

Student Proposal Cover Page

Applicant Information

Applicant Name: Kaitlin Steiger-Meister Date: 1-20-08
Building Clean Water Communities: Understanding how environmental policies can promote and coordinate community participation in the long-term management of local freshwater resources.

Project Title: _____

Department: Natural Resource Science & Management, Forest Resources College: CFANS

Home address: 1783 Lafond Avenue City & State: St. Paul, MN Zip: 55104

Faculty advisor name: Dr.Dennis Becker Applicant's Email: drbecker@umn.edu stei0579@umn.edu Not applicable

Dept. Head's name: Dr. Alan Ek Dept. Head's email: aek@umn.edu

Dean's name: Dr. Allen Levine Dean's email: aslevine@umn.edu

How did you hear about this funding opportunity?

Funding

Amount of funding requested: \$5,000

Funding justification: [a clear statement of what you will use the funds for without going into budget details]

This funding will mainly go to paying my stipend for the research activities that take place in the summer of 2008 (May 15-Sept.4). Additionally, it will help to cover the expenses of my travel both for stakeholder interview purposes and to attend and present at conferences from May 2008 through December of 2008.

Approvals

Check all appropriate approvals required for your proposal. Approvals must be obtained prior to receipt of funding. If you have applied for approval but have not yet received it, indicate that below.

X IRB Date submitted: Upon notification of award Number: _____

IACUC Date submitted: _____ Number: _____

Other Explain: _____

For Use by the Consortium Office

- The proposal is 1000 words or less excluding budget, biographies, references and citations.
The proposal includes a work plan with a specific timeline using months or quarters to identify work to be done and completion dates.
- The proposal includes a 1-2 paragraph biography of the applicant and all co-investigators.
The budget form is complete including the funds sought for this project, other pending applications for this project, and the amount/source of matching or other funds.
- The applicant's faculty advisor is copied on the application email. Professional students w/o advisors check NA.
- All necessary approvals are pending or received.

Applicant: Kaitlin Steiger-Meister, Natural Resource Science and Management Ph.D. Student, stei0579@umn.edu

Building Clean Water Communities: Understanding how environmental policies can promote and coordinate community participation in the long-term management of local freshwater resources.

Objective: The Minnesota Pollution Control Agency has found that lakes and rivers are polluted to the extent that they fail to meet the state's water quality standards and are thus labeled as *impaired*. Employing devolution to support the environmental ethic that communities should play an active role in the management of the resources that impact their lives, this project will examine the role of community participation in the management activities of lakes. Research seeks to identify and develop an institutional framework whereby federal efforts may better support community stewardship of local freshwater resources, resulting in progress toward the water quality goals of the community, the state, and the federal government. Research findings can be used to build environmental policies that better coordinate water management activities across varying spatial scales (local, regional, national) with an emphasis on the dynamic role of community participatory action at the local level.

Introduction: Over forty years after the Clean Water Act was passed into law, water quality testing by states, territories, and the Environmental Protection Agency reveals a significant portion of freshwater resources in the United States are severely polluted. Over 218 million citizens live within ten miles of an impaired surface water.¹ Minnesota, with the greatest number of surface waters in the Continental U.S., employs some of the most comprehensive top-down and bottom-up water management policies in the country. With the recent advent of the state's Clean Water Legacy Act, there is a renewed interest in the restoration and continued protection of Minnesota's lakes and rivers. **Though citizens share in the responsibility of keeping local surface waters clean, there are no transparent guidelines that coordinate the role of concerned citizens in water resource management activities.** In the absence of coordinating policies, available resources are not used efficiently, resulting in wasted resources and the inconsistent implementation of water quality standards.² Polluted waters curtail recreational activities such as fishing, swimming and boating. This jeopardizes citizen lifestyles, human health, and community economies dependent on Minnesota's wildlife tourism, which comprises a large portion of the state's \$10 billion tourism industry. Community participation in the form of civic environmentalism is founded upon the environmental ethic that the public plays a vital role in the management and long-term sustainability of local natural resources.³ Devolution whereby the federal government remains in control but is able to transfer power to local authorities holds unexplored potential in the field of water resource management.⁴ **In order to avoid a crisis of trust in our water resource policies, I will examine how Minnesota water management policies can better connect with citizens interested in protecting the ecological health of local surface waters that impact their lives, thus promoting citizen accountability and stewardship. Furthermore, I will examine how water management policies can potentially coordinate community actions across multiple watersheds to achieve state water quality goals through the cumulative actions of grassroots efforts.**

This project will use Minnesota Lake Improvement District Statute as a platform to examine the policy mechanisms that connect water management policies to concerned citizens. A Lake Improvement District (LID) is a local unit of government (comprised exclusively of citizens) established by resolution of county boards to affect water quality by securing grants and taxing landowners to support mitigation activities within a watershed district (Chapter 378 MN Statutes 2005, § 103B.501 to 103B.581). Mitigation activities within a LID may include activities like erosion control, septic system improvements, or invasive species control to improve water quality. Different levels of authority are granted reflecting severity of local problems. Though a potentially beneficial tool, particularly when

coordinated across multiple watersheds, diffusion has been slow. Only 24 LIDs have been created since 1976, compared to more than 200 in Wisconsin.

Methods: This project will employ qualitative research methods to examine Minnesota and Wisconsin LIDs, with an emphasis on ethnographic techniques including one-on-one interviews, focus group interviews, direct observation and document analysis. Ethnographic research methods were chosen with the intent to frame water management policies from the perspective of citizens at the community level, thus exploring local perspectives in greater depth. Research is tiered into two stages of data collection and analysis. Stage I evaluates community based conservation activities in the restoration of local surface waters. Collected data will be used to understand if environmental policies that make a group of citizens into a local unit of government translate into stakeholder accountability and actual progress toward meeting the water quality goals of the community, the state, and the federal government. Through a comparative study with Wisconsin LIDs, Stage II explores how policy can be modified to better engage communities and illuminates the broader implications of community participation in water resource management when coordinated across watersheds and state lines.

Research Timeline:

Timeframe

Research Activities

| | |
|--|--|
| Spring Semester 2008 Jan.22-May 14 | Interview county water planners, county auditors, and state legislatures to understand extent LIDs have been incorporated into water quality management plans. Interview analysis of lake stakeholders (began in summer of 2007). |
| Summer Semester 2008 May 14-Sept. 4 | Transcribe interviews and build a comprehensive database of all LIDs in Minnesota. Includes LID history, budgets, sources of funding, projects started, completed, and/or projected. Database will be made available to state agencies, NGOs, policymakers, and citizens to better inform them of the LID program’s potential as a mechanism to achieve water policy goals. Attend and present at relevant conferences such as the International Symposium on Society and Resource Management (ISSRM) 2008, Burlington, VT. Begin in-depth document analysis of the LID statute and related legislative materials. |
| Fall Semester 2008 Sept. 5-Dec.20 | Write and submit first journal article on findings. Present preliminary findings at the Minnesota Lakes and Rivers Conference, Rochester, MN and potentially also the Minnesota Water Resources Conference, Minneapolis, MN. Initiate comparative study with Wisconsin LIDs, continue with the interviews of relevant stakeholders. |
| Spring Semester 2009 Jan.15-May 14 | Develop a finalized framework for my dissertation. Organize data and source materials. |
| Summer 2009 May 14-Sept.4 | Complete comparative study with Wisconsin LIDs. Complete organization of all interviews, transcripts, and relevant written materials. Begin in-depth analysis of coordination theory. |
| Fall 2009 Sept. 5 – Dec.20 | Final analysis of collected data and subsequent first drafts of dissertation. |
| Spring 2010 Jan. 15-May 14 | Submit dissertation, write and submit a minimum of two more journal articles for peer review. Complete final defense with an anticipated graduation date of May. |

Significance: This project approaches policy analysis through a fusion of limnology, public policy, political science, and anthropology to inform a burgeoning dialogue between state agencies, policymakers, and concerned citizens about the potential role of communities in the management of local water resources. The interdisciplinary nature of this project has the potential to show how policy can support the ideals of conservation sciences through mediating stakeholder involvement with the implementation of technical solutions to water pollution problems. By exploring how environmental policies can be coordinated across political boundaries that fail to match the boundaries of natural systems, this project takes a realistic and powerful new approach to how policy can instigate positive environmental change through the synergistic activities of grassroots efforts under the umbrella of government supported water quality initiatives.

Biographical Statement: As a student of natural resource sciences and management I am inspired by the sheer beauty and power of the natural world we live in. When I was 16 years old I earned my SCUBA certification and literally immersed myself in the aquatic and marine world. Diving in everything from quarries in Ohio to the coral reefs of the Bahamas, I became acutely aware of the ecological impacts pollution has to bodies of water. By the time I entered college at the University of Miami, I knew aquatic and marine resource management was my passion. I felt confident in creating a focused interdisciplinary course of study that in subsequent years propelled me through multiple degree programs. As a result, I was able to step directly from my B.A. in Marine Science Affairs to my M.A. in Marine Affairs Policy and Management, and from there to a Ph.D. program in Natural Resource Science and Management at the University of Minnesota, where I am currently rounding out my understanding of the science and policies surrounding freshwater resources. The continuity of my studies has been a strength and a worthy indicator of my personal dedication to the field of water resource management.

The overarching goal of my academic inquiries is to learn how to facilitate the stewardship of aquatic and marine resources from within the policy community. The diversity of courses I have taken, including marine biology, chemical oceanography, limnology, economics, ocean law, coastal law, global policy, cultural anthropology, and international sustainable development, illustrates my interdisciplinary approach to understanding the interactions of science, politics, policy, and people involved in natural resource management issues. My fieldwork methods reflect an early grounding in biological sciences and cultural anthropology, which influences my approach to water management issues. I seek to better understand the role of traditional and local knowledge, as well as community action, in both policy creation and management plan implementation. It is from this conceptual framework that I define my doctoral research interest: understanding how the creation and implementation of environmental policies can facilitate stakeholder engagement in the long-term management of local freshwater resources.

¹ EPA. (2007). *Overview of current total maximum daily load (TMDL) program and regulations*. Retrieved October 10, 2007, from www.epa.gov/owow/tmdl/overviewfs.html

² Stephenson, J. B., & Elstein, S. (2002). *Water quality: Inconsistent state approaches complicate nation's efforts to identify its most polluted water*. No. GAO-02-186. Washington, D.C.: U.S. General Accounting Office.

³ Kapoor, I. (2001). Towards participatory environmental management? *Journal of Environmental Management*, 63, 269-279.

⁴ Sapat, Alka. (2004). Devolution and Innovation: The adoption of state environmental policy innovations by administrative agencies. *Public Administration Review*, 64(2), 141-151.

Consortium on Law and Values in Health, Environment the Life Sciences

Budget for Student Proposals

Project Title: Building Clean Water Communities: Understanding how environmental policies can promote and coordinate community participation in the long-term management of local freshwater resources.

| Instructions: add rows for multiple personnel. | | Requested funding | Matching/other funding | |
|--|---|-------------------|------------------------|--------------|
| | | Amount | Amount | Source |
| Category | Description & justification | | | |
| Personnel <i>Explain what hourly wage & fringe are based on-- departmental, community or other rate?</i> Departmental | Salary = 20hrs a week x \$15 hrly wage | \$3,000 | \$3,000 | WRC Center |
| | Fringe rate: 21.8% | \$654 | \$654 | WRC Center** |
| | What work will this person do? PI responsible for the implementation of the proposed research plan. | | | |
| | Subtotal | 3,654 | 3,654 | |
| Speaker Honoraria | NA speakers x \$ NA honorarium | 0 | 0 | |
| Supplies & Services | List items and explain use. None. | 0 | 0 | |
| Equipment <i>Equipment costs are allowable only if the justification clearly shows that the equipment is necessary for the project. Include explanation of what will happen to equipment at completion of project.</i> | Identify and explain use. None. | 0 | 0 | |
| Travel <i>Travel costs must include a description of the purpose of the travel, start and stop dates of travel, transportation costs, housing costs, and allowable per diem (use University rates found at http://travel/umn.edu).</i> | Justification below. | \$2,000 | 0 | |
| | Subtotal research supplies, equipment, travel, other | \$2,000 | | |
| TOTAL BUDGET | | \$5,654 | \$3,654 | |

** Funding for one academic year (2007-2008) was secured through the University of Minnesota's Water Resource Center. A small remaining portion of the grant can be used to match the proposed hourly stipend requested in this grant for the summer sessions of 2008.

TRAVEL JUSTIFICATION: 1)Jan.22-Sept.4, 2008, In person interviews with between 5-20 county water planners based throughout MN, and potential additional 5-15 in-person interviews with lakeshore stakeholders located throughout MN. Estimate at least 700 miles driven X mileage rate of \$0.505 = **\$354**. 2) ISSRM Conference, Burlington, VT, June 10-14,2008. Official meeting of the International Association for Society and Natural Resources. I have the intent to present at it in 2009. Max of 4 night stay X Max. rate exc. taxes \$102 = \$408, (per diem of \$49 X 2) + (\$36 per diem for first and last day X 2) = \$170. Flight: Current lowest ticket price \$422. Conference registration fees: \$125. Total trip expense = **\$1,125**. 3) Minnesota Water Conference, Presenter, Rochester, MN, September 10-13, 2008. Transportation 160 miles rountrip X \$0.505 = \$80. Max of 3 night stay X Max. loding rate exc. taxes \$93 = \$279. Conference registration fee: \$162. Total = **\$521**.