A case study in graduate level community-engaged research: challenges and considerations

Molly Wick
University of Minnesota Duluth Natural Resources Research Institute, EPA Great Lakes Toxicology
Nancy Schuldt, *Fond du Lac Band of Lake Superior Chippewa*
Deanna Erickson, *Lake Superior National Estuarine Research Reserve*
Joel Hoffman, *EPA Great Lakes Toxicology and Ecology Division*
Lucinda Johnson, *University of Minnesota Duluth Natural Resources Research Institute*

More push for community-engaged research in aquatic sciences.

- Graduate students need to learn to lead community-engaged research early in their careers.
- Community engaged research is extra challenging for students focused on publishing and career advancement.

- I’m going to share my story and some of my thoughts about how we could better support community-engaged research at the graduate level.

My perspective…

- MS Water Resource Science
- Worked in ecosystem assessment/restoration in study area for 7 years
- Interested in how to better connect community values to environmental management
- 2nd year PhD student in Water Resource Science studying cultural ecosystem services

Trying to take sediment samples on the Niagara River

I want to acknowledge

- Collaborative partners have an entire other set of challenges
- Coming from:
  - Western science
  - Aquatic sciences
  - Other fields may have fewer/more/different challenges

Cultural ecosystem services

The intangible benefits people experience from nature.

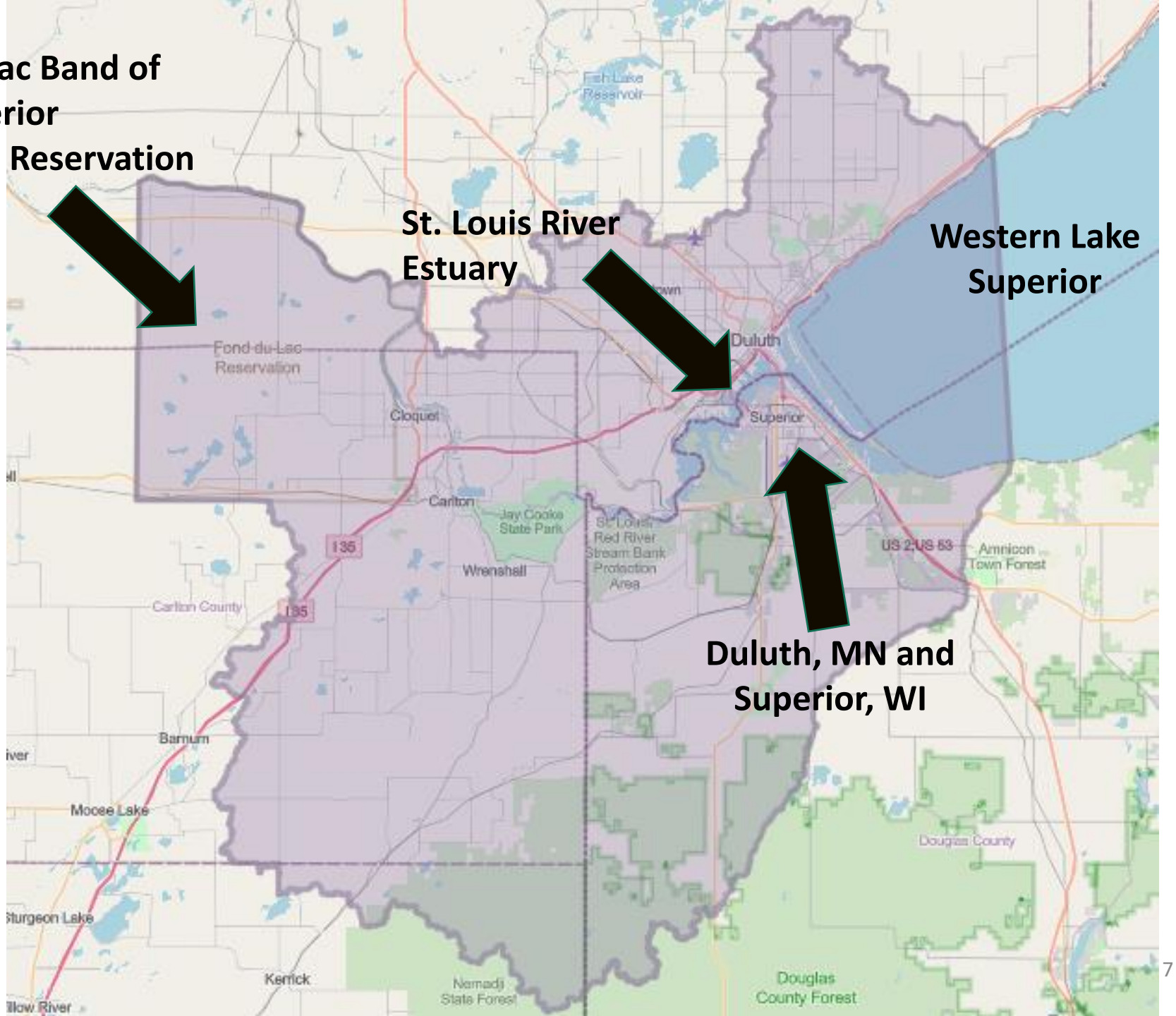
- Cultural and traditional
- Spiritual/mental health
- Social
- Aesthetic, inspiration, art
- Education and learning
- Recreation
- Work and stewardship
- Wild foods – fishing, hunting, foraging

Cultural ecosystem services reflect a relationship between **people** and **nature**.

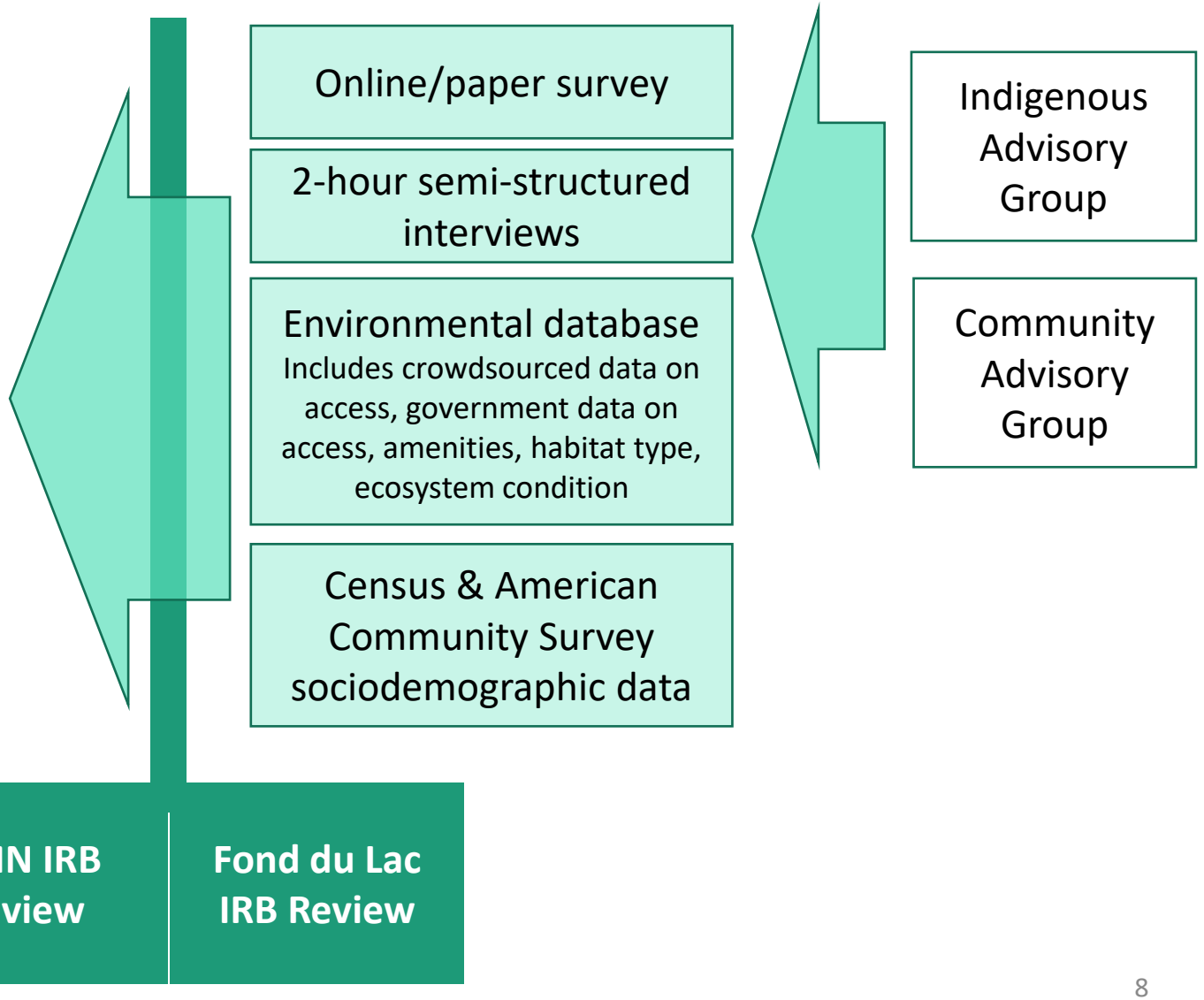
Example: Manoomin

Jeff Savage harvesting wild rice, photo by Laurie Stern https://theuptake.org

Study Area


Fond du Lac Band of
Lake Superior
Chippewa Reservation
St. Louis River
Estuary
Western Lake
Superior
Duluth, MN and
Superior, WI
Fond du Lac
Reservation
Cloquet
Carlton
Jay Cooke
State Park
Wrenshall
Carlton County
135
Duluth
Superior
US 2/US 53
Amnicon
Town Forest
Barnum
Moose Lake
Sturgeon Lake
Kerrick
Nemadji
State Forest
Douglas County
Douglas
County Forest

How do social processes influence coastal cultural ecosystem services? A case study in the St. Louis River Estuary



Advisory Groups

- Community Advisory Group
  - Objective: neighborhood context, help recruit participants
- Indigenous Advisory Group
  - Requested by FDL IRB
  - Objective: Help ensure study methods/tools provide robust data from Indigenous participants

Engagement challenges

Engagement challenges

FDL IRB review

- Tribe-University Data Sharing Agreement
- University Openness in Research policy
- Tribe’s data sovereignty policy
- Stems from a long history of poor relations between the Tribe & University - Colonialism, unethical research practices
- University considering making exception to its Openness in Research policy to sign Tribe’s agreement.

Engagement challenges

Time to build relationships, recruit members, etc.

- Engaged peoples from 22+ organizations
- Some signed on to ongoing involvement in the project
- Need to work directly with some people
- Some willing to help recruit but not provide input

Engagement challenges

Engagement from underrepresented groups

- Low capacity - historic systemic marginalization/inequitable resources
- Less willing to engage - lack of trust
  - historic co-opting tribal histories & lack of respectful practices

Engagement Successes

- Identified potentially overlapping efforts
- Members willing to help publicize research
- Increased understanding of neighborhood context
- Encouragement on the topic of research & identify applications

photo by Clint Austin, DNT.

Engagement Successes

- Improved survey and interview tools:
  - Worldview – recreation vs culture/tradition
  - Language & place names
  - Perception of time, changes over time
  - Tested functionality

Photo: LSNERR

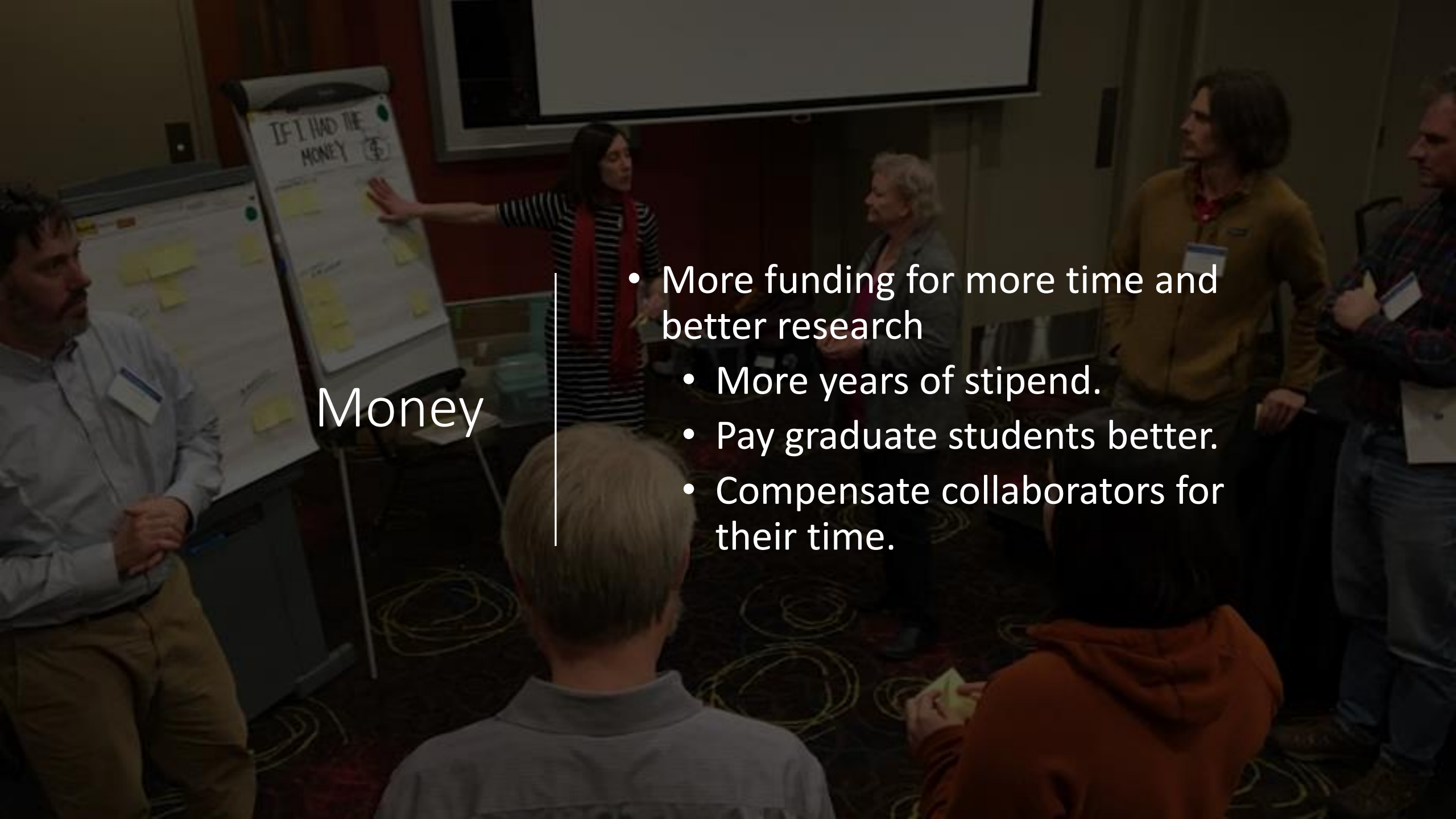
My advantages for collaborative research

- Already embedded in community
  - Understanding of networks, institutions, actors
  - Facilitation, project management, interpersonal skills
- Positionality –white academic
- Advisors at collaborative institutions
- Davidson fellowship
  - Training, mentorship, and support for engaged research
  - Budget
  - Secure funding, financially secure – have more time

How can we make community-engaged research easier for graduate students?

Training

- Skills development & training
  - Collaborative research & interpersonal skills
  - Cultural competence
  - Understanding positionality



Money

- More funding for more time and better research
  - More years of stipend.
  - Pay graduate students better.
  - Compensate collaborators for their time.

Support

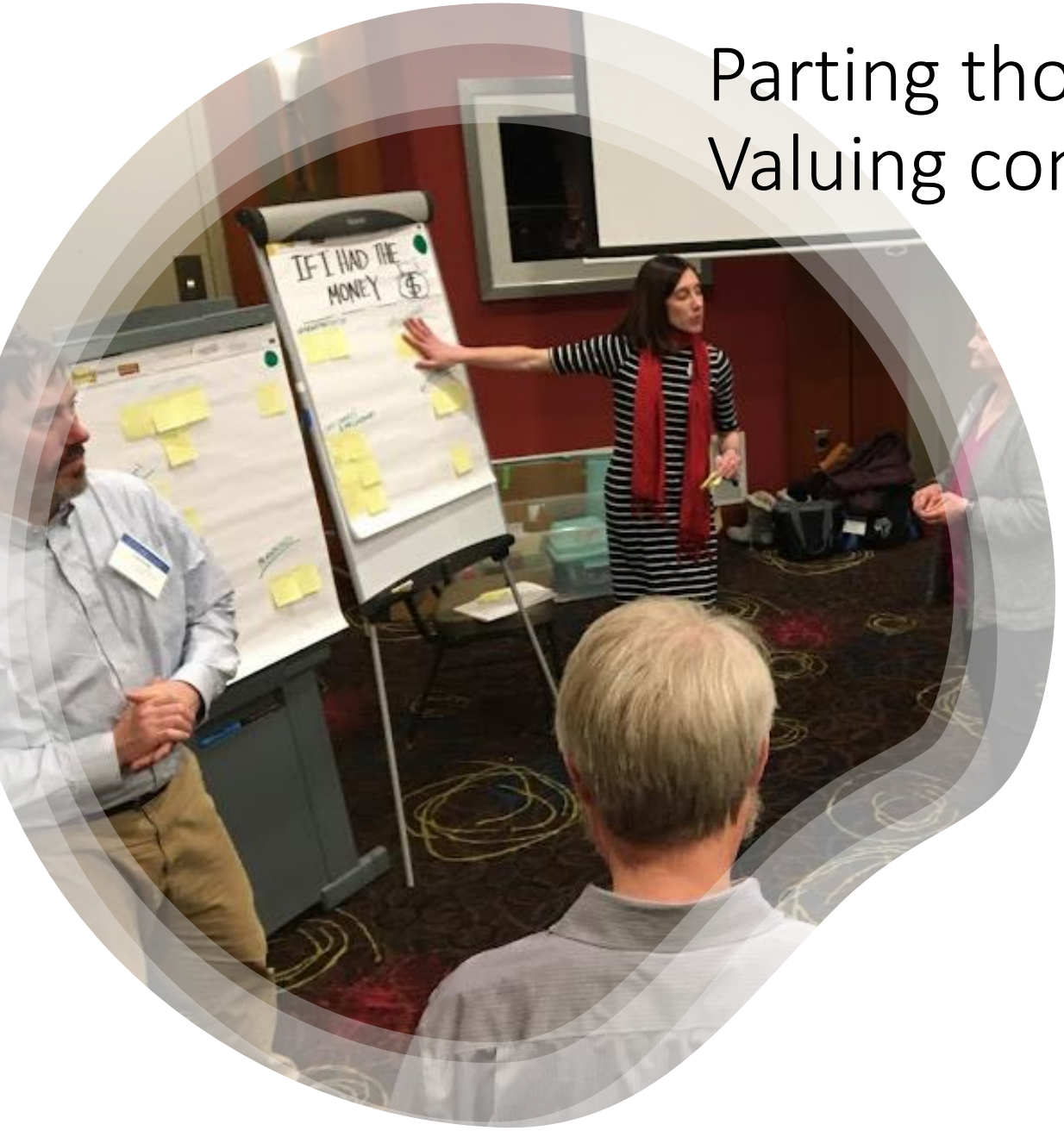
- Institutional support for collaborative research
  - Universities must respect tribal sovereignty to partner with Tribes
  - Graduate student support for systems (Clincard, IRB, etc.)
  - Support work-life balance support for students

All of the above

- More fellowships/grants to support collaborative research
  - Design and sequenced for the time, funding, and skills needed
  - Balance the demands of degree progress, research, collaboration, translation
  - E.g. Margaret Davidson fellowship

Careers

- Institutions and agencies find way to formally value more than just # publications in hiring.
  - Value “soft skills” essential for collaborative research
  - Value applied research



Parting thoughts:
Valuing community engaged research

- Community-engaged research looks different from traditional scientific method.
  - Takes more time
  - May have different outcomes
- What is the definition of **high-impact science**?
  - Community impact vs publications/citations
  - What skills and metrics need to be measured to evaluate impactful research?
- Community-engaged research is higher risk
  - Depends on people engaging collaboratively!
  - How do we reward good practice, even if it does not lead to high impact?

Photo: LSNERR

Thank you!

Molly Wick
Wick.molly@epa.gov

References

- Boaz A, Hanney S, Borst R, O'Shea A, Kok M. How to engage stakeholders in research: design principles to support improvement. Health Res Policy Syst. 2018;16(1):60.
- Ghate, D., 2018. Developing theories of change for social programmes: co-producing evidence-supported quality improvement. *Palgrave Communications*, *4*(1), pp.1-13.
- Oliver K, Innvar S, Lorenc T, Woodman J, Thomas J. A systematic review of barriers to and facilitators of the use of evidence by policymakers. BMC Health Serv Res. 2014;14(1):–2.
- Oliver, K., Kothari, A. & Mays, N. The dark side of coproduction: do the costs outweigh the benefits for health research?. *Health Res Policy Sys* **17,** 33 (2019). https://doi.org/10.1186/s12961-019-0432-3

Photo: LSNERR

Framing: investment vs. cost

- Investment in community impact vs. cost to traditional measures of career advancement
- Costs/Investments **to researchers**:
  - Time, time, time
  - Skills development - facilitation, management, interpersonal skills
  - Emotional labor of collaboration
  - Professional – takes time away from publications, grant writing, etc.
  - Political – stakeholder influence
  - Basic research impact – applied research may not be novel or generalizable
  - Failed collaborations/animosity, setting poor precedent
- What is the definition of **high-impact science**?
- What skills and metrics need to be measured to evaluate impactful research?

Tribal interest

- Study has potential for informing Tribal projects in estuary
- Work with Fond du Lac Water Projects Coordinator.
- Prior work on cultural ecosystem services in area
- FDL has their own IRB

Parching wild rice at the FDLTCC Wild Rice camp in 2021

Tangential calls

- Robin Wall Kimmerer's thoughts to - Decolonize our education system
  - Learn from nature rather than about nature
  - Value multiple ways of knowing – mind, body, spirit, emotional
  - Scaffolding of elder/traditional knowledge – what is 'right'
- Bonnie Keeler – 2017
  - Produce future environmental leaders
  - Culture values use-inspired research
  - Move ideas into action faster
  - Put people at center of environmental science
  - Reimagine [interdisciplinary] academic structures to encourage innovation

Collaborative Research Practices

- Includes range of research practices that help shift of power from researchers to community
- Benefits:
  - Direct applications = more relevant outcomes
  - Empowerment of communities their problems
  - Holistic approach: Can incorporate multiple perspectives & ways of knowing
  - Ongoing translation = Better understanding of results.
  - Ownership of findings increases action (Ghate, 2018)
  - Involvement imbues trust and belief in research. (Boaz et al., 2018; Oliver et al., 2014)
  - **Lower chance of extractive, surprising, or unethical research**

Orgs engaged

- Duluth City Council, Superior City Councils
- Duluth NAACP
- Duluth & Superior Parks and Recreation Departments
- College of Saint Scholastica Social Work
- Ecolibrium3
- Johns Hopkins Center for American Indian Health Great Lakes Hub
- Lake Superior Reserve and Reserve Advisory Board
- MN DNR & WI DNR
- NOAA OCM
- UMD Pharmacy Dept
- US EPA Great Lakes Toxicology and Ecology Division
- UWS Link Center
- WI & MN Sea Grants
- Zeitgeist Arts
- Plus tribal – FDL, 1854, GLIFWC, FDLTCC, UMD MTRES

IRB Approval

- UMN IRB approval - 1 week
- FDL IRB review
  - Submit, present, revise protocol - 2 months
  - IRB Recommended to Reservation Business Council (RBC) to approve
- Tribe-University Data Sharing Agreement
  - University Openness in Research policy conflicts with Tribe's data sovereignty policy
  - Process: University review, FDL Legal + RBC review – 6 months
  - RBC denied the University's proposed modifications.
- Impasse stems from a long history of poor relations between the Tribe & University - Colonialism, unethical research practices
- University considering making exception to its Openness in Research policy to sign Tribe's agreement.
- **To support collaborative research with tribes, Universities must respect tribal sovereignty.**