

Curriculum Vitae

Michael Remke, PhD

1000 Rim Drive

Durango, CO 81301

Berndt Hall 2443

(303) 842-5188

mremke@fortlewis.edu

EDUCATIONAL BACKGROUND

Northern Arizona University, Flagstaff, Arizona

May 2019

Doctor of Philosophy: Forest Science

Certificates: Applied Statistics

Dissertation: Getting to the root of change: How plants respond to novel climates, soils, and soil biota.

Fort Lewis College, Durango, Colorado

April 2012

Bachelor of Science: Environmental Biology

Overall GPA: 3.51

Certificates: Geographic Information Systems

Thesis: Plant community responses to the coupled effects of dust on snow and warming in an alpine environment, southwestern Colorado.

HONORS AND AWARDS

Colorado Water Center: Team proposal	\$34,892	2021
Bureau of Land Management: Climate and Plant Research Program	\$65,000	2020
Rocky Mountain Research Station – Forest Health Grant	\$94,000	2020
United States Forest Service agreement for ecological research associated with land management	\$64,000	2020
Colorado Water Center: Watershed Fund Grant	\$50,000	2019
Achievement Rewards for College Scientists: Scholar Award	\$8,500	2018
Colorado Plateau Native Plant Program: Native plant materials development grant	\$100,000	2018
Czech Ministry of Science Research Grant	\$25,000	2017
Achievement Rewards for College Scientists: Scholar Award	\$8,500	2017
Achievement Rewards for College Scientists: Scholar Award	\$7,000	2016
Genes to Environment: NSF IGERT Fellowship	\$25,000	2014
Genes to Environment: NSF IGERT Fellowship	\$25,000	2013
ESA SEEDS: Travel Award	\$1,000	2012
Tri Beta Biological Honor Society		2012

Fort Lewis College: John Dever Best in Show Biology Poster		2012
Who's Who Among American Colleges and Universities		2012
Fort Lewis College: Ted and LeAnn Compton Scholarship	\$6,000	2011
ESA SEEDS: Colorado Plateau Chapters Grant	\$5,000	2011
Fort Lewis College: Emerging Scholar Writing Award		2008
PUBLICATIONS AND PRESENTATIONS (SELECTED)	*indicates an undergraduate student mentee	
Honeyman, A.; Remke, M. ; Rhodes, C.; Spear, J. Using machine learning to predict microbial community association with soil biogeochemical factors.	Manuscript	<i>In Prep</i>
Janoušková, M; Remke, M. ; Johnson, N.C.; Blažková, A; Rydlová, J.; Kolaříková, Z.; Bowker, M. Moving together: Effects of inoculation with sympatric soil microbes on the composition of arbuscular mycorrhizal fungal communities.	Manuscript	<i>In Prep</i>
Remke, M. ; Korb, J. Long term post-fire vegetation shifts eventually results in conifer regeneration on the Missionary Ridge Fire, Southwestern Colorado.	Manuscript	<i>In Prep</i>
Gaber, B.*; Remke, M. ; Korb, J. Assessing individual tree and stand characteristics associated with round headed bark beetle outbreak in ponderosa pine stands in southwestern Colorado.	Undergraduate Thesis	2020
Remke, M. ; Johnson, N. C.; Williamson, M; Wright, J*; Bowker, M. Sympatric pairings of dryland grass populations, mycorrhizal fungi, and associated soil biota enhance mutualism and ameliorate drought stress. <i>Journal of Ecology</i> .	Manuscript	2020
Remke, M. ; Tuten, M.; Kimple, A. Ecological Forestry in southwestern mixed conifer forests: economic viability of management. Southwestern Ecological Restoration Annual Symposium.	Poster Presentation	2020
Uhey, D. A; Hofstetter, R. W; Haubensak, K. A; Remke, M. ; Vissa, S. Climate and vegetation structure shape ant communities along elevational gradients on the Colorado Plateau. <i>Ecology and Evolution</i> .	Manuscript	2020
Remke, M. Diameter caps, mountain pine beetle outbreaks, and drought: A literature review with an emphasis on management implications. San Juan National Forest Technical Report.	Technical Report	2020
Remke, M. ; Culpepper, A; Kimple, A. Forest stewardship and restoration enhances shrub	Technical Report	2020

growth while maintaining desired overstory conditions in dry mixed conifer forests in southwest Colorado. San Juan National Forest Technical Report.		
Remke, M. ; Hoang, T.*; Kolb, T; Gehring, C; Johnson, N.C.; Bowker, M. Familiar soil conditions facilitate growth of <i>Pinus ponderosa</i> seedlings during drought. Restoration Ecology	Manuscript	2020
Lekberg, Y.; Van der Putten, W; Beaver, J; Callway, R; Reinhart, K; Klironomos, J; Remke, M. ; Hart, M. The relative importance of plant-soil feedback and competition varies based on environment. Ecological Letters.	Manuscript	2018
Hoang, T.*; Remke, M. ; Bowker, M. Variability in soil nutrients and parent material influence ponderosa pine seedling growth rates.	Undergraduate Thesis	2018
Remke, M. ; Johnson, N.C.; Bowker, M. Mycorrhizal allocation determines their function across varying environmental contexts. 9 th International Conference on Mycorrhiza.	Invited Presentation	2017
Remke, M. ; Johnson, N.C.; Bowker, M. Mycorrhizal common gardens: how mycorrhizal associations influence plant populations in a changing world. 14 th Biennial Conference for Science and Management on the Colorado Plateau & Southwest Region.	Oral Presentation	2017
Remke, M. ; Johnson, N.C.; Haubensak, K.; Williamson, M.; Bowker, M. Mycorrhizal allocation determines their function across varying environmental contexts. Soil Ecology Society 2017 Meeting.	Oral Presentation	2017
Wright, J.*; Remke, M. ; Bowker, M. Plant diameter is a better predictor for biomass than height in a perennial bunchgrass, <i>Bouteloua gracilis</i> .	Undergraduate Thesis	2017
Remke, M. ; Johnson, N.C.; Bowker, M. Moving from the glasshouse to the field: understanding plant-soil feedbacks in ecological settings. MPG Ranch International workshop on plant-soil feedback.	Invited Presentation	2016
Tso, H.*; Remke, M. ; Bowker, M. Experimental drought in a greenhouse reduces plant vigor and reproductive success.	Undergraduate Thesis	2016
Knuaf, A.*; Remke, M. ; Haubensak, K.; Bowker, M. Intact plant and soil microbial pairings result in higher decomposition rates during drought.	Undergraduate Thesis	2015

Remke, M.; Johnson, N.C.; Bowker, M. The home team advantage: Locally adapted plants and soil biota yield greater mutualistic function. 8 th Annual conference on mycorrhiza.	Poster Presentation	2015
Remke, M.; Johnson, N.C.; Williamson, M.; Bowker, M. C. <i>Bouteloa gracilis</i> and its associated soil organisms likely coevolved: the importance of home. Networks of Power and Influence: Ecology and evolution of symbiosis between plants and mycorrhizal fungi. 33 rd New Phytologist Symposium. Zurich, Switzerland.	Poster Presentation	2014
Remke, M.; Korb, J.; & Steltzer, H. Plant community responses to the coupled effects of dust on snow and warming in alpine environments, Southwestern Colorado. Proceedings for Biennial Conference of Science and Management on the Colorado Plateau.	Manuscript	2010
Remke, M. 2012. Genetic Conservation: A literature review focused on preserving plant genetic material for restoration and conservation on Federal lands in southwestern Colorado.	Technical Report	2012

TEACHING EXPERIENCE

Fort Lewis College **2020-P**

Adjunct Professor of Biology

Courses taught:

- BIO 437: Advanced topics in Forest Ecology
- BIO 377: Ecological Methods
- BIO 250: Ecology of the Southwest
- BIO 125: Conservation Biology

Northern Arizona University: Education and outreach **2014-2018**

Research Experience for Undergraduates Mentor

- Help undergraduate student researchers develop and conduct research
- Help students develop and implement data collection protocols
- Guide students through statistics
- Help students prepare posters for presentation
- Help students prepare a scientific paper

Northern Arizona University: Education and outreach **2013-2018**

Climate in the Southwest: The Southwest Experimental Garden Array

- Lead experiential trips with Flagstaff High School students and Grand Canyon Trust Volunteers
 - *Focus on climate change research*
 - *Teach field methods and data collection techniques and protocols*
 - *Teach broader science concepts to a wide array of audiences from high school to adults of various professions.*
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Fort Lewis College: Teaching Assistant **2012**
Field Ecology (BIO 376)

- Set up weather monitoring equipment (HOBO weather stations and I-Button temperature loggers)
- Provided assistance in understory plant monitoring techniques, plant identification, forestry measurements, freshwater macro-invertebrate surveys, water chemistry analysis, and rangeland assessments
- Graded exams

Fort Lewis College: Teaching Assistant **2012**
Introduction to Cellular and Molecular Biology (BIO 113)

- Provided assistance during lab hours
- Answered general questions
- Wrote and graded weekly quizzes

Fort Lewis College: Teaching Assistant **2011-2012**
Introduction to Geographic Information Systems (GEOG 250)

- Provided assistance during lab hours
- Led course demos and gave introductory lectures

PROFESSIONAL EXPERIENCE

Mountain Studies Institute, Durango, Colorado **2019-P**
Research Associate

- Develop monitoring protocols and analyze data
- Develop technical reports interpreting monitoring results
- Hire, train and lead field crews in forest and plant ecological data collection
- Facilitate conversations about science and research with collaborative stakeholder groups
- Write grants to support research that informs land management

Chicago Botanic Gardens: Conservation and Land Management Internship; **2013**
Bureau of Land Management, Alturas, California
GIS and Wildlife Biology Intern

- Organized spatial data
- Provided cartographic services
- Initiated the National Invasive Species Inventory and Monitoring (NISIMS) protocol and train individuals on ArcPad
- Completed and update Aspen and Sage Steppe vegetation monitoring protocols
- Completed various wildlife surveys
- Marked timber for various silvicultural objectives

Fort Lewis College, Durango, Colorado **2011-2012**
Research Coordinator

- Trained undergraduate researchers on plant identification protocols
 - Guided researchers to study site during winter months
 - Collected data in the absence of other researchers
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Lindner Ranches, Pagosa Springs, Colorado **2012**

Conservation Manager

- Organized and collected preliminary data related to forest health, fluvial geomorphology, stream health, soil erosion, pasture productivity, and bird habitat
- Used data to plan restoration efforts and develop conservation strategies
- Used spatial modeling techniques to create maps representing current conditions and conditions following various hypothetical management options
- Coordinated with land management agencies and public working groups about restoration plans
- Mapped noxious weeds using Trimble GPS units with *ArcPad* software

Four Corners Undergraduate STEM Success Program, Durango, Colorado **2012**

Group session and one-on-one tutor

- Hosted drop in tutoring sessions in mathematics, chemistry, biology, geology, and geography courses
- Scheduled one-on-one tutoring sessions upon request

Native American Center, Fort Lewis College, Durango, Colorado **2011-2012**

Group session and one-on-one tutor

- Hosted drop in tutoring sessions in mathematics, chemistry, biology, geology, and geography courses
- Scheduled one-on-one tutoring sessions upon request

La Plata County Weed Management Office, Durango, Colorado **2011**

Weed Technician and Geographic Information Systems Technician

- Provided cartographic services
- Used Trimble GPS units with *Terrasync* software to map noxious weeds
- Provided assistance in the development of weed management plans

SOCIETIES AND MEMBERSHIPS

American Association for the Advancement of Science **2019-P**

Society of Ecological Restoration **2019-P**

Mycological Society of America **2014-P**

Soil Ecology Society **2014-P**

Arizona Native Plant Society **2013-P**

Ecological Society of America **2012-P**

Colorado Native Plant Society **2011-P**

VOLUNTEER EXPERIENCE

Colorado Native Plant Society: Southwest Chapter President **2019-P**

Ecological Society of America's Planting Science: Scientist Mentor **2014-P**

Flagstaff Festival of Science: Classroom Scientists (Guest teacher) **2014-2018**

Strategies for Ecology, Education, Diversity, and Sustainability: Mentor **2012-P**

REFERENCES

Name	Affiliation	Email	Phone
Dr. Matthew Bowker	PhD primary adviser and current collaborator- Northern Arizona University	Matthew.Bowker@nau.edu	(928)-523-6600
Dr. Julie Korb	Undergraduate adviser and current collaborator – Fort Lewis College	Korb_j@fortlewis.edu	(970)-382-6905
Dr. Erin Lehmer	Current Biology Department Chair – Fort Lewis College	Lehmer_e@fortlewis.edu	(970)-247-7024
