

APPENDIX II

**UNIVERSITY RESEARCH COUNCIL GRANT PROGRAM
PROPOSAL APPLICATION FORM**

COVER PAGE

David Casagrande (Assistant Professor)

Name of Faculty Member and Faculty Rank: Heather McIlvaine-Newsad (Associate Professor)

Department: Sociology and Anthropology Amount Requested (URC only): \$5,000

Title of Proposal: Ecological Sustainability and Marshallese Migration

Certification

I (we) certify that I (we) meet the eligibility requirements for an award and that I (we) accept the terms and conditions specified in the guidelines. I (we) further agree to be responsible for the conduct of the project as approved and for adherence to WIU policies and procedures.

Applicant: _____ Date: _____

Co-Applicant: _____ Date: _____

Endorsements: _____

* Department Head: _____ Date: _____

Dean: _____ Date: _____

* The department chairperson, in consultation with the departmental committee (if one exists), is required to write a cover letter evaluating the relative merits or values of the proposal to the discipline. Documentation should be included of departmental/college support to the project. For co-applicants from more than one department both department chairpersons' cover letters will be needed.

APPENDIX II

**UNIVERSITY RESEARCH COUNCIL GRANT PROGRAM
PROPOSAL APPLICATION FORM**

COVER PAGE

Name of Faculty Member and Faculty Rank: Gordon P Rands (Associate Professor)
Barbara A Ribbens (Associate Professor)

Department: Management Amount Requested (URC only): \$5,000

Title of Proposal: Ecological Sustainability and Marshallese Migration

Certification

I (we) certify that I (we) meet the eligibility requirements for an award and that I (we) accept the terms and conditions specified in the guidelines. I (we) further agree to be responsible for the conduct of the project as approved and for adherence to WIU policies and procedures.

Applicant: _____ Date: _____

Co-Applicant: _____ Date: _____

Endorsements: _____

* Department Head: _____ Date: _____

Dean: _____ Date: _____

* The department chairperson, in consultation with the departmental committee (if one exists), is required to write a cover letter evaluating the relative merits or values of the proposal to the discipline. Documentation should be included of departmental/college support to the project. For co-applicants from more than one department both department chairpersons' cover letters will be needed.

Abstract

The goal of this URC sponsored research will be to collect and analyze pilot data to support a research grant application to the National Science Foundation (NSF). Our long-term research goal is to elucidate the causal relationships between environmental knowledge, values, social networks, perceptions of self-efficacy, and ecologically sustainable behavior. Previous research indicates the importance of these variables, but no research has attempted to identify the causal relationships by studying changes in environmental behavior as people migrate to the US and adopt American values and behaviors. We propose to study changes in environmental knowledge, values, social networks and behaviors of migrants from the Republic of the Marshall Islands (RMI). With URC support, we will collect qualitative and quantitative pilot data via focus groups, individual interviews, and observations of behavior in three Marshallese migrant communities in the US. Each interview team will consist of a male and female researcher, as well as a representative from each discipline (anthropology and management). These data will form the basis for a questionnaire survey and additional research in the RMI to be supported by NSF. The pilot data will lead directly to peer-reviewed publications and will contribute to ecological sustainability policies in the RMI and US. Our interdisciplinary collaboration (cultural anthropology and business management) broadens the impact of this research and led to theoretical and methodological innovations.

Introduction/background

Wackernagel and Rees (1996) have argued that the United States is in a state of ecological overshoot. We are consuming more natural resources than our environment can replenish and producing more waste than can be absorbed by natural processes. Their claims are based on a technique called “ecological footprint analysis”—an accounting tool that balances demand against supply of ecological processes on a per hectare basis. Footprint analysis has been adopted as an international policy tool by many local and national governments and the United Nations because it identifies which populations are overusing a complete set of ecological resources, versus those with excess supply (Wackernagel et al. 2006). Footprint analysis is also widely used as an educational tool to increase ecological awareness. Rands, Casagrande, and McIlvaine-Newsad have used footprint calculations in WIU courses and experienced the same result found by educators around the country: Americans are amazed to learn how large their footprints are, and how much their behaviors impact the planet. Ecological footprint analysis, however, has been used little if at all in scholarly research on environmental behavior (Wackernagel, personal communication). We intend to combine footprint analysis with other social variables in the research proposed here. We believe that indigenous populations living subsistence lifestyles have an

acute appreciation for the effects of their behavior on their environment. Our research intends to test this assumption, and determine how such an appreciation is impacted by migration, and how it relates to social networks and personal self-efficacy. We ultimately hope to use these findings to assist the Republic of the Marshall Islands to plan and implement actions that permit the nation to achieve and maintain an ecological footprint that is within the limits allowed by earth's ecological systems—in other words, to develop an ecologically sustainable society. In addition, we hope that our research can help address whether it is possible to create a similar appreciation, as measured by the footprint, among Americans.

Despite increasing public knowledge of environmental issues and concern about the impacts of individual behaviors, Americans have adopted few pro-environmental behaviors (Dunlap and Catton 1994; Wackernagel et al. 2006). Extensive research shows that providing information about environmental issues can change attitudes, but is insufficient to change behavior, contrary to most education-based environmental policies (Kollmuss and Agyeman 2002). An analysis of environmental behavior research literature by Hines et al. (1986-87) showed that in addition to knowledge of issues, knowledge of possible actions, and pro-environmental values and attitudes, behavioral change requires a sense of individual responsibility for problems, a feeling that individuals are capable of creating change (i.e., self-efficacy), and social pressure. Research on social norms and social pressure clearly indicates that behavior change is most likely to occur when information about behavior dominates social networks in which individuals are embedded (Atran et al. 2002, Kincaid 2000).

Environmental research on these topics has tended to include surveys of either environmental knowledge, attitudes, self-efficacy, or behavior, occasionally in some combination with each other. But researchers have a poor understanding of the causal links between these social processes and the role of social networks. Significant contributions to theory and policy could be achieved by using experimental or comparative approaches that include the variables above. Migration into the United States provides a unique opportunity to test hypotheses about how environmental behaviors change within social networks. Hunter (2000) found that recent immigrants often show higher environmental concern than long-term residents, and concern diminishes over time. Many immigrants are indigenous people from subsistence-based economies with ecologically sustainable lifestyles who are socialized into American behavioral patterns. Most importantly, migration and socialization occur within social networks (Wilson 1994, 1998). To date, little research has been conducted on how environmental values and

behaviors change when people migrate to countries with high per capita consumption like the United States, and no research has considered the effects of migration networks on environmental behavior.

Atran et al. (2002) showed that social networks are important for ecological sustainability among the Maya in Guatemala. Social networks that lack central authorities to disseminate external information are less likely to respond to changing environmental conditions in a sustainable manner. The tendency for environmental information to reach most Americans without passing through their social networks (McKenzie-Mohr and Smith 1999) may account for the failure of immigrants to fully appreciate the environmental consequences of their behavior. An alternative explanation is that, because migrants cease to participate in a subsistence-based economy, social networks become dominated by information about negotiating governmental bureaucracies, financial management, employment opportunities or other matters necessary to survive on a day-to-day basis in an economy in which few people interact directly with natural resources. It is also possible that although environmental concern is high, and strong networks include environmental information, migrant self-efficacy decreases when migrating to new areas.

We propose to study changes in environmental knowledge (including ecological footprints), values, social networks, perceptions of self-efficacy, and behavior of migrants from the Republic of the Marshall Islands (RMI). RMI consists of 29 small coral atolls in the western Pacific Ocean. Traditional subsistence consists of fishing and gardening within communities of kin-based membership, as is still practiced to a limited extent on outlying atolls (Crismon 2005). Each atoll is a small island from which residents cannot escape the effects of behavior, thus forcing them to closely monitor their ecological sustainability. Marshallese may still carry mental models of ecological sustainability. RMI faces many environmental problems (Ribbens and Ribbens 1999), including rising sea levels caused by global climate change, which is believed to threaten their islands (Relang 2000). This suggests that the Marshallese public will be knowledgeable about at least some global environmental issues.

One of the investigators, Dr. Ribbens, adopted a daughter from the Marshall Islands in 1998 and visited the Marshall Islands again in 2005. Through this adoption experience, she has developed connections with Marshallese individuals both in RMI and the US. Observations by Ribbens suggest that Marshallese migrants quickly adopt non-sustainable behaviors. This is despite their appreciation for the constraints of natural resources, global climate change and rising sea levels. We hypothesize that non-sustainable behavior among Marshallese immigrants results from either: 1) changes in their

environmental values; 2) reduced feelings of personal responsibility for ecological sustainability; 3) lack of knowledge about ecological sustainability in America; 4) a reduced sense of self-efficacy as a result of living in and coping with a new and complicated social environment; 5) changes in the structures of their social networks; and/or 6) information about natural resources becoming less important in social networks than information about more pressing daily needs.

To understand which of these potential hypotheses may hold the greatest explanatory power, and to elucidate the causal relationships between behavior, knowledge, values, social networks and self-efficacy, our long-term research plan is to study Marshallese social networks along a migration continuum, including subsistence-based communities on outlying atolls in the RMI, urban communities in RMI, and migrant communities in the United States.

This proposal to the URC is to conduct qualitative and quantitative pilot research among Marshallese in three migrant communities in the United States. Our two primary goals are to determine the importance of environmental themes in cultural context and measure agreement about such themes. We will use these data to develop quantitative hypotheses to be tested with questionnaires and observations of behavior in the US and RMI. We intend to apply for funding from the National Science Foundation, Cultural Anthropology program and the US Environmental Protection Agency, National Center for Environmental Research, Collaborative Science And Technology Network For Sustainability program to conduct the international and quantitative survey components of this research.

We have identified three Marshallese migrant communities in the United States. It is necessary to visit each of these to determine suitability for further research, because they vary in population size, degree of socialization into American culture, and possibly types of social networks. A community in Springdale, Arkansas includes over 6000 Marshallese immigrants who migrated directly from RMI and have been in the United States for less than 10 years. A community of 700-800 immigrants in Salem, Oregon has existed for more than 10 years. Another similar sized community in Costa Mesa, California has existed since a group of young islanders came to attend college there in the late 1960's. Many of these students stayed to establish the first continental US settlement of Marshallese (Rowa, 2005). Costa Mesa had approximately 400 Marshallese immigrants in 1995 (Hess et al. 2001). Ribbens has been gathering email contacts for these and other Marshallese migrant communities within the US.

Objectives

Our objectives for this URC research proposal are:

1. verify non-sustainable behaviors via ecological footprint analysis and direct observation of behavior among RMI immigrants in the US.
2. transcribe and code qualitative data obtained through focus groups and interviews in order to identify culturally appropriate themes and language for communicating about social networks, environmental values, and ecological knowledge, including atoll memories and issues like global climate change.
3. identify a population in the US suitable for further study based on a preliminary analysis of social networks, length of residence in the US, and degree of cultural consensus within and between communities (i.e., determine whether all three are necessary for the subsequent quantitative phase of research).
4. identify potential study populations in the RMI based on information provided by immigrants living in the US.
5. develop a quantitative survey instrument and apply for funding from external sources to conduct further research in the Marshall Islands.

Explanation of research activities and data analysis (See Appendix II for detailed timeline)

During the 2nd week of January, 2007 all four research applicants will travel to Springdale, Arkansas to conduct three days of focus groups, interviews with individuals and participant observation. All four will participate in a morning focus group the first day. In the evening, we will split into two teams of two researchers each for two additional focus groups. Each team will include both an anthropologist and business management researcher. Focus group discussions will begin with general questions about life in the US versus RMI, followed by specific probes regarding migration decisions, social networks, environmental perceptions, and self-efficacy. We will show participants photos of the RMI and Arkansas to generate initial discussions. Focus groups, or focus group interviews, will enable us to: 1) generate a considerable amount of data in relatively short period of time; 2) refine hypotheses based on informants' insights; and 3) develop individual questions for individual interviews and questionnaires (Schensul et al. 1999; see Appendix I for opening questions). Over the next two days, interdisciplinary teams of two researchers each will conduct 8 in-depth interviews (four each day) with individuals who did not participate in focus groups (yielding a total of 16 interviews). Each interview team will consist of a male and female researcher, as well as a representative from each discipline (anthropology and management). Open-ended interview questions will include those in Appendix I, but will be re-worded

based on focus group input. We will ask additional questions regarding details about social networks (e.g., “who do you rely on for information,” and “how often do you ask each individual about...?”) and perceptions of environmental problems. We will finish by asking interviewees to complete the standard ecological footprint questionnaire (see <http://ecofoot.org/>). Each interview will last less than 90 minutes. All focus groups and interviews will be audio-recorded for transcription and qualitative content analysis. During the second and third days we will also conduct participant observation (either during or between interviews), in which we will participate in typical household activities such as eating and socializing. Participant observation is a common anthropological tool for rapid assessment of cultural behavior (Bernard 2002:322-364). The Marshallese are known for their spontaneous hospitality, and we anticipate relatively open access to households. We will record details on types of food consumed, household furnishings, waste disposal, number of inhabitants per household, energy use, and transportation decisions. These data will be compared to footprint questionnaire results to evaluate the efficacy of the footprint protocol in the Marshallese cultural context.

Between January and Spring Break 2007, two graduate assistants will transcribe the audio recordings. We will conduct thematic content analysis on the transcriptions using NVivo software (Gibbs 2002). This method is crucial for determining which environmental themes are important to interviewees, the relationships between themes like migration and environmental perceptions, and, most importantly, how people talk about sustainability issues within the context of their culture (Casagrande 2004).

We will repeat the field component of this research in two other locations during Spring Break, 2007. One team consisting of an anthropologist and a business management specialist will travel to Salem, Oregon, and the other interdisciplinary team will go to Costa Mesa, California. Each team will conduct three days of focus groups, individual interviews and participant observation, as in Springdale. These data will be transcribed and coded between Spring Break and the end of the Spring 2007 semester. At this point, we will also conduct quantitative cultural consensus analysis (Romney et al. 1986) using the ANTHROPAC software on discursive themes to determine how well interviewees agree with each other about the various themes (Borgatti 1996). This will enable us to determine the degree of cultural consensus within and between each of the three communities.

During May and June 2007, we will use these results to develop a culturally appropriate questionnaire and participant observation protocol. These pilot data and the questionnaire will form the basis for an application to the National Science Foundation for funding to extend this research to the RMI and also

conduct a large-scale quantitative survey among Marshallese in the US. We will use multivariate regression analysis and path analysis (Loehlin 1991) to evaluate the relationships between knowledge, values, social networks, self-efficacy, and behavior in our NSF-funded survey. The NSF application deadline is July 2007.

Statement of significance

This research will make a significant contribution to environmental theory by elucidating the relationships between knowledge, values, social networks, self-efficacy, and behavior. It will also contribute to the developing theoretical field of information in migration networks—an increasingly important area of research due to accelerating global mobility, migration politics, and the complexity of global environmental issues. We anticipate that the combination of qualitative methods with quantitative variables and our development of a culturally-sensitive ecological footprint protocol will be received by the academic community as a methodological innovation.

This research can also make two important theoretical and applied contributions to the growing literature on management, organizations, and the natural environment. Substantial attention has been paid by management researchers in recent years to the environmental attitudes, values, behavior and decision making of managers (Cordano & Frieze, 2000; Flannery & May, 2000) and business students (Cordano, et. al., 2006). These studies have not investigated the potential role that either social networks or personal self-efficacy play in environmental behavior. Our findings can therefore inform future research on environmental decision-making and behavior in organizational settings. A second important aspect of this research relates to the growing public expectations for "triple bottom line" (ecological, social and economic) sustainability on the part of organizations, especially multinational corporations in their operations in host countries. As corporations increasingly respond to these expectations, they will confront the need to better understand and influence the nature of environmental decision-making and behavior on the part of their employees and of members of their host communities, especially in developing nations. Our research can therefore contribute to more effective sustainability efforts by corporations.

This research has important implications for education-based environmental policies in the US. We are also confident that we can have a significant impact on environmental policy in the RMI. Given rising sea levels and the increasing frequency and severity of storm surges, the Marshallese will likely be

among the first of many environmental refugees (Relang 2000). The small population of RMI (c. 60,000) and positive political relations with the US provide an opportunity for us to engage with policy at the national and international level, significantly increasing the impact of this research. Recent national policy recommendations (Yokwe Online, 2006) indicate that RMI officials are recognizing the need for environmental sustainability at the national level. We have communicated with RMI government officials from the Economic Policy, Planning, and Statistics Office who are very interested in this research and are willing to work with us to provide statistical data. The applied orientation of management theory and its attention to organizational change, can make an added contribution to this phase of the overall research program.

Procedures for Evaluation

The success of this project will be evaluated based on two criteria: 1) successful acquisition of external funding from either the National Science Foundation, Cultural Anthropology program or US Environmental Protection Agency Collaborative Science and Technology Network for Sustainability program, and 2) publication of research results in peer reviewed journals.

Cite your previous work and/or publications most directly relevant to this project

The four applicants in this proposal formed a sustainability interest group in Fall 2005. We have been meeting regularly since then. The interdisciplinary energy and innovation of these conversations built upon earlier theoretical work by Rands and Ribbens and eventually led to a collaborative publication that developed a framework for an ecologically sustainable society and suggested how this framework might be applied to ecological sustainability in the RMI (Rands et al. in press). Rands and Ribbens presented our thesis at a session of the Organizations & the Natural Environment Interest Group of the Academy of Management in August 2006. We believe that our grounding in two different disciplines has created significant synergies, and has resulted in new ideas and insights that none of us might have had working solely on a single-discipline basis. Our experiences reflect the frequently noted complexity of environmental issues that requires interdisciplinary solutions. In addition, our research team's interdisciplinary nature significantly expands the potential for widespread dissemination of the results of this research.

Rands has published and presented widely on issues of environmental sustainability, primarily but not exclusively at the organizational level. His co-authored paper on ecologically sustainable organizations (Starik & Rands, 1995) provided the impetus for our recent co-authored work on ecologically

sustainable societies (Rands, et. al, 2006; Rands, et. al., in press). He is also extending this work to the political-economic level, focusing on the need for ecologically sustainable governments (Rands & Starik, 2006). He has done work on environmental attitudes and behaviors (Cordano, et. al., 2006; Rands, 1990), and is a co-founder and past officer of the Organizations & the Natural Environment Interest Group of the Academy of Management, the largest global professional association of management scholars.

Ribbens has been involved with the Republic of the Marshall Islands since her adoption of a daughter there in 1998. Since then she has returned to the country in 2005 and organized Marshallese reunions in the United States for RMI adoptive children to learn about their cultural heritage via various researchers and government representatives. This has developed her perspective on Marshallese culture both in their own country and within the US, as well as developing the personal contacts to make this research possible. She also has published a book chapter about sustainability in RMI (Ribbens and Ribbens 1999) in addition to the chapter coauthored by this group and has been coauthor for five national and international academic presentations about environmental issues, particularly in Pacific Island nations. In addition, she has experience with both quantitative and qualitative data analysis including archival data methods, interview methods and focus groups.

McIlvaine-Newsad has worked with a wide variety of rural and indigenous peoples and published on their relationship to the environment (McIlvaine-Newsad 2003, McIlvaine-Newsad, et al. 2004, Merrett et al. 2006). She also has extensive training, teaching experience, and publications on research methods (McIlvaine-Newsad 2006, McIlvaine-Newsad and Clark 2006, McIlvaine-Newsad et al. 2003). She has been the principal investigator on several grants exploring the relationship between gender and the environment (North-South Grant 1997, MERGE 1996) and has recently been the recipient of three one-year grants from the National Oceanographic and Atmospheric Association's department of National Marine Fisheries Service (NMFS 2006, 2005, 2004) to document the changing ecological knowledge of Gulf Coast fishing communities in Louisiana and Texas.

Casagrande has extensive experience conducting research and publishing on environmental issues via interdisciplinary collaborations (Casagrande 1997a, Cook et al. 2004; Stepp et al. 2003). He has studied environmental perceptions and values in the US (Casagrande 1996; Casagrande 1997b; Hope et al. 2006) and environmental issues in indigenous cultures, including effects of migration on perceptions of natural resources (Casagrande 2005), and translating environmental themes between cultures

(Casagrande 2004). He has been the principal investigator on environmental research grants from the National Science Foundation and College Sea Grant Program among others. He is currently a collaborative investigator on a National Science Foundation grant studying environmental perceptions and policy in the American Southwest. Casagrande has extensive experience conducting qualitative content analysis using the NVivo software, including having coded over 100 hours of interview text as part of his current NSF-funded environmental research in the American Southwest. He has extensive experience with quantitative consensus analysis using the ANTHROPAC software (e.g., Casagrande 2004). In May, 2006, Casagrande attended a workshop on ecological footprint accounting led by Mathis Wackernagel, the developer of the footprint.

Publication and Dissemination Plans

The pilot data will lead directly to manuscripts suitable for publication in the following anthropology, management, and interdisciplinary journals: *Society and Natural Resources*, *Environment and Behavior*, *Journal of Ecological Anthropology*, *Journal of Environmental Education*, *Human Organization*, *Social Forces*, *Organizations & Environment*, and *Sustainable Development*. We hope to be able to present initial results of this research at the Society for Applied Anthropology meeting in March 2007, the Greening of Industry conference on social and ecological sustainability in June 2007, and the Academy of Management meeting in August 2007. Subsequent results would be presented at the American Anthropological Association meeting in November 2007. We will report our results to the three migrant communities in which we collect data. We will also prepare a working paper for RMI government officials, suggesting how the findings of this research can inform efforts to enhance the ecological sustainability of the nation.

Support from non-University sources

Discussions about developing our ideas into a research proposal began in the Spring of 2006. Casagrande has been in contact with Jill Marshall of the Office of Sponsored Projects to discuss potential external sources of funding, and we established an NSF Fastlane application account. On March 30, 2006 Casagrande met with Deborah Winslow, the NSF program director for Cultural Anthropology, at a conference in Vancouver, BC. Winslow was enthusiastic about the theory, methods and policy implications of the research, but suggested the need to collect pilot data before applying to NSF. We also identified the US Environmental Protection Agency, National Center for Environmental Research, Collaborative Science And Technology Network For Sustainability program as a potential

target, but unfortunately learned of the deadline and began preparing the grant too late to meet the Spring deadline. We intend to apply to the EPA program if it is announced again this coming Spring.

To what external sponsors will you apply to support the next phase of this research project?

- National Science Foundation, Cultural Anthropology program (Deadline July 2007)
- US Environmental Protection Agency Collaborative Science and Technology Network for Sustainability program (Possible Deadline May 2007).

References

- Atran, S., D. Medin, N. Ross, E. Lynch, V. Vapnarsky, E. U. Ek, J. Coley, C. Timura, and M. Baran. 2002. Folkecology, cultural epidemiology, and the spirit of the commons: A garden experiment in the Maya lowlands, 1991-2001. *Current Anthropology* 43:421-450.
- Bernard, H. R. 2002. *Research Methods in Anthropology: Qualitative and Quantitative Approaches*, 3rd edition. Walnut Creek, CA: AltaMira Press.
- Borgatti, S. P. 1996. *ANTHROPAC 4.0 Methods Guide*. Natick, MA: Analytic Technologies.
- Casagrande, D. G. 1996. A value based policy approach: The case of an urban salt marsh restoration. *Coastal Management* 24:327-337.
- Casagrande, D. G. Editor. 1997a. *Restoration of an urban salt marsh: An interdisciplinary approach*. Vol. No. 100. *Bulletin Series*. New Haven, CT: Yale School of Forestry and Environmental Studies.
- Casagrande, D. G. 1997b. "Values, perceptions and restoration goals," in *Restoration of an urban salt marsh: An interdisciplinary approach*, vol. Bulletin No. 100. Edited by D. G. Casagrande, pp. 62-75. New Haven, CT: Yale School of Forestry and Environmental Studies.
- Casagrande, D. 2004. Conceptions of primary forest in a Tzeltal Maya community: Implications for conservation. *Human Organization* 63:189-202.
- Casagrande, D. G. 2005. "Globalization, migration, and indigenous commodification of medicinal plants in Chiapas, Mexico," in *Globalization, Health, and the Environment: An Integrated Perspective*. Edited by G. Guest, pp. 83-106. Lanham, MD: AltaMira Press.
- Cook, W. M., D. G. Casagrande, D. Hope, P. M. Groffman, and S. L. Collins. 2004. Learning to roll with the punches: Adaptive experimentation in human-dominated systems. *Frontiers in Ecology and the Environment* 2:467-474.

- Cordano, M. and I. H. Frieze. 2000. Pollution reduction preferences of U.S. Environmental Managers: Applying Ajzen's Theory of Planned Behavior. *Academy of Management Journal* 43:627-641.
- Cordano, M., S. Welcomer, R.F. Scherer, G.P. Rands, L. Pradenas & V. Parada. "A Cross-cultural Analysis of Measures of Environmental Attitudes, Beliefs, Norms, & Values." 2006. Presented at the Annual Meeting of the Academy of Management, Atlanta, GA, August 2006.
- Crismon, S. 2005. Negotiating the Borders of Empire: An Ethnography of Access on Kwajalein Atoll, Marshall Islands. Ph.D. Dissertation, University of Georgia.
- Dunlap, R. E., and W. R. Catton. 1994. Struggling with human exemptionalism: The rise, decline and revitalization of environmental sociology. *American Sociologist* Spring 1994:5-30.
- Fairclough, N. 1995 Critical Discourse Analysis. London: Longman
- Flannery, B. L. and D. R. May. 2000. Environmental ethical decision making in the U.S. metal-finishing industry. *Academy of Management Journal* 43:642-662.
- Gibbs, G. 2002. Qualitative Data Analysis: Explorations with NVivo. London: Open University Press
- Hess, J., K. Nero, and M. Burton. 2001. Creating Options: Forming a Marshallese Community in Orange County, California. *The Contemporary Pacific* 13(1): 89-121.
- Hines, J.M., H.R. Hungerford and A.N. Tomera. 1986-87. Analysis and synthesis of research on responsible pro-environmental behavior: A meta-analysis. *Journal of Environmental Education* 18(2):1-8.
- Hope, D., C. Gries, D. Casagrande, C. L. Redman, N. B. Grimm, and C. Martin. 2006. Drivers of spatial variation in plant diversity across the Central Arizona-Phoenix ecosystem. *Society and Natural Resources* 19:101-116.
- Hunter, Lori M. 2000. A Comparison of the Environmental Attitudes, Concern, and Behaviors of Native-Born and Foreign-Born U.S. Residents. *Population and Environment* 21(6): 565-580.
- Kincaid, D. 2000. Social networks, ideation, and contraceptive behavior in Bangladesh: a longitudinal analysis. *Social Science and Medicine* 50:215-231.
- Kollmuss, A., and J. Agyeman. 2002. Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research* 8:239-260.
- Loehlin, J. (1991). *Latent variable models: An introduction to factor, path and structural analysis*. Hillsdale, NJ: Lawrence Erlbaum.
- McIlvaine-Newsad, H. 2003. Ojalá que lluev  algo en el campo: Cultural Influences of Development. *International Journal of Agricultural Resources, Governance and Ecology*, Vol. No. 2, pp. 153-166.

- McIlvaine-Newsad, H. 2006. Unravel the Gordian Knot. in 147 Practical Tips for Teaching Sustainability: Connecting the Environment, the Economy, and Society. Timpson, W., B. Dunbar, G. Kimmel, B. Bruyere, P. Newman, and H. Mizia Eds. Madison, WI: Atwood Publishing.
- McIlvaine-Newsad, H. and M. J. Clark. 2006. Community Health Mapping: Participation, Collaboration and Positive Outcomes. Public Health Practice in Illinois. Volume 6, Number 2, pp. 41-48.
- McIlvaine-Newsad, H. C. Merrett, and P. McLaughlin. 2004. Direct from Farm to Table: Community Sponsored Agriculture in Western Illinois. Culture and Agriculture. Vol. 26, No. 1-2, pp. 149-163.
- McIlvaine-Newsad, H., M. Dougherty, and A. Sullivan. 2003. Operationalizing the Household Timeline. Field Methods. Vol. 15, No. 3, pp. 305-317.
- McKenzie-Mohr, D., and W. Smith. 1999. *Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing*. Gabriola Island, Canada: New Society Publishers.
- Merrett, C. W. Maakestad, H. McIlvaine-Newsad, and P. McLaughlin. 2006. Slow Food Lessons for a Fast Food Nation. Ethics and the Politics of Food: Proceedings from the 6th Congress of European Society for Food and Agricultural Food Ethics. The Netherlands: Wageningen Academic Publishers.
- Rands, G. & M. Starik, "Ecologically Sustainable Governments: A Framework and an Application." Accepted for presentation at the Annual Meeting of the Association for Public Policy Analysis and Management, Madison, WI, November 2006.
- Rands, G., B. Ribbens, D. Casagrande & H. McIlvaine-Newsad, "Envisioning an Ecologically Sustainable Society: Development and Application of a Framework." Presented at the Annual Meeting of the Academy of Management, Atlanta, GA, August 2006.
- Rands, G., Ribbens, B., Casagrande, D. and Mc-Ilvaine-Newsad, H. In press. Envisioning An Ecologically Sustainable Society: An Ideal Type and an Application. Accepted for Edward Elgar published volume titled Organizations and the Sustainability Mosaic: Crafting Long-Term Ecological and Societal Solutions, edited by Sanjay Sharma, Mark Starik and Bryan Husted.
- Rands, G.P. "Environmental Attitudes, Behaviors and Decision Making: Implications for Management Education and Development," 1990. In W.M. Hoffman, R.E. Frederick, & E.S. Petry, Jr. (eds.), The Corporation, Ethics, and the Environment. New York: Quorum Books, 269-286.
- Relang, Jackeo, (2000), Marshall Islands Statement to the United Nations at the Fifty-Fifth Session of the General Assembly of the United Nations on September 21, 2000.

- Ribbens, Barbara and Eric Ribbens (1999), 'Searching for sustainability in the Marshall Islands: development dreams clash with ecological reality', in Walter Wehrmeyer and Yacob Mulugetta (eds.), Growing Pains: Environmental Management in Developing Countries, Sheffield, UK: Greenleaf Publishing, pp. 283-295.
- Romney, A. K., S. C. Weller, and W. H. Batchelder. 1986. Culture as consensus: A theory of culture and informant accuracy. *American Anthropologist* 88:313-338.
- Rowa, Aenet, 2005. Orange County Marshallese Face Challenges Together. Yokwe Online (www.yokwe.net/index.php?name+News&file=articles&sid=1088)
- Schensul, J., M. LeCompte, B. Nastasi, and S. Borgatti. 1999. Enhanced Ethnographic Methods: Ethnographer's Toolkit – 3. Walnut Creek, CA: AltaMira Press.
- Starik, M. & G.P. Rands. 1995. "Weaving an Integrated Web: Multilevel and Multisystem Perspectives of Ecologically Sustainable Organizations," *Academy of Management Review*, 20, 4, 908-935.
- Stepp, J. R., E. C. Jones, M. Pavao-Zuckerman, D. Casagrande, and R. K. Zarger. 2003. Remarkable properties of human ecosystems. *Conservation Ecology* 7:11.
- Wackernagel, M. May 12, 2006. Personal communication.
- Wackernagel, M., and W. Rees. 1996. *Our ecological footprint: Reducing human impact on Earth*. Gabriola Island, BC: New Society Publishers.
- Wackernagel, M., D. Moran, S. Goldfinger, and J. Kitzes. 2006. "Ecological footprint accounting: Comparing resource availability with an economy's resource demand," Published by Global Footprint Network.
- Wilson, T. D. 1994. What determines where transnational labor migrants go? Modifications in migration theories. *Human Organization* 53:269-278.
- Wilson, T. D. 1998. Weak ties, strong ties: Network principles in Mexican migration. *Human Organization* 57:394-403.
- Yokwe Online. 2006. Reports: A Summary of Policy Recommendations from Marshall Islands Social and Economic Report. September 26, 2006. Accessed online at www.yokwe.net/modules.php?name+News&file=article&sid=1504

BUDGET

Fall 2006 URC Application

Item	Mangmnt	Soc/Anth	College Arts & Sci.	College Bus. & Tech.	URC	Total
Commodities					550.00	550.00
Travel	602.70	602.70	600.00	600.00	4200.00	6605.40
Contractual					250.00	250.00
Total	602.70	602.70	600.00	600.00	5000.00	7405.40

Budget Justification (Explain the necessity and cost basis for each item. Attach an additional page if necessary).

Commodities. Commodities include supplies and photocopying. Included in the amount requested from the URC are two digital tape recorders (\$150.00 each), Wavpedal transcription software and peripherals (\$200.00), and another \$50.00 for miscellaneous supplies.

Travel. The University Research Council grant is being asked to pay for travel associated with this project. There are three Marshallese settlements in the United States that we have identified as suitable for fieldwork. The fieldwork sites are located in Springdale, Arkansas; Salem, Oregon; and Costa Mesa, California. For the Springdale Arkansas site all four researchers will travel by car to the community. For the remaining two sites, two researchers will conduct the interviews. The researcher teams will consist of one male and one female from each discipline. The following table shows a detailed breakdown of the anticipated travel expenses.

Travel Budget

Field Site	Mileage/Plane	Hotel	Per Diem	Rental Car
Springdale, AK	920 miles RT \$409.00 with personal car	4 nights of lodging for 2 rooms (rooms will be shared) \$880.00	5 days for 4 individuals \$512.00	NA
Salem, OR (fly into Portland airport)	2 RT plane tickets \$740.00 RT mileage to Moline airport \$71.20	4 nights for 2 rooms \$880.00	5 days for 2 individuals \$256.00	5 days \$225.00
Costa Mesa, CA	2 RT plane tickets \$1200.00 RT mileage to Moline airport \$71.20	4 nights for 2 rooms \$880.00	5 days for 2 individuals \$256.00	5 days \$225.00
Totals	\$ 2491.40	\$2640.00	\$1024.00	\$450.00

Contractual. We are requesting \$250.00 in contractual funds from the URC to provide food for the focus groups, childcare, and possibly to place ads in the local paper to find participants for the interviews. Though we already have established contacts in the areas, and the community members have expressed interest in our research, we may need to advertise in order to secure sufficient numbers of participants during the short time we are in the field.

Appendix I. Focus Group Opening Questions

1. How is life here different from the Marshall Islands?
2. (freelist exercise in small groups) Please write down a list of all the words you think of to describe the Marshall Islands and Springdale Arkansas
3. If you could live anywhere, what would your ideal environment look like?
4. What about your description makes it ideal?
5. What are some problems you have encountered in the Marshall Islands and here?
6. Do you feel personally responsible for your current conditions?
7. How do you think those around you feel about the problems you have described?
8. What could you do to improve your environment?
9. Who do you rely on to get information about how to solve problems?
10. Can you give us an example of trying to make a change and how successful you were?

Additional Questions for Individual Interviews

1. How long have you been in the United States?
2. How old were you when you came?
3. Can you describe your decision to move to the United States?
4. Who do you rely on for help to solve problems?
5. For each of these people, how often do you talk with them?

We will also include the Ecological Footprint Protocol developed by Wackernagel to estimate an individual's impact on the environment.

Appendix II. Research Timeline

Methodology/Activity	Individual Responsible for Activity	January	February	March	April	May	June	July	August
Interviews, Participant Observation & Focus Groups	Researchers	Springdale, Arkansas		Salem, Oregon and Costa Mesa, California					
Transcription & Coding of Data	Graduate Assistants	————	————	————	————				
Develop Questions for Surveys and Protocol for Participant Observation	Researchers				————	————	————		
Apply for External Funding	Researchers					US EPA Proposal		NSF Proposal	
Presentation of Findings	Researchers			Society for Applied Anthropology Meetings			Greening of Industry Conference on Social and Ecological Sustainability		Academy of Management meeting

———— indicates work in progress by various personnel