



Published in final edited form as:

Cancer Epidemiol Biomarkers Prev. 2015 May ; 24(5): 882–885. doi:10.1158/1055-9965.EPI-15-0136.

Building a funded research program in cancer health disparities: considerations for young investigators

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Abstract

A workshop entitled “Building a funded research program in cancer health disparities” was held at the 38th Annual American Society of Preventive Oncology (ASPO) Meeting. Organized by the Junior Members Interest Group, the session addressed topics relevant to career development for cancer disparities investigators. Such considerations include the development of research programs on a backdrop of existing multi- and trans-disciplinary teams, recognizing opportunities for advancing their research given the growth of consortia-related research, and development of effective community-based partnerships. Key strategies for developing a sustainable career in cancer health disparities in the current environment include the need to effectively engage with communities, appreciate the value of team science and develop cross-discipline collaborations, and navigate the use and utility of consortia for disparities research. Academic considerations related to earning tenure and promotion that may be faced by the junior investigator in cancer health disparities were also discussed. This report may serve to both educate and provide lessons for early stage investigators who wish to tackle complex scientific questions while developing their careers in cancer health disparities.

Introduction

As the field of cancer health disparities grows into a more mature and exciting area of scientific investigation, young investigators are becoming increasingly present in these efforts, some of whom wish to dedicate their careers wholly to the study of cancer health

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The authors disclose no potential conflicts of interest.

disparities. Early career pressures notwithstanding, there are unique career development considerations that are relevant to the study of cancer health disparities that were identified by ASPO Junior Members as being relevant opportunities to help serve young investigators as they develop disparities research programs. Senior disparities investigators shared their advice and led the discussion of these issues at the ASPO Junior Members session. The specific areas of discussion included the opportunities and challenges in community-engaged research, working in multidisciplinary research teams, conducting research in large-scale consortia as well as academic issues involved as investigators compete for grant dollars and navigate toward tenure and promotion and a long-term research career in cancer health disparities. Awareness of these issues may help to educate young investigators as they make informed career decisions.

Through most of the history of cancer epidemiology research, studies were largely undertaken by single investigators or small groups, and recruitment was focused on European Americans. Collaboration across disciplines and large-scale consortia in cancer epidemiology did not become common until the past ten years. The Healthy People 2020 goals acknowledge the overlap of multiple determinants of health and the need to understand the collective impact (1). Thus, a fundamental feature of cancer epidemiology is the shift towards team science, larger-scale studies, and the need to assemble consortia. There is also an emphasis on diversity and inclusivity in epidemiologic research. As study design, recruitment methods, data collection, and analysis may vary depending on target population under study, there is a need for career development programs to provide training related to community-engaged and community-based methods that necessitate building community partnerships. In the increasingly competitive funding climate, early stage investigators need to strategize and balance their own research independence within a culture of team science and the rise of consortia to become productive disparities scientists who are well-adapted to meet these challenges.

The Value of Team Science

There can be great value in establishing multi-disciplinary and trans-disciplinary collaborations, particularly when the collaboration involves working with unlikely collaborators. For example, investigators trained in population science should not shy away from developing basic science expertise on their own or in collaboration with basic scientists, given the potential for mutual benefit of new knowledge, appreciation for alternate ways of thinking, and ability to test hypotheses in the context of multi-disciplinary teams in new and innovative ways. No one scientist (or scientific discipline) can bring all the skills needed for effective cancer health disparities research. Ultimately, early stage investigators need to be aware of their strengths and limits in contributing to a team, understand where and how their expertise fits into a disparities team, and how the expertise from other team members can enhance the scientific approach in order to generate competitive grant proposals, scientific publications and research results with meaningful public health impact.

As with the development of any long-term professional collaboration, there is a need for disparities researchers to be solid communicators and champions of cancer health disparities

research; this will help scientists who may be coming from other disciplines to develop appreciate population-based perspectives and the unique cultural, behavioral, or other contexts in which we are working. The same is true for the population scientist: those coming from outside the population science domain may have cultural behavioral and methodological tools that can enhance the multidisciplinary project. Researchers from all areas should value the potential contribution and expertise of the other.

Several challenges exist for team science in disparities. The field of health disparities is recognized as the study of complex issues acting at multiple levels, requiring input from many disciplines for proper consideration and statistical modeling (2). Members of a scientific team may bring a variety of (often conflicting) approaches, values, and metrics of success. There are also a limited number of clinicians and basic science investigators devoted specifically to disparities research, and a shortage of senior disparities faculty who can provide opportunities for junior investigators to train alongside experts in the field. While it is unlikely that a single young investigator can initiate effective transdisciplinary research teams on their own, there may be opportunities to investigate the nature and extent of such teams during the academic job hunt and judging whether the particular environment is an example of effective interdisciplinary teams or mentors with this kind of experience are available.

The Rise of Consortia for Disparities Research

In parallel to the need for multidisciplinary approaches, there is also a need to conduct population-based studies that are generalizable to diverse populations. One of the goals of cancer disparities research is to maximize geographic, ethnic, etiologic variability and diversity with the purpose of making the most appropriate recommendations for cancer prevention, screening, or treatment that is appropriate to specific population subgroups. The National Cancer Institute Epidemiology & Genomics Research Program supports several consortia (3).

A major concern in the development of consortia is to collectively develop a conceptual framework about the problem. This should include hypothesis-based CEnR/CBPR research and the ability for dissemination/implementation of research outcomes that includes sustainability of the positive outcomes should there be any. Consortia should include relevant stakeholders, including scientists across disciplines as well as community members who can provide the indispensable perspective for the team. As the team grows and diversifies, there is an intrinsic need to define a common language for research concepts and standards, success metrics, and plans for how best to communicate and disseminate all proceedings and translate new knowledge into policy as needed for findings that grow from the consortia.

Immediate-term issues for the development of consortia include human subjects issues of IRB and HIPAA, material transfer agreements, data use agreements, non-monetary agreements, and confidentiality disclosure agreements. These collectively represent the need to establish an understanding of the research principles, including data sharing, up front. In the longer-term, the investigators must build trust with their scientific colleagues and relevant communities. One considerable challenge is the need to harmonize existing data;

often, some amount of existing data is available and there is a need to develop a plan to harmonize its use that investigators agree on. There is a need to catalog availability of biologic samples and plan for future accessibility and approval of use. These activities take time and require full commitment of the investigators.

Effectively Engaging with Communities

Many but not all graduate programs are tailored specifically to provide all of the competencies needed for cancer health disparities research; therefore there is a need to fill gaps. One such gap identified by ASPO Junior Members was that of community-engaged research (CEnR) and community-based participatory research (CBPR). Pursuant to this type of research is the need to effectively engage with the community to collect the most valid and representative data from research participants.

Establishing partnerships with communities to conduct cancer health disparities research is critical for success but requires resources, patience, and time. The central tenets of community-engaged research (CEnR) and community-based participatory research (CBPR) include fostering meaningful partnerships to build capacity from within a community, involving the people affected by a problem in the research, and working with them (rather than conducting research on them) (4, 5). Ideally, the generation of research hypotheses should involve input from and be accepted by the community in which the research is being conducted and translated. The success of the research may be jeopardized without community engagement both in terms of study participation and in the impact it may have on the community. Instituting a community advisory board (CAB) or similar structure can be a mutually beneficial process to implement CEnR/CBPR. Investigators and CAB members must develop a team relationship with mutual respect and sharing of information and ideas.

It is incumbent on the research team to teach and engage CAB members in the research as much as is possible. There is an inherent need for education throughout CEnR/CBPR work. Investigators should be good educators: partnerships can be greatly enhanced with the inclusion of education about the benefits, risks, and process or timeline of scientific research. Time at each meeting with the CAB and community groups should specifically include education about the research and the process of research. Likewise, there should be opportunities for the community to engage the researchers in education about what is important to the community through the course of the research development, execution, and translation.

Practical issues faced by researchers engaged in CEnR/CBPR include difficulties in establishing a community infrastructure with limited resources and writing a competitive grant proposal. With regard to time, CEnR/CBPR may take longer than an investigator may expect compared with other studies that do not engage communities. Therefore, investigators should plan for additional time and develop relationships with communities very early in the research process. Early stage investigators should consult with seasoned investigators who have worked in community settings, and prepare for community needs assessment that may take a great deal of energy and time. Communication with the community should be kept open regarding the timing issues involved in garnering grant

funding; many communities may not be aware that the grant process can take a year or more. Similarly, investigators should be open about possible research outcomes and how those will be communicated back to them so that they know what potential benefits (if any) the community can expect.

Other challenges in the conduct of CEnR/CBPR are budgetary. Grant budgets may be reduced, and community partners may be concerned about their share of the funds and who controls those funds. There are difficulties in maintaining balance of prudent budgets and keeping community members feeling engaged and appreciated. Three-year infrastructure programs or pilot funding from institutions that can help investigators build capacity for health disparities research may be needed to help to lay a successful CEnR/CBPR groundwork.

There is an indisputable need for additional research in cancer health disparities. Early stage investigators involved in CEnR/CBPR should stay focused on the science, emphasize the partnership, and build infrastructure to enhance sustainability. Partnerships should provide for programs that provide a clear benefit to the community. While working with communities can be challenging, the rewards realized in working with communities can “satisfy the fire in the belly,” providing investigators with satisfaction in knowing that their work is simultaneously testing meaningful hypotheses, while also filling a need in the community where research results are highly anticipated and appreciated. An early stage investigator should acknowledge the perspective of the community members and their own needs, listening to concerns and priorities of the community, while educating them along the way to set expectations and increase their knowledge of the process of research. Early stage disparities researchers should always be open to suggestions (including those coming from the community), willing to learn from successes and inevitable challenges, trouble-shoot problems, be patient, and have a good sense of humor.

Academic Considerations for the Junior Investigator

Strategies for success in cancer disparities research exist that are more relevant during the interview process that can reveal the likelihood of near and long-term success. One such strategy is searching for positions that already have active consortia-related research and in particular senior disparities investigators to mentor a young investigator. Another strategy is related to the collaborative research environment itself and how a junior investigator interested in disparities might find supportive mentors and receive consideration for the type of development necessary for their research.

Also, interviews with basic scientists who are working with investigators involved in community-engaged research should be requested as part of the interviewing process. Conversations with these investigators can help a young investigator evaluate the degree of collaboration with basic scientists to help gauge potential for development of their own future collaborations. Finally, conversations with junior faculty and post-docs who are already housed within institutions can provide opportunities to discuss the likelihood that support for cancer health disparities research is actually available and the quality of mentoring provided to junior faculty.

The shift in the culture from a single-investigator “silo” to a more team-oriented and multidisciplinary approach is a recurrent theme in cancer health disparities research. Many more senior investigators may recall a time when they could collect their own data, run their own analyses and publish manuscripts – perhaps with fewer than five co-authors. Now, there is a prerequisite to tackle large and more complex scientific questions. Junior investigators need to position themselves on the backdrop of existing expertise and recognize the need to become part of a multidisciplinary team, all while developing the skills needed to effectively engage with target communities.

Early stage investigators who wish to pursue a career in cancer health disparities must navigate the recognition-related issues that come with participation in communities, scientific teams, and consortia, as they strive to earn promotion and tenure. The promotion and tenure process at most institutions relies on the individual's contributions to new scientific knowledge; these contributions can become hazy as the number of co-authors on manuscripts increases and large amounts of time are spent building research capacity in communities of interest, to the detriment of the publication record. Some universities have specific tracks for team scientists, where the metrics for success differ from traditional tenure-track expectations. Education of promotions committees about the contribution of specific investigators to team science is needed. Recognition of an investigator's leadership, versus independence, is one way to value these efforts. Early stage investigators are advised to surround themselves with local mentors to help them through the process within their institution who can identify institution-specific benchmarks for tenure and also mentors who can serve as champions and specify the contributions to each project and how their contributions have advanced the science.

Acknowledgements

We thank the members of the ASPO Junior Members Interest Group, especially Drs. Marlyn Allicock, Tomi Akinyemiju, Adana Llanos, and Kathryn Royse who helped organize the session, as well as Heidi Sahel for session logistics.

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