Empowering Maine's Rural Workforce to Advance Forest and Community Resiliency

Kennedy F. Rubert-Nason (Natural Sciences)* • Libin T. Louis (Forestry) • Stephanie Landry (Forestry)

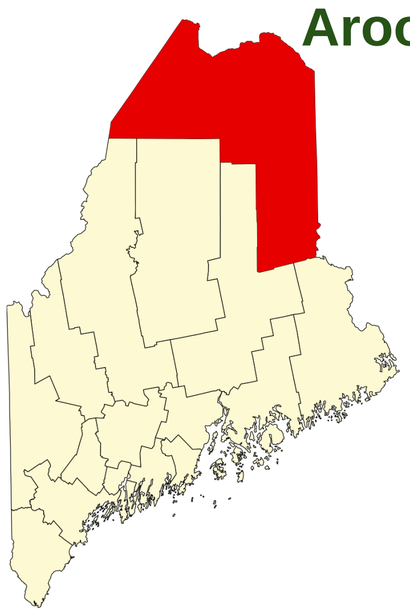
*Corresponding author: kennedy.rubertnason@maine.edu • office: 207-834-8693 • cell: 608-234-1321

UNIVERSITY OF MAINE FORT KENT
UNIVERSITÉ DU MAINE

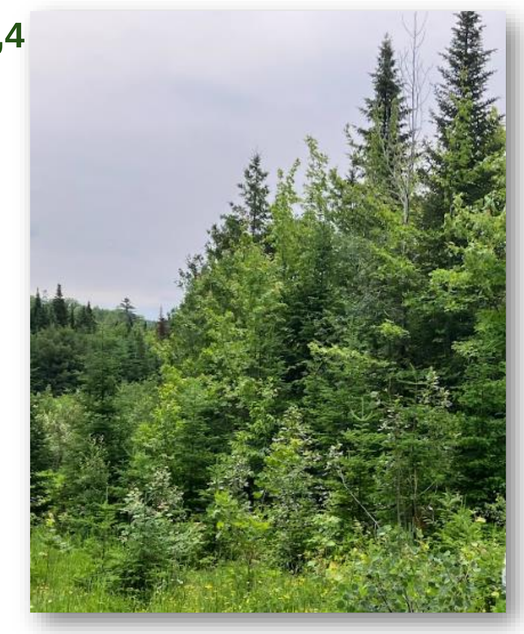
Introduction

- A socioeconomically and ecologically conscious workforce is imperative for building climate resilient and sustainable forests and communities
- Co-productive relationships among scholars and community stakeholders are key to success[1]

Aroostook County[2,3,4]



- Population: 67,000
- Age > 65: 26%
- Mean per capita income: $31k/yr
- Poverty: 15%
- Major industries
  - Agriculture
  - Forestry
  - Tourism
  - Manufacturing



Rural Issues[5]

- Climate change threats
- "Green" economy transition
- Workforce preparation for current + emerging careers
- Infrastructure
- Access to education
- Community networking

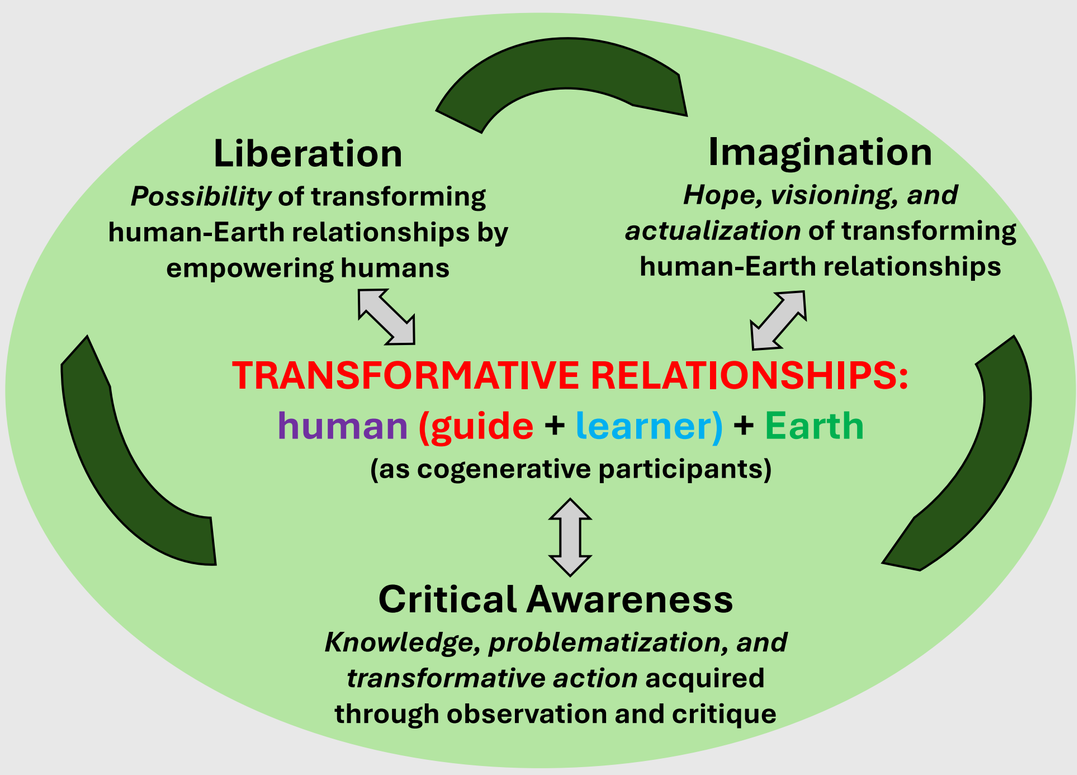
Objectives

Over next 4 years, UMFK faculty will engage 20+ undergraduate interns in authentic research

- Build STEM career skills
- Solve forestry problems
- Demonstrate social and learning impacts of a novel mentoring framework
- Build relationships among diverse stakeholders
- Publish scholarly articles with student coauthors

New ecopedagogy of human-Earth relationships[6]

An experiential mentoring and learning framework



Research Internship Topics

- Develop climate-resilient forestry practices
- Explore uses of biochar to promote forest health and carbon retention
- Study impacts of biofuel and nanocellulose production waste products
- Identify land management effects on soil microbiomes
- Braid Indigenous and western science to build mutualistic human-Earth relationships

Internships with authentic research experiences

How can transforming human-Earth relationships support healthy forests?

- Promote mutualistic relationships among humans and Earth
- Expand human networks within/among Maine's rural communities
- Confer foundational STEM knowledge though practice
- Inspire + include marginalized people in STEM careers
- Teach relevant workforce skills for current + emerging green industries
- Cultivate agency making communities resilient to global change threats

Broader Impacts

- Increased recruitment + retention of socioeconomically marginalized people in rural STEM workforce
- Insights into building climate-resilient forests and rural communities
- Increased resilience of rural communities to economic and global change threats
- Shift cultural paradigms toward mutualistic human-Earth relationships

Challenges + Opportunities

- *Student recruitment:* Need UMFK students and interns
- *Human resources:* Limited capacity for project leadership
- *Institutional buy-in:* Aligning UMFK + UMS + Maine interests
- *Continuity:* Plan for funding cycles + personnel turnover

Sponsors & Partners

Harold Alfond Foundation
Center for Advanced Forestry Systems
WABANAKI YOUTH IN SCIENCE
THE UNIVERSITY OF MAINE
NSF START CAFS.21.92
NSF EPSCoR ADVANCING GEOGRAPHIC DIVERSITY IN STEM
MAINE SMART
MAINE EPSCoR
FOREST
Maine Economic Improvement Fund

Supported by National Science Foundation awards OIA-2412131 and OIA-2416915 to Maine EPSCoR and the University of Maine

References

1. Rubert-Nason *et al*. 2021. Rethinking Ecology. DOI: 10.3897/rethinkingecology.6.64103
2. U. S. Census Bureau. 2017. Aroostook County, Maine. AFN120217
3. Maine Office of Business Development. 2022. https://maine.gov/decd
4. D. Benbennick. 2006. Aroostook County. https://commons.wikimedia.org
5. Maine Economic Development Strategy 2020-2029. 2019. https://maine.gov/decd
6. Rubert-Nason, K.F. 2023. A new ecopedagogy of human-Earth relationships: Praxis and possibility. Soc. Human Ecol. Natl. Mtg., Tucson, AZ, Nov. 5-8, 2023