

John (“Jay”) A. Arnone III

Research Professor

Desert Research Institute

Division of Earth & Ecosystem Sciences

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Education:

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|------|---------|---|
| 1988 | Ph.D. | Yale University, School of Forestry and Environmental Studies
<u>Field</u> : Plant Physiological Ecology |
| 1985 | M.Phil. | Yale University, School of Forestry and Environmental Studies
<u>Field</u> : Tree Physiology / Plant Physiological Ecology |
| 1981 | M.F.S. | Yale University, School of Forestry and Environmental Studies
<u>Field</u> : Tree Physiology / Plant Physiological Ecology |
| 1979 | B.S. | University of Vermont, School of Natural Resources
<u>Field</u> : Forestry / Forest Science |

Work and Research Experience [Supervisor]

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| 2004-present | <i>Research Professor</i> —Plant and Terrestrial Ecosystem Ecology
Desert Research Institute, Division of Earth & Ecosystem Sciences |
| 2000-2004 | <i>Associate Research Professor</i> —Plant and Terrestrial Ecosystem Ecology
Desert Research Institute
<i>Associate Professor</i> , Hydrologic Sciences faculty, University of Nevada
Reno (UNR) |
| 2001- | <i>Adjunct Associate Professor</i> , Ecology, Evolution & Conservation Biology
faculty, UNR |
| 2001-2004 | <i>Adjunct Associate Professor</i> , Natural Resources & Environmental Sciences
faculty, UNR |
| 1999-2001 | <i>Director</i> , Frits Went Laboratory, Desert Research Institute, Reno, Nevada |
| 1998-2000 | <i>Assistant Research Professor</i> . (Plant and Terrestrial Ecosystem Ecologist)
Desert Research Institute; Hydrologic Sciences, University of Nevada Reno. |
| 1994-1998 | <i>Assistant Professor</i> . University of Basel, Switzerland (non-tenure track,
“Privat Dozent”). |
| 1990-1993 | <i>Postdoc</i> . University of Basel, Switzerland. Project leader and co-PI for
several studies on the long-term effects of elevated atmospheric CO ₂ on plant
community ecology, ecophysiology and ecosystem function. (See also
teaching experience below.) [Prof. Ch. Körner] |

- 1988-1990 *Postdoctoral Associate*. Yale University [Profs. J. Gordon & D. Baker]
- 1984-1988 *Doctoral Research Assistant*. Yale University [Prof. J. Gordon]
- 1981-1982 *Research Assistant*. Forstbotanisches Institut, Universität München [Prof. P. Schütt]
- 1980-1981 *Research Assistant*. Harvard Forest (Master's Thesis) [Prof. C. Schwintzer]
- 1979-1980 *Research Assistant*. Yale University [Prof. G. Berlyn]
- Consulting Forester*. Town of Wallingford, Connecticut [Dr. P. Wargo]
- 1979
Summer *Research Technician*. USDA-Forest Service, Northeastern Station, Insect & Disease Laboratory [Dr. H. Valentine]
- 1978, 1976
Summers *Research Assistant*. Connecticut Agricultural Experiment Station, Dept. of Ecology & Climatology [Drs. D. Aylor & G. Stephens]

Teaching Experience:

DRI & UNR

- 2000-2005 *Mentor* for Nevada high school and middle school science teachers in conjunction with the NSF-funded IRCEB project (see Grants below)
- 1998-present *Major Professor/Mentor* of 1 Ph.D. student (D. Obrist), 6 Master's students (H. Weatherly, G. Royce, C. Batts, A. Farnady, J. Larsen, A. Darouzett-Nardi), and 5 undergraduate interns from within the University & Community College System of Nevada, and outside. Supervisor of two postdocs (L. Tarnay, R. Jasoni)

University of Basel, Switzerland

- 1995-1998 *Lecturer, Ecology of Plant Nutrition*: extension and integration of the basic principles of plant nutrition to the ecology (structure and function) of plant communities and ecosystems.
- 1991-1997 *Leader of Field Course in Plant & Ecosystem Ecology* with emphasis on quantitative methods
- Instructor of seminar courses in plant ecology* which emphasizes critical evaluation of scientific papers, as well as experimental design--through class discussions and oral and written assignments.

Major Professor/Adviser to 1 Ph.D. student; 10 Master's students and numerous undergraduate project students

(All courses and lectures in Switzerland were given in German.)

Yale University

- 1988-1990 *Project Adviser* for Masters and undergraduate students
- 1989 *Lecturer* for team-taught course in Ecology of Agroforestry Systems

Funded Research Grants

- 2007-2009 Gas Technology Institute, [Amount: **\$250,00**] Assessment of Biomass Resources of Nevada and NE California for Potential Use as Biofuels and Feedstocks—**PI** (with Verburg, Jasoni, Minor, Hoekman)
- 2006-2008 Bureau of Reclamation, Walker Basin Study: Effects of Alternative Agricultural Crops on Evapotranspiration and Plant Water Use Efficiency [Amount: **\$389,000**]—**PI** (with Verburg & Jasoni—DRI)
- 2007 DOE Program in Ecosystem Research: Quantification of the role of soil cryptobiotic crust surfaces to ecosystem CO₂ exchange in a Mojave Desert ecosystem. [Amount: **\$99,000**]—**PI** (with Jasoni & Fenstermaker—DRI)
- 2005-2007 International Arid Lands Consortium: Global Change and Ecosystem H₂O & CO₂ fluxes in the Mojave and Negev Deserts [Amount: **\$100,000**]—**PI** (with Jasoni, Fenstermaker—DRI, and Grünzweig—Hebrew University)
- 2004-2005 SEMBRA Energy Consulting, Contribution of phreatophytic vegetation to ecosystem evapotranspiration and ground water use in the Smoke Creek Desert playa: quantification of ground water use as a function of depth to ground water and season. [Amount: **\$480,000**]—Co-I (with Albright & Thomas—DRI)
- 2003-2005 NSF Ecosystems, Division of Environmental Biology: Biotic and abiotic controls on inorganic carbon biogeochemistry in an intact Mojave Desert ecosystem under global environmental change [Amount: **\$800,000**]—Co-I (with Verburg, Marion, & McDonald—DRI)
- 2003-2005 NSF Ecosystems, Division of Environmental Biology: Collaborative research: Responses of productivity and nutrient dynamics to elevated CO₂ in an intact Mojave Desert ecosystem [Amount: **\$1,300,000**]—**PI** (with Smith—UNLV; Nowak—UNR; Evans—Washington State University; Reynolds—Duke University)
- 2002-2004 NSF Division of Atmospheric Sciences: Quantifying the role of natural ecosystems as sources and sinks of elemental mercury [Amount: **\$464,000**]—Co-I (with Gustin—PI, UNR; Johnson—UNR; Gertler & Schorran—DRI)

- 2002-2003 International Arid Lands Consortium: Ecosystem consequences of cheatgrass invasion in the Great Basin [Amount: **\$100,000;**]—Co-I (with Delucia—Univ. Illinois; Yakir—Weizmann Institute, Israel)
- 2000-2005 NSF IRCEB Division of Environmental Biology: Interannual climate variability and ecosystem processes: A quantitative assessment combining models with field and mesocosm experiments [Amount: **\$3,000,000**]—PI (with Verburg & Buck—DRI; Johnson—UNR; Wallace & Luo—Univ. Oklahoma; Schimel—National Center for Atmospheric Research; Braswell—Univ. New Hampshire)
- 2000-2001 Nevada NSF EPSCoR: Historical records of anthropogenic impacts upon nutrient biogeochemistry at Lake Tahoe [Amount: **\$45,000**]—Co-I (with Poulson—PI; Karlin—UNR)
- 2000-2002 International Arid Lands Consortium: Ecosystem consequences of cheatgrass invasion in the Great Basin [Amount: **\$75,000**]—Co-I (with Delucia—Univ. Illinois; Yakir—Weizmann Institute, Israel)
- 1997-1998 Swiss National Science Foundation Continuation of funding to study the interactive effects of grassland plant community species composition, earthworm population density and activity, and elevated CO₂ on N production in the field (see grant title immediately below) [Amount: **\$51,000**]—sole PI
- 1995-1998 Swiss NSF Fine roots and earthworms in grassland communities: functional relationships and feedbacks on nutrient cycling and plant community structure [Amount: **\$290,000;**]—sole PI
- 1993-1996 Swiss NSF: Plant species diversity in complex grassland ecosystems under elevated CO₂ [Amount: **\$1,275,000**]—Co-I (with Körner, PI; Schmid—Univ. Basel)
- 1992-1995 Swiss NSF: Consequences of global environmental change for alpine vegetation [Amount: **\$1,700,000**]—Co-I (with Körner, PI—Univ. Basel)

Awards and Honors:

- 2005-2006 One year sabbatical at the Institut für Ökologie of the University of Innsbruck, Austria
- 1998 Harvard University, Charles Bullard Fellowship in Forest Research for Advanced Study and Research (awarded but declined in lieu of DRI position).
- 1997 "Habilitation" in Plant Ecology: Award to become a "Privat Dozent" (*Venia docendi*), or a licensed faculty member; an advanced degree in the germanic academic system
- 1997-1998 Grant from the Treubel Foundation of Basel, Switzerland to complete my studies on the effects of global change on the dynamics of fine root populations in native grasslands

- 1994 Travel grant from the *Fond zur Förderung wissenschaftlicher Kontakte (FFWK)* to attend the Annual Meeting of the Ecological Society of America (ESA) in Knoxville, Tennessee (August 1994)
- 1993 Travel grant from the *FFWK* to attend the International Botanical Congress in Yokohama, Japan (September 1993)
- 1992 Travel grant from the *FFWK* to attend the Annual Meeting of the ESA in Honolulu, Hawaii (August 1992)
- 1986-1987 Duke University, Department of Botany, "Friends of the Phytotron" student grant in support of research. [Prof. B. R. Strain]
- 1984-1988 Yale University, A. W. Mellon Graduate Research Fellow in Forest Microbiology
- 1985 Sigma Xi, Yale University
- 1979 University of Vermont, Department of Natural Resources, Honors Research Project
- 1978 Xi Sigma Pi, University of Vermont, School of Natural Resources (forestry honor society)
- 1975-1979 Dean's List, University of Vermont

Membership in Professional Organizations:

Ecological Society of America • American Association for the Advancement of Science
 American Geophysical Union • Association of Ecosystem Research Centers—Board of Directors (2008-)

Editorial responsibilities:

1996 – 2000 *Plant and Soil*, Board of Consulting Editors

1994 – present Referee for:

Science; Oecologia; Ecology; Global Change Biology; New Phytologist; Journal of Arid Environments; Plant and Soil; Biogeochemistry; Biogeosciences; Ecological Applications; Functional Ecology

Grant proposal reviews and panel service:

- 2005-present NSF Ecosystems program, *ad hoc* reviewer
 DOE Program in Ecosystem Science, *ad hoc* reviewer
- 2004 NSF Ecosystems program, *ad hoc* reviewer
 AAAS Canon National Parks Science Scholar Program for the Americas review panel
- 2003 NSF Review Panel member for Division of Environmental Biology's Frontiers in Biological Research (FIBR)

2002	NSF Review Panel member for Division of Environmental Biology's Integrated Research Challenges in Environmental Biology (IRCEB) Program (1-3 May 2002)
2002	NSF Ecosystems, <i>ad hoc</i> reviewer
1999 - 2000	International Arid Lands Consortium
1998	USDA Plant Responses to the Environment Program

Service on Advisory/Research Review Committees:

- U.S. Congressional Briefing on Carbon Sequestration in Deserts (invited by T. Jordan, 25 September 2008)
- DOE Workshop on Exploring Science Needs for the Next Generation of Climate Change and Elevated CO₂ Experiments in Terrestrial Ecosystems (invited by P. Hanson, 14-18 April 2008)
- National Academy of Sciences review panel of Biosphere 2 (invited by P. Raven,)
- National Phytotron Strategic Planning Workshop at Duke University, 24-27 October 2001
- Panama FACE facility and experiment (invited by C. Potvin, 29 June-3 July 1999)
- Columbia University's Biosphere 2 (invited by J. Mellilo, 10-13 May 1999)

Other Interests: Outdoor activities (running, skiing, biking, hiking), music (clarinet)

Refereed Publications:

47. **Arnone** JA III, Verburg PSJ, Johnson DW, Larsen JD, Jasoni RL, Lucchesi AJ, Batts CM, von Nagy C, Coulombe WG, Schorran DE, Buck PE, Braswell BH, Coleman JS, Sherry RA, Wallace LL, Luo Y, Schimel DS (2007) Prolonged suppression of ecosystem carbon dioxide uptake following an anomalously warm year. *Nature* 455:383-386
46. Wohlfahrt G, Fenstermaker LF, **Arnone** JA III (2008) Large annual net ecosystem CO₂ uptake of a Mojave Desert ecosystem. *Global Change Biology* 14:1475-1487.
45. Marion GM, Verburg PSJ, Stevenson B, **Arnone** III JA (2008) Soluble element distributions in a Mojave Desert soil. *Soil Science Society of America Journal* (in press)
44. Marion GM, Verburg PSJ, McDonald EV, **Arnone** III JA (2008) Modeling salt movement through a Mojave Desert soil. *Journal of Arid Environments* 72:1009-1030
43. Verburg PSJ, Johnson DW, Schorran DE, Wallace LL, Luo Y, **Arnone** JA III (2008) Impacts of an anomalously warm year on soil nitrogen availability in experimentally manipulated intact tallgrass prairie ecosystems. *Global Change Biology* (in press)

42. Stamenkovic J, Gustin MS, **Arnone** JA III, Johnson DW, Larsen JD, Verburg PSJ (2008) Atmospheric mercury exchange with a tallgrass prairie ecosystem housed in mesocosms. *Science of the Total Environment* (available on-line).
41. Sherry RA, Zhuo XH, Gu SL, **Arnone** JA III, Schimel DS, Verburg PSJ, Wallace LL, Luo Y (2007) Divergence of reproductive phenology under climate warming. *Proceedings of the National Academy of Sciences* 104:198-202.
40. Prater MR, Obrist D, **Arnone** JA III, Delucia EH (2006) Net carbon exchange and evapotranspiration in post-fire and intact sagebrush communities in the Great Basin. *Oecologia* 146:595-607.
39. Verburg PSJ, Larsen JD, Johnson DW, Schorran DE, **Arnone** JA III (2005) Impacts of an anomalously warm year on soil CO₂ efflux in experimentally manipulated intact tallgrass prairie ecosystems. *Global Change Biology* 11:1720-1732.
38. Jasoni RL, Smith SD, **Arnone** JA III (2005) Net ecosystem CO₂ exchange in Mojave Desert shrublands after eight years of exposure to elevated CO₂. *Global Change Biology* 5:749-756.
37. Obrist D, Gustin MS, **Arnone** JA III, Johnson DW, Schorran DE, Verburg PSJ (2005) Measurement of gaseous elemental mercury fluxes over intact tallgrass prairie monoliths during one full year. *Atmospheric Environment* 39:957-965.
36. Johnson DW, Verburg PSJ, **Arnone** JA III (2004) Soil extraction, ion exchange resin, and ion exchange membrane measures soil mineral N during incubation of a tallgrass prairie soil. *Soil Science Society of America Journal* 69:260-265.
35. Obrist D, Yakir D, **Arnone** JA III (2004) Temporal and spatial patterns of soil water following wildfire-induced changes in plant communities in the Great Basin. *Plant and Soil* 262:1-12.
34. Weatherly HE, Zitzer SF, Coleman JS, **Arnone** JA III (2003) *In situ* litter decomposition and litter quality in a Mojave Desert ecosystem: effects of elevated CO₂ and interannual climate variability. *Global Change Biology* 9:1223-1233.
33. Verburg PSJ, **Arnone** JA III, Evans RD, Leroux-Swarthout D, Obrist D, Johnson DW, Schorran DE, Luo Y, Coleman JS (2003) Net ecosystem carbon exchange in two model grassland ecosystems. *Global Change Biology* 10:498-508.
32. Obrist D, Verburg PSJ, Young MH, Coleman JS, Schorran DE, **Arnone** JA III (2003) Quantifying the effects of phenology on ecosystem evapotranspiration in planted grassland mesocosms using EcoCELL technology. *Agricultural and Forest Meteorology* 118:173-183.
31. Obrist D, **Arnone** JA III (2003) Root development, soil water use, and root proliferation into water-enriched soil patches by *Larrea tridentata*: effects of atmospheric CO₂. *New Phytologist* 159:175-184.
30. **Arnone** JA III, Obrist D (2003) A large daylight geodesic dome for quantification of whole-ecosystem CO₂ and water vapor fluxes in arid shrublands. *Journal of Arid Environments* 55:629-643.

29. Billings SA, Zitzer SF, Weatherly HE, Schaeffer SM, Charlet T, **Arnone** JA III, Evans RD (2003) Effects of elevated CO₂ on green leaf tissue and litter quality in an intact Mojave Desert ecosystem. *Global Change Biology* 9:729-735.
28. Obrist D, DeLucia EA, **Arnone** JA III (2003) Consequences of wildfire on ecosystem CO₂ and water vapor fluxes in the Great Basin. *Global Change Biology* 9:563-574.
27. Goverde M, **Arnone** III JA, Ehardt A (2002) Species-specific reactions to elevated CO₂ and nutrient availability in four grass species. *Basic and Applied Ecology* 3:221-227
26. Obrist D, **Arnone** III JA, Körner Ch (2001) *In situ* effects of elevated atmospheric CO₂ on leaf freezing resistance and carbohydrates in a native temperate grassland. *Annals of Botany* 87:839-844
25. Marsh AS., **Arnone** JA III, Bormann BT, Gordon JC (2000) The role of *Equisetum* in nutrient cycling in an Alaskan shrub wetland. *Journal of Ecology* 88:999-1011
24. **Arnone**, JA III, Zaller JG, Spehn EM, Niklaus PA, Wells CE, Körner Ch (2000) Dynamics of root systems in intact native grasslands: effects of elevated atmospheric CO₂. *New Phytologist* 147:73-86
23. **Arnone** JA III (1999) Symbiotic N₂ fixation in high alpine grassland: effects of four growing seasons of elevated CO₂. *Functional Ecology* 13:383-387
22. Zaller JG, **Arnone** JA III (1999) Earthworm responses to plant species' loss and elevated CO₂ in calcareous grassland. *Plant and Soil* 208:1-8
21. Zaller JG, **Arnone** JA III (1999) Interactions between earthworm casts and plant species in a calcareous grassland under elevated CO₂. *Ecology* 80:873-881
20. Zaller JG, **Arnone** JA III (1999) Earthworm and soil moisture effects on the productivity and structure of grassland communities. *Soil Biology and Biochemistry* 31: 517-523
19. **Arnone** JA III, Bohlen PJ (1998) Stimulated N₂O flux from intact grassland monoliths after two growing seasons under elevated atmospheric CO₂. *Oecologia* 116:331-335
18. **Arnone** JA III (1997) Indices of plant nitrogen availability in an alpine grassland under elevated atmospheric CO₂. *Plant and Soil* 190:61-66
17. Zaller JG, **Arnone** JA III (1997) Activity of surface casting earthworms in a calcareous grassland under elevated atmospheric CO₂ *Oecologia* 111:249-254
16. **Arnone** JA III (1997) Temporal responses of community fine root populations to long-term elevated atmospheric CO₂ and soil nutrient patches. *Acta Oecologica* 18:367-376
15. **Arnone** JA III, Hirschel G (1997) Does fertilizer application alter the effects of elevated CO₂ on leaf litter quality and *in situ* decomposition in an alpine grassland? *Acta Oecologica* 18:201-206
14. Körner Ch, Diemer M, Schächli B, Niklaus P, **Arnone** JA III (1997) The responses of alpine grassland to four seasons of CO₂ enrichment: a synthesis. *Acta Oecologica* 18:165-177
13. **Arnone** JA III, Kestenholz C (1997) Root competition and elevated CO₂: effects on seedling growth in *Linum usitatissimum* populations and *Linum-Silene cretica* mixtures. *Functional Ecology* 11:209-214

12. Hirschel G, Körner Ch, **Arnone** JA III (1997) Will rising atmospheric CO₂ affect leaf litter quality and *in situ* decomposition rates in native plant communities? *Oecologia* 110:387-392
11. **Arnone** JA III, Körner Ch (1997) Temperature adaptation and acclimation potential of leaf dark respiration in two species of *Ranunculus* from warm and cold habitats. *Arctic and Alpine Research* 29:122-125
10. **Arnone** JA III (1996) Predicting responses of tropical plant communities to elevated CO₂: lessons from experiments with model ecosystems. In: Carbon dioxide, populations and communities (eds Körner Ch, Bazzaz FA), Physiological Ecology Series, Academic Press, San Diego, pp. 101-121
9. **Arnone** JA III, Körner Ch (1995) Soil and biomass carbon pools in model communities of tropical plants under elevated CO₂. *Oecologia* 104:61-71
8. **Arnone** JA III, Zaller JG, Ziegler C, Zandt H, Körner Ch (1995) Leaf quality and insect herbivory in model tropical plant communities after long-term exposure to elevated CO₂. *Oecologia* 104:72-78
7. **Arnone** JA III, Blot M, Leadley PW, Matthies D, Sanders I (1994) Biodiversity in Switzerland. *Nature* 370:500
6. **Arnone** JA III, Kohls SJ, Baker DD (1994) Nitrate effects on nodulation and nitrogenase activity of actinorhizal *Casuarina* studied in split-root systems. *Soil Biology and Biochemistry* 26:599-606
5. Körner Ch, **Arnone** JA III, Hilti W (1994) The utility of artificial ecosystems in CO₂ research. In: Design and execution of experiments on CO₂ enrichment (eds. Schulze E-D, Mooney HA), Commission of the European Communities, Brussels, pp. 185-198
4. **Arnone** JA III, Körner Ch (1993) Influence of elevated CO₂ on canopy development and red:far-red ratio in two-storied stands of *Ricinus communis*. *Oecologia* 94:510-515
3. Körner Ch, **Arnone** JA III (1993) Global change: the important difference between lettuce and forests. *Plant Sciences Bulletin* 39:8
2. Körner Ch, **Arnone** JA III (1992) Responses to elevated carbon dioxide in artificial tropical ecosystems. *Science* 257:1672-1675
1. **Arnone** JA III, Gordon JC (1990) Effect of nodulation, nitrogen fixation and CO₂ enrichment on the physiology, growth and dry mass allocation of seedlings of *Alnus rubra* Bong. *New Phytologist* 116:55-66.

Invited Seminars:

- 2004 How earthworms modulate responses of native grassland ecosystems to rising atmospheric CO₂ and declining plant species diversity. University of Missouri, Department of Ecology and Evolution, (12-14 October 2004; invited by J. Coleman). **Invited speaker**

- 2004 Annual Meeting of the Ecological Society of America, Portland, Oregon (3-8 August 2004)
- **Arnone** JA III, Wallace LL. Interannual climate variability: How temporal signatures can drive ecosystem processes. Co-chair of Organized Oral Session
 - Johnson DW, **Arnone** JA III, Verburg PJS, Wallace LL, Luo Y, Zerbach N. Interannual climate variability and ecosystem function in tallgrass prairie: non-destructive measures of soil nutrients.
 - Sherry R, Wallace LL, Luo Y, **Arnone** JA III, Johnson DW, Verburg PJS, Schimel DS. Interannual temperature and precipitation effects on plant production, phenology and community structure: a field study.
 - Jasoni RL, Smith SD, **Arnone** JA III. Net CO₂ exchange from a Mojave Desert ecosystem: effects of elevated CO₂.
 - Stamenkovic J, Obrist D, **Arnone** JA III, Schorran DE, Verburg PJS, Johnson DW, Gustin MS. Mercury emissions from tallgrass prairie ecosystems.
 - Verburg PJS, **Arnone** JA III, Johnson DW, Schorran DE. Responses of soil respiration to an anomalously warm year in tallgrass prairie ecosystems.
 - Batts C, Verburg PJS, Arnone JA III. Hydrologic responses of tallgrass prairie ecosystems in the EcoCELLs to seasonal and interannual climate variability.
 - Royce G, Verburg PJS, Tyler S, **Arnone** JA III. Controls on BNPP and soil water balance in response to interannual climate variability.
 - Darrouzet-Nardi A, Verburg PJS, **Arnone** JA III. Presence and absence of thermal acclimation of root and soil microbial respiration to warming in tallgrass prairie.
 - **Arnone** JA III, Verburg PJS, Schorran DE, Johnson DW, Wallace LL, Luo Y, Schimel DS. Plant species shifts codetermine tallgrass prairie NPP responses to interannual climate variability in the EcoCELLs.
- 2003 Annual Meeting of the Ecological Society of America, Savannah, Georgia (3-8 August 2003)
- **Arnone** JA III, Schorran DE, Johnson DW, Wallace LL, Luo Y, Coleman JS, Schimel DS. NSF-I.R.C.E.B. Interannual climate variability and ecosystem processes in tallgrass prairie: Effects on ecosystem CO₂ fluxes
 - Johnson DW, **Arnone** JA III, Verburg PJS, Wallace LL, Luo Y, Royce G, Zerbach N. Interannual climate variability and ecosystem processes in tallgrass prairie: non-destructive measures of soil nutrients.
 - Prater MR, **Arnone** JA III, Delucia EH. Conversion of sagebrush to non-native communities following fire: impacts of ecosystem carbon and water exchange.
 - Royce G, Weatherly HE, **Arnone** JA III. NSF-I.R.C.E.B. Interannual climate variability and ecosystem processes in tallgrass prairie: controls on root length density.
 - Weatherly HE, Su B, Wallace LL, **Arnone** JA III. NSF-I.R.C.E.B. Interannual climate variability and ecosystem processes in tallgrass prairie: controls on litter decomposition.

- Verburg PJS, **Arnone** JA III, Schorran DE. NSF-I.R.C.E.B. Interannual climate variability and ecosystem processes in tallgrass prairie: soil respiration.

Arnone JA III (2003) Working with ecosystem processes in recovery: atmospheric CO₂ influences on recovery potential. California Invasive Plant Council Symposia: "Planning Weed Management for Ecosystem Recovery" (organizer: T. Dudley, USDA-ARS, Reno held at Kings Beach at Lake Tahoe, Nevada). **Invited speaker**

- 2002 Terrestrial Ecosystem Responses to Atmospheric and Climate Change (TERACC) Workshop entitled: "From Transient to Steady State Response of Ecosystems to CO₂ Enrichment and Global Warming" Durham, New Hampshire (28 April to 1 May 2002; organizer L. Rustad). **Invited speaker** Annual Meeting of the Ecological Society of America, Tucson, Arizona (4-9 August 2003)—Principle presenter or co-presenter on six talks or posters; see: "Arnone" under author index at: <http://abstracts.co.allenpress.com/pweb/esa2002/>
- 2001 Annual Meeting of the Ecological Society of America, Madison, Wisconsin (5-10 August 2001)—Co-presenter on one posters; see: "Arnone" under author index at: <http://abstracts.co.allenpress.com/pweb/esa2001/> LeRoux-Swarthout D, Connin S, Verburg PJS, Johnson DW, **Arnone** JA III, Luo Y, Evans RD (2001) Effect of single versus continuous nitrogen applications on ecosystem nitrogen losses.
- 2000 Global Change and Terrestrial Ecosystems (GTCE) Program of the IGBP Workshop on: "Fine root dynamics under elevated CO₂". Townsend, Tennessee (20-22 October 1999; organizers: R. Norby and A. Fitter). **Invited speaker** Annual Meeting of the Ecological Society of America, Snowbird, Utah (6-11 August 2000)—Principle presenter or co-presenter on three talks or posters; see: "Arnone" under author index at: <http://abstracts.co.allenpress.com/pweb/esa2000/> **Arnone** JA III, Zaller JG, Spehn EM, Niklaus PA, Wells CE, Körner Ch (2000) *In situ* dynamics of fine root populations in a native temperate calcareous grassland: effects of elevated atmospheric CO₂
- Obrist D, **Arnone** JA III (2000) The responses of fine roots on patches of water and nitrogen in two dominant Mojave Desert shrubs
- Zitzer SF, **Arnone** JA III, Coleman JS, Nowak R, Seemann J, Smith SD (2000) Litter accumulation beneath Mojave Desert shrubs exposed to predicted 21st century atmospheric CO₂ levels using Free Air CO₂ Enrichment. 1999 Annual Meeting of the Ecological Society of America, Snowbird, Utah (August 1999)—Co-presenter on one posters
- Zaller JG, **Arnone** JA III (1999) Ecological interactions between earthworms and grassland communities in a changing environment.

- 1998 Global Change and Terrestrial Ecosystems (GTCE) Program of the IGBP Workshop on: "Litter quality and decomposition under elevated CO₂". Capri, Italy (24-27 September 1998; organizers: F. Cotrufo, R. Norby & J. Canadell). **Invited speaker**
- 1996 Arctic Terrestrial Ecosystems Research Initiative Workshop on: "Europe's Cold Regions: Scenarios for Ecosystem Responses to Global Change". Copenhagen, Denmark (8-10 November 1996; organizers: TV Callaghan, Ch Körner, OW Heal). **Invited speaker**
- 1996 COST 619 and Global Change and Terrestrial Ecosystems (GTCE) Program of the IGBP Focus I. Conference on: "Interactions between elevated CO₂ and water in grassland". Davos, Switzerland (1-5 June 1996; organizer: J. Nösberger). **Invited presenter**
- 1994 Global Change and Terrestrial Ecosystems (GTCE) Program of the IGBP Focus I. Conference on: "Community and Evolutionary Implications of Rising Atmospheric CO₂". Leuenberg, Switzerland (14-19 August 1994; organizers: Ch. Körner, FA Bazzaz). **Invited speaker**
- 1991-1994 Annual Meeting of the Ecological Society of America—Presenter or Co-presenter on six oral presentations or posters
- 1993 XV. International Botanical Congress. Yokohama, Japan. **Invited speaker**
- 1993 International workshop on-- "Belowground Responses to Rising Atmospheric CO₂: Implications for Plants, Soil Biota and Ecosystem Processes. Pellston, Michigan (29 May - 2 June 1993; organizer: J. Teeri). **Invited presenter and participant**
- 1993 Ninth International Conference on *Frankia* and Actinorhizal Plants. Waikato, New Zealand (4-7 April 1993; organizer W. Silvester) (**Invited presenter**)
- 1986 **Arnone** JA III, Gordon JG. Effects of elevated atmospheric CO₂ on nodulation and nitrogenase activity in *Alnus rubra*. International Meeting on *Frankia* and Actinorhizal Plants. Umeå, Sweden (17-20 August 1986, **Invited speaker**)

Meeting Oral and Poster Presentations:

- Bohlen PJ, Zaller JG, **Arnone** JA III (1997) Earthworms amplify the stimulatory effect of elevated atmospheric CO₂ on N₂O flux from intact grassland monoliths. *Bulletin of the Ecological Society of America* **78**:55
- Zaller JG, **Arnone** JA III (1997) Earthworms affect plant species' responses to elevated atmospheric CO₂ in a native grassland. *Bulletin of The Soil Ecology Society* (1997 Conference, Manhattan, Kansas, 27-30 May 1997).
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