990-1991Dr. Carol Greitner, 1991-1993\*Dr. Guy Thompson, SI Fellow 1991-1994Dr. James Jacob, 1992-1995\*Dr Andrew Ball, Summer, 1994Dr. Xavier Aranda, Summer, 1994Dr. Damian Barrett, Summer, 1995\*Dr. Miguel Gonzalez-Meler, 1995-96\*Dr. Bruce Hungate, October 1995-96; DOE Fellow, 1996-1997Dr Paul Dijkstra, Research Associate, KSC CO2 ssite, April 1995 to May 1999Dr. Jiahong Li, April, 1997-; NASA Fellow, Kennedy Space Center CO2 site, FloridaDr Anne Marsh, Post Doctoral Fellow, November 1997 to presentDr Graham Hymus, Research Associate, KSC CO2 site, April 1999 to p |

**VII. Interactions**

|  |
| --- |
| **A. SERC** |
|   | 1. Dr Greg Ruiz; on the role of elevated CO2 in regulating populations of invertebrates in the salt marsh2. Dr Dennis Whigham; on the effects of elevated CO2 on decomposition in the salt marsh study site.3. Dr Tom Jordan; on effects of elevated CO2 on nutrient and carbon dynamics in marsh soils4. Dr Pat Megonigal, on carbon storage in wetlands and scrub oak |
| **B. Other Agencies** |
|   | 1. NASA: joint project on effects of elevated CO2 on a scrub-oak ecosystem; Kennedy Spaceflight Center, Cape Canaveral, Florida2. DOE. Reviewer for Open Top Chamber study at Stanford University, December, 1993 and Free Air Carbon Release Pilot study at Duke University, August, 1994.3. AIBS, Reviewer for NSCORT Project on Space Biology, Purdue University, February, 19944. Ecological Society of America. Reviewer for Sustained Biosphere Initiative, Durham, North Carolina, January, 1994.5. Smithsonian Institution. Planning committee for exhibition on Chesapeake Bay. September, 94. |
| **C. Universities and research laboratories** |
|   | Prof. Steve Long and Mr Colin Osborne, Department of Biology, University of Essex, Colchester, UK: collaboration on effects of elevated CO2 on photosynthetic processes in native vegetation. Prof Long, Mellon Foundation Award to work on CO2 sites, 1997-Dr. John Dacey, Woods Hole Oceanographic Institution, Woods Hole, MA: collaboration on effects of elevated CO2 on methane emission from a Chesapeake Bay Wetland.Prof Harold Bolhar-Nordenkampf, Institute for Plant Physiology, University of Vienna, Austria: collaboration on effects of elevated CO2 on light harvesting in photosynthetic processes.Dr. Joaquim Azcon-Bieto, Institute of Plant Physiology, University of Barcelona, Spain: collaboration on the effect of elevated CO2 on regulation of dark respiration.Dr. Bill Dugas, USDA Grassland Research Institute, Temple, Texas: use of stem flow gages in measurement of evapotranspiration from the forest species, Lindera benzoin.Dr. Ross Hinkle, Bionetics, Kennedy Spaceflight Center, Effects of elevated atmospheric CO2 on a scrub-oak ecosystem.Dr. Jim Reynolds, Duke University, Modeling the effects of elevated CO2 on ecosystems.Dr Jim Siedow, Botany Department, Duke University; effects of elevated CO2 on dark respiration.Dr. David Vieglais, NASA Fellow, Kennedy Space Center, Florida; effects of elevated CO2 on the scrub-oak ecosystem.Dr Steven W.Leavitt, Associate Professor of Dendrochronology, Laboratory of Tree Ring Research, University of Arizona, Tucson, AZ; isotopic signature of plants, detritus and soil in elevated CO2.Dr Andrew Ball, Department of Biology, University of Essex, Colchester, UK. Decomposition and respiration of plants grown in elevated CO2.Dr. Roger Gifford, Division of Plant Industry, CSIRO, Canberra, Australia. Mellon Foundation award, 1995-1996Dr. Peter Stiling, Department of Biology, University of South Florida, Tampa, Florida. Effects of CO2 on plant/insect interactions.Dr Frank Day, Old Dominion University, Norfolk, Virginia, Effects of elevated CO2 on root growth in Florida scrub-oak.Dr Bernard Saugier, Universitie Paris Sud, Orsay, France: Effects of elevated atmospheric CO2 on plant physiological processes.Dr Steve Running, University of Montana, Bozeman, MT, Climate change and ecosystem productivity |

 |