

Curriculum Vitae

Michael Remke, PhD

New Mexico Highlands University

(505)-454-3320

mremke@nmhu.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

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| The Nature Conservancy: Forests and Water Agreement | \$25,000 | 2022 |
| 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 | \$104,000 | 2020 |
| Colorado Water Center: Watershed Fund Grant | \$50,000 | 2019 |
| Achievement Rewards for College Scientists: Scholar Award | \$24,000 | 2016, '17, '18 |
| Genes to Environment: NSF IGERT Fellowship | \$50,000 | 2013. '14 |
| 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) | | |
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| | *Indicates an undergraduate student mentee | |
| Remke, M; Stevens, B; Bowker, M.B.; Johnson, N.C. Invasion of an annual grass, <i>Bromus tectorum</i> , results in disruption of mutualism through shift in mycorrhizal communities. | Manuscript | <i>In Prep</i> |
| Remke, M; Johnson, N.C.; Bowker, M.B. Sympatric soil biota mitigate drought for <i>Bouteloua gracilis</i> . Global Change Biology | Manuscript | 2022 |
| Post, E. *; Remke, M.; Korb, J. Wildland fire severity effects on conifer and shrub regeneration three years post-fire, in the 416 Fire, southwest, Colorado. Fort Lewis College Thesis and Projects. | Undergraduate Thesis | 2021 |
| Brophy, S*.; Remke, M.J.; Korb, J. Mycorrhizal propagule densities and soil properties across varying burn severities, three years post-fire, in warm/dry, mixed conifer forest in the 416 Fire, southwest Colorado, USA. Fort Lewis College Metamorphosis | Manuscript | 2021 |
| Remke, M.J., Chambers, M.E., Tuten, M., Pelz, K.A. The Status of Our Knowledge and Management Implications in Mixed Conifer Forests of the San Juan Mountain Region of Colorado, USA. CFRI-2110. | Technical Report | 2021 |
| 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> |
| 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. Fort Lewis College Thesis and Projects. | 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. Journal of Ecology. | 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 | Manuscript | 2020 |

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| structure shape and communities along elevational gradients on the Colorado Plateau. Ecology and Evolution. | | |
| 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 growth while maintaining desired overstory conditions in dry mixed conifer forests in southwest Colorado. San Juan National Forest Technical Report. | Technical Report | 2020 |
| 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 | Invited Presentation | 2016 |

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| Ranch International workshop on plant-soil feedback. | | |
| 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. <i>C. 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

New Mexico Highlands University

Assistant Professor of Forestry

- Courses taught:
 - FORS 1010: Humans and Ecosystems
 - FORS 2010: Forestry Field Safety and Practices

Wild Rockies Field Institute

2022-P

Field Instructor

Taught and led a three-week college course in Restoration Ecology in the greater Yellowstone Ecosystem Region

Fort Lewis College

2022-P

Lecturer of Biology

- Courses taught:
 - BIO 497: Senior Seminar
 - BIO 497: Senior Thesis
 - BIO 377: Ecological Methods
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| <ul style="list-style-type: none"> ○ BIO 250: Ecology of the Southwest ○ BIO 125: Conservation Biology ○ BIO 106: Ecology, Evolution & the Diversity of Life ● Served on curriculum improvement committees, completed student recruitment service events, and served as faculty advisor for Strategies for Ecology, Education, Diversity, and Sustainability (SEEDS) club. | |
| Fort Lewis College <i>Adjunct Professor of Biology</i> Courses taught: <ul style="list-style-type: none"> ● BIO 437: Advanced topics in Forest Ecology ● BIO 377: Ecological Methods ● BIO 250: Ecology of the Southwest ● BIO 125: Conservation Biology | 2020-2021 |
| Northern Arizona University: Education and outreach <i>Research Experience for Undergraduates Mentor</i> <ul style="list-style-type: none"> ● Help undergraduate student researchers develop and conduct research ● Help students develop and implement data collection protocols ● Help students prepare posters for presentation and prepare final papers | 2014-2018 |
| Northern Arizona University: Education and outreach <i>Climate in the Southwest: The Southwest Experimental Garden Array</i> <ul style="list-style-type: none"> ● Lead experiential trips with Flagstaff High School students and Grand Canyon Trust Volunteers <ul style="list-style-type: none"> ○ 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. | 2013-2018 |
| Fort Lewis College: Teaching Assistant <i>Field Ecology (BIO 376)</i> <ul style="list-style-type: none"> ● Set up weather monitoring equipment (HOBO weather stations and I-Button temperature loggers) ● Provided assistance in understory pant monitoring techniques, plant identification, forestry measurements, freshwater macro-invertebrate surveys, water chemistry analysis, and rangeland assessments ● Graded exams | 2012 |
| Fort Lewis College: Teaching Assistant <i>Introduction to Cellular and Molecular Biology (BIO 113)</i> <ul style="list-style-type: none"> ● Provided assistance during lab hours ● Answered general questions ● Wrote and graded weekly quizzes | 2012 |
| Fort Lewis College: Teaching Assistant <i>Introduction to Geographic Information Systems (GEOG 250)</i> <ul style="list-style-type: none"> ● Provided assistance during lab hours ● Led course demos and gave introductory lectures | 2011-2012 |
| PROFESSIONAL EXPERIENCE | |
| Mountain Studies Institute, Durango, Colorado <i>Research Associate</i> <ul style="list-style-type: none"> ● Develop monitoring protocols and analyze data and prepare technical reports | 2019-2021 |

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| <ul style="list-style-type: none"> • 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 • Work with the Southwest Ecological Restoration Institutes to develop and support collaborative approaches in forest management in Northern New Mexico and Southern Colorado. • Support the development, implementation, and governance structures of Collaborative Forest Landscape Restoration Programs | |
| <p>Ecological Restoration Institute, Fort Lewis College</p> <p><i>Research coordinator and Field Crew Lead</i></p> <ul style="list-style-type: none"> • Coordinate and lead field research on long term forest thinning project • Manage data and field equipment • Train forestry and botanical field crews on mensuration protocols | 2018 |
| <p>Chicago Botanic Gardens: Conservation and Land Management Internship; Bureau of Land Management, Alturas, California</p> <p><i>GIS and Wildlife Biology Intern</i></p> <ul style="list-style-type: none"> • Organized spatial data • Provided cartographic services • Initiated the National Invasive Species Inventory and Monitoring (NISIMS) protocol and train individuals on ArcPad • Completed and updated Aspen and Sage Steppe vegetation monitoring • Completed various wildlife surveys and trapped and tagged Sage Grouse • Marked timber for various silvicultural objectives | 2013 |
| <p>Fort Lewis College, Durango, Colorado</p> <p><i>Research Coordinator</i></p> <ul style="list-style-type: none"> • Trained undergraduate researchers on plant identification protocols • Guided researchers to study site during winter months • Collected data in the absence of other researchers | 2011-2012 |
| <p>Lindner Ranches, Pagosa Springs, Colorado</p> <p><i>Conservation Manager</i></p> <ul style="list-style-type: none"> • Organized and collected preliminary data related to forest heath, 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 <i>ArcPad</i> software | 2012 |
| <p>Four Corners Undergraduate STEM Success Program, Durango, Colorado</p> <p><i>Group session and one-on-one tutor</i></p> <ul style="list-style-type: none"> • Hosted drop in tutoring sessions in mathematics, chemistry, biology, geology, and geography courses • Scheduled one-on-one tutoring sessions upon request | 2012 |

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| Native American Center, Fort Lewis College, Durango, Colorado | 2011- |
| <i>Group session and one-on-one tutor</i> | 2012 |
| <ul style="list-style-type: none"> • Hosted drop-in tutoring sessions in mathematics, chemistry, biology, geology, and geography courses • Scheduled one-on-one tutoring sessions upon request | |

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| La Plata County Weed Management Office, Durango, Colorado | 2011 |
| <i>Weed Technician and Geographic Information Systems Technician</i> | |
| <ul style="list-style-type: none"> • Provided cartographic services • Used Trimble GPS units with <i>Terrasync</i> software to map noxious weeds • Provided assistance in the development of weed management plans | |

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| SOCIETIES AND MEMBERSHIPS | |
| Society of American Foresters | 2019-P |
| 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 |
| International Mycological Society | 2016-P |
| Society of Ecological Restoration | 2018-P |
| Ecological Society of America | 2012-P |
| Colorado Native Plant Society | 2011-P |
| Hermit Peak Watershed Alliance | 2023-P |
| New Mexico Native Plant Society | 2022-P |
| Arizona Native Plant Society | 2013-19 |

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| 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 |
