Behavioral and social scientists' reflections on genomics: a systematic evaluation within the Society of Behavioral Medicine

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Cite this as: *TBM* 2019;9:1012–1019
doi: 10.1093/tbm/ibz044

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ABSTRACT

Clinical and public health translation of genomics could be facilitated by expertise from behavioral medicine, yet genomics has not been a significant focus of the Society of Behavioral Medicine (SBM). SBM convened a working group (WG) to lead a systematic exploration of members' views on: (a) whether SBM should give a higher priority to genomic translation and (b) what efforts, if any, should be made to support this increased engagement. The WG used a stepped process over 2 years that began by gaining input from SBM leadership regarding key issues and suggestions for approach, engaging a cross section of membership to expand and record these discussions, followed by systematic qualitative analyses to inform priority action steps. Discussions with SBM leaders and members suggested that genomics was relevant to SBM, particularly for junior members. SBM members' expertise in social and behavioral theory, and implementation study designs, were viewed as highly relevant to genomic translation. Participants expressed that behavioral and social scientists should be engaged in translational genomics work, giving special attention to health disparities. Proposed action steps are aligned with a "push-pull" framework of innovation dissemination. "Push" strategies aim to reach potential adopters and included linking members with genomics expertise to those wanting to become involved and raising awareness of evidence-based genomic applications ready for implementation. "Pull" strategies aim to expand demand and included developing partnerships with genomics societies and advocating for funding, study section modifications, and training programs.

Keywords

Genetics, Qualitative Research, Focus group, Behavioral science

INTRODUCTION

The rapid advancements of genomic discovery have been documented widely [1]. For example, from 2005 to 2012, hundreds of genome-wide association studies identified a veritable "goldrush" of associations of genetic variants with common diseases such as diabetes and cancer [2]. In 2009, Centers for Disease Control and Prevention's (CDC) systematic evidence review identified four genomic applications related to newborn screening, hereditary cancer, and cardiovascular syndromes, where the level of available evidence (i.e., Tier

Implications

Researchers: The manuscript can raise awareness of the need for interdisciplinary collaborations for novel research.

Practitioners: The manuscript can raise awareness of the potential for health disparities to be increased, if behavioral evidence bases are not considered in genomic translation.

Policy makers: The manuscript can raise awareness of the need for broadened funding at the National Institutes of Health (NIH) for behavioral medicine researchers.

1) supported their population-wide deployment [3]. Throughout this time, the effort involved and cost of genome sequencing has continued to decline. Whereas sequences once took days of computing time to complete at a cost of \$100,000 or more, sequencing can now be completed in one day for approximately \$1,000 [4].

This pace of discovery has rivaled that of the internet revolution, which dramatically shifted the ways communication occurs within professional networks and how patients interact with health care delivery systems and gain access to health information and services. Though these information technology advances were predicted, they were viewed with skepticism relating to reach and cost as recently as 1990 [5]. Many expect that genomic discovery could equal or even surpass the scope of the internet revolution, with far-reaching impact for health promotion and health care delivery [1].

Accordingly, high profile funding initiatives have been launched to intensify the focus of genomics on prevention and treatment of disease (e.g., "Cancer Cures Act"). However, concerns have been expressed that because these initiatives favor discovery-driven science, the potential effectiveness, dissemination, and implementation (henceforth

“translation”) of genome-informed prevention and treatment approaches will be a lower priority or even overlooked [6]. A number of consensus conferences, systematic literature reviews, and invited commentaries have outlined research priorities for translation that include clinical and public health foci to inform translation research [7,8].

Indeed, tracking of peer-reviewed scientific publications lends empirical support for the predominance of discovery over translation. Data from the CDC’s Office of Public Health Genomics of genomic publications over the past 20 years show no appreciable increase in publications relating to clinical or public health translation during this time frame [9]. The vast majority of genomic publications continue to describe basic science discoveries.

A growing number of rigorous research studies exemplify how basic science genomic discovery might be translated for clinical and public health benefit. For example, advances in prevention options for those affected by inherited cancer syndromes are now compelling researchers to develop and evaluate family-based interventions to disseminate inherited risk information [10] and implement clinic- and community-based screening approaches to identify those at greatest risk for these syndromes [11–13]. Social scientists are also showing how consideration of social environment can be informative in understanding gene-disease associations. For example, Fuller et al. tested whether social network structure influenced the well-established association of angiotensin 1 converting enzyme gene (ACE) with hypertension among African Americans. Inclusion of both genetic haplotype and family social structure measures yielded a better fitting predictive model for both systolic and diastolic blood pressure compared to either component alone [14]. In the clinical setting, others have demonstrated how incorporating genetic risk information into primary care discussions can lessen patient perceptions of personal blame that can inhibit their receptivity to providers’ weight management recommendations [15].

The promise and challenges of translation to public health and clinical settings arguably will require an even broader evidence base with expertise drawn from social, behavioral, and public health sciences. The Society of Behavioral Medicine (SBM)—a large international organization of social and behavioral scientists—“is a multidisciplinary organization of clinicians, educators, and scientists dedicated to promoting the study of the interactions of behavior with biology and the environment, and then applying that knowledge to improve the health and well-being of individuals, families, communities, and populations.” Over the past decade, genomic translation has begun to draw attention at annual SBM meetings but has yet to emerge as a significant focus despite its mission relevance to cancer, cardiovascular disease, and preventive and treatment compliance behaviors.

A number of suppositions have been posed about why there has been slow engagement of social and behavioral sciences in genomic translation. Historically, although much progress has been made toward understanding the broad ethical implications of genomic discovery, other areas have received significantly less attention [16]. In the summer of 2016, then SBM president James Sallis commissioned a presidential working group (WG) with the overarching aim to proactively consider whether SBM members should be engaged in genomics translation and how SBM’s influence might be leveraged in shaping the national and international narrative regarding genomics translation. The WG was developed with the awareness of the well-acknowledged and growing gap between advances in genetic and genomic discovery and efforts to apply this new knowledge to promote health. To this end, the WG set out to engage in a two-year effort to systematically explore SBM members’ views on: (a) whether SBM as an organization should be giving a higher priority to research aligned with genomic translation and (b) what efforts, if any, that SBM should be making in support of this increased engagement. In this manuscript, we describe the two-year process in which we have engaged, the results of these endeavors, and suggestions for future directions.

METHODS

Working group composition and planning

In our first year, the WG comprised seven members (C.M., E.A., K.G., K.K., W.K., C.W., and C.A.). The WG’s membership emerged organically. Several members of the WG conducted a preconference workshop on precision medicine through the Cancer Special Interest Group (SIG) that was held before the SBM national meeting in Washington, DC, in 2016. The workshop garnered considerable discussion among attendees about SBM’s role in the Cancer Cures Act, Moonshot, and other initiatives.

The initial WG met bimonthly by phone. Early calls focused on setting aims that could feasibly be achieved in an initial 12-month time frame. The WG adopted the following aims: (a) foster discussions of opportunities and concerns related to applying genomics in behavioral medicine research and practice and (b) work to ensure engagement of members at all stages of career and varying levels of genetics knowledge.

To achieve these aims the WG developed a three-step process (See Fig. 1). First, we set out to engage a slate of SBM leaders to identify themes that could be explored with the larger membership. In Step 2, we developed outreach strategies to make SBM members aware of our activities. In Step 3, we established a data synthesis plan with the goal of evaluating and prioritizing actions to pursue that

could be accomplished in the second year. In Year 2, we also refreshed the WG composition to engage appropriate viewpoints and expertise.

Step 1: engage SBM leadership

The WG hosted a “Think Tank” lunch during the April 2017 national meeting in San Diego. The 90 min luncheon began with a brief overview of the WG’s charge. We developed a structured interview guide to direct questions posed to the attendees (see Table 1). The invitees were selected to represent past SBM presidents, participants in SBM’s Leadership Institute, NIH leaders in behavioral science, SIG leaders, and current board members. Additionally, we sought to include leaders who had been outspoken with respect to their negative and positive views of genomics and those who self-reported as being naïve regarding genomics. Prior to the meeting, invitees were provided short readings to brief them on the Cancer Cures Act, Moonshot Initiative, ongoing scientific debates about genomics’ potential contributions to public health broadly, and forward-looking recommendations for ways that genomics might bring value to behavioral medicine [6,17].

The 14 attendees (including five members of the WG who served as group facilitators) were assigned to one of two concurrent discussion groups. One discussion group focused on general reactions to genomics and behavioral medicine, and the second group focused on ways to engage membership in discussions about the potential value of genomics to SBM. We recorded responses to the questions to fully capture the discussion. After the meeting, committee members reviewed the summaries and individually identified themes. Themes were discussed in a follow-up WG call and then synthesized to a final set of themes and recommendations. One of the recommendations for engaging the broader membership was to conduct discussion groups with SBM members and is described next.

Step 2: online video discussions with SBM membership

To collect data from a broad cross section of SBM membership in a timely manner, we opted for synchronous online video discussion groups. We developed two interview guides derived from the two discussion questions used in the think tank lunch—one geared to those reporting some

Fig 1 | Working group’s three-step process.

Table 1 | Think tank luncheon discussion questions for Society of Behavioral Medicine (SBM) leaders

Breakout Group 1: General reactions to genomics and behavioral medicine	<ul style="list-style-type: none"> • When you hear about initiatives like the Precision Medicine Initiative that talks about applying genomic discovery to improve health, what do you think about its relevance to SBM? • Based on what you currently know about genomics, what encourages you to get more involved in research? What discourages you from getting more involved? • As you think about the work you do, have you considered incorporating genomics into your work? Are others with similar expertise as you incorporating genomics in their work? What do you think of their efforts?
Breakout Group 2: Engaging membership in discussions	<ul style="list-style-type: none"> • Do you think that SBM should be more proactive in encouraging its membership to get more engaged in emerging genomic initiatives? Why or why not? • What are some steps that SBM could take to engage its membership in considering greater involvement in integrating genomic thinking and modeling into what we do? • Over the coming year, how might we engage SBM members in discussions of whether and how SBM could contribute to emerging genomic initiatives?
Both groups: Recommendations for engagement of SBM membership	<ul style="list-style-type: none"> • Over the coming year, how might we engage SBM members in discussions of whether and how SBM could contribute to emerging genomic initiatives?

knowledge of genomics and the other for those who had less exposure. Interviewees were recruited from SBM's 24 SIGs. SIG Chairs were invited to nominate individuals for potential focus group participation and were provided with text for an invitation to distribute to their SIG listserv to encourage SIG members to participate. SIG members were incentivized to sign up to have their SIG recognized at an upcoming meeting. We specifically sought individuals with varying levels of experience in genomics and at varying career stages to help gather a diverse set of opinions. In addition to inviting participation through individual SIG listservs, we also published an article in the SBM newsletter and used broadcast emails sent to the entire SBM membership to invite participation.

Prior to the discussion groups, participants received a brief introduction to the objectives for the discussion (i.e., discuss whether SBM should be more proactively engaged in encouraging the integration of genomics and social and behavioral medicine research), along with a commentary that discussed some of the ways in which genomics might inform and be informed by behavioral medicine [17]. Topics included: (a) general opinions about genomics, perceived relevance of genomics to participant's research program, and documentation of slow uptake described in the provided articles; (b) perceived value of genomics to behavioral researchers; (c) perceived value of behavioral research to genomics; and (d) opportunities to support genomics research in SBM. Each group was facilitated by two members of the WG and was conducted and recorded (with participants' permission) using the video conference feature of BlueJeans technology. These activities were reviewed by the Emory IRB and deemed to be exempt.

Participants were offered a range of dates December 2017–January 2018 to sign up for an online discussion. SBM staff screened potential participants for their level of familiarity with genomics using a brief online survey. Groups were arranged to be relatively homogeneous with respect to familiarity with genomics to foster open discussion uninhibited by concerns about one's genomic literacy. We conducted five discussion groups that included 6–9 participants; each ranged from 60 to 90 min in duration. Two of the groups included those with a high degree of familiarity with genomics, two with those unfamiliar, and one with a mix of genetics knowledge.

Step 3: analyze and synthesize findings to suggest priority activities

After discussion groups were completed, the audio files were de-identified, transcribed verbatim, and double coded. All WG members reviewed the five transcripts. Qualitative analysis was

conducted using MaxQDA (version 2018). A data-driven codebook was developed inductively and adapted upon completion of a consensus review by two primary coders. During the iterative coding process, the two primary coders met with the larger WG to develop and define new codes and review transcripts to improve consistency in coding. During WG calls, themes were synthesized using a framework approach [18–20] and recommendations were distilled for presentation to SBM's Executive Committee at the national meeting in April, 2018.

RESULTS

Think tank with SBM leaders: themes and recommendations

Four main themes emerged from the think tank discussion (Step 1 of our process) at SBM in 2017 and are summarized in Table 2. First, there was general consensus that genomics was relevant to SBM and its members. This perspective was based on the growing presence of genomics in the mass media, scientific journals, and high-profile funding initiatives. Comments by participants (hereafter "leaders") suggested that consideration of genomics in behavioral medicine was justifiable given the role of biology and embodiment as a level of influence on health outcomes. Lastly, leaders noted that as a professional society we should be open to opportunities for innovation in our interventions and practice.

A second theme centered on the role that behavioral medicine could play in dissemination and translation of genomics. Leaders suggested that SBM members could bring important expertise in how to conceptualize the distinction between achieving broad precision medicine and public health objectives, expertise in psychosocial theories to suggest appropriate intervention targets, and real-world study designs that could build an evidence base related to genomic dissemination. Lastly, leaders perceived that SBM could play a central role in understanding the interplay of genomics with social determinants of health to reduce the likelihood of exacerbating health disparities. Practice-related health disparity concerns are that technology-dependent genome applications will not have broad reach or be implementable in public health settings where the requisite supporting infrastructure is lacking. For example, most community health care settings do not have access to next-generation genomic sequencing nor the personnel with genomic expertise to interpret complex genomic test results. An additional concern is that exploration of genomic applications will divert limited funding away from public health programs with potential for greater health benefits.

A third theme centered on barriers and facilitators to engagement. Leaders perceived more barriers than facilitators for broadening SBM's engagement

Table 2 | Think tank luncheon themes from Society of Behavioral Medicine (SBM) leaders

Genomics has relevance to SBM	<ul style="list-style-type: none"> • Train has left the station and SBM should be engaged particularly as it relates to equity • SBM recognizes all other levels of the social ecological model as important for health outcomes, why resist biology? • Opportunities to bring innovation to address challenges for promoting preventive behaviors and treatment adherence.
SBM expertise has relevance to genomics	<ul style="list-style-type: none"> • Help clarify conceptual differences in meaning and implications for implementation of precision health versus precision medicine and care • Brings expertise, theory, methods, potential moderators, behavioral phenotype definitions • May contribute to a de-emphasis on genetics and increase broadened understanding of genomics including social determinants of health
Perceived more barriers than facilitators to engagement in genomic translation	<p>Barriers</p> <ul style="list-style-type: none"> • Need to bridge silos of science where the rhetoric of precision medicine has left out behavior • SBM membership lack <i>conceptual</i> knowledge in genetics and genomics and is unclear how to include genomics • Concern about increasing disparities • Sense that it is just another biomarker and not particularly useful • Concerns about genetic testing in communities and related identification issues <p>Facilitators</p> <ul style="list-style-type: none"> • New opportunities for improving intervention efficacy • Opportunity for innovative research with respect to literacy and health equity
How could SBM be more proactive in encouraging membership to engage in genomics?	<ul style="list-style-type: none"> • Shape the rhetoric and narrative to highlight the relevance of behavior and social determinants of health to genomics that has largely been left out of the discussion • Help prioritize research questions and resources for the field • Help keep genomics being viewed as a hammer and everything else is a nail • Show how we could be using genomics to understand and advocate for health equity

in genomics. Notable barriers included disciplinary silos exhibited in research collaborations, the relatively low genomic literacy of the majority of SBM's membership, and the existence of separate, independent meetings of professional genomics organizations; leaders thought these challenges inhibited cross-disciplinary discussions. Some leaders noted their skepticism about the utility of genomics (i.e., "just another biomarker") and the potential that genomics would benefit few people and inadvertently increase aforementioned health disparities. Others perceived that the nature of SBM's primary care and community collaborators would not be amenable to genomics, when most applications have yet to show utility.

In addition, leaders noted some facilitators to genomics adoption. The prospect of sparking innovation in intervention approaches was noted. Recognition of and desire to engage in interdisciplinary collaborations to address complex problems of behavioral medicine was noted as a facilitator. Leaders commented on the possibilities of advancing the field of communication research, particularly as it relates to health literacy.

A fourth theme focused on recommendations for what SBM could bring to genomics. Leaders strongly suggested that the gene by environment perspective was largely missing from much of the narrative about genomics; they noted that SBM members could contribute expertise in measurement of environmental factors related to behavior. Leaders also recommended that SBM could play an important role in interdisciplinary discussions aimed to prioritize research questions related to genomics. There

was strong support for SBM playing a leading role in applying genomics to understand and advocate for health equity. To this end, leaders suggested that SBM create forums for discussion of the relevance of behavior and social exposures that together with genomics may influence health outcomes. These recommendations were viewed as essential to reduce the likelihood that genomics, used in isolation, would be the sole lens through which health risks are viewed, leaving out behavior and social determinants.

Online video discussion groups

Characteristics of participants in the member discussions are described in Table 3. Briefly, the majority were female and at all levels of seniority with at least some familiarity with genomics. Three major themes arose from the video discussions and are described in turn.

Slow uptake

Discussion participants agreed that, in general, SBM membership had been somewhat hesitant to engage fully in genomics. Participants noted that this hesitancy was amplified by their lack of understanding of what specific genomic discoveries were "ready" for translation. Participants talked about the mixed messages they were receiving with respect to the usefulness of genomic information, particularly its low to modest effectiveness in promoting health behavior change [21,22], as having a discouraging effect on their engagement. In turn, participants noted that their lack of understanding of the jargon and conceptual knowledge of genomic influences

Table 3 | Characteristics of member discussion group participants (N = 35)

	N(%)
Genomic expertise ^a	
None	2 (6.2)
A little	6 (18.8)
Some	13 (40.6)
A great deal	11 (34.4)
Sex	
Female	30(85.7)
Job title	
Trainee	4 (11.4)
Assistant Professor	10 (28.6)
Associate Professor	6 (17.1)
Professor	10 (28.6)
Other	5 (14.3)
Cancer Center	
Yes	16 (45.7)

^aSelf-reported; N = 32.

limited their ability to critically evaluate the quality of the evidence base. This lack of genomic literacy also limited their research imagination and ability to conceptualize research questions.

Those attempting to engage in genomic research lamented the lack of funding initiatives related to social and behavioral research (e.g., translation of genomic discoveries). Individuals in cancer centers talked about the difficulty of identifying and engaging with scientists from other disciplines (e.g., genomics, clinicians, and epidemiologists) as collaborators. This challenge was juxtaposed with the pressure some participants felt to increase engagement in genomic research. Additionally, genomics-related funding announcements that emphasize clinical and basic science were perceived as inadvertently marginalizing behavioral scientists on research teams. Lastly, there was a strong sense that the research grant and manuscript peer-review process lacked social and behavioral scientists with expertise in genomics and, thus, proposals were judged to be of low significance or provided with feedback that was difficult or impossible to address.

Relevance and value of genomics for SBM

Consistent with the SBM leaders' perspective, discussion group participants perceived genomics to be increasingly a part of the scientific and public discussions in clinical contexts and public health. Discussion group participants expressed their perception that "like it or not, genomics is coming." However, participants also noted that their limited conceptual and technical knowledge impeded them from thinking about and fully evaluating the potential value and relevance of genomics to SBM. Most agreed that engagement by SBM members was especially relevant for junior faculty (particularly in

cancer centers) who would be increasingly called upon to engage in collaborations.

Participants in several of the groups mentioned the importance of interdisciplinary forums to thoughtfully consider the value and relevance of genomics for SBM and its membership. However, it was deemed important that the value of SBM (and social and behavioral science more generally) to genomics also be given serious consideration. Indeed, it was commonly mentioned that bidirectional learning—SBM learning about genomics and genomic scientists learning about SBM—would be critically important to understanding where and how genomic advances could have added value.

Recommendations for SBM to increase genomics

The member discussion groups articulated that SBM as an organization should clearly affirm its commitment to integrating genomics among the research and practice of its membership. With this assumed objective, we were able to categorize the recommendations into a set of action steps organized using a "push-pull" framework [23,24]. These recommendations are discussed next.

Current and future directions

WG members were surprised by the ease of recruiting and meaningfully engaging leaders and the broader SBM membership in discussions of the relevance of genomic translation. Indeed, members readily volunteered, even those skeptical or unfamiliar with genomics. The general consensus of both the leadership and online discussions was that genomics was relevant to SBM.

Framework for action steps

We conceptualized our Year 2 activities and recommendations for future SBM activities within a "push-pull" framework of innovation dissemination and situational influence (Step 3) [23,24]. Briefly, push/pull activities are anchored with the clear specification of an objective. The objective is then supported by a set of strategies that "push" reach out to potential adopters and support their efforts to engage. These strategies are often categorized as "persuasion and assertion" [23]. Push strategies are complemented by "pull" strategies aimed to expand demand through bridging and attracting. In the ideal, these complementary strategies are incremental and integrated, in that they may be pursued sequentially, but they are both conceived to achieve the same objective.

Push strategies

We conceptualized two broad categories of "push" strategies to persuade and assert genomics translation as important to SBM members' research and practice. A key recommended "push" strategy is that SBM foster collaboration-building activities that link members

with expertise in genomics to members who want to become more involved. Disciplinary silos were noted consistently to inhibit research collaborations. For example, social and behavioral scientists in cancer centers talked at length about the challenges of interdisciplinary collaborations in these settings. This was viewed as a loss given that expertise in social and behavioral theories and innovative dissemination/implementation study designs will be essential for developing an evidence base to inform translation.

A consistent theme was the need for reciprocal discussions amongst genomic and social and behavioral scientists with a goal that these interdisciplinary forums could increase the likelihood of cross fertilization to improve research and practice. Suggestions included premeeting workshops, “speed-dating” sessions, and online webinars to highlight the “how to’s” of building collaborations within and across institutions. These collaborations could promote improved understanding of the interplay of genomics with social determinants of health, perceived to be largely lacking in current genomic rhetoric. Increased attention to social determinants of health through involvement of behavioral and social scientists may reduce the likelihood of reinforcing health disparities in future genomic advances and applications.

Second, it was recommended that SBM should make concerted efforts to raise awareness among the membership about genomic applications that have sufficient evidence for evaluation within behavioral medicine contexts. These efforts could include premeeting workshops, featured plenaries, special editions of journals, and other approaches that foster continuing education related to evidence-based genomic applications and the opportunities and challenges they have for translation to promote health. An example of this effort could be a preconference grant-writing workshop at the American Society of Human Genetics to engage broad disciplinary representation from genomic scientists and social and behavioral scientists from SBM and other organizations to develop research aims that could seed continued collaborations outside of the meeting setting.

Pull strategies

“Pull” strategies aim to expand demand through bridging and attracting. Two pull strategies emerged from the discussions. First, the value of bidirectional learning was consistently suggested as beneficial; SBM members have expertise that could benefit genomics translation and genomics scientists have expertise that could enable SBM members’ engagement in genomic translation. Bidirectional learning could be accomplished via partnerships with other national societies focused on genetics and genomics (e.g., American College of Medical Genetics). Specific activities that could facilitate this bidirectional learning include joint workshops and plenaries at SBM’s national meetings and accordingly

at other societies’ national meetings. To this end, we invited two new members to the WG to represent the perspectives of large genomic societies and genomics journals. Together, we are proposing plenaries for SBM’s national meeting as well as meetings of the American Society of Human Genetics and National Society of Genetic Counselors to broaden discussion of collaborative partnerships. The group has also discussed various venues for disseminating information and opportunities such as this manuscript and one prepared to encourage collaborative discussions aimed for other Society journals [25].

Second, our discussion participants noted a strong concern that the research grant and manuscript peer-review process lacked social and behavioral scientists with expertise in public health and genomics and, thus, proposals were judged to be of low significance or provided with feedback that was difficult or impossible to address. To address this, SBM could advocate for modifications in the funding arc that might enhance SBM members’ engagement in genomics translation. SBM also could formulate a policy brief that highlights compelling examples of interdisciplinary collaborations involving behavioral medicine researchers in translational genomic research. Such an approach could complement SBM’s existing efforts to promote social and behavioral research funding.

Looking ahead

The identified push-pull strategies within the framework of innovation dissemination and situational influence provide clear next steps for generating fertile interdisciplinary conversations, as described above. As a professional society, making inroads with other groups invested in genomics is a first step. To maintain momentum, we will need to build upon and expand these efforts to facilitate deeper connections and meaningful, ongoing collaborations. To this end, we have made similar observations and suggestions in a companion piece published in a top genetics journal, the *American Journal of Human Genetics* [25].

In sum, we systematically sought a diverse membership to the WG, elicited input from proponents and skeptics of genomics translation, and then established and implemented a process for discussion among a broad cross section of society members. These efforts are intended to foster disciplinary inclusiveness with SBM and social and behavioral scientists broadly, viewed as essential for effective genomic translation to benefit public health, research, and practice.

Acknowledgements: The authors would like acknowledge the Society of Behavioral Medicine (SBM) staff Lindsay Bullock and Mary Dean who were instrumental in recruiting and actualizing all of the data collection events. We also thank Dr. Yue Guan who served as a second coder of the video discussion transcripts. We also thank Dr. James Sallis and members of the SBM executive committee for their thoughtful comments on an earlier draft of this manuscript. Lastly, we thank the SBM member participants for their insightful perspectives.

Funding: None to report.

Compliance with Ethical Standards

Conflict of Interest: Authors Colleen M. McBride, Kristi D. Graves, Kimberly A. Kaphingst, Caitlin G. Allen, Catharine Wang, Elva Arredondo, and William M. P. Klein declare no conflicts of interest.

Authors' Contributions: All authors were part of the SBM Presidential Work Group and contributed to the conceptualization and completion of this study.

Ethical Approval: All aspects of the study were approved by the Emory University IRB. This article does not contain any studies with animals performed by authors.

Informed Consent: Informed consent was obtained from individual participants included in the study.

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