

Dr. Sara H. Brown

New Mexico Highlands University

Department of Natural Resource Management

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Education

- Ph.D.** Ecology Minor: Environment and Natural Resources (2011)
University of Wyoming, Laramie, Wyoming
Advisor: Dr. Ingrid C. Burke
- M.S.** Environmental Science and Regional Planning (2009)
Washington State University, Pullman, Washington
- B.S.** Major: Environmental Science Minor: Political Science (2001)
Willamette University, Salem, Oregon

Teaching Experience/ Pedagogy Coursework

- 2011-2014** Assistant Professor of Natural Resource Management, Forestry Program
New Mexico Highlands University Las Vegas, NM 87701
- 2011** Post-Doctoral Work (NSF-funded FIRST-IV Pedagogy Program) 2011-2013
- 2010** Graduate Teaching Assistant (Fall Semester)
University of Wyoming
Course: *Environment*; Assisted in developing/teaching course & 6,8-hr labs
- 2008** Student, graduate level semester-long course "College Instruction"
University of Wyoming Instructor: Ben Roth
- 2007** Graduate Teaching Assistant (Fall Semester)
Colorado State University
Course: *Environmental Conservation*
- 2005** Graduate Teaching Assistant (Full Academic Year)
Washington State University
Course: *Environmental Science 101*; Instructed biweekly 3 hour labs

Courses & Labs Taught as Primary Instructor

- SCI 135 Co-Taught Fundamentals of Science (3 credits) Lab (2 credits)
* This is a learning community course with MATH120
- FOR 200 Forestry Field Practices (6 credits) –Field-based course
- BIO 300 Tropical Field Ecology (6 credits) –International (Belize) field-based course
- FOR 405 Wildland Fire Management (3 credits)
- FOR 431 Terrestrial Ecology (3 credits) Lab (2 credits)
- FOR 450 Fire Ecology (3 credits)
- FOR 451 Project Fires and Post-Fire Rehabilitation (3 credits)
- FOR 452 Prescribed Fire Practices (3 credits) Lab (2 credits)
- FOR 454 Field Safety Practices (1 credit)
- FOR 456 Landscape Ecology and Wildland Fire (3 credits)
- FOR 620 Climate Change (2 credits)
- FOR 620 Fire and Humans (2 credits)
- FOR 620 Fire and Climate Change (2 credits)

Courses Taught as Teaching Assistant

ENV 101	Environmental Science (3 credits)	Lab (primary instructor) (2 credits)
ENV 1001	Environment (3 credits)	Lab (primary instructor) (2 credits)
ENV 1000	Environmental Conservation (3 credits)	Lab (primary instructor) (2 credits)

Synergistic Pedagogy Activities

- 2014** Organized Faculty and Student Research Day for New Mexico Highlands University
2013 Attended Discipline Based Education Research (DBER) Workshop at University of New Mexico, October 2013; 2-days.

Attended Workshop: "Incorporating Research into introductory science classes".
Instructors: Drs Rosenberg, Svihla and Knottenbelt from University of New Mexico.
Held at NMHU November, 2013. 1day.

Member of Association of Fire Ecology Education Committee (fall 2012-present)

- 2012** Attended 5 day OnCourse Teaching Workshop in Maryland, USA. July 2012

Co-taught 22 high school students in the "SASE" (Student Agriculture and Science Experience) summer program at NMHU June 3-18, 2012

Facilitator for course development at New Mexico Highlands University;
Development of SCI135 course for Fall, 2012; facilitation for 8 faculty members.

Lead instructor of Tropical Field Ecology Course in Belize (May 18-28, 2012)—
funded by NMSU via USDA partner grant; collaborative effort with "Belize Field School;" 14 students, 6 instructors.

Attended, and assisted in bringing faculty development workshop by Dr. Diane Ebert-May (Backward Course Design) to Highlands University (the PI on the FIRST-IV post-doctoral program)

- 2011** Attended a CUR workshop during fall 2011 in Holland, MI entitled: "Beginning an undergraduate research program at a predominantly undergraduate institution."

- 2011** FIRST IV Postdoctoral Scholar 2011-2013 NSF Grant # 0817224 (due) to Michigan State University. The FIRST IV program is designed to reform undergraduate science education through professional development of postdocs who design an inquiry-based, student-centered undergraduate biology course.

Grantsmanship

- 2013** Co-PI Southwest Fire Science Consortium Renewal Grant; PI-Northern Arizona University. \$475.00k for two years.

- 2012** EPSCoR Seed Grant—Instrumentation; submitted in collaboration with Drs. E. Martinez and C. Conley July 2012 (\$50,000).

- 2011** WAESO Grant: Pinyon/Juniper Fire History Reconstruction Project (F2011ur0043/F2011UR031). I mentored 2 forestry students: Matt Guzman and Adele Ludi (\$6,500)

NMHU Faculty Research Committee Research Proposal: Investigation of pinyon-juniper age structure and encroachment patterns in northern New Mexico. (\$3,000).

Fellowships & Academic Awards

2012 Granted Faculty Release Committee (FRC) release time (25%) for spring semester, 2012, to write grant proposal for acquisition of equipment for Fire Ecology Lab.

Pino Endowment Award (\$3,000) to attend the “On-Course Workshop” focused on pedagogical tools for faculty members.

ARMAS faculty/undergraduate research fellowship for spring 2012. Ben Gonzales investigated wildland fire communications and safety (broadband radios) (\$2,800).

Mentored Undergraduate student, Adele Ludi, won 3rd place at NMHU Research Day (out of 36 posters) for her poster entitled: “Investigation of Pinon/Juniper Age Structure and Fire History on Rowe Mesa, Las Vegas Ranger District”

2011 FIRST IV Postdoctoral Scholar 2011-2013 NSF Grant # 0817224 (due) to MSU

Wilhelm G and Ragnhild Solheim Scholarship—University of Wyoming (\$400)

First Place Oral Presentation—Front Range Student Ecology Symposium (\$520)

2009 Program in Ecology Fellowship, University of Wyoming (\$3,500)

National Smokejumper Association Award (\$4,500)

Plummer Scholarship, University of Wyoming (\$500)

2005 Robert Lane Fellowship Award in Environmental Science (\$2,000 award)

2000 Morris K. Udall Scholarship for Environmental Policy (\$5,000 award)

Webber Scholar Outreach Program--Excellence in Environmental Science (\$4,000)

Publications

Shaw, M., **Brown, S.**, Corey-Rivas, S. 2013. Student-centered introductory biology and forestry at a HSI. Abstract Accepted by AAAS Vision and Change in Biology Undergraduate Education: Chronicling Change, Inspiring the Future working conference on August 28 – 30, 2013, in Washington DC.

Brown, S.H., Conley, C., Martinez, EA. The Acquisition of Hydrology & Water Quality Equipment for Undergraduate Research & Training at New Mexico Highlands University. New Mexico. Academy of Sciences and New Mexico EPSCoR Joint Annual Meeting and Symposium. November 9, 2013.

Owen T. Burney, **Sara H. Brown**, Kenneth P. Bentson, and W. David Hacker. 2013. Forestry and Tree Planting in New Mexico. Tree Planters Notes Vol 57 no. 2. In press.

Publications Cont.

Jackle, A. **S. Brown**, D. Tinker, J. Lovato and N. Dobric. 2011. *Bark Beetles in the Intermountain West: Redefining Post-Disturbance Forests and Management Strategies for Minimizing Impacts*. Proceedings of a workshop held October 4-5, 2010. Laramie, Wyoming. Laramie, Wyoming: William D. Ruckleshaus Institute of Environment and Natural Resources.

Brown, S.H., Burke, I.C., Lauenroth, W., Tinker, D.B. Quantifying aboveground carbon emissions during prescribed fire in the montane forest of the Colorado Front Range, USA. International Journal of Wildland Fire. (Invited resubmission)

Brown, S.H., Reich, R.M., Burke, I.C., Gill, R.A., Carroll, M.S. Modeling the spatial distribution of lightning fires on two national forests. International Journal of Wildland Fire. (InPrep).

Brown, S.H., Burke, I.C., Lauenroth, W., Schlaepfer, D.R. The impact of prescribed fire and soil water content on soil respiration in the montane forest of the Colorado Front Range USA. Plant and Soil. (In prep as of June 2012.)

Brown, S.H., Brown P.M., Burke, I.C., Lauenroth, W. Examining atmospheric emissions of pre and post European settlement fires in the montane forest of the Colorado Front Range, USA. (In Prep.)

Professional Presentations

- 2013** **Accepted Special Session**—Large Fire Conference, Missoula, MT. May 19-23, 2014. “*The Las Conchas Fire: A Case Study of Ecological and Social Impacts.*”
Invited Oral presentation—Northern New Mexico College in Espanola, NM (Nov). “Tree Rings, Fire Ecology and Encroachment.”
- 2012** **Oral presentation**--Association for Fire Ecology in Santa Fe, NM (Feb). “Comparing pre-European and contemporary carbon emissions from wildfire in the montane forest of the Colorado Front Range, U.S.A.”
- 2011** **Oral presentation**-- Ecological Society of America Pittsburgh, PA. (Aug). “Comparing pre-European and contemporary carbon emissions from wildfire in the montane forest of the Colorado Front Range, U.S.A.”
- 2011** **Oral presentation**--Annual Front Range Student Symposium at CSU (Feb.) “Quantifying aboveground carbon emissions during wildfire in the montane forest of the Colorado Front Range, U.S.A.” ***First Place Oral Presentation
- 2010** **Departmental seminar**—Final Dissertation Research (Nov.)
“The impact of fire and fire mitigation on forest carbon Storage
Oral presentation--Ecological Society of America Pittsburgh, PA. (Aug.)
“Quantifying aboveground carbon emissions during wildfire in the montane forest of the Colorado Front Range, U.S.A.”
Oral presentation--Annual Front Range Student Symposium at CSU (Feb.)
“Modeling the Spatial Distribution of Lightning Fires on Two National Forests”
- 2009** **Poster presentation**--EPSCORE meeting for UW Program in Ecology: “The Impact of Wildland Fire, and Fire Mitigation on Forest Carbon Storage” (Nov.)
- 2008** **Oral presentation**--Annual Front Range Student Symposium at CSU (Feb.)
“Wildfire and Harvest, Interactions on Two National Forests.”

Additional Synergistic Activities

- 2013** Board member of South West Fire Science Consortium
On Review panel for Joint Fire Sciences GRIN proposal process
- 2012** On steering committee for the 4th Annual Fuel and Fire Behavior Conference for 2013 (conference to be held Feb, 2012)
On Review panel for Joint Fire Sciences GRIN proposal process
- 2010** Workshop Participant: Bark Beetles in the Intermountain West—Laramie, Wyoming, University of Wyoming. Sponsored by the William D. Ruckleshaus Institute of Environment and Natural Resources; Women in Science Conference Panel Member—The conference targeted high school women interested in continuing a career/education in science. University of Wyoming, Laramie, WY; Wyoming State Science Fair Judge, division: 5-8th grades. University of Wyoming, Laramie, WY.; Bark Beetle Research Day: Outreach for Governor of Wyoming. Provided the Governor and associates with knowledge about the interaction between bark beetles and fire.
- 2008** Forest Management and Biomass Symposium, Colorado State University
- 2001-2006** Instructor/co-instructor of wildland fire courses through the U.S.D.A. Forest Service Incident Command System
- (2001, 2002) Fire Fighter Type-2
 - (2001) Helicopter Crew Member & Wildland Fire Urban Interface
 - (2005, 2006, 2007) Wildland Fire Pumps
 - (2006) Leadership in the Fire Service

Student Mentorship 2011-2013

I serve as primary advisor for 2 graduate students: 1) Elijah Small 2) Elyssa Duran.
I serve on 6 graduate student committees: 1) Ms. Anita Lavadie 2) Mr. Will Jaremko-Wright 3) Mr. Robert Ortega 4) Ms. Molly Wright 5) Erika Guaba 6) Alfonso Trujillo

Mentored/mentoring 10 undergraduate students in research: Matt Guzman; Adele Ludi (fall 2011); Ben Gonzales, Elyssa Duran (spring 2012); Tim Cusack (summer 2012); Jesse Weitz (Fall 2012) Tara Cusack (Spring 2013); Estevan Martinez (spring 2013); Jacob Key (ongoing); Lorenzo Herrera (ongoing)

I currently am the academic advisor for 23 students who are majoring in the Forestry Wildland Fire Concentration

Instructor/Outreach/Community Service

- 2011-2013** Sigma Xi Secretary and Treasurer; NMHU branch (ongoing duty)
Organized a Science Café, Nov. 2012 “Fire and Water in the Gallinas”
Assist with programmatic activities--NMHU Conservation Club
- 2009** Community presentation about “Smokejumping” Laramie, WY Rotary Club
Community presentation about “Smokejumping” Laramie, WY Kiwanis Club

Study Abroad Experiences

Havana, Cuba: University of Havana
January/February, 2000
Introduction to Contemporary Cuba

Durban, South Africa: University of Natal
February/July, 2000
Environmental Science, Politics

Academic Employment

- 2011 Assistant Professor** August 2011-Present
New Mexico Highlands University: Las Vegas, NM 87701
Department of Natural Resource Management
- 2008-2010 Graduate Assistant** August 2008-Present
University of Wyoming: Laramie, WY 82070
Supervisor: Dr. Ingrid C. Burke iburke@uwyo.edu
Accomplishments/Tasks: I work on a variety of ecological research projects under the direction of Dr. Burke.
- 2007-2008 Research/Teaching Assistant** August 2007-July 2008
Colorado State University: Fort Collins, CO 80525
Supervisor: Dr. Ingrid C. Burke iburke@uwyo.edu
Accomplishments/Tasks: During the fall semester I was a teaching assistant for the course *Environmental Conservation*. During the spring semester I worked as a research assistant on a variety of research projects under Dr. Burke.
- 2005 Graduate Teaching Assistant** (Full Academic Year)
Washington State University: Pullman, WA 50321
Supervisor: Dr. Richard Gill rgill@byu.edu

Non-Academic Employment

- 2004-2007 West Yellowstone Smokejumpers** May-August
USDA Forest Service: 670 Air Center Rd. West Yellowstone, MT 59758
Supervisor: Jim Kitchen (406) 329-4900
Accomplishments/Tasks: As a smokejumper I assisted in many fire management tasks, including extinguishing and monitoring remote wildland fires by parachute, and conducting large-scale prescribed burns.
- 2003 Redmond Smokejumpers** May 19-October 17
UDSA Forest Service: 1740 E. Ochoco Way Redmond, OR 97756
Supervisor: Dewey Warner (541) 504-7281
- 2002 Snake River Hot Shots** April 16-November 1
Bureau of Land Management: 1111 N. 8th Ave. Pocatello, ID 83204
Supervisor: Randy Anderson (208) 233-2937
Accomplishments/Tasks: As a member of an elite wildland firefighting team, our crew traveled the western United States extinguishing large, complex forest fires.

Non-Academic Employment Cont.

2001 **Zion Helitack** May 16-December 1
National Park Service: Zion National Park, Cedar City, UT 67671
Supervisor: Jason Hofman (435) 590-3331
Accomplishments/Tasks: As lead crew-member for the helicopter crew, I supervised five crew members in helicopter and wildland fire operations.

1997-2000 **Middle Fork Type II Crew** May 23-August 28
USDA Forest Service (Willamette National Forest) Oakridge, OR 97463
Supervisor: Jose Mercado (541) 782-5259
Accomplishments/Tasks: Ignition of prescribed fires for fuel reduction, and initial attack of wildland, vehicle, and urban interface fires.

References

Dr. Sarah Corey Visiting Professor of Biology and Honors Program Coordinator, New Mexico Highlands University
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Dr. Jesus Rivas Associate Professor of Biology, New Mexico Highlands University
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Dr. Ingrid Burke Director of the Ruckleshaus Institute and Haub School for the Environment, University of Wyoming
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