

# CATHERINE KLEIER

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## EDUCATION

- 2001 Ph.D., Organismic Biology, Ecology, and Evolution, University of California, Los Angeles  
Advisor, Philip Rundel. Dissertation Title: Functional ecology, ecophysiology, and  
convergent evolution of dwarf shrub and cushion plant growth forms.
- 1996 M.S. General Science/Botany and Plant Pathology, Oregon State University, Corvallis
- 1992 B.A. Environmental, Population and Organismic Biology, University of Colorado, Boulder

## PROFESSIONAL APPOINTMENTS

- Present Director - Environmental Studies Program and Assistant Professor of Biology, Regis  
University, Denver, CO
- 2005 Visiting Assistant Professor of Biology, Metropolitan State College of Denver
- 2005 Research Associate, Cooperative Institute for Research in Environmental Sciences  
(CIRES), University of Colorado, Boulder, CO
- 2005 Visiting Lecturer, University of Colorado, Denver, CO
- 2005 Visiting Lecturer, University of Colorado, Boulder, CO
- 2004-05 Visiting Faculty, Regis University, Denver, CO
- 2004-05 Visiting Faculty, Metropolitan State College, Denver, CO
- 2001-04 Assistant Professor, Department of Biology, Adams State College, Alamosa, CO
- 2001-04 Curator ALAM Herbarium, Adams State College, Alamosa, CO
- 1997-01 Teaching and Research Associate, University of California, Los Angeles, CA
- 1993-96 Teaching and Research Assistant, Oregon State University, Corvallis, OR

## PROFESSIONAL EXPERIENCES

- 2006 National Science Foundation Chautauqua Short Course – Ecology of the Front Range
- 2004 Kenan Fellow, National Tropical Botanic Garden, Miami, FL
- 2003 Consultant, Mid-continent Research for Education and Learning
- 2001 National Science Foundation Chautauqua Short Course for College Teachers
- 1998 Organization for Tropical Studies Graduate Semester, Costa Rica

## RESEARCH PROJECTS

- 2005-08 Environmental Monitoring. City of Breckenridge, CO  
Perform environmental monitoring of vegetation in Cucumber Gulch in collaboration  
with Dr. Christy Carello of Metropolitan State College of Denver.
- 2008 Population Ecology. Boulder County Parks and Open Space, CO  
Investigate Abert's squirrel populations in treated and untreated areas of Heil Valley  
Ranch, Boulder, County. In collaboration with Dr. Kelly Worden, of Red Rocks  
Community College.

- 2005 Plant Physiological Ecology. University of Colorado, Boulder, CO  
Research collaborator with Dr. Ray Fall and Dr. Russ Monson. Worked with increased CO<sub>2</sub> and isoprene emission of *Populus*, using Li-Cor gas exchange equipment in addition to maintaining and programming Conviron growth chambers.
- 2004 Restoration Ecology. Wason Ranch, Creede, CO  
Selected species of trees and shrubs to revegetate banks of the Rio Grand River with a \$5000 budget, also supervised four employees and various volunteers in planting.
- 1998-01 Plant Physiological Ecology Field Dissertation Research. Parque Nacional Lauca, Chile, White Mountain Research Station, CA; Bodega Bay Natural Reserve, CA  
Conducted field studies using Li-Cor gas exchange and conductance equipment, pressure chambers, data loggers, and psychrometers. Also conducted ecological research including habitat selection, niche partitioning, demography, nearest-neighbor analysis, principle components analysis, and multiple linear regression.
- 1998 Field Biology Quarter. Bodega Bay, CA  
Organized equipment and logistics for UCLA field biology quarter course. Also, assisted students with project development, statistical analyses, and final reports.
- 1998 Organization for Tropical Studies (OTS). Costa Rica  
Studied mouse home range size using sherman traps, plant allometry, fish ecology, plant nastic movements, bird foraging behavior, and forest dynamics.
- 1997 Field Biology Quarter. Chiang Mai, Thailand  
Organized equipment and assisted in logistics for UCLA international field biology course. Student projects included pioneer tree leaf physiology (see publication below), bird surveys using mist nets, and frog niche partitioning by call.
- 1993-96 Masters Research in Plant Physiological Ecology. Oregon State University  
Investigated the combined effects of tropospheric ozone and increased root zone temperatures on physiology, growth, and fecundity of two Brassicaceae species in controlled growth chamber experiments.
- 1990-91 Undergraduate Research Assistant. University of Colorado, Boulder  
Worked in the lab of Dr. Michael Breed collecting honeybees and testing sister kin recognition within the hive by exposure experiments.

### **TEACHING INTERESTS**

Courses Taught: Plant Physiology, Plant Ecology, Plant Anatomy and Morphology, Plant Systematics, Ecology, Field Ecology, Advanced Ecology, Tropical Biology, Thesis I (majors science writing), General Biology Lecture and Laboratory, Life Sciences (non-majors) Lecture and Laboratory, Evolution, Introduction to Botany (majors and non-majors), Conservation Biology, Human Anatomy and Physiology, Evolution, Diversity of American Attitudes Towards the Environment and Environmental Science.

Potential Courses: Plant Physiological Ecology, Alpine Ecology, Plants and Medicine (Ethnobotany), Critical Thinking in Environmental Issues, Rain Forest Ecology.

## **PUBLICATIONS**

- Kleier, C. and P.W. Rundel. Energy balance and temperature relations of *Azorella compacta*, a high elevation cushion plant of the central Andes. *Plant Biology*. In Press.
- Lambrinos, J. and Kleier, C. 2006. Vegetation community analysis of high altitude puna at Parque Nacional Lauca, Chile. *Revista Chilena de Historia Natural* 79: 233-243.
- Kleier, C. and J. Lambrinos. 2005. The importance of nurse associations for three tropical alpine life forms. *Arctic, Antarctic, and Alpine Research* 37(5): 331-336.
- Kleier, C. and P.W. Rundel. 2004. Microsite requirements, population structure and growth of the cushion plant, *Azorella compacta*, in the tropical Chilean Andes. *Austral Ecology* 29(4): 461-470.
- Rundel, P.W., A. C. Gibson, G. S. Midgley, S. J. E. Wand, B. Palma, C. Kleier, and J. Lambrinos. 2003. Ecological and ecophysiological patterns in a pre-altiplano shrubland of the Andean Cordillera in northern Chile. *Plant Ecology* 169(2): 179-193.
- Lambrinos, J. and C. Kleier. 2003. Thermoregulation of juvenile Andean toads (*Bufo spinulosus*) at 4300 m. *Journal of Thermal Biology* 28: 15-19
- Kleier, C., L. Ainsworth\*, and P.W. Rundel. 2001. Sunlight foraging in two tropical Southeast Asian pioneer tree species: *Macaranga denticulata* and *Mallotus paniculatus*. *Natural History Bulletin of the Royal Siam Society* 49: 231-241.
- Kleier, C., B. Farnsworth, W.E. Winner. 2001. Photosynthesis, growth and biomass allocation of radish (*Raphanus sativa* L.) in response to root temperature and ozone. *Environmental Pollution* 111: 127-133.
- Kleier, C., B. Farnsworth, W.E. Winner. 1998. Biomass, reproductive output and physiological responses of rapid-cycling Brassica (*Brassica rapa* L.) to ozone and modified root temperature. *New Phytologist* 139: 657-664.

\* Denotes work with an undergraduate student.

## **PAPERS PRESENTED AND PUBLISHED ABSTRACTS**

- C. Carello, C. Kleier, and A. Hoffa\*. 2007. Oral Presentation. Impact of gondola construction and development on bird and mammal populations. Ecological Society of America Annual Meeting, San Jose, CA.
- Kleier, C., A. Hoffa\*, and C. Carello. 2006. Poster. Willow (*Salix* sp.) as a diversity driver in a subalpine forest. Ecological Society of America Annual Meeting, Memphis, TN.
- Kleier, C., D. Bullard\*, and B. Ybarondo. 2004. Poster. Water pressure chamber measures xylem water potential. Ecological Society of America Annual Meeting, Portland, OR.
- Kleier, C. 2003. Oral Presentation. Active learning in the plant sciences classroom. Botanical Society of America Annual Meeting, Mobile, AL.
- Kleier, C. and J. Lambrinos. 2002. Oral Presentation. Spatial patterns of shrubs and grasses in a tropical alpine puna. Ecological Society of America Annual Meeting, Tucson, AZ.
- Kleier, C. and P.W. Rundel. 2001. Oral Presentation. Comparative morphology, demography, and ecophysiology between two populations of *Chrysothamnus viscidiflorus* ssp. *viscidiflorus* at two different altitudes in the White Mountains, CA. Ecological Society of America Annual Meeting, Madison, WI.

- Kleier, C. and P.W. Rundel. 2000. Oral Presentation. Comparison of functional morphology and ecophysiology between three shrubs in a Californian coastal prairie. Ninth International Conference on Mediterranean Type Ecosystems. Stellenbosch, South Africa.
- Kleier, C., J. Lambrinos, and P.W. Rundel. 2000. Poster. Community vegetation analysis of Parque Nacional Lauca, Chile in the high Andean puna. Joint meeting of the Ecological Society of America and the British Ecological Society, Orlando, FL.
- Kleier, C. and P.W. Rundel. 1999. Oral Presentation. Cushion form adaptations of *Azorella compacta* to cold temperatures and drought in Parque Nacional Lauca, Chile. Ecological Society of America Annual Meeting, Spokane, WA.
- Kleier, C., L. Ainsworth\*, and P.W. Rundel. 1998. Poster. Sunlight foraging in two tropical tree species. Ecological Society of America Annual Meeting, Baltimore, MD.

\* Denotes work with an undergraduate student

#### **SELECTED AWARDS AND GRANTS**

- 2008 Boulder County Parks and Open Space Small Research Grant
- 2006 Colorado Native Plant Society, John Marr Research Grant
- 2004 Kenan Foundation, Kenan Fellowship for College Professors
- 2002 Adams State College Teaching Improvement Grant
- 2001 Adams State College Center for Excellence in Learning and Teaching Scholar
- 2001 UCLA OBEE Lasiewski Award for Outstanding Graduate Student Research
- 2001 UCLA Professor Thomas James Memorial Award
- 2000 University of California Dissertation Year Fellowship
- 2000 UCLA Vavra Fellowship
- 2000 White Mountain Research Station Graduate Student Fellowship
- 1999 UCLA Latin American Center Grant
- 1999 White Mountain Research Station Graduate Student Fellowship
- 1998 UCLA Department of OBEE Research Quarter Fellowship
- 1998 UCLA Department of Organismic Biology, Ecology and Evolution Research Grant
- 1998 University of California Natural Reserve System Mildred E. Mathias Award
- 1997 UCLA Vice-Chancellor for Academic Research Fellowship Award

#### **INVITED PRESENTATIONS**

- Western State College, Gunnison, CO. Biology department seminar. September, 2005.
- Colorado Native Plant Society, Boulder, CO. Seminar on tropical alpine plants. March, 2005.
- Rio Grande County Museum, CO. Public address on alpine wildflowers. March, 2003.
- University of Denver, Denver, CO. Biology department seminar. March, 2002.
- Kew Botanic Gardens London, England. Seminar on *Azorella compacta*. February, 2001.

#### **PEER REVIEWS SOLICITED BY JOURNALS**

*American Journal of Botany*  
*Arctic, Antarctic, and Alpine Research*  
*Journal of Arid Environments*  
*Plant Biology*

## **PEER REVIEWS SOLICITED BY AGENCIES**

National Science Foundation

## **SELECTED LEADERSHIP EXPERIENCE AND SCHOOL SERVICE**

- 2008- College Core Curriculum Committee, Regis College, Regis University
- 2006-07 Women's Studies Committee, Regis College, Regis University
- 2006 Development Committee for Masters in Sustainability, Regis University
- 2003-04 Center for Excellence in Learning and Teaching (CELT) Council  
Oversaw and assessed the CELT at Adams State College
- 2003-04 Title V Steering Committee, Adams State College  
Made budget decisions regarding use of \$1.5 million grant
- 2002-04 International Student Committee, Adams State College  
Committee developed International Student Affairs Office
- 1999-01 President, Biology Graduate Student Association, UCLA  
Liaison between faculty and graduate students for OBEE department
- 1997-98 Biological Sciences Council Representative, UCLA  
Represented Organismic Biology, Ecology, and Evolution department graduate students to school-wide Graduate Student Senate
- 1994-96 President, Graduate Student Association, Oregon State University  
Led graduate student body, developed OSU's first health insurance benefits for graduate students, and created first school-wide graduate student conference

## **PROFESSIONAL AFFILIATIONS**

Ecological Society of America  
Botanical Society of America  
Colorado Native Plant Society  
Organization for Tropical Studies  
Society for Conservation Biology