

CURRICULUM VITAE

University of Idaho

NAME: Ryer McKenzie Becker

DATE: January 21, 2025

RANK OR TITLE: Forest Operations and Products Manufacturing Extension Specialist;
Research Assistant Professor

DEPARTMENT: Forest, Rangeland and Fire Sciences

OFFICE LOCATION AND CAMPUS ZIP: CNR, Room 205E, 1136

OFFICE PHONE:

EMAIL: rbecker@uidaho.edu

DATE OF FIRST EMPLOYMENT AT UI: August 2014

DATE OF TENURE: Tenure Track

DATE OF PRESENT RANK OR TITLE: October 2024

EDUCATION BEYOND HIGH SCHOOL:

Degrees:

Doctor of Philosophy (Ph.D.), University of Idaho, Moscow, ID, May 2022, Natural Resources
Dissertation Title: *Assessing forest and fire management operations using integrated mobile technologies and remotely sensed data.*

Master of Science (M.S.), University of Idaho, Moscow, ID, December 2017, Natural Resources
Thesis Title: *Applications of real-time GNSS-RF and lidar-derived products to improve forest operations in beetle-killed stands in the Inland Northwest.*

Bachelor of Science (B.S.), Paul Smith's College, Paul Smiths, NY, May 2014, Ecological Forest Management

Bachelor of Science (B.S.), Paul Smith's College, Paul Smiths, NY, May 2014, Forest Operations

Associate of Applied Science (A.A.S.), Paul Smith's College, Paul Smiths, NY, May 2013, Forest Technology

Certificates and Licenses:

Idaho Logging Safety and First Aid – 2024

FAA Part 107 – Remote Pilot Certificate, 2022 – present

National Wildfire Coordinating Group - S-130 & S-190, 2022 – present

National Park Service Type II Law Enforcement Certification - Class 13-05, 2013

Game of Logging Level 1 & 2, Chainsaw Training/Safety, 2012

EXPERIENCE:

Teaching, Extension and Research Appointments:

- Forest Operations and Products Manufacturing Extension Specialist & Research Assistant Professor, University of Idaho, Moscow, ID – College of Natural Resources, Department of Forest, Rangeland, and Fire Sciences, 2024 - Present
- Research Assistant Professor, Forest Operations, University of Idaho, Moscow, ID - College of Natural Resources, Department of Forest, Rangeland, and Fire Sciences, 2022 – present
- USDA NIFA Post-Doctoral Fellow, University of Idaho, Moscow, ID - College of Natural Resources, Department of Forest, Rangeland, and Fire Sciences, 2022
- Instructor, Washington State University, Pullman, WA - School of the Environment, 2022
- Instructor, University of Idaho, Moscow, ID - College of Natural Resources, Department of Forest, Rangeland, and Fire Sciences, 2019 – Present
- Graduate Teaching Assistant, University of Idaho, Moscow, ID - College of Natural Resources, Department of Forest, Rangeland, and Fire Sciences, 2015 – 2022
- Graduate Research Assistant, University of Idaho, Moscow, ID - College of Natural Resources, Department of Forest, Rangeland, and Fire Sciences, 2014 – 2022

Non-Academic Employment including Armed Forces:

- Associate Director - Audio Production, Resonate Church Network, Pullman, WA, 2014 – 2020
 - Development and delivery of curriculum for audio technology and sound mastering.
 - Optimized resource purchasing, training, and mobilization for 10 network locations.
 - Coordinated production for annual network conference serving 900+ participants.
- Lead Field Technician, Sustainable Solutions, LLC., Shepherdstown, WV, 2014
 - Conducted integrated natural resource management in eastern United States
 - Managed invasive and noxious plants using forestry mowing and herbicides.
 - Performed forest inventory and management plan development.
 - Scheduled maintenance, repair, and mobilization of management resources.

TEACHING ACCOMPLISHMENTS: (Academic and Extension)

Areas of Specialization:

Forest operations; forest management; geographic information systems

Courses Taught:

University of Idaho – Department of Forest, Rangeland, and Fire Sciences:

Forest Mapping and GIS App. (2cr)	FOR272	2023, 2025
Forest Operations (3cr)	FOR430	2019, 2021, 2023
Forest Operations 1 (2cr)	FOR230	2024
Low Volume Forest Roads (2cr)	FOR431	2020, 2021
Cable Systems (2cr)	FOR236/436	2019, 2024
Forest Policy and Administration (2cr)	FOR484	2022, 2023

Washington State University – School of the Environment:

Forest Management and Planning (3cr)	SOE484	2022
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Teaching Assistant:University of Idaho – Department of Forest, Rangeland, and Fire Sciences:

Forest Operations (3cr)	FOR430	2016, 2017
Low Volume Forest Roads (2cr)	FOR431	2016
Cable Systems (2cr)	FOR436	2015, 2017, 2020, 2021
Forest Measurement and Inventory (3cr)	FOR274	2020
Forest Resource Sampling (3cr)	FOR275	2021
Science Synthesis and Comm. (2cr)	FOR546	2022

Students Advised:

Graduate Students:

Graduate Students, Committee Member, CompletedJosh Reed, M.S., 2022 – *Effect of Ground Based Harvesting Equipment on Soil Physical Properties***Courses Developed:**University of Idaho – Department of Forest, Rangeland, and Fire Sciences:

FOR272 - Forest Surveying and Mapping (3cr)
 FOR430 - Forest Operations (3cr)
 FOR230 - Forest Operations 1 (2cr)
 FOR436 - Low Volume Forest Roads (2cr)
 FOR431 - Cable Systems (2cr)

Washington State University – School of the Environment:SOE484 - Forest Management and Planning (3cr) – *Forest Operations Lectures***Non-credit Classes, Workshops, Seminars, Invited Lectures, etc.:****Extension and Outreach Presentations:**

Becker, R.M. (2024) Career exploration for the forest operations sector. Deary High School; November 19; Deary, ID.

Becker, R.M. (2024) Contemporary logging equipment operation and simulation. 12 locations.

Becker, R.M. (2024) Advancing Idaho's logging sector. Associated Logging Contractors of Idaho Annual Meeting; April 26; Orofino, ID.

Becker, R.M., Manley, B. (2024) Multi-faceted workforce development for Idaho's forest industries. Council on Western States Foresters, Workforce Development Committee; April 9; Coeur d'Alene, ID.

Becker, R.M. (2024) Workforce development to support Idaho's logging workforce. Idaho Logger Education to Advance Professionalism (LEAP) Update; March 5-7; Multiple locations.

- Becker, R.M. (2023) Technological trends shaping the future of forest management and operations. Coeur d'Alene Business Leaders Class; June 22; Coeur d'Alene, ID.
- Becker, R.M. (2023) Low volume forest roads for management. Forest Owners Field Day; Idaho Forest Owners Association; June 13; Troy, ID.
- Becker, R.M. (2023) Evolution of steep slope logging practices in the inland northwest. Forest Management Speaker Series; April 5; Moscow, ID.
- Becker, R.M. (2023) Advances in Steep slope logging operations. Idaho Logger Education to Advance Professionalism (LEAP) Update; March 7-9; Lewiston, St. Maries & Sandpoint, ID.
- Becker, R.M. (2023) Launching Idaho's two-year forestry programs to support workforce development. Family Foresters Workshop; January 27; Spokane, WA.
- Becker, R.M. (2022). University of Idaho's role on addressing education and training needs for forestry and forest operations workforces. Idaho Forest Products Commission Sustainable Forestry Tour; June 27-30; Moscow, ID.
- Becker, R.M. (2022). Training & education development for forest operations workforces. Associated Logging Contractors (ALC) of Idaho Annual Meeting; April 22; Orofino, ID.
- Becker, R.M. (2018). Use of lidar-derived landscape parameters to characterize alternative harvest system options in the Inland Northwest. Idaho Logger Education to Advance Professionalism (LEAP) Update; Lewiston, ID.
- Becker, R.M. (2018). Tethered and steep slope logging systems. Idaho Logger Education to Advance Professionalism (LEAP) Update; Coeur d'Alene, ID.

Invited Lectures:

- Becker, R.M. (2024). Logging simulation and operator training. Undergraduate Research Experience (NR211); University of Idaho; October 4; Moscow, ID.
- Becker, R.M. (2024). Forest road layout and design. Forest Management and Planning (SOE484); Washington State University; March 1; Pullman, WA.
- Becker, R.M. (2024). Contemporary timber harvesting systems, technology, and timber sales. Forest Management and Planning (SOE484); Washington State University; February 28; Pullman, WA.
- Becker, R.M. (2023). Evolution of forest management and operations technology. Undergraduate Research Experience (NR211); University of Idaho; October 6; Moscow, ID.
- Becker, R.M. (2021). Mobile technologies and remote sensing applications in forest operations. Paul Smith's College; September 29; Paul Smiths, NY.

Podcasts:

- Becker, R.M. (2023). Education and training for the next generation of loggers. In the Dirt; March 7.

Other:

Becker, R.M. (2025). Introduction to Extension and Idaho's forest products industry. PNW Ag Network, Glenn Vaagen, January 14; Multi-media Release.

Becker, R.M. (2024). Opportunities with logging simulators. Tomorrow's Technology Today, WBZ News Radio Interview, December 5; Boston, MA.

Bartholdt, R., Becker, R.M. (2024). Trees to framing timbers. University of Idaho News, Feature Story; April.

Honors and Awards:

University of Idaho - Outstanding Student Teaching Assistant Award - Nominee, 2022

SCHOLARSHIP ACCOMPLISHMENTS:**Publications:****Refereed:**

Becker, R.M., Keefe, R.F. (2022) A novel smartphone-based activity recognition modeling method for tracked equipment in forest operations. *PLoS ONE*. 17(4):e0266568. doi:10.1371/journal.pone.0266568

Becker, R.M., Keefe, R.F. (2022) Development of activity recognition models for mechanical fuel treatments using consumer-grade GNSS-RF devices and lidar. *Forestry*. doi:10.1093/forestry/cpab058

Becker, R.M., Keefe, R.F. (2020). Prediction of fuel loading following mastication treatments in forest stands in North Idaho, USA. *Sustainability*. 12(17), 7025. <http://dx.doi.org/10.3390/su12177025>

Keefe, R.F., Wempe, A.M., Becker, R.M., Zimbelman, E.G., Nagler, E.S., Gilbert, S.L., Caudill, C.C. (2019). Positioning methods and the use of location and activity data in forests. *Forests*. 10(5), 458. <https://doi.org/10.3390/f10050458>

Becker, R.M., Keefe, R.F., Anderson, N.M., Eitel, J.U.H. (2018). Use of LiDAR-derived landscape parameters to characterize alternative harvest system options in the Inland Northwest. *International Journal of Forest Engineering*. 29(3), 179-191. <https://doi.org/10.1080/14942119.2018.1497255>

Becker, R.M., Keefe, R.K., Anderson, N.M. (2017). Use of real-time GNSS-RF data to characterize the swing movements of forestry equipment. *Forests*. 8(2), 44. <https://doi.org/10.3390/f8020044>

Peer Reviewed:

- Brooks, R., Becker, R.M. (2024). Engaging and equipping the next generation of logging equipment operators: Leveraging new technologies. *Idaho Farm Bureau Quarterly*, Fall Issue 24(4).
- Becker, R.M. (2024). Leveraging technology to engage the next generation of forest operations workers. Forest Resources Association, Technical Release 24-R-12.
- Becker, R.M., Keefe, R.F. (2023). Monitoring work activities of equipment during forest operations using smartphones and activity recognition. Forest Resources Association, Technical Release 23-R-15.
- Link, T.E., Johnson, T.R., Keefe, R.F., Becker, R.M. (2020). The effectiveness of Idaho's class I stream shade rule: analysis of before – after, control – impact effective shade data. University of Idaho College of Natural Resources. Moscow, ID.
- Keefe, R.F., Link, T.E., Dunnette, P., Becker, R.M. (2015). Monitoring the effectiveness of Idaho's Class I stream shade rule: quality assurance project plan. Idaho Dept. of Environmental Quality. Boise, ID.
- Keefe, R.F., Link, T.E., Dunnette, P., Becker, R.M. (2015). Monitoring the effectiveness of Idaho's Class I stream shade rule: standard operating procedures for the measurement of relative stocking. Idaho Dept. of Environmental Quality. Boise, ID.

Other Publications:

- Becker, R.M., Keefe, R.F. (2024). University of Idaho Experimental Forest student logging crew. *Loggers World*, November Issue.
- Becker, R.M. (2023). Safe, productive, and sustainable. *Between the Branches*, Issue 59. Brantford, ON, Canada: Tigercat Industries, 5p.
- Becker, R.M. (2023). Wood to Mill: University Series – University of Idaho. Forest Resources Association. 3p.
- Watts, A., Anderson N.A., Hogland, J., Keefe, R.F., Becker, R.M., Twitchell, J. (2022). Science You Can Use Bulletin, Issue 53. Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Research Station. 11 p.

Peer-Reviewed Conference Proceedings:

- Becker, R.M. (2022). Development and validation of a novel smartphone-based activity recognition model for forest equipment. 2022 COFE-FORMEC-IUFRO Joint Meeting; October 6; Corvallis, OR.
- Becker R.M., Keefe, R.F. (2016). Classifying productive cycle elements for shovel harvesting of beetle-killed timber using real-time GNSS-RF. Council on Forest Engineering Annual Meeting and DEMO International Technical Conference; September 22-24; Vancouver, BC.

Presentations and Other Creative Activities:**Invited Presentations:****Professional Presentations:**

- Becker, R.M. (2024). Comprehensive approach to addressing Idaho's forest industry workforce challenges. Society of American Foresters National Convention; September 18; Loveland, CO.
- Becker, R.M. (2024). Innovation Zone – Logging Equipment Simulators. Society of American Foresters National Convention; September 20; Loveland, CO.
- Becker, R.M. (2024). Leveraging technology for forest operations outreach and education. Council on Forest Engineering Annual Meeting; May 23; Moscow, ID.
- Becker, R.M. (2023). Addressing workforce challenges in Idaho's logging sector. Council on Forest Engineering Annual Meeting; May 23; Flagstaff, AZ.
- Becker, R.M. (2022). Development and validation of a novel smartphone-based activity recognition model for forest equipment. 2022 COFE-FORMEC-IUFRO Joint Meeting; October 6; Corvallis, OR.
- Becker, R.M. (2021). Using GIS and lidar for harvest system selection in the Inland NW. Soil Impacts and Recovery from East and Westside Harvest Operations. Western Forestry and Conservation Association; November 17; Coeur d'Alene, ID.
- Becker, R.M. (2019). Using lidar-derived site and forest attributes to characterize alternative logging systems at the landscape scale. 5th Annual President's Tour, College of Natural Resources Advisory Board; August 1; Elk River, ID.
- Becker, R.M., Keefe, R.F. (2018). Use of lidar-derived landscape parameters to characterize alternative harvest system options in the Inland Northwest. Society of American Foresters National Convention; October 3-7; Portland, OR.
- Becker, R.M., Keefe, R.F. (2018). Use of real-time GNSS-RF to characterize the swing movements of forestry equipment. Off the Grid 2018; October 25-26; Coeur d'Alene, ID.
- Becker, R.M. (2018). Technological integration: Forest products tracking and logistics. Off the Grid 2018; October 25-26; Coeur d'Alene, ID.
- Keefe, R.F., Zimbelman, E.G., Wempe, A.M. and Becker, R.M. (2018). Strengths and weaknesses of different real-time positioning systems for logging safety. Off the Grid 2018; October 25-26; Coeur d'Alene, ID.
- Becker, R.M. (2018). Use of lidar-derived landscape parameters to characterize alternative harvest system options in the Inland Northwest. Idaho Logger Education to Advance Professionalism (LEAP) Update; Lewiston, ID.
- Becker, R.M. (2018). Tethered and steep slope logging systems. Idaho Logger Education to Advance Professionalism (LEAP) Update; Coeur d'Alene, ID.

Becker, R.M., Keefe, R.F. (2017). Use of lidar and real-time GNSS-RF to evaluate mastication treatment production and fuel load modeling. Society of American Foresters National Convention; November 15-19; Albuquerque, NM.

Becker, R.M., Keefe, R.F. (2017). Use of lidar and real-time GPS to evaluate harvest planning options. Off the Grid 2017; November 2-4; Coeur d'Alene, ID.

Becker, R.M., Keefe, R.F. (2017). Use of lidar-derived landscape parameters to characterize alternative harvest system options in the Inland Northwest. Council on Forest Engineering Annual Meeting; July 30- August 2; Bangor, ME.

Becker, R.M., Keefe, R.F. (2016). Classifying productive cycle elements for shovel harvesting of beetle-killed timber using real-time GNSS-RF. Society of American Foresters National Convention; November 2-6; Madison, WI.

Grants and Contracts Awarded:

Total funding: \$982,254; **As PI:** \$982,254

Becker, R.M. (PI), Brooks, R. (CI), Schnepf, C. (CI), Cochran, A. (CI) (2025). Intro to chainsaw safety and operation. *UI Extension Innovative Project Award*. \$10,000.

Becker, R.M. (PI) (2024). Logger training and workforce development initiative. *Green Diamond Impact Fund*. \$40,000.

Becker, R.M. (PI), Keefe, R.F. (CI), Goebel, P.C. (CI), Shook, S.R. (CI) (2023). Forest operations education and equipment training program. *Idaho Workforce Development Council, Workforce Training Fund- Industry Sector Grant*. \$708,089.

Becker, R.M. (PI) (2022). Advancing technological and fundamental skillsets of next generation forest operations workforces through enhanced education and extension. *USDA-NIFA, AFRI*. \$224,165.

Grants and Contracts Attempted (Past Unsuccessful & Current Submitted/Pending):

Becker, R.M. (PI) (2020). Smartphone-based activity recognition of mastication treatments. *ORED RISE Graduate Research Fellowship Program*. \$3,000. Not Funded.

Honors and Awards:

Western Region Technical Writing Award - Forest Resources Association, 2023

University of Idaho - FRFS Outstanding Graduate Student Award - Nominee, 2022

John Mandzak Travel Award, 2018

SAF Forest Science and Technology Board Student Presentation Award, 2015

College of Natural Resources Research Poster Competition Winner, 2015

President's Award, Paul Smith's College - *Highest GPA of graduating senior*, 2014

Outstanding Senior Award, *Paul Smith's College*, 2014

President's Award, Paul Smith's College - *Highest GPA of graduating sophomore*, 2013

Leadership Excellence Award, Temple University SLETP - *Class 13-05*, 2013

SERVICE:

Major Committee Assignments:

University of Idaho, Moscow Idaho:

Staff Search Committee, College of Natural Resources, Forestry Extension Educator and Senior Instructor, 2023

Staff Search Committee, College of Natural Resources, Assistant Director of Student Recruitment and Support, 2022

Professional and Scholarly Organizations:

Inland Empire Society of American Foresters, Executive Board Member, 2025 – Present

National Forest Operations Training Coalition, Board Member, 2023 – present

Intermountain Logging Conference, Board Member, 2024 – present

Society of American Foresters, Member, 2011 – present

Council on Forest Engineering, Member, 2022 – present

Xi Sigma Pi, International Honor Society of Forestry, 2018 – present

Faculty Advisor, Society of American Foresters Student Chapter, 2022 – present

Journal Reviewer:

International Journal of Forest Engineering, 2021- present [3 reviews]

Forests, 2021 - present [3 reviews]

European Journal of Forest Research, 2024 [1 review]

Outreach Service:

Workshops-Conferences-Seminars-Tours Organized:

Intermountain Logging Conference - Education Subcommittee, Planning Committee, 2024 – present

University of Idaho College of Natural Resources - Forestry Hiring Event, Organizer, 2023 – present

Council on Forest Engineering (COFE), Annual Meeting Planning Committee, 2023 – 24

Idaho Forest Products Commission, Sustainable Forestry Tour, Planning Committee, 2022 – present

Review Committees:

Idaho Minimum Safety Standards and Practices for Logging - Red-Line Review, Idaho Division of Occupational and Professional Licenses, Logging Safety Program, 2024

PROFESSIONAL DEVELOPMENT:

Teaching & Scholarship:

National Forest Operations Training Coalition Summit, 2024

Society of American Foresters National Convention, 2012 – 2019, 2023

National Council on Forest Engineering Annual Meeting, 2016, 2017, 2022, 2023, 2024

Off-the-Grid Workshop, 2017, 2018

Oregon Logging Conference, 2015, 2016, 2018, 2023, 2024

Intermountain Logging Conference, 2023, 2024

Administration/Management:

Idaho Pro-Logger Program Accreditation, 2024

Idaho Division of Occupational and Professional Licensing - Logging Safety and First Aid, 2024

FAA Part 107 Remote Pilot License Certification, 2022

National Wildland Fire Coordinating Group (NWCG) Type II Firefighter: S-130/S-190/I-100/L-180, 2015, 2022

Game of Logging Level 1 and 2, Chainsaw Safety Course, 2012