



## Geography in interdisciplinarity: Towards a third conversation

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### ABSTRACT

The 'era of interdisciplinarity' heralds collaborative inquiry as effective for addressing complex issues at the nexus of disciplinary interests. Geographers have long argued that they are particularly well-suited to contribute to interdisciplinary endeavors because of the breadth and depth that the discipline enfolds. However, within the literature about geography and interdisciplinarity, we find only two rather limiting conversations. The first conversation is concerned with the role(s) and position of geography within academia and focuses on what geographers can do to distinguish themselves while also improving their interactions with scholars from other disciplines. The second conversation largely revolves around how best to conduct interdisciplinarity 'in the lab and classroom' and focuses on practical issues associated with making collaborative research operate smoothly for multiple, disciplinary participants. We propose opening up intellectual space for a third conversation about the benefits, challenges and contributions of individual disciplines in interdisciplinary environments. Using survey data, we analyze how geography was perceived by collaborators from various disciplines in an interdisciplinary Urban Ecology program at the University of Washington. We offer this pilot study as a heuristic for others wishing to perform similar small-scale reflexive exercises and advance this "third conversation".

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### 1. Introduction

Interdisciplinarity (IDR) as a framework for conducting innovative research is increasingly central to many geographic studies, and is also highly valued as part of the graduate and, increasingly, undergraduate, pedagogical and research experience in many higher education institutions around the world (e.g. Leshner, 2004; NERC, 2000; COSEPUP, 1995). So prominent are these interdisciplinary frameworks, they have precipitated numerous studies examining their benefits and challenges as well as how they can best be implemented and maintained to improve program outcomes for all participants (e.g. Ivanitskaya et al., 2002; Sung et al., 2003; Rhoten and Parker, 2004; Graybill et al., 2006). We find that foregrounding these and other geography-oriented explorations of interdisciplinarity (e.g. Schoenberger, 2001; Murphy, 2006), and placing them in their historical context, reveals a critical lacuna between two recurring conversational threads, one meta-level dialogue on the role of geography within academia and the other on the "nuts and bolts" process of making interdisciplinary programs 'work'. While both conversations have produced valuable lessons for the discipline of geography and the field of interdisciplinary studies, respectively, we proffer a 'third conversation'

to fill this knowledge gap and to examine how disciplinary participants in interdisciplinary endeavors can improve their day-to-day contributions.

We envisage this conversation will help geographers better cultivate their contributions in rigorous, multi-year interdisciplinary settings involving scholars from the natural and social sciences and the humanities. While a recent *Geoforum* special issue (March 2008) focused on IDR and addressed several important issues associated with intra-departmental collaboration, including pit-falls and opportunities associated with convening scholars from different disciplinary backgrounds (especially see Harrison et al., 2008; Lau and Pasquini, 2008), we find it useful to expand on this examination of geography as interdisciplinarity and explicitly explore geography *in* interdisciplinarity (see for example Petts et al., 2008).

Given the growing interest in IDR and subsequent reports on how to foster and improve such programs, Harrison et al. (2008) pose a targeted question: "Do Geographers wish to rise to the [interdisciplinary] challenge?" We argue that if geographers do indeed wish to meet this challenge and increase and optimize our cross-disciplinary collaborative engagements, it will require publicly sharing our experiences as geographers functioning in interdisciplinary academic forums. By examining our role in interdisciplinary research projects, we will be better equipped to advance geographical theory and approaches to research within innovative cross-cutting programs. We view this paper therefore, as well as many of those found in the March 2008 *Geoforum* special

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issue, as part of this third conversation about geography in interdisciplinarity. We define interdisciplinarity here as the synthesis of two or more disciplinary approaches applied to the study of a common research problem.

One way to better understand the contributions of geographers participating in interdisciplinary research and pedagogy is through reflexive assessment. Lélé and Norgaard (2005, p. 975) for example, indicate that “practicing interdisciplinarity” necessitates looking inwards at individual disciplinary personas and suggest that “contrary to their disciplinary training, participants need to be self-reflective about the value judgments embedded in their choice of variables and models”. We consider reflexive assessment to include a systematic evaluation of individuals by their peers. This includes reflecting on individual positionalities including perceptions of geography and of interdisciplinarity more generally (see Lau and Pasquini, 2008). We suggest that reflexively addressing how geographers are experienced in interdisciplinary environments (we use this term to connote the spaces of intellectual inquiry where interdisciplinary studies are practiced) may be useful for assessing the strengths and limitations of geographers as interdisciplinary colleagues, and for understanding how collaborative inquiry may be improved.

In this paper, we draw on geographic and other disciplinary literature to highlight two prominent ‘conversations’ about interdisciplinarity. From this review, we suggest that while these conversations are valuable, they must be bridged to open space for a third conversation about the contributions that individual disciplines (in this case, geography) make in interdisciplinary environments. We draw on international (mainly US and UK based) literature to make assertions about the role(s) of geographers in IDR programs in hopes of representing a broad range of geographers in multiple cultural and institutional settings. To initiate this third conversation, we present the survey results of a reflexive assessment of our participation as geographers in an interdisciplinary program in Urban Ecology at the University of Washington.

It is important to keep in mind that the University of Washington program in question was relatively small and contained a unique organizational structure and blend of participants. This arrangement should therefore not be viewed as representative of other programs. In general, lessons will vary between assessments performed at institutions and programs of different size, structure and location. The goals and anticipated benefits of this pilot study are twofold and reflect these limitations. First, on a heuristic level, we hope findings from our study will initiate a long-term, discipline-wide conversation on the role of geographers in interdisciplinary settings. We therefore encourage other geographers contribute to this conversation by performing similar assessments in other cross-disciplinary collaborative environments. Once replicated we suggest aggregating assessment results into a much larger data set capable of generating more robust and far-reaching lessons. Second, we expect that such reflexive exercises – especially when performed at nascent stages of collaboration – will pay more immediate dividends by substantively improving the experiences of all interdisciplinary colleagues.

## 2. Geography and conversations about interdisciplinarity

### 2.1. Conversation 1: geography, interdisciplinarity and the academy

Geography’s suitability for interdisciplinarity has long been a theme in discussions about collaborative research within the academy. A 1965 report by the National Academy of Sciences and National Research Council stated that geography contained “the development of a more or less common language for communication for the first time among all the pertinent branches of science through mathematical science and systems analysis” (NAS-NRC,

1965). This sentiment remains alive over 40 years later, as numerous geographers and scholars in other disciplines agree that geography is “well placed to bridge the human and environmental” (Petts et al., 2008, p. 600) and provides fertile ground for conducting research that brings together natural and social science issues, particularly related to environmental issues.

For example, Zimmerer states that human geography is “especially well positioned for probing the multifaceted ideas in the “new ecology”” (Zimmerer, 1994, p. 118), which is premised on integrating the social and natural sciences in pursuit of understanding environmental issues. Skole echoes this sentiment by suggesting that the challenges of emerging global environmental issues “extend beyond current disciplinary frameworks” and that “geography is placed at the center of this emerging new transdisciplinary synthesis science” (Skole, 2004, p. 739). During her centennial keynote address at the 2004 AAG Conference, Colwell suggested that geography is “the original multidisciplinary discipline – the ultimate field of confluence” not only in substance but also in practice, where “Geographers point the way for interdisciplinary approaches” (Colwell, 2004, p. 705). Evans and Randsalls (2008, p. 582) summarize these sentiments succinctly when stating that geography’s “own “interdisciplinarity” is actually “intra-disciplinary” – science and humanities contained within one discipline” (italics in original).

Others express interest in establishing a role and identity for geography that is unique, harmonious, and synthesized, yet still competitive, with other integrative-science programs (e.g. Turner, 2002a; Gober, 2000; Hanson, 1999). *Geoforum’s* 2002 discussion among Thrift; Johnston and Turner exemplifies the pervasive and contentious nature of these broad, disciplinary self-assessments. These authors comment on geography’s future within the academy by assessing the discipline’s strengths and weaknesses, political strategies for attaining intellectual vibrancy, and the need to reevaluate dominant articulations of the current state of geography. Schoenberger adds to this conversation by discussing the challenge of establishing “genuinely interdisciplinary engagement” from geographical perspectives without relinquishing control over the terms and use of geography (Schoenberger, 2001, p. 10). Seeing geographers as central players in the melting pot of “synthesis science” (Zimmerer, 1994; Skole, 2004; Colwell, 2004), Schoenberger calls for ‘disciplinary control’ through the selective solicitation of ‘interlocutors’.

Similar concerns over the impact of geography are expressed in the context of the public sphere. In a conversational forum drawing on input from numerous geographers, Murphy writes that geographers should engage in public debates because we “have something to say about everything from homelessness to climate change” (Murphy et al., 2005, p. 165). Harm de Blij adds that the public perceives geographers as bringing a “fresh, insightful, thought provoking, often surprising, and... invariably welcome” perspectives to world events (Murphy et al., 2005, p. 169). Thus, he concludes that geographers should increase their profile outside of academia, a transition Turner describes as moving from geography with a little ‘g’ to a big ‘G’ (Murphy et al., 2005, p. 173). Doing so, he writes, will sustain our discipline and influence important and public fields of inquiry.

Murphy utilizes this forum as a starting point for his 2006 report on *Enhancing geography’s role in public debate* where he takes an important analytical step by beginning to assess the role of geographers in interdisciplinarity. Murphy laments the “paucity of visible studies” by geographers on important contemporary debates (Murphy, 2006, p. 1). Traveling outside the academy, Murphy critiques the role of geographers in the public sphere, providing substantive recommendations for increased and more effective public exposure, including the need to foster interdisciplinary dialogue. In the spirit of his own recommendations, Murphy initiates a meta-level

reflexive exercise to assess the research questions, scalar conceptions and theoretical orientations of geographers in the sphere of public debate.

Yet while this first conversation focuses primarily on the opportunities and barriers for geography as it utilizes its inherent diversity to cross traditional disciplinary and academic-public boundaries, such studies remain sparsely populated with substantive descriptions of how geographers actually participate in interdisciplinary endeavors. How geographers engage with ideas and researchers in other disciplines, and how they are perceived by other disciplines as they reach across divides are questions rarely broached.

## 2.2. Conversation 2: making interdisciplinarity work

A legion of work – by both geographers and other scientists – exists outlining the dos, don'ts, challenges and benefits of interdisciplinary programs, particularly those concerned with human-environment interactions (e.g. Ivanitskaya et al., 2002; Sung et al., 2003; Musante, 2004; Rhoten and Parker, 2004; Graybill et al., 2006; Lau and Pasquini, 2008; Petts et al., 2008). Numerous studies examine specific issues that arise when performing interdisciplinarity, such as learning/creating a common language, developing the professionalism needed for cross-disciplinary interaction, accommodating the extra time needed for team work, and learning to understand and value different kinds of scholarship (e.g. Klein, 1996; Palmer, 2001; Lélé and Norgaard, 2005). Cross-disciplinary research has undergone such scrutiny that it has forced researchers and practitioners to rethink and differentiate between its various forms (e.g. Neff, 2005; Weingart and Stehr, 2001; Klein, 1996; Chubin, 1986). Indeed, the broad scope of contemporary interdisciplinary endeavors has resulted in an increasingly standardized typology of cross-disciplinary collaboration where multidisciplinary research involves researchers from two or more disciplines; interdisciplinary research entails the synthesis of two or more disciplinary approaches; and transdisciplinary research involves the integration of non-academic practitioners with academics (Tress et al., 2003).

A large portion of this conversation has revolved around addressing the cultural (disciplinary) and institutional barriers to interdisciplinarity and highlighting the need to share a common language and common research goals across disciplines (Nicolson et al., 2002; Sung et al., 2003; Klein, 2005). Other scholars emphasize how interdisciplinary endeavors should be sensitive to the epistemological and value-based commitments present in knowledge claims across disciplines (Jones et al., 1999; Fry et al., 2003). Yet interestingly, the March 2008 special issue of *Geoforum* focusing on crossing boundaries and evaluating interdisciplinarity – albeit primarily from within the field of geography – is one of the first themed issues in a geographical journal devoted to this topic.

While the focus in this conversation on administrative, institutional, pedagogical, research and interpersonal components of instituting successful cross-disciplinary endeavors is valuable, it does not reflect upon the actual, everyday experiences of interdisciplinarity from disciplinary (geography or otherwise) perspectives. Lélé and Norgaard (2005) describe how eliminating barriers to effective interdisciplinarity and devising common project objectives requires disciplinary collaborators to reflect upon their own positionality within the collaborative setting. We follow this perspicacious advice and engage a third conversation to explore how geographers are perceived, by our collaborators, to participate in interdisciplinary programs.

## 2.3. Towards conversation 3: reflecting on geography as an interdisciplinary partner

Over 40 years since the NAS-NRC report detailed geography's capacity for integration across "pertinent branches of science",

few scholars have addressed how geography actually integrates into interdisciplinary projects. For all of the valuable ruminations on the perceived and actual contributions of geography to academia writ large, contributors to Conversation 1 are ultimately more interested in the perception of geography by other disciplines as it searches for "a full seat at the academy's head table" (Turner, 2002a, p. 63) than in how we as geographers actually step out of our disciplinary boxes to interact in face-to-face interdisciplinary collaboration. Conversation 2, with an emphasis on 'making interdisciplinarity work', has focused on the institutional and programmatic dimensions of interdisciplinary programs, not on the impact of IDR on disciplinary programs. While these studies contribute to the construction of functional and productive interdisciplinary collaboration, they do not discuss issues pertinent to individual disciplines attempting to negotiate and bridge these barriers.

The literature on conducting interdisciplinarity is thus largely void of reflexive accounts of participation from individual disciplines. The existing prominent conversations, including the "Conversation across the divide" forum (March 2008) held in this journal, only rarely proffer substantive details regarding how geography is actually experienced by scholars residing in other departments and colleges over the duration of a long-term collaborative agenda, or how specific geographical concepts are communicated and translated between disciplines (see Petts et al., 2008). We advocate for, and demonstrate, using a pilot study, how to participate in a third conversation that works towards assessing how geography is performed and perceived in interdisciplinary settings.

## 3. A reflexive exercise

Our student and faculty colleagues involved in an interdisciplinary program in Urban Ecology at the University of Washington (UWUE) were surveyed to assess how they experienced concepts in geography as introduced by four human and nature-society geographers. Twenty-five faculty and doctoral students participated in the UWUE program representing the disciplines of Anthropology, Biology, Earth Sciences, Geography, Natural Resources Policy, Urban Design and Planning, and Wildlife Ecology. Three graduate students and one faculty from Geography participated in the UWUE program. The requirements of each participating graduate student included weekly seminars, collaborative teaching, and interdisciplinary team research. Seminars varied, but generally consisted of discussions about problem-based issues, urban ecological theory building and debates concerning the relationship between urban areas, nature and society. In research teams, doctoral students developed a publishable research project reflecting an interdisciplinary agenda that blended research methods and theories. All students also collaboratively developed and taught an undergraduate course in Urban Ecology. (See Fig. 1 for a summary description of the UWUE program structure.) Examples of student and faculty contact with scholarship in geography included discussions in the following research domains: consumption, critical science studies, environmental justice, political ecology, political economy, post-structuralism and urban geography. We realize many concepts and theories found in these research domains are also utilized by other participating disciplines. However, in the context of our program, geographers initiated discussions and readings on these topics.

Our evaluation of this program stands as a preliminary study in this third conversation. The results of this research are time and place specific, because (a) these experiences with 'geography' are based on exposure to only a small population of faculty and graduate student geographers at the University of Washington who in no way represent the vast diversity and breadth of geography scholarship; and (b) the UWUE context – group dynamics, individual personalities, program structure, intellectual orientations of

Urban Ecology at the University of Washington			
<p><b>Background:</b> The University of Washington's Urban Ecology (UWUE) Integrative Graduate Education and Research Traineeship (IGERT) Program's goal is to create an integrated learning environment where real-world urban environmental issues are explored by participants from various epistemological, theoretical and methodological backgrounds. Funded by the National Science Foundation (NSF), twenty-five doctoral students in three cohorts participated in the UWUE program and represent the disciplines of Anthropology, Biology, Earth Sciences, Geography, Natural Resources Policy, Urban Design and Planning, and Wildlife Ecology throughout the 2001 – 2005 academic years.</p> <p>Core elements of the IGERT Program in Urban Ecology for each cohort are provided in the following table.</p>			
Program Activity	Details	Timeline	Inputs from Geography
Seminar Series	Includes discussions about problem-based issues, urban ecological theory building and philosophical debates on the relationship between urban areas, nature and society.	First 2 years of PhD program	Throughout, geographers initiated engagement with the following scholarly fields: Consumption, critical science studies, cultural ecology, environmental justice, political ecology, political economy, post-structural studies and urban geography.
Collaborative Teaching	Graduate students collaboratively develop and teach an undergraduate course in urban ecology.	Year 2	
Team Research	Participants develop a publishable research project reflecting an interdisciplinary research agenda blending multiple research methods and theories.	First 2 – 3 years of PhD program	
<p><b>Benefits:</b> Contemporary urban ecologists find that traditionally separated ecological and social science theories and research do not provide adequate understandings of human-dominated systems. The collaboration of natural and social scientists participating in the UWUE program provides a "welcome development that unsettles the long standing separation of urban and environmental studies" (Braun 2005: 635). Indeed, in order for natural and social scientists to overcome past research biases, fields like urban ecology serve to "...knock down the walls, rather than scale them, to integrate diverse disciplines into a synthetic research area" (Collins et al. 2000: 414).</p>			

**Fig. 1.** Urban Ecology at the University of Washington. (See above-mentioned references for further information.)

participants and representative departments – in which these issues are raised are unique. We recognize that if leadership roles were occupied by faculty with different academic backgrounds, or if areas of collaborative learning revolved around alternative questions, the outcomes of this pilot study would look much different. Moreover, the particular institutional and geographic setting of this program significantly influenced assessment outcomes. An IDR program at a liberal arts college or land grant institution (University of Washington is neither) may look very different than the collaborative program assessed in this study due to dissimilar research and teaching expectations, available lab resources, community extension requirements and preexisting levels of disciplinary integration. Similar distinctions may also occur between programs in the US and UK that are structured around established disciplin-

ary performance expectations, cross-campus engagement opportunities, and institutional acceptance for IDR programs. Finally, our interdisciplinary colleagues' engagement with geography occurred almost exclusively with nature-society geographers. This study cannot make claims about the perceived interdisciplinary contributions of physical geographers or members of other human geography sub-fields. The experiences of our interdisciplinary colleagues therefore do not necessarily reflect the experiences of other scholars working with geographers in other cross-disciplinary settings. Despite these limitations, this small-scale assessment of geography in interdisciplinarity demonstrates the practical utility of performing reflexive assessment in collaborative forums. The objective of this third conversation is to eventually pool findings from similar studies in other interdisciplinary settings into a larger

data set capable of producing more robust and far-reaching analysis. This assessment therefore represents an important *first step* towards achieving a discipline-wide reflexive conversation.

We solicited survey responses from all non-geography participants in the UWUE Program. Responding participants included both student ( $n = 15$  of 20) and faculty ( $n = 3$  of 5) colleagues, for a total number of 18 of 25 participants. The four geographers participating in the Urban Ecology Program did not take the survey. While we understand the exclusion of geographers in the survey to be a limitation of our study, it does not deny the analytic importance of our colleagues' perspectives, which can shed valuable light on the role of geographers in interdisciplinary programs. Part of being reflexive in an interdisciplinary setting is evaluating how others perceive and experience you.

All participants received the same survey. The survey was comprised of four questions pertaining to geography's contribution to the interdisciplinary field of Urban Ecology. Specifically, participants were asked to (1) list unique contributions geography makes to the field of urban sustainability/Urban Ecology, (2) list any aspects (ideas, frameworks, concepts, etc.) of geography that they feel contributed positively or negatively to a practical and theoretical understanding of urban sustainability/Urban Ecology, (3) describe what geographers could do better as interdisciplinary colleagues, and (4) define their understanding of the field of geography since participating in the UWUE program. Prior to analysis, all surveys were stripped of their names and coded to provide as much anonymity for participants as possible. Both authors qualitatively analyzed all of the data, and coded the data for keywords and themes (i.e. ideas about geography, practical vs. theoretical nature of geography). We analyzed half of the data separately, and then switched sections to check the other's analysis for consistency in technique and language. Finally, we met and discussed the results of the coding and sorting for all interviews.

Survey responses varied tremendously between each program participant. Although responses frequently clustered around a handful of positions, these response groups rarely exceeded 50% of the total surveyed population. We therefore draw explanatory power from these data by focusing on the three or four largest consensus groups that reflect the most commonly held perceptions of Geography and its role in interdisciplinary environments. Once compiled with other similar studies, we expect much of the response diversity will be eliminated as themes are consolidated in order to target frequently cited perspectives of Geography. For now, we have retained the diversity of responses (many with response rates below 50%) in order to highlight the different types of themes mentioned by our colleagues.

#### 4. Working with geographers: perceived contributions, benefits and challenges

##### 4.1. Perceived contribution

The perceived contribution of geography to the interdisciplinary Urban Ecology Program varies greatly among individuals. As Lau and Pasquini (2008, p. 552) suggest, the positionality of every colleague is "informed by, and informs disciplinary contexts" and the personal experiences of every participant plays a role in how they perceive the contribution of a particular discipline or individual to collaborative process. Our most notable result was the high variability of responses attempting to characterize geography's precise contribution. Lack of consensus, however, should not be mistaken for a lack of perceived influence. Four themes in particular emerge that characterize many of the perceived contributions made by geography.

- *Theme 1: Integrated human-environment perspective.* Nearly forty percent of respondents perceived that geography brings a "socio-cultural context into the study of nature", which introduces "a framework for thinking about humans and the environment together". Natural scientists, however, were more apt to note the "human-centric" aspect of geography by noting how geographers "emphasize the presence and influence of humans and human drivers that impact urban systems".
- *Theme 2: Diverse understanding of cities.* Thirty-three percent of respondents believed that geography promotes a diverse understanding of how cities function. Respondents indicate that geographers' willingness to examine geographically diverse places encourages the integration of other national and global approaches to managing urban environments. Two-thirds of these respondents felt that knowledge about diverse geographical locations lends itself to effective comparative urban ecological analysis.
- *Themes 3: Attention to scale.* Twenty-eight percent of respondents indicate that the concept of geographic scale contributed to a more nuanced understanding of urban, suburban and rural designations. Respondents also cite how a critical engagement with issues of scale reminds them of the analytical purchase of delineating multiple urban systems and phenomenon, and connecting local with regional or global systems.
- *Theme 4: Challenging assumptions.* Twenty-eight percent of respondents also acknowledge the critical nature of geography and the tendency of geographers to question the assumptions, norms and practices underlying everyday environment-society interactions. Specific critical ecological approaches referenced by respondents include acknowledging polyvocality, the destabilization of scientific orthodoxies and inequities associated with managing nature and negative environmental externalities. According to UWUE respondents, this perspective added "considerable and important philosophical layers to our discussions".

##### 4.2. Perceived benefits and challenges

Respondents leveled a series of positive and critical assessments of the language and conceptual frameworks they associated with geography. By far the most frequently cited positive aspect of geography is its critical and philosophical contribution (44% of respondents) to the Urban Ecology Program, which participants indicate make Urban Ecology more "thought provoking" and "interesting". Particularly helpful were "higher-level" philosophical debates introduced by geographers concerning the social dimensions of urban nature, including both its historical-material and cultural-representational construction. Also highly valued by respondents were geographers' propensity to challenge assumptions and ability to "witness, understand and participate in the forging of new conceptual points of view". Along these lines, geographers are credited with challenging assumptions and interrogating 'taken-for-granted' knowledge concerning urban nature. The critical/philosophical contribution of geography, according to these respondents, seems to have a "broadening" influence on the interdisciplinary experience of many participants.

One of the most troublesome aspects of geography for participants in the Urban Ecology Program (28% of respondents) is the jargon associated with the field. Jargon tends to make theory in geography "opaque", as one respondent openly admitted. Geography is also critiqued by respondents (28%) for a perceived "lack of empirical grounding" and for relying too heavily on "unsubstantiated verbal arguments and thought exercises". One individual specifically expressed that "postmodernism is not helpful" as a way to approach problem-based social-ecological issues. (It should be noted here that none of the geographers in the UWUE program identify themselves as strict postmodernists per se, although intro-

duction of this material into the UWUE program seems to have had a lasting impact.) A significant percentage of participants (34%) also felt that geographers should become more receptive to natural science and should “find the synthetic kernel” for a given research project instead of looking only for unique case studies.

Respondents hold a range of perceptions of geography. Many understand geography to be about environment-society relations with a broad theoretical and empirical base that appreciates multiple perspectives. Some have simply come to see geographers as “not just demographers”. Others understand it to be a theory-based discipline largely concerned only with human dynamics. Alarming, many of our interdisciplinary colleagues (39%) have difficulty understanding what geography encompasses even after 4–5 years of interdisciplinary interaction.

## 5. Reflexivity amidst interdisciplinarity

Respondents were asked to assess the contributions, benefits and challenges of working with geographers. When reviewing responses, it became immediately apparent that there was little consensus, as no two respondents held similar opinions for all questions. Despite the high variability of responses both within and across all questions, perceptions of geography have not been muted or contradicted away. On the contrary, inconsistencies in participant responses provide a rich presentation of the various impressions geography makes on our interdisciplinary colleagues. That every individual perceives geography differently underscores the difficulty of communicating effectively with every last colleague.

The experiences of our colleagues highlight three important issues. Each issue is briefly addressed below. The goal here is not to project survey themes and recommendations as necessarily representative of other IDR settings. Rather our objective is to convey the potential for the third conversation to generate meaningful discussions on the role of geographers in interdisciplinarity.

### 5.1. We like what you are saying, just not how you are saying it!

Participants in UWUE held a favorable view of the critical and philosophical perspectives brought by geographers to the field of Urban Ecology. Forty-four percent of respondents found this contribution helpful. Participants appreciated exploring “thought provoking” questions that seek to understand why we plan for, and respond to, urban environments in particular ways. These discussions typically attempted to unearth the taken-for-granted assumptions lying behind human actions and cultural norms. While participants seemed to find the concepts and questions raised by geographers interesting, the way we went about raising them, or the way they were discussed in the literature, was more troublesome. Specifically, respondents mention the use of too much “opaque” jargon on the part of geographers. Reconfirming this opinion, when UWUE participants were asked to describe how they understand geography, 39% indicated simply “not understanding” the discipline. These findings indicate that geographers had useful things to say but needed to work on making these ideas more accessible to our colleagues. In order to be better and more effective interdisciplinary colleagues, we may have benefitted from working with our IDR collaborators to establish mutual understanding and communication of geographical concepts. This is by no means a new challenge (see Klein, 1996), and is one that many disciplines have faced as they enter and successfully operate within interdisciplinary forums.

### 5.2. Challenging scientific orthodoxies or stepping on toes?

Geography is viewed favorably for its propensity to undertake critical approaches to Urban Ecology. Particularly helpful to the

UWUE community were readings and discussions intended to challenge scientific orthodoxies and expose the political and social dimensions of scientific knowledge production and policy formation. On the other hand, 17% of respondents felt geographers could in turn be more receptive to the natural sciences. These participants noted that geographers routinely cast doubt on scientific findings and were overly critical of natural scientists and their research approaches. Based on these sentiments, geographers appear to have stepped on the toes of many of our natural science colleagues. (It is worth emphasizing here that our natural science collaborators should undoubtedly match our reflexive assessments to better understand why they perceive, and are perceived by, geographers in this way.)

These two antithetical experiences – challenging orthodoxies and stepping on toes – reflect one of the major challenges of working in an interdisciplinary setting. While some members of the UWUE community enjoyed challenging largely-accepted scientific discourse, others were wary of such “antagonistic” literature, understanding it as stifling scientific discovery and limiting the value of applied research. Needless to say, all interdisciplinary scholars must be accommodating of research questions and agendas that challenge their philosophical moorings. Intensive exposure to multiple epistemological and methodological approaches will surely unsettle even the most seasoned interdisciplinary scholar. However, an important objective for geographers should be to avoid alienating (or being alienated by) colleagues from other disciplines. Particularly vulnerable to these critiques are human geographers working in the sub-fields of political ecology and science and technology studies where knowledge production, scientific discourse, and policy formation are routinely subjects of critical examination. Along with our fellow geographers, we may have benefitted from practicing *appreciative inquiry* in these encounters in order to maintain good rapport with our interdisciplinary colleagues (see Graybill et al., 2006).

### 5.3. Too integrated for interdisciplinarity?

On the one hand, it was heartening to discover that 33% of respondents thought geographers contribute an already-integrated perspective to the interdisciplinary setting. On the other hand, respondents seemed less than satisfied with geography’s integrated analytical approach. Geography was perceived by many to lack a coherent definition, with more than a few respondents indicating that the discipline may be too broad to make substantive contributions to Urban Ecology. Forty-four percent of respondents mentioned that geographers should work to improve their contribution by defining and narrowing the scope of the discipline. According to these participants, geography can improve its role in interdisciplinary programs by more clearly defining what it is and what it has to offer.

Although narrowing the breadth of studies within geography is not a realistic or desirable goal for geographers, improving our coherency for interdisciplinary colleagues is a more feasible and valuable endeavor. This could have been achieved by articulating to colleagues when our input and contributions were representative of important work in geography. This stance is also taken by Murphy (2006), who conveys his interest in making the contributions and implications of geography more transparent in both intellectual and public agendas. In other words, we needed to do a better job of conveying why our disciplinary knowledge ‘mattered’. Routinely pointing out the theoretical and technical work of geographers on such themes as space, scale, globalization and global-local connections may have generated important associations and geographical signifiers in the minds of our colleagues. Colwell’s description of Geography as “the original multidisciplinary discipline” was meant to highlight one of the discipline’s

strengths. However this study reveals that the very breadth and inclusiveness Colwell champions also worked to prevent some of our colleagues from clearly identifying the scholarly contributions of Geography.

Across all themes, survey responses from our interdisciplinary colleagues allude to some of the same challenges encountered by Lau and Pasquini (2008) when conversing across-disciplinary boundaries. The very structure of the UWUE and other similar programs oftentimes do not provide consistent, ongoing contact among all participants. This leads to decreased exposure and discussion among program participants on the theoretical framings that inform many human and nature-society geographers. For example, the statements by our colleagues imploring us to find the ‘synthetic kernel’, or to clearly extrapolate generalizable meaning from discussion of individual case studies was a point of frustration that may very well have been avoided with greater interaction and mutual disciplinary vetting. Given the opportunity, we could have demonstrated geography’s long-standing engagement with nomothetic approaches to urban studies – disciplinary approaches associated with the “quantitative revolution” that hold their roots in large part within the very same halls we occupied at the University of Washington. Program participants hoping to improve intellectual transparency and cross-disciplinary appreciation should, as an important first step, initiate reflexive assessments to reveal perceived and actual disciplinary objectives, contributions, benefits and challenges.

## 6. Conclusions

Two recurring conversations, one exploring the position of geography within the scientific academy and the second examining the nuts and bolts of practicing interdisciplinarity, have yielded productive discussions on how to improve the future direction of geography and interdisciplinary programs. By foregrounding and explicating these conversations, we note that each fails to adequately address the experiences of geographers, and members of other disciplines for that matter, operating in interdisciplinary lab and classroom environments. We suggest the need for a third conversation exploring the role and contributions of individual disciplines in sustained interdisciplinary research and learning environments. We have offered a pilot study to initiate this third conversation by exploring the perceived role and contributions of geography within one interdisciplinary setting (UWUE), thus helping to solidify what IDR may mean (Palmer, 2001), at least for one localized collaborative group of scholars. We sympathize with Harrison et al.’s (2008) call for achieving interdisciplinarity through intra-disciplinary projects that utilize the full breadth of scholarly orientations that comprise geography programs in many institutions. Efforts to improve conversations across these intra-departmental divides through critical program assessments are extremely useful and should be encouraged. However, we also recognize that many geographers (authors included) routinely look outwards to conduct collaborative research. Such cross-campus arrangements bring together individuals with vastly different academic and professional backgrounds that may also benefit from reflexive assessment by all parties.

From our preliminary study, three issues of concern stand out: using too much opaque jargon, appearing antagonistic to our natural science colleagues and failing to clearly present geographical theories and concepts. Actively addressing these issues may have improved the coherency, sensitivity and transparency of geographers participating in our program. We by no means feel that geographers alone should be so responsive: we have simply put the onus on geographers here to emphasize what individual disciplines can do to improve cross-disciplinary collaborations.

This conversation should not end with this study. Issues raised within this singular case are no doubt influenced by individual personalities and backgrounds, institutional characteristics, group size and dynamics, and the nature of material under discussion. Similar studies in other settings will result in different conclusions and suggestions for advancing collaborative, interdisciplinary research. We encourage other geographers participating in interdisciplinary ventures to undertake similar assessments in the hopes that such reflexive exercises will converge to form a vibrant third conversation on disciplinary accounts of interdisciplinarity. Once replicated in other settings we suggest that findings are aggregated within a much larger database capable of generating more robust and wide-ranging results. However, to qualify as a *conversation*, and to generate a more robust and informed set of conclusions, there must be an active exchange of ideas and experiences between geographers in national conferences, through externally funded projects, journal roundtables and individual communication (see Thomas Baerwald’s “The Interdisciplinary Opportunity” Presidential Column in the July/August 2007 AAG Newsletter).

We recognize that reflexivity on the part of geographers will be most rewarding when our internal assessments are matched by other disciplines. Accordingly, we recommend that reflexive efforts, such as the one we report on here, become standard, crucial and important interdisciplinarity team-building exercises early in the collaborative process. We welcome and encourage all groups engaged in interdisciplinarity research projects to perform similar types of investigations for each representative discipline. Finally, we suggest that higher value be placed on the heuristic and substantive importance of face-to-face, collaborative research forums when evaluating our position within the academy.

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