

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

## Student Proposal Cover Page

### Applicant Information

Applicant Name: Rachel F. Brummel Date: 02/19/07  
Project Title: Burning through Boundaries: Science and Social Learning in Collaborative Wildfire Planning Groups  
Department: Conservation Biology College: CFANS  
Home address: 955 Idaho Ave West City & State: Saint Paul, MN Zip: 55117  
Faculty advisor name: Dr. Kristen C. Nelson Email: kcn@umn.edu  Not applicable  
Dept. Head's name: Dr. Susan Galatowitsch (DGS) Dept. Head's email: galat001@umn.edu  
Dean's name: Dr. Allen Levine Dean's email: aslevine@umn.edu  
How did you hear about this funding opportunity? Advisor/other graduate students

### Funding

Amount of funding requested: \$ 2000

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

I am requesting funds to cover the travel expenses to Australia from the Twin Cities. This travel is necessary for my doctoral dissertation research.

### 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.*

IRB Date submitted: 04/2006 Number: 0504E69428  
I am in the process of adding the Australia component to this exempt research title.  
 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.

# **Burning through Boundaries: Science and Social Learning in Collaborative Wildfire Planning Groups**

Rachel F. Brummel  
PhD Student in Conservation Biology

Advisor: Dr. Kristen C. Nelson  
Department of Forest Resources; Department of Fisheries, Wildlife and Conservation Biology

## **Background and Importance:**

Last year the United States spent over 875 million dollars attempting to suppress uncontrolled wildfires that burned nearly 8.7 million acres. In the summer of 2003, bushfire burned over 3.2 million acres in the state of Victoria, Australia alone. However, the recognition of the wildfire problem in each of these countries is tempered by the ecological understanding that fire is a natural component of many American and Australian landscapes. Many struggle with the paradox of desiring to live in fire-adapted environments that pose an inherent risk to their lives and property.

Wildland fire burns through environmental, political and institutional boundaries. Accordingly, the consequences of wildfire in the United States and bushfire in Australia are multi-faceted: wildland fire is an environmental problem, a public health problem, and an economic problem. Thus, wildfire management presents a particularly complex policy challenge to lawmakers in the United States and Australia. US policy traditionally has centered on wildfire suppression, while Australia has a history of managing bushfire through fuels mitigation and re-establishing fire regimes. The US's singly-focused policy, however, has been largely ineffective<sup>1</sup>: wildfire management requires the cooperation of all scales of government and landowners at-risk of fire<sup>2,3</sup>. Thus both the US and Australia have adopted a collaborative approach in their wildfire planning policy, though Australia has used this model for much longer.

The collaborative model now utilized in American and Australian wildfire management strives to engage stakeholders in environmental decisions and facilitate the integration of multiple interests and values in a management plan<sup>4</sup>. Despite our increasing knowledge of ecological systems, however, collaborative groups often struggle to effectively integrate science in their decision-making<sup>5</sup>. One hypothesis maintains that social learning is essential for groups to wade through the science and incorporate multiple interests into their planning. Social learning is "learning that occurs when people engage one another, sharing diverse perspectives and experiences to develop a common framework of understanding and basis for joint action"<sup>6</sup>.

I plan to investigate how collaborative wildfire planning groups interact with scientific knowledge in navigating their diverse interests. I will use Ozawa's<sup>5</sup> theory of the five roles of science in environmental decision making – science as a discoverer, as a tool of accountability, as a shield, as a tool of persuasion, and as a tool of facilitation – as a framework for investigating how scientific knowledge is presented and used within the planning groups. Ultimately, I will examine the relationship between the role of science and the dynamics of social learning within each group.

## **Research Context:**

The 2003 Healthy Forest Restoration Act requires US communities to collaboratively create Community Wildfire Protection Plans (CWPPs) to receive federal wildfire funds. I will examine CWPPs as the US component of my comparative. Australian bushfire policy is implemented on the state level, so I plan to investigate three of these frameworks: 1) Bushfire Management Committees in New South Wales created by the Rural Fires Act, and 2) Regional Bushfires Committees in the Northern Territory mandated by the Bushfires Act, and 3) Western Australian planning partnerships administered by the Department of Conservation and Land Management. All of these policies require planning groups to address fuels mitigation, fire suppression, protection of lives and property, and biodiversity conservation/ecosystem restoration. However, meeting multiple objectives proves challenging because the wildfire problem is defined on multiple levels by multiple stakeholders. Stakeholders with a fuels mitigation perspective may view fallen trees as fire hazards that must be removed, while those with a conservation perspective view these same trees as essential habitat. Thus, members of one committee may hold planning objectives in direct conflict.

## **Work Plan:**

Progress to Date: As a member of the CWPP Joint Fire Science Research team, I have helped conduct case studies – through interviewing planning participants and document review – of four wildfire planning groups in the United States between June 2006 and February 2007. In terms of my academic progress, I will complete my written preliminary exams April 2007.

Summer 2007: Analysis and coding of US case studies.

Fall Semester 2007: Take oral preliminary exams, continue analysis of US case studies and prepare for Australian research.

Spring Semester 2008: Travel to Australia, begin conducting case studies of bushfire planning groups. I intend to conduct a total of six case studies, two in each of the policy frameworks.

Summer 2008: Continue Australian case study research.

Fall Semester 2008: Finish up research in Australia, return to the US mid-semester. Begin analysis of Australian case studies.

Spring 2009: Continue data analysis, begin writing dissertation, and prepare publications.

Fall 2009: Continue writing dissertation and developing publications.

Spring 2010: Defend dissertation.

## **Innovative Contributions:**

This research pulls from the disciplines of environmental sociology, political science, and fire ecology to inform an ongoing international exchange about integrated and sustainable wildfire planning. I believe it will provide multiple contributions to the interdisciplinary study of the environment:

- ❖ This research seeks to inform our understanding of how federal laws can foster community collaboration around environmental management.

- ❖ This study will engage policymakers and those living in fire-prone communities in conversations about the ways planning processes may democratically and deliberatively use ecological science in collaborative decision making, without marginalizing personal epistemologies.
- ❖ Stakeholders engaged in a collaborative decision-making process enter with diverse values, interests, and knowledge related to the environmental system at hand. I hope to understand how social learning may contribute to the incorporation of multiple perspectives and forms of knowledge in the formation of a collectively produced management plan.
- ❖ Collaborative planning strives to increase the diversity of individuals involved in decision making according to the democratic understanding that the public should be engaged in the management of their own environment. Thus my research may speak to ways that this ethic may be pursued in all natural resource management systems.

### **Student Biography:**

I pursued a childhood interest in environmental science as a Biology major at Grinnell College. While there, I also completed a concentration in environmental studies that exposed me to courses in anthropology, environmental policy, and human ecology; this multi-disciplinary approach informed my desire to focus on the social aspects of natural resource management in graduate school. At Grinnell, I took a leadership position with my personal engagement in local environmental issues and found ways to provide environmental leadership by creating a citizen water monitoring program with partners from the town and the college. My study abroad experience in Costa Rica with the Organization for Tropical Studies also served to focus my current research interests. While I spent much of my time within biological field stations, my most important lessons took place outside the boundaries of these parks. During this time, I reinforced both my practical belief and my personal ethic that multiple stakeholders should be included in environmental decision-making. I graduated with Honors from Grinnell in 2003 and was selected as a member of Phi Beta Kappa.

I began graduate school at the U of M in 2005 as a Graduate School Fellow in the Conservation Biology Program. Since May 2006, I have been a research assistant and team member on the Joint Fire Science Program Community Wildfire Protection Plan research team, which supports a nationwide investigation of community wildfire planning in the US. Through speaking with collaborative wildfire planning groups in the US, it struck me that no two planning groups approached or defined the wildfire problem the same way. This piqued my interest in how an ecologically and politically diverse country like Australia deals with the same challenge of multi-objective, multi-stakeholder bushfire planning.

---

**Literature Cited:** <sup>1</sup>Busenburg, 2003. *Rev. of Policy Res.* 21(2): 145-156. <sup>2</sup>Nelson, et al. 2005. *Soc. Nat. Res.* 18(4):321-336. <sup>3</sup>Handmer, J. 2003. *CSIRO Pub.* <sup>4</sup>Wondolleck/Yaffe. 2000. *Island Press.* <sup>5</sup>Ozawa. 1996. *Soc. Persp.* 39(2):219-230. <sup>6</sup>Schusler, et al. 2003. *Soc. Nat. Res.* 16(4):309-326.

**Budget:**

I am requesting funds to support my travel to and from Australia in order to conduct the international portion of my case study research. I intend to leave in January of 2008.

<b>Item</b>	<b>Dollar Amount Requested</b>
<b>Travel Expenses</b>	
Roundtrip airfare to Sydney, Australia from MSP*	\$2000
<b>TOTAL</b>	<b>\$2000</b>

\* Kayak.com estimate for airfare from MSP to SYD ranges between \$1734 - \$3386.

**Other Funding:**

I have secured the Mark & Judy Yudof Fellowship for science policy and ethics for the 2007-2008 academic year. This funding covers my salary (\$18,000) for this period of time, but does not support travel expenses. Additionally, I have applications for funding pending for the NSF Graduate Research Fellowship, EPA STAR, and the Fulbright Fellowship.