

KEN KEEFOVER-RING

POSTDOCTORAL RESEARCH ASSOCIATE

UNIVERSITY OF WISCONSIN-MADISON

DEPARTMENT OF ENTOMOLOGY

1630 LINDEN DRIVE

MADISON, WI 53706

PHONE: (608) 630-3801

EMAIL: keefer@entomology.wisc.edu

WEB: <http://entomology.wisc.edu/~keefer/>

EDUCATION

- Ph.D., Department of Ecology and Evolutionary Biology (EEB), University of Colorado, Boulder, CO, May 2008. Advisor: Prof. Yan Linhart.
- Master of Arts, Department of Environmental, Population and Organismic Biology, University of Colorado, Boulder, CO, May 2001. Advisor: Prof. Yan Linhart.
- Bachelor of Science, Department of Chemistry, Arizona State University, Tempe, AZ, December 1989.
- Bachelor of Science, Double Major from Departments of Biochemistry and Biology, Minor from Department of Chemistry, Colorado State University, Fort Collins, CO, August 1987.

TEACHING EXPERIENCE

- Spring 2007 - Teaching Assistant for Biometry - University of Colorado, EEB Dept.
- Fall 2006 - Teaching Assistant for Ecology - University of Colorado, EEB Dept.
- Fall 2005 - Teaching Assistant for Conservation Biology - University of Colorado, EEB Dept.
- Fall 2004 - Teaching Assistant for Genetics - University of Colorado, EEB Dept.

RESEARCH EXPERIENCE

- July 2008 to present – Post-doctoral Research Associate to Prof. Richard Lindroth, University of Wisconsin, Madison, WI. Chemical ecology of poplars and yellow monkeyflower, *Mimulus guttatus*
- January 2008 to June 2008 - Research Assistant to Prof. Deane Bowers, EEB Department, University of Colorado, Boulder, CO. Develop HPLC methods and GC/MS spectral library for iridoid glycosides. Lab equipment repair and maintenance.
- August 2006 to December 2006 - Research Assistant for the University of Colorado Museum entomology collection. Curation and databasing of large grasshopper collection.
- November 2001 to August 2005 - Research Assistant to Prof. Yan Linhart, EEB Department, University of Colorado, Boulder, CO – Essential oil analyses, field, and greenhouse work for an NSF grant concerning herbivory and competition in common thyme, *Thymus vulgaris*.
- June 2002 to Present - Studied the chemical ecology of *Thymus vulgaris* in southern France and *Monarda fistulosa* and *M. pectinata* in Colorado.
- August 1998 to May 2001 - Master of Arts research - Field and lab work studying the terpenoid chemistry of ponderosa pine cones and a suite of specialist herbivores.
- September 1986 to August 1987 - Research assistant to Dr. Winslow Caughey, Department of Biochemistry, Colorado State University, Fort Collins, CO - Protein isolation and general lab work.

PROFESSIONAL WORK EXPERIENCE

- March 1999 to November 2001 - Analytical protein chemist for Baxter Hemoglobin Therapeutics, Boulder, CO - HPLC method development and stability testing of recombinant hemoglobin.
- November 1994 to July 1998 - Analytical chemist for Geneva Pharmaceuticals, Broomfield, CO - HPLC and GC method development and QC testing of small molecule pharmaceuticals.
- December 1987 to October 1993 – Aircraft interior development chemist for ICI/Fiberite, Tempe, AZ - Development of lightweight fire resistant composites for commercial aircraft. Resin formulation, and flammability and mechanical testing.

GRANTS AND AWARDS

- University of Colorado EEB Departmental Graduate Fellowship. Fall 2007.
- NSF-Doctoral Dissertation Improvement Grant. 2006. \$7,921
- University of Colorado EEB Departmental Grant. 2006. \$500
- Sigma Xi Research Grant. 2006. \$700
- John Marr Fund. 2006. \$1,000
- University of Colorado EEB Departmental Grant. 2005. \$1,435
- Colorado Native Plant Society. 2003. \$325
- Walker Van Riper Fund. 2003. \$761
- Colorado Mountain Club. 1999. \$600
- US Patent #5,418,050. 1995. **Keefover-Ring, K.**, G. T. Geisendorfer, and H. A. Yap, Light-weight impact resistant polyaramid fiber fire/heat barrier laminates for commercial aircraft cargo bays. ICI/Fiberite Composites Inc.

PEER-REVIEWED PUBLICATIONS

Keefover-Ring, K. and Y. B. Linhart. In press. Variable chemistry and herbivory of ponderosa pine cones. *International Journal of Plant Sciences*

Keefover-Ring, K., J. D. Thompson, and Y.B. Linhart. 2009. Beyond six scents: defining a seventh *Thymus vulgaris* chemotype new to southern France by ethanol extraction. *Flavour and Fragrance Journal* 24: 117-122

Groendahl, E., B. K. Ehlers, and **K. Keefover-Ring**. 2008. New *cis*-sabinene hydrate chemotype detected in large thyme (*Thymus pulegioides* L.) growing wild in Denmark. *Journal of Essential Oil Research* 20: 40-41

Thompson, J. D., P. Gauthier, J. Amiot, B. K. Ehlers, C. Collin, J. Fossat, V. Barrios, F. Arnaud-Miramont, **K. Keefover-Ring**, and Y. B. Linhart. 2007. Ongoing adaptation to Mediterranean climate extremes in a chemically polymorphic plant. *Ecological Monographs* 77(3): 421-439

Linhart, Y. B., **K. Keefover-Ring**, K. A. Mooney, B. Breland, and J. D. Thompson. 2005. A chemical polymorphism in a multi-trophic setting: thyme monoterpene composition and food web structure. *American Naturalist* 166(4): 517-529

PRESENTATIONSPosters

Flaunting Fragrant Frass: The Chemical Ecology of *Physonota unipunctata* and its Host Plant *Monarda fistulosa* - Gordon Conference on Plant Herbivore Interaction - February 18-23, 2007 - Ventura, CA

Geographic, Temporal and Anatomic Variation in Monoterpene Chemistry of *Monarda fistulosa* in Colorado - Gordon Conference on Plant Herbivore Interaction - February 29 to March 5, 2004 - Ventura, CA

Talks**2008**

One Chemistry, Two Continents: Maintenance and Function of Chemical Polymorphism in the Mint Family - Evolution Seminar Series - October 16, 2008 - University of Wisconsin at Madison

2007

Chemical Warfare in Colorado: Beetles versus Bergamot - Invited talk to the Colorado Native Plant Society 2007 annual conference - September 8, 2008 - Boulder, CO

One Chemistry, Two Continents: Maintenance and Function of Chemical Polymorphism in the Mint Family - Public presentation of Ph.D. dissertation research - September 7, 2008 - University of Colorado at Boulder

Chemical Warfare in Colorado: Beetles versus Bergamot - Invited talk to Café Botanique at the Denver Botanical Gardens - July 5, 2007 - Denver, CO

The Other Chemicals: Plant Secondary Compounds - Invited talk to Nutritional Ecology - April 13, 2007 - University of Colorado at Boulder

2006

A Chemical Polymorphism in Thyme and Space - Invited talk to University of Colorado Biology Club - December 7, 2006

2005

The Terpenes - Invited talk to graduate seminar in chemical ecology - September 19, 2005 - University of Colorado at Boulder

Flaunting Fragrant Frass: *Physonota unipunctata* (Chrysomelidae) fecal shield and host plant chemistry - Guild of Rocky Mountain Ecology and Evolutionary Biologists - September 18, 2005 - University of Colorado Mountain Research Station

Variation in Plant Secondary Chemistry - University of Colorado Department of Ecology and Evolutionary Biology Brown Bag Series - September 16, 2005

2004

The Chemical Ecology of Monarda on Open Space and Mountain Parks (OSMP) Lands and Beyond – Invited talk to City of Boulder OSMP - December 15, 2004 - Boulder, CO

Quest for the Holy Geraniol - University of Colorado Department of Ecology and Evolutionary Biology Brown Bag Series - November 17, 2004

Plants Terpenes: The Spice of Life - Invited talk to EBIO 2590 Plants and Society - September 29, 2004 - University of Colorado at Boulder

Plants Making Scents: Labiate Volatile Emissions and Pollination - Guild of Rocky Mountain Population Biologists - September 2004 - University of Colorado Mountain Research Station

Terpene Polymorphisms in Mints - EBIO 2070 Genetics - Fall 2004 - University of Colorado at Boulder

2003

Monoterpene Chemistry of *Monarda* in Colorado - University of Colorado Department of Ecology and Evolutionary Biology, Brown Bag Series - November 10, 2003

Chemotype Distribution of *Monarda fistulosa* in Colorado - Guild of Rocky Mountain Population Biologists - September 20, 2003 - University of Colorado Mountain Research Station

2002

Variation in Chemistry and Herbivory of Ponderosa Pine Seed Cones in Colorado - Ecological Society of America National Conference - August 7, 2002 - Tucson, AZ

Monoterpene Polymorphism in *Monarda fistulosa* - Plant Animal Interaction group - November 25, 2002 - University of Colorado at Boulder

Evolution of Terpene Synthases - Evolutionary Biology course - April 23, 2002 - University of Colorado at Boulder

SERVICE WORK

- July 2005 to Present - Board of Directors member for Prairie Preservation Alliance - A Broomfield, CO based non-profit advocating for prairie protection in Colorado.
- November 1994 to January 2004 - Served on the Board of Directors for Sinapu - A Boulder, CO based non-profit dedicated to the protection and restoration of native carnivores in the Southern Rockies.