

Stakeholder Preferences for Process and Outcomes in Community-University Research Partnerships: Implications for Research Collaborations

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Abstract

Researchers in numerous fields assert that research partnerships involving academics and nonacademics are essential for developing solutions to pressing and complex problems. While theoretically justified and urgently needed, working across institutional and epistemological boundaries to produce knowledge and create solutions turns out to be complex and challenging. Given the potential and often realized challenges of collaborations, and the need for partners to come together to develop workable solutions, additional research is needed on process in research collaborations. With this paper, we contribute to the literature on process and outcomes in the development of community-university research teams. Specifically, we study local government officials' (LGOs) process and outcome preferences for engaging in community-university research partnerships and their perceptions of academic researchers. Our data were generated from open-ended responses to a statewide survey of LGOs in Maine, United States, during the scoping phase of a large-scale sustainability-focused research initiative. Our findings revealed that respondents' process preferences were influenced by such considerations as partners' willingness to codesign the partnership and the attendant research, and by having a shared understanding of partner needs and responsibilities. Stakeholders' outcome preferences were influenced by their perceptions of the type and relevance of the outcomes to all involved parties. We conclude with a discussion of how to use this data to initiate research partnerships and facilitate inclusive partnership processes. Being mindful of partners' process and outcomes preferences in research collaborations and being aware of the perceptions that partners bring to the table are important for achieving solutions that are inclusive, thoughtful, and ethical.

"If you don't want to hear our opinion... don't ask for it. We often get asked our opinion, and then something rolls out, and it doesn't sound anything like what we suggested." (Maine municipal official, personal communication, 2012)

As the quote above reflects, frustration with the way knowledge is used in scientific research and decision-making is a common concern of stakeholders participating in community-university research partnerships. Broadly speaking, these partnerships engage people outside of the academy as team members in the research process and emphasize conducting research *with* the community. Unlike other types of community engagement in higher education, such as service-learning, the primary goal of community-engaged research is to produce research that is relevant to both community partners and science, often with the hope of addressing specific problems, such as those related to sustainability (Silka, 2010; Silka & Renault-Caragianes, 2006). Recognizing that

"the problems of sustainability are not bounded by either disciplines or expertise" (Miller et al., 2014, p. 243), sustainability science researchers widely accept that stakeholder-university research partnerships are essential for addressing sustainability challenges (e.g., Kates et al., 2001; Lang et al., 2012). Among other outcomes, these partnerships strengthen data collection processes and project sustainability (O'Fallon & Dearry, 2002), deepen understanding of the different parts of the social-ecological system (Clark et al., 2016), and improve the likelihood of "co-creating useful solutions" (Hart et al., 2015, p. 9).

While theoretically justified and urgently needed, integrating individuals and groups across institutional and epistemological boundaries to produce knowledge (Scholz & Steiner, 2015) and create solutions is complex and challenging. Important questions arise about who can and should contribute to the scientific process, which stakeholders should be involved, and how to appropriately engage the spectrum of perspectives these stakeholders provide (Lélé & Norgaard, 1996).

In Maine, United States—where this study took place—and elsewhere, local users and managers, such as local government officials (LGOs), hold important knowledge about local social-ecological systems (Tengö et al., 2014) and are often lead decision-makers about the future of those systems. Their leadership in local decision-making makes them an important stakeholder group to involve in collaborative, community-engaged sustainability efforts (e.g., McLarty et al., 2014).

Through a qualitative analysis of open-ended questions included in a statewide survey of LGOs, we evaluated LGOs' interest in and opinions of how community-university partnerships should be developed in Maine. Our initial review of the data revealed that LGOs have particular ideas about how community-university partnerships should operate and have preconceptions of academic researchers that are important to understand when initiating partnerships. Thus, we asked the following research questions:

1. What are the most salient issues written about by stakeholders in relation to community-university research partnerships?
2. What do participants' preferences for engaging with and perceptions of university and college researchers imply about how to design and interact in community-university research partnerships?

We refer to community-engaged research as community-based participatory research (CBPR) and the partnerships in CBPR as community-university research partnerships. Because of the focus on *research* partnerships in this study, we think about community-university partnership processes in stages (e.g., Bieluch et al., 2017; Jones et al., 1999; Lang et al., 2012). Specifically, we discuss the stages that relate to conducting research and moving that research into decision-making (i.e., problem definition, developing research hypotheses or questions, gathering and analyzing data, and communicating and implementing those findings). Further, we focus on what we describe as the “scoping” phase of community-university research partnerships, or what D’Alonzo (2010) calls the “pre-research period,” a phase that comes before, or should come before, the problem-formulation stage of the research process.

We situate our study amid research on CBPR and sustainability science, and we argue that learning how to design and participate in community-university partnerships is crucial to conducting effective, solutions-oriented research. This study contributes to the sustainability science

and CBPR literature by offering insights on process, outcomes, and perceptions that may affect research partnerships between local governments and universities. Partner preconceptions matter and influence both interest in collaborative work (Hutchins et al., 2013) and how partners and university researchers engage in it (Bieluch et al., 2017). Identifying partners' preferences and perceptions provides researchers with valuable data on how to initiate and structure partnerships, the types of expectations partners may bring to the relationship, and potential barriers to working together.

Literature: CBPR and Sustainability Science

Scholars have given stakeholder-involved, problem-focused research many names, such as integrative research (van Kerkhoff, 2014), post-normal science (Funtowicz & Ravetz, 2003), and sustainability science (Kates et al., 2001). Each approach is nuanced, but each also shares a basic assumption: For a sustainable future, the science community, decision-makers, and other key stakeholders (Scholz & Steiner, 2015) need to work in partnership to address highly complex and uncertain coupled human and natural systems problems (Funtowicz & Ravetz, 2003). Addressing these problems requires recognizing that there are multiple, often competing, values and priorities related to what sustainability should and should not look like (Lélé & Norgaard, 1996). With its collaborative orientation to research (Minkler et al., 2008), CBPR offers important insights and strategies that may help sustainability scientists develop collaborations with practitioners and other community members (Silka, 2010).

CBPR uses a problem- or question-driven orientation to research. In CBPR, research questions are (co)identified by community partners and academic researchers; teams are often co-led by community members and researchers, and partners work together during many or all stages of the research decision-making process. CBPR is also often, but not always, intended to empower community members through the integrated research decision-making process (Jason et al., 2004). With respect to ethical concerns, researchers involved in this kind of engaged research must reflect on issues of researcher accountability and responsibility to community partners (Teeters & Jurow, 2019; Trickett & Ryerson Espino, 2004) and consider the effects of the research process on individuals and communities (Deetz, 2008).

CBPR emphasizes (a) learning from each other, as opposed to the unidirectional learning promoted in a researcher–subject or educator–learner relationship; (b) recognizing each partner’s strengths and resources; and (c) using processes and producing outcomes that are mutually beneficial (Israel et al., 1998; Teeters & Jurow, 2019). Because a CBPR orientation values community partners and researchers equally for their contributions to the research process (Minkler, 2004), important issues such as how to coproduce research knowledge and how to design a process where people can learn from each other come to the fore. For an enriched understanding of the issue(s) to emerge, mutual learning must occur, which requires that participants be willing to learn from each other and accept “the otherness of the other” (Scholz & Steiner, 2015, p. 532). Learning can occur if partners “accept each other’s legitimacy and power [which creates space] for developing collaboration from the onset of the project, grounded on the appreciation of different ways of understanding the world” (Tengö et al., 2014, p. 7). Undergirding mutual learning are participants’ mindsets and attitudes and the processes used to facilitate the learning process (Smith, 2003; Tengö et al., 2014), including respect, equality, and reciprocity (Maiter et al., 2008; Tengö et al., 2014, p. 5).

Facilitating mutual learning requires that research partners pay attention to process. Recommendations abound for how to work in CBPR partnerships (e.g., D’Alonzo, 2010; Ferman & Hill, 2004; Israel et al., 1998). Broadly speaking, studies have highlighted four processes central to ethical and successful (e.g. produces research that is useful to community (Israel et al., 1998) CBPR projects:

1. There should be a learning orientation in the research process. In other words, participants must be ready to learn from each other (O’Fallon & Dearth, 2002), which means that diverse forms of knowledge—not just academic knowledge—must be respected and included in the research process (Nyden, 2006). Learning also requires listening, and opportunities for listening should occur in multiple settings (e.g., conference rooms, community suppers, living rooms) and through multiple media (e.g., one-on-one conversations, art, observation, surveys; Israel et al., 1998).
2. Control in the research process should be shared (Ferman & Hill, 2004). This means that opportunities must exist for research to

be coidentified and coproduced. In addition, what the collaborative process looks like and at which stages each group is involved should vary according to community and researcher needs (Bieluch et al., 2017). At a minimum, determining the focus of the research and the products that it will produce should be discussed and negotiated among both researchers and community partners. Shared control also relates to research data (Ferman & Hill, 2004) and how and if it is shared beyond the immediate partnership team (Minkler, 2004).

3. Procedures should be discussed and agreed upon as a team. Procedures may involve how the researchers or community members will recruit study participants, how the data will be shared, and if and how data will be kept confidential. The location, frequency, and format of partnership meetings and other forms of partner communication are also procedural considerations (D’Alonzo, 2010).
4. The research process should be adaptable and flexible enough to change as the needs of community partners, researchers, and the project change. A rigid approach to research design and implementation may fail because socio-ecological systems are continually adapting, changing systems (Clark et al., 2016). Further, inherent to an adaptive process is the idea that feedback from the system, community, or research findings should inform the research process (Clark et al., 2016).

Although scarcer than research on CPBR processes, recommendations for outputs and outcomes in CBPR can also be found in the literature. For example, Ferman and Hill (2004) discovered that community partners were interested in joining community-university partnerships because of the opportunities they offered for “obtaining project-related resources, leveraging further resources, gaining access to networks, and increasing legitimacy” (p. 245). In addition, Ferman and Hill discovered that community partners became frustrated when they could not adequately guide or contribute to the research projects because of other time and work commitments or when, for example, student projects were left incomplete at the end of the term. While much is known about how to engage in partnerships to produce certain kinds of outcomes, we still have much to learn, especially about engaging specific types of community partners in research.

Methods

Study Area

We conducted this study in the state of Maine in the northeastern United States. We chose to study LGOs because of their involvement in numerous sustainability-related projects nationally and internationally and because of Maine's history of strong local control, local government decision-making capacity, and the numerous and diverse towns and municipalities in the state. The extent of local government responsibility in Maine and other states and localities where local governments play a key role in governing elevates the relevance of LGOs, such as town and city managers and select board chairs, in addressing place-based sustainability challenges. According to a survey of a National Science Foundation-funded interdisciplinary group of researchers from state and private colleges and universities in Maine involved in a large National Science Foundation-funded grant, LGOs and state government officials were the top two external stakeholders that researchers involved in their sustainability-related research projects (McGreavy et al., 2015). Finally, towns and municipalities are important stakeholders for universities and colleges that reside within their borders. Thus, understanding these towns' perceptions of higher education institutions may prove useful for building stronger partnerships and for overcoming issues with town-gown relationships (e.g., McComas et al., 2011).

Participants

The text data analyzed for this study was collected via a statewide survey of Maine LGOs: the Maine Municipal Official Survey. Our sampling frame consisted of lead LGOs occupying positions in the following function areas: key official, community development, planning, purchasing, assessing, finance, public safety, recreation, chief elected official (e.g., select board chairperson), personnel, public works, welfare, and code enforcement. We purchased a list of LGOs from the Maine Municipal Association, a nonprofit organization that serves Maine municipalities and local government agencies. Their mailing list is updated daily (Maine Municipal Association, n.d.). One person from each function area in each municipality was included in the sample, though only a few municipalities had individuals serving in all 13 positions. We distributed the Maine Municipal Official Survey to 2,553 LGOs.

While some respondents reported that their municipality had previous experience

working with universities and colleges in Maine (20%), the majority (55%) had no previous experience; 25% selected *Not Sure*. In the survey, we did not ask respondents about specific prior, current, or future partnerships but instead asked them to discuss, generally, engagement in collaborative academic-community enterprises. We asked for general information from stakeholders because we conducted this study during the initial phase of a large sustainability science-focused initiative that aimed to engage local, state, and federal stakeholders in conducting research; at the time of the survey, many project teams were still forming, and the survey data helped inform teams' approaches to engaging with LGOs. Using a modified version of Dillman's tailored design method for surveys (Dillman et al., 2009), we sent four solicitations for participation, including a prenotification letter, a first-round survey and invitation letter, a reminder postcard, and a second-round survey and invitation letter.

Researchers

The authors of this study have been working in, studying, facilitating, and publishing about community-based research partnerships for 10, 30+, and 11 years, respectively. Their experience has ranged from working collaboratively with municipal and state decision-makers to develop environment-focused best management practices, to working with community leaders and state managers to develop tools that protect public health, to working collaboratively with small business owners and students on downtown revitalization efforts. Their community-engaged research has involved domestic and international partners. Prior collaboration experience and participant observation conducted during the study period provided the researchers with insight on the survey findings and helped contextualize the meaning of those results.

Survey Design and Texts

The survey was designed by an interdisciplinary team of faculty researchers and doctoral, master's, and undergraduate students who were part of the Knowledge-to-Action Collaborative on a large, interdisciplinary National Science Foundation grant. The survey instrument consisted of three sections. Section 1 asked about general LGO and municipality background information. Section 2 solicited information about current and future economic, social, environmental, and policy issues in the individual municipalities. Section 3

asked LGOs about their experiences with, trust in, preferred roles in, and interest in developing community-university research projects. Following Section 3, we asked participants the following open-ended questions:

1. Is there anything else you would like to tell us to help us identify opportunities for developing community-university partnerships, such as conditions that would need to be met?
2. Is there anything else you would like to tell us to help us better understand opportunities and challenges in Maine municipalities?

We purposefully asked broad, exploratory questions about community-university partnerships to generate insights about what stakeholders valued in collaborations with universities. For additional information about the survey, see Bieluch et al. (2017) and Hutchins et al. (2013).

Data Analysis

Mailed-in survey responses were entered verbatim into a Microsoft Excel spreadsheet, sorted using sort features in Excel, and coded using hand-coding techniques. During our initial open coding process (Corbin & Strauss, 2008), we discovered that participants identified preferences for both partnership outcomes, such as the perceived beneficial outcomes to their municipality, and partnership processes, such as control in partnership design. Their comments also provided insight into their perceptions of university and college researchers. Based on these emergent themes, we determined that a multiround, modified deductive coding and case study approach (Creswell, 2007) was appropriate for analyzing the responses.

We conducted our analysis using the following process. We first sorted the text data to include only those passages that discussed community-university partnership relationships and officials' perceptions of the quality and benefits of partnership outcomes (as opposed to data that discussed the need for better paying jobs in a community, for example). Next, based on the literature and our initial review of the text data, we sorted the data according to three major themes: process, outcomes, and perceptions of academic researchers. Third, we sorted the text data into subthemes or subcodes (e.g., outcomes, characteristics of outcomes, issues of control, voice and project negotiation, trust, and partnership design; Glesne, 2006). In the fourth and final round of coding, we reevaluated the major themes and subthemes to verify fit, and we began identifying

properties of the subthemes to provide definition and description to the themes (Corbin & Strauss, 2008).

Reliability refers to the dependability of a measure over time and across situations (Vaske, 2008). In qualitative research, field notes and records, multiple coders, computer programs, and consistency of coding across transcripts all help to ensure reliability (Creswell, 2007). In this study, we used four rounds of coding to ensure consistency in coding and analysis across transcripts, and we reviewed field notes and meeting reflections from meetings with LGOs from our other stakeholder engagement activities. Bieluch, the lead author, conducted the coding; thus, we did not run intercoder reliability scores. To ensure research credibility (Creswell, 2007) or validity, we used participant observation of municipal groups, prior experience working in LGO-university partnerships (e.g., the City of Lowell, Massachusetts, and University of Massachusetts Lowell), and prior knowledge of other university-involved research projects to member check our interpretations of the data (Patton, 2002). In addition to drawing on multiple forms of data to check our analysis (triangulation), all authors reviewed the coding scheme and related data, and we also sought the opinions of fellow researchers through presentations, analysis review, and personal discussions of our findings.

This study was approved by the University of Maine institutional review board.

Results

We achieved a 46% response rate ($N = 1,177$) to our survey, and respondents represented 86% of Maine towns and municipalities. On average, respondents had worked for 13 years in their current local government position. The first open-ended question elicited 188 responses (16% of all survey respondents), and the second open-ended question elicited 274 responses (23% of all survey respondents). While not every written response discussed town/municipality-university relationships, 125 LGOs (11% of all respondents) explicitly discussed a community-university partnership or their expectations or perceptions of a university partner. Another 24 LGOs indicated that they were uncertain of university capabilities and potential partnership opportunities. It is important to note that some LGOs' comments about community-university partnerships may not have been based on experience. Instead, their responses may have been based on perceptions

of researchers and universities/colleges that they developed outside of actual partnerships, such as through the media, stories from colleagues or friends, or personal academic experiences. In addition, we cannot know if LGOs had direct experience working with universities and whether those experiences drove their perceptions because we did not ask them to identify the specific community-university partnerships that influenced their opinions. Except for excluding identifiable information, all quotes included in this manuscript are taken verbatim from the surveys.

Process Preferences

Three main themes related to process emerged from the survey data: negotiating community-university partnership projects, partnership design, and control in the partnership.

Negotiating Research Projects and Demonstrating Respect

Respondents suggested that researchers should approach the communities with research projects to “pitch them” (Respondent 4), and they noted that researchers should “let us give input for what would be valuable to us” (Respondent 3). One respondent specifically suggested that researchers should “come to our community and talk to and with our people” (Respondent 1), and another wrote, “[We] would like more two-way decisions before the start of any project to prevent a narrowed effort” (Respondent 2). Finally, Respondent 5 noted, “There has to be balance in all things in order to make things work. Common ground needs to be found.” These comments document the importance of negotiation dialogue that encourages collaborative as opposed to unilateral decision-making. Concerns about having voice are inherent in comments about “giving input” and “two-way decisions.” LGOs specifically requested opportunities to voice their opinions and to influence project topics and design. These comments align with Senecah’s concept of “influence” (2004) and what Tyler et al. (1985) termed “decision control.” Officials stated that they needed some control over decision-making in any collaborative project and, more than that, that their opinions should be included in project design and planning.

Several respondents noted concerns with decision-making control in the partnership, specifically concerns with “people and groups telling us what to do” (Respondent 11). Respondent 26 wrote, “My experience has been

that the campus administration is not interested in being part of the community but aspires to control it or bend the community to the campus way of thinking.” Another respondent expressed a willingness to partner but only under particular conditions, writing, “We would work with someone that came to listen and help, not dictate” (Respondent 12). Others emphasized that local governments are independent and make their own decisions. Comments suggested that interactions in the partnership must demonstrate respect for partner autonomy while also promoting shared responsibility for addressing the problems under investigation. As one respondent noted, “listening” is a type of interaction that demonstrates shared power in the partnership.

Partnership Design

LGOs also discussed concerns with control, specifically scheduling and timelines. Respondent 6 simply recommended “mutually acceptable scheduling,” while Respondent 7 indicated that researchers need to be able to “meet after regular business hours.” Respondent 8 suggested a “firm contract and complete understanding of roles and responsibilities.” Respondents 9 and 10 recognized that the semester timeline of the university is not necessarily congruent with municipal timelines and that researchers may need to meet the timeline needs of LGO partners. Each of these comments indicates concern with the fairness of structure and process in the partnerships and suggests that prioritizing university schedules and timelines at the expense of municipal schedules would be unfair. In fact, in some instances, LGOs argued that officials’ schedules should be prioritized. In the CBPR literature, the challenges of mismatched schedules (e.g., a class period or an elected official’s evening-availability-only schedule) and project deadlines (e.g., a semester timeline) are often discussed as logistical problems that affect relationships and project outcomes.

Data Control

Given the central role of data collection in the research process, it is particularly important to address participants’ concerns related to data in LGO-university partnerships. LGOs noted concerns with equitable control over data gathering and analysis in research partnerships. Similar to university requirements for institutional review board approval for studies involving human subjects, LGOs have their own data requirements. Respondents reported needing to satisfy the state’s

Freedom of Access Act, or the Right to Know Law, for any data collected, and Respondent 13 noted that their town or municipality would like to “own the data that is arrived at [through the study or project].” Respondent 14 stated, “In my experience with the University outside of municipal activities, I’ve observed that...the University sometimes gathers information on a project from businesses and individuals—then disseminates [it] to others as their own idea.” This latter comment explains that data ownership is important because it translates into control of when, where, how, and with whom data are shared.

Perceptions of Outcomes

While we did not assess specific outcomes of prior partnerships, the survey findings did reveal preferences related to outcomes of community-university partnerships. Two main themes in this vein emerged: interest in specific outcome characteristics and the shared value of those outcomes.

Outcome Characteristics

Numerous respondents listed the kinds of issues that they would like university researchers to study, and several noted potential benefits of some of those projects. For example, Respondent 28 wrote that the “University needs to help with big-picture economic models of policy options,” and Respondent 29 stated, “I see your main strengths as conducting research; problem identification; accessing the latest, relevant data; facilitating discussion and problem solving.” One respondent noted, “The [state university] appears to be very productive in identifying both environmental and economic issues in Maine.” These comments provide insight into some of the perceived benefits of working with researchers (i.e., “big-picture” thinking and problem identification). Based on these comments, it appears that an important component of a just partnership is alignment between the kind of research that these officials view as beneficial and the existing skills and interests of university researchers. Interestingly, while Respondent 30 noted that the “[state university] has an excellent research reputation,” others noted the need for more “common sense” (Respondent 31) at the university, “less academic exercises and studies,” and “more action plans that are success oriented” (Respondent 32). One respondent noted that while they are open to discussing partnerships, “pie-in-the-sky, unrealistic solutions are not very helpful.” These comments highlight participants’

concerns about the practical utility of university research and the equitable distribution of beneficial outcomes among participants. Officials may be turned off from a partnership if they perceive the researchers to be approaching the problem-solving process unrealistically.

Shared Outcomes

A few participants commented that the outcomes of the partnership must be reciprocally beneficial. One respondent discussed their past experiences and concerns about final products, writing, “This [student project] produced opportunities for students to problem-solve realworld issues but produced nice results of limit[ed] value for the town” (Respondent 33). Respondent 43 wrote, “Our time is limited. Unless you can demonstrate through a cost-benefit analysis that a focused partnership will have both short-term and long-term benefits for our community, I remain hesitant to engage.” Similarly, Respondent 42 noted, “Small communities are largely [interested in] help, but active people are also very busy, so taking on new projects is problematic unless the payout is likely to be significant.” Thus, while officials seem open to partnerships, researchers cannot assume that research alone will be sufficient to engage busy government officials; the potential for meaningful results is paramount to participation.

Perceptions of Academic Researchers

We all bring perceptions of our partners to our relationships, regardless of whether those perceptions are grounded in personal experience, such as involvement in a prior partnership, or indirect experience, such as impressions filtered through mass media. Two main themes related to perceptions emerged from the survey data: concerns about partners’ knowledge of each other’s capabilities/job demands and perceptions of researchers’ biased/unbiased thinking and behavior.

Knowledge Concerns

Several respondents who wrote about community-university partnerships expressed concerns with researchers’ lack of knowledge about local government. Two quotes exemplify these concerns: “Become a municipal volunteer or official beforehand so you can understand issues better” (Respondent 34) and “Get to know how municipal government works first...Your credibility is only as good as your knowledge of municipality expectations” (Respondent 35). In

an attempt to help researchers develop knowledge of municipal government, several participants suggested that researchers would be wise to read particular municipality-related newsletters, attend certain meetings, and build relationships with agencies well versed in municipal issues.

Two respondents also expressed concerns with their own knowledge of university researchers. For example, Respondent 36 suggested the importance of “educating municipal officials as to the benefits of a collaboration,” and Respondent 37 noted, “This seldom means [municipal officials] have a solid understanding of civics, economics, or university researchers. Approach municipal leaders with the lowest common denominator.” Comments about knowledge concerns indicate that there are opportunities for mutual education about life in municipal government and life in higher education. Mutual education reduces uncertainty and, in some individuals’ minds, may reduce the likelihood of one-sided decision-making and irrelevant project topics, thus potentially decreasing the chance of injustice in the relationship.

Outcomes and Unbiased/Biased Researchers

Multiple respondents wrote about bias and impartiality, suggesting that university researchers were unbiased and that this lack of bias “enables the University to work with municipalities on technical knowledge and alternative technical approaches to alternative energy and sustainability” (Respondent 15). Respondent 16 suggested that university researchers’ neutrality may also “help [legislators] keep the politics out of good sound judgment by the community-university recommendation on issues in all communities.” Respondents viewed unbiased research as potentially beneficial in assisting with decision-making on contentious issues, such as regionalization, and on planning and ordinance proposals, particularly “new technology proposals such as wind” (Respondent 17). Respondent 18 even stated, “Almost everyone else has an agenda hidden or otherwise (except the university),” and argued that one of the values of working with universities is the production of “good information” and “forward-thinking recommendations.”

This view of university researchers as unbiased, however, was not universal. Several respondents expressed concerns with connections between the university and the state government and with the political leanings of university researchers. Respondent 19 wrote, “[The] university [is] not seen

as unbiased but [as] an advocate for regionalism/consolidation, ‘carrying the message’ for the governor.” Respondent 20 wrote, “Most of the problems we face are caused by state agencies and the legislature. You can understand our skepticism about a community/university partnership.” Another respondent wrote, “Perceptions of universities in general [are] that many there are leftist, social-oriented, and very intolerant of other views, especially American values, i.e., personal responsibility, liberty, partisan[ship]” (Respondent 21). In some instances, respondents’ past experiences with university researchers reinforced perceptions that university researchers are biased. Respondent 22, for instance, wrote, “Make sure the students are looking at both sides of an issue. The students/staff I’ve dealt with were making outcomes which already matched their beliefs (basic scientific method).” Perceptions of fair resource allocation and outcomes seems tied to participants’ assessment of partnership outcomes as either biased or unbiased.

Discussion

The study both supports and extends the current literature on solutions-oriented CBPR. Specifically, it helps us understand stakeholder preferences for engaging in community-university partnerships as well as stakeholder perceptions of academic researchers. In general, respondents’ comments showed interest in partnering with university researchers, assuming that certain criteria for process and outcomes are met. The specific findings related to process are not unique in and of themselves; we know from prior research, for instance, that negotiation is important (van Kerkhoff, 2008), as is conducting research that is relevant to stakeholders (Cash et al., 2003; Nelson et al., 2015) and establishing guidelines about data ownership and sharing (Minkler, 2004). Comments about negotiation were particularly interesting in relation to a well-documented component of process—voice—which is defined as the extent to which people are allowed to contribute to or share their opinions in processes that affect them (Lind et al., 1990; van den Bos & van Prooijen, 2001). Responses that encouraged university researchers to “talk to and with our people” revealed participants’ desire for opportunities to voice their opinions about potential projects and to negotiate the focus of the research instead of being asked to join a project with inflexible research plans. As Lemos and Morehouse (2005) assert, individuals involved in coproduction processes

are not only exchanging information; “there is an actual re-shaping of both groups’ perceptions, behaviors, and agendas that occurs as a function of their interaction” (p. 61). A willingness to go through this reshaping or negotiation process is precisely what respondents believe is important in partnerships.

Our finding that desirable community-university partnerships produce outcomes and resources that are relevant and useful is also supported by prior research (Ferman & Hill, 2004). Given that many community-engaged research projects are grant-driven, the focus of the research is often predetermined during the grant writing process. Our research findings suggest that, ideally, researchers should reach out to potential partners during grant development so that the grant proposal can be coproduced. If engagement during grant writing is not possible, researchers should engage stakeholders as early as possible so they can help refine the grant focus; codefine research questions; and coalign the process with their schedules, needs, and interests in mind. Failing to include stakeholders in the inception phases of partnerships “undercut[s] goals of mutuality and reciprocity so essential to effective collaboration” (Glover & Silka, 2013, p. 44). Better yet, researchers may want to consider becoming members of community groups that are conducting work that interests them. Research questions may naturally emerge from the ongoing work of the group, ensuring better alignment or compatibility between the researcher and group needs through the cross-fertilization of ideas (Tryon & Stoecker, 2008).

This study extends the literature on CBPR and partnerships conducting solutions-oriented research, such as those promoted in sustainability science, in three important ways. First, the findings demonstrate that people come to partnerships with specific expectations. Second, the data provide additional insights on the types of outcomes that partners may find useful or relevant. For example, results demonstrate that while partners may value researchers for their ability to “think big” and for their capacity to access and understand multiple forms of data that may be inaccessible to partners, they want solutions to be realistic and implementable. As one participant noted, they do not want “pie-in-the-sky” solutions. The trick then for these partnerships is to capitalize on the skills that each party brings to the table (e.g., big-picture thinking, breadth of resources, deep local knowledge, ability to implement decisions

based on data) while also possibly working at different scales in terms of partnership discussions, applications, and solutions.

Third, the findings identify general perceptions of university and college researchers in Maine that are important to recognize as researchers initiate and enter partnerships. For example, although university researchers are experts in many realms and all live in communities of some form, far fewer have walked in the shoes of LGOs or have had to make decisions at the local government level. LGOs’ concern with researchers’ lack of local government knowledge is humbling and an important reminder that just because we researchers drive on the roads our LGOs manage does not mean that we understand how to build or manage them. Similarly, LGOs expressed concerns that they did not understand enough about what researchers do or how a community-university partnership might work. Thus, researchers would be wise to come to these partnerships with tangible examples of previous work and to have thought through how LGOs can work together with university partners on research in ways that are meaningful and workable for all parties. Price et al. (2013) recommended identifying a “research navigator” from the community partner organization to help university researchers and community partners understand each other and “translate” information (p. 48).

Applying the Findings

There is an intimate connection between process and outcomes. For example, in order to conduct relevant research, partners need to go through a process of negotiation and learning. In their case study analysis, Cash et al. (2003) discovered that knowledge–action linkages were compromised when “communication was largely one-way...[and] when stakeholders from either the expert or decision-making communities saw themselves as excluded from relevant dialogues” (p. 8088). Importantly, this study suggests that researchers cannot simply pay attention to the quantity of their communication with fellow partners; they must also pay attention to the *quality* of communication and the boundaries that it draws among actors. Thus, the structural and institutional characteristics of the partnership *and* communication patterns and practices that occur within community-university research partnerships are interdependent and need to be addressed in concert. We recommend that

members of the partnership pay particular attention to communication patterns and practices to ensure that (a) participants are learning from each other rather than just trying to “transfer” knowledge from one party to the next (Beech et al., 2010), (b) relevant parties are included in the discussion and have the necessary information to participate (Senecah, 2004; Tryon & Stoecker, 2008), and (c) communication practices do not unproductively draw rhetorical boundaries around the kind of information that is considered legitimate or credible enough to be included in the research process (Cox, 2010). In other words, how researchers “treat the knowledge of local stakeholders will either empower those stakeholders by helping to validate their knowledge claims or disempower them by conveying that such knowledge is of little value” (Clark et al., 2016, p. 4573).

Future Research

The insights gained into LGO perceptions of university researchers also raise questions about the meaning of their preferences and perceptions and the experiences that influenced those perceptions. For example, why do some officials view researchers as unbiased while others perceive them to be biased? Does this opinion hold across research topics and types of communities? Did a certain type of engagement with researchers (e.g., an online survey versus a collaborative research partnership) influence these perceptions? One study limitation is that we did not ask officials to describe processes and outcomes of particular community-university partnerships, so we do not know what kinds of partnerships may lead to particular experiences and outcomes. In fact, only 20% of respondents had prior experience working with universities and colleges in Maine. Thus, results from this study must be interpreted with the understanding that the expressed preferences and perceptions may not be associated with specific partnership experiences. While we argue that preferences and perceptions prior to partnership formation matter, those that exist during the partnership may be particularly informative about how and why community-university partnerships function and evolve. Future studies may want to focus on LGOs who have experience with community-university partnerships.

Finally, research has demonstrated that questions of who is engaged in decision-making processes and how they are so engaged are much more than logistical issues; they are questions of

justice (e.g., Miller, 2013). Leading researchers in the fields of social psychology and communication have considered issues of inclusion/exclusion and process in relation to environmental and social justice (e.g., Jast & Kay, 2010), but they have also studied the cognitive, behavioral, and affective outcomes of individuals’ judgments of procedural justice (i.e., perceptions of the fairness of the decision-making process; van Prooijen et al., 2006) and distributive justice (i.e., perceptions of the fairness of outcomes; Folger, 1977). Further, they have explored specific elements that influence these judgments, such as voice (Lind et al., 1990; van den Bos & van Prooijen, 2001). These important lines of research focus on *how* people are engaged in collaborative decision-making processes (e.g., small-group decision-making in businesses or public participation in environmental decisions, such as those processes required by the National Environmental Policy Act) and the *outcomes* of those processes (e.g., a tool that guides evaluations of a product or a protected wetland) as perceived by the participants.

Theories from these fields can help researchers studying issues related to sustainability understand how and why people work the way they do in partnerships and thus can enhance the functioning of community-university research teams (see McComas et al., 2011 for research on procedural justice, decision-making, and town-gown relationships). To begin identifying the specific behaviors and outcomes that lead participants to perceive partnerships as fair and just, we recommend that researchers study participant perceptions of procedural and distributive justice in a diverse array of community-university research partnerships. Our general findings lay the groundwork for these future research directions.

Conclusion

If we are to address the wicked problems (Kreuter et al., 2004) facing society, there must be an “opening up of knowledge systems” in which scientists coproduce knowledge with others (Cornell et al., 2013, p. 2). This promotes innovation, learning (Dobson, 2012), and responsiveness. Opening up knowledge production does not make the academy weaker; it brings science more directly into societal conversations and decisions, and it brings society into science in productive, albeit complex, ways. To develop sustainable solutions, we need to recognize the value of our partners and design partnerships so that the processes and outcomes are valued by all partners. Further,

we need to engage undergraduate and graduate students in these partnerships to ensure that a focus on knowledge coproduction is sustained into the future and that we have academics who are trained to successfully do this work.

These issues are not only linked to our ability to implement and achieve important sustainability goals but also intimately connected with ethical issues concerning how sustainability is defined (Miller, 2013) and who gets to inform that definition. Community-university research partnerships are fundamental to sustainability work. If academics are going to play a role in developing sustainable solutions, they need to understand their nonacademic partners and reach out to them early in the research process, preferably before research plans are cemented. Only then will researchers have a chance of coproducing knowledge that can tackle the challenging sustainability issues facing our local, regional, and global communities.

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Supplementary Material

Please find below the relevant survey questions for this article from the Maine Municipal Official Survey. Questions 25 and 26 are the questions that generated the text data for this manuscript.

Maine Municipal Official Survey

One of our team's research objectives is to increase the relevance and responsiveness of university research to Maine communities. In line with that objective, we plan to work with Maine municipalities on community-based research projects. Our team includes researchers from many different fields with diverse expertise and skills, and we are interested in working with municipalities on a range of issues. We would like to continue talking with your municipality about the key issues in your community and ways that we can work together.

22. Considering your current municipal position, how interested are you in pursuing a community-university partnership? (Please check one box.) (Scale: *Very Unlikely*–*Very Likely*, including a *Not Sure* option)

23. How likely do you think it is that another municipal official from your community would be interested in pursuing a community-university partnership? (Please check one box.) (Scale: *Very Unlikely*–*Very Likely*, including a *Not Sure* option)

24. May we contact you at your municipal office to talk with us further about opportunities for community-based research projects in your municipality? (Please check one box.) (Response options: *Yes*, *No*, *Not Sure*)

25. Is there anything else you would like to tell us to help us identify opportunities for developing community-university partnerships, such as conditions that would need to be met?

26. Is there anything else you would like to tell us to help us better understand opportunities and challenges in Maine municipalities?