

SUSANNE SCHWINNING

Curriculum Vitae

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EDUCATION

Ph.D.	Ecology, Department of Ecology and Evolutionary Biology, University of Arizona, Tucson.	1994
M.S.	Plant Physiology, Department of Land, Air and Water Resources, University of California, Davis.	1986
Diplom	Biology, Department of Botany, University of Göttingen, Germany.	1984

ACADEMIC POSITIONS

Assistant Professor	Department of Biology, Texas State University, San Marcos.	2005-present
Academic Associate	School of Renewable Natural Resources, University of Arizona.	2001-present
Postdoctoral Fellow	Columbia University's Biosphere 2 Center, Oracle Arizona.	2002-2003
Postdoctoral Fellow	Department of Biology, University of Utah.	1997-2001
Research Scientist	BBSRC Institute of Grassland and Environmental Research, Okehampton, UK.	1994-1997
Teaching Assistant	Department of Ecology and Evolutionary Biology, University of Arizona.	1988-1994
Technician	Agronomy Department, University of Nebraska.	1987
Lab Assistant	Department of Land, Air and Water Resources, University of California, Davis.	1985-1986

HONORS AND AWARDS

John L. Harper Prize	For a paper published in <i>Journal of Ecology</i> , British Ecological Society (Schwinning & Parsons 1996a).	1996
R. W. Hoshaw Memorial Award	Department of Ecology and Evolutionary Biology, University of Arizona.	1994

MEMBERSHIPS

Member	Ecological Society of America	1990-present
Member	British Ecological Society	1994-present
Member	American Geophysical Union	2001-present

GRANTS AND SCHOLARSHIPS

Research	“Epikarst Controls on Recharge, Water Quality and Ecosystem dynamics in the Central Texas Hill Country” ARP: \$150,000, co-Pi.	2007
Research	“Woody encroachment into desert grassland: experimental assessment of the critical seedling establishment phase”, Collaborative Grant with University of Arizona. NSF (DEB 0620836) TSU portion: \$95,875. Both institutions combined: \$450,000.	2005
Workshop	“Precipitation pulse effects in arid and semi-arid ecosystems”, NSF (DEB 0222313), PI, \$20,000.	2002
Research	“Improving the reliability of non-fertilized grass/clover pasture - a proposed mechanism and its test”. Biotechnology and Biological Sciences Research Council (BBSRC), UK, co-PI, £172,000.	1996-1999
Research	UK/France research collaboration. Biotechnology and Biological Sciences Research Council, UK, £6,000.	1996-1997
Scholarship	Education Abroad Program, University of Göttingen, Germany, DM 20,000.	1984

PROFESSIONAL SERVICES

Consulting Editor	<i>Plant and Soil</i> (since 2004).
Associate Editor	<i>Journal of Ecology</i> (since 2005)
Convener	International workshop of precipitation pulse effects in arid and semi-arid ecosystems, Tucson, Arizona, 1-3 August, 2002 (60 participants).
Participant	PrecipNet Synthesis Group, National Center for Ecological Analysis and Synthesis, Santa Barbara, CA, 2002, 2003.
Reviewer	Grant proposals: external reviewer for NSF Programs in Population Biology, Ecological and Evolutionary Physiology, Geography and Regional Science, NIGEC (NICRR) (DOE), The Netherland's Earth and Life Sciences, US-Israel Binational Science Foundation, Collaborative Research Network of the Inter-American Institute for Global Change Research, IAI.
Reviewer	Journal articles: <i>Agronomy Journal</i> , <i>The American Naturalist</i> , <i>Annals of Forest Science</i> , <i>Australian Journal of Agricultural Research</i> , <i>Bioscience</i> , <i>Canadian Journal of Forest Research</i> , <i>Ecography</i> , <i>Ecological Applications</i> , <i>Ecology and Ecological Monographs</i> , <i>Ecological Modelling</i> , <i>Ecology Letters</i> , <i>Ecosystems</i> , <i>Functional Ecology</i> , <i>Global Change Biology</i> , <i>Journal of Arid Environment</i> , <i>Journal of Ecology</i> , <i>Journal of Experimental Botany</i> , <i>Journal of Hydrometeorology</i> , <i>Nature</i> , <i>New Phytologist</i> , <i>Oecologia</i> , <i>Oikos</i> , <i>Plant and Soil</i> , <i>Plant Ecology</i> , <i>Theoretical Population Biology</i> , <i>Water Resources Research</i> .

PUBLICATIONS

Peer-reviewed journal articles:

1. Woods, S.R., Archer, S.R., Schwinning, S. Narrow window of opportunity for the establishment of *Larrea tridentata* seedlings. *Submitted to Plant Ecology*.
2. Eggemeyer, K.D., Schwinning, S. 2009. Biogeography of woody encroachment: why is mesquite excluded from shallow soils? *Ecohydrology* 2:81-87.
3. Schwinning, S. 2008. The water relations of two evergreen tree species in a karst savanna. *Oecologia* 158: 373-383.
4. Schwinning, Belnap, J., S. Bowling, D.R., Ehleringer, J.R. 2008. Sensitivity of the Colorado Plateau to change: climate, ecosystems and society. Sensitivity of the Colorado Plateau to Change: Climate, Ecosystems, and Society. *Ecology and Society* 13: Art. 28.
5. Schwinning, S., Starr, B.I., Wojcik, N.J., Miller, M.E., Ehleringer, J.E., and Sanford R.L. Jr. 2006. Effects of nitrogen deposition on an arid grassland in the Colorado Plateau cold desert, *Rangeland Ecology and Management* 58: 565-574.
6. Schwinning, S., Starr, B. I. and Ehleringer, J. R. 2005. Summer and winter drought in a cold desert ecosystem (Colorado Plateau) I: Effects on soil water and plant water uptake, *Journal of Arid Environments* 60: 547-566.
7. Schwinning, S., Starr, B. I. and Ehleringer, J. R. 2005. Summer and winter drought in a cold desert ecosystem (Colorado Plateau) II: Effects on plant carbon assimilation and growth, *Journal of Arid Environments* 61: 61-78.
8. Seyfried, M. S., Schwinning, S., Walvoord, M. A., Pockman, W. T., Newman, B. D., Jackson, R. B., Phillips, E. M. 2005. Ecohydrological Control of Deep-Drainage in Arid and Semiarid Basins. *Ecology* 86 (2): 277-287.
9. Schwinning, S., Sala, O.E., Loik, M.E. and Ehleringer J.R. 2004. Thresholds, memory and seasonality: understanding pulse dynamics in arid/semiarid ecosystems. *Oecologia* 141: 191-193.
10. Schwinning, S. and Sala, O.E. 2004. Responses to resource pulses in arid and semi-arid ecosystems. *Oecologia* 141: 211-220.
11. Huxman, T.E, Snyder, K., Tissue, D., Leffler, J., Ogle, K., Pockman, W.T., Sandquist, D.R., Potts, D.L., and Schwinning, S. 2004. Precipitation pulses and carbon fluxes in semiarid and arid ecosystems, *Oecologia* 141: 254-268.
12. Chesson, P.L., Gebauer, R.L.E, Schwinning, S. et al. 2004. Species interactions in pulsed environments. *Oecologia* 141: 236-253.
13. Huxman, T.E., Smith, M.D., Fay, P.A., Knapp, A.K., Shaw, M.R., Loik, M.E., Smith, S.D., Tissue, D.T., Zak, J.C., Weltzin, J.F., Pockman, W.T., Sala, O.E., Haddad, B.M., Harte, J., Koch, G.W., Schwinning, S., Small, E.E., Williams, D.G. 2004. Convergence across biomes to a common rain-use efficiency. *Nature* 429: 651 - 654.
14. Weltzin, J.F., Loik, M. E., Schwinning, S., Williams, D. G., Fay, P., Haddad, B. et al. 2003. Assessing the response of terrestrial ecosystems to potential changes in precipitation, *Bioscience* 53: 941-952.
15. Schwinning, S., Starr, B. I. and Ehleringer, J.R. 2003. Dominant cold desert plants of the Colorado Plateau do not partition rain by rainfall size, *Oecologia* 136: 252-260.

16. Schwinning, S., Davis, K., Richardson, L. and Ehleringer, J.R. 2002. Deuterium enriched irrigation suggests three forms of pulse use in perennial species of the Colorado Plateau, *Oecologia* 130:345-355.
17. Gebauer, R. L.E., Schwinning, S. and Ehleringer, J.R. 2002. Interspecific competition and resource pulse utilization in a cold desert community, *Ecology* 83: 2602 - 2616.
18. Schwinning, S. and Ehleringer J. R. 2001. Water-use trade-offs and optimal adaptations to pulse-driven arid ecosystems, *Journal of Ecology* 89: 464-480.
19. Parsons, A.J., Schwinning, S. and Carrère, 2001. Plant growth functions and possible spatial and temporal scaling errors in models of herbivory, *Grass and Forage Science* 56, 21-34.
20. Schwinning, S. and Parsons, A.J. 1999. The stability of grazing systems revisited: spatial models and the role of heterogeneity, *Functional Ecology* 13: 737-747.
21. Schwinning, S. and Weiner, J. 1998. Mechanisms determining the degree of size-asymmetry in competition among plants, *Oecologia* 113, 447-455.
22. Schwinning, S. 1996. Decomposition analysis of competitive symmetry and size structure dynamics. *Annals of Botany* 77: 47-57.
23. Schwinning, S. and Parsons, A.J. 1996a. Analysis of the coexistence mechanisms for grasses and legumes in grazing systems. *Journal of Ecology* 84, 799-813.
24. Schwinning, S. and Parsons, A.J. 1996b. A spatially explicit population model of stoloniferous N-fixing legumes in mixed pasture with grass. *Journal of Ecology* 84, 815-826.
25. Schwinning, S. and Fox, G. A. 1994. Population dynamic consequences of competitive symmetry in annual plants. *Oikos* 72: 422-432.
26. Schwinning, S. and M.L. Rosenzweig 1990. Periodic oscillations in an ideal-free predator-prey distribution. *Oikos* 59: 85-91.

Book chapters and symposium proceedings:

1. Litvak, M.E., Schwinning, S., Heilman, J.L. Woody plant rooting depth and ecosystem function of savannas: a case study from the Edwards Plateau karst, Texas, USA. In: *Ecosystem Function in Global Savannas: Measurement and Modeling at Landscape to Global Scales*. Hill M.J., Hanan N.P. (eds). CRC/Taylor and Francis. *In review*.
2. Schwinning, S., Hooten, M.M. 2009. Mojave desert root systems. In: *The Mojave Desert: Ecosystem Processes and Sustainability*. Webb, R.H., Fenstermaker, L.F., Heaton, J.S., Hughson, D.L., McDonald, E.V., Miller, D.M. (eds), University of Nevada Press, Reno.
3. Ehleringer, J.R., Schwinning, S. and Gebauer, R.L.E. 1999. Water use in arid land ecosystems. In: *Advances in Plant Physiological Ecology*, Press M. C., Scholes, J.D. and
4. Parsons, A.J., Carrère, P. and Schwinning S. 1999. Dynamics of heterogeneity in a grazed sward. In: *Proceedings of the International Symposium on Grassland Ecophysiology and Grazing Ecology*, deMoraes, A., Nabinger, C. de Faccio, P.C., Alves, S.J. & Campos Lustosa, S.B. (eds), Curitiba, Parana, Brazil: pp. 187-214.
5. Schwinning, S. and Parsons, A.J. 1996c. Interactions between grasses and legumes: understanding variability in species composition. In: *Legumes in Sustainable Farming*

Systems. Proceedings of the Sustainable Farming Systems/British Grassland Society Joint Conference, p.153-163.

6. Chapman, D.F., Parsons, A.J. and Schwinning, S. 1996. Management of clover in grazed pastures: expectations, limitations and opportunities. In: *White Clover: New Zealand's Competitive Edge*. Symposium of the New Zealand Grassland Association, Lincoln, N.Z, p. 55-64.