Extending behavior theory (please respond to one question in this category)

• How could models account for simultaneous change along multiple health dimensions and their complex interaction? If we need separate models for separate behaviors, where do you draw the line? Which behaviors would 'cluster' together in the same model? Would you envision that these models would 'intersect' somewhere, and if so, how?

Although I would like to answer the first question, it seems that most people are answering it so I'm going to put my $.02 on this one. I think that this is an empirical question and involves the scientific process of proposing theories/models and then testing them empirically. The pattern of results will then tell us where we should draw the line. The results would also tell us with behaviors cluster together and further challenges to the clusters (through interventions and experiments(will tell us what parts of the cluster are truly related to one another which ones factors are simply spurious correlations. For sure these models will intersect. But I think the intersection of these models may have more to do with the pressure for individual academics to have their own "theory" that is actually a collage of an existing theory or theories along with their own model predictions to explain behaviors and behavior change.

Overall, I felt like all of the answers to the questions in this section required empirical evidence to answer them. I suppose that means we need to be conducting high quality research in this area.

Measurement of behavior (please respond to one question in this category)

• Are some types or magnitudes of incentives (financial, game rewards, social feedback, etc.) far more effective than others in supporting engagement?

Again, I think that the answer to this question depends on what the empirical data show us. And our ability to answer this question is further dependent on the strength of the studies to actually show us what kinds of incentives are more effective than others in supporting engagement. I also think that the answer to this question is not simple because we already know that the effectiveness of any incentive or intervention or treatment is not the same for every individual in every situation in every possible cohort or time dimension. I think a more effective question to ask would be "what kinds of incentives work for what problems, what people, in which situations and at what point(s) in time?" or some variation thereof. A dose of aspirin does not cure every headache but it helps if know when it does and does not work. We need to figure out efficient and effective doses of incentives.

Evaluation (please respond to one question in this category)

• Devices and software applications that claim to promote health and behavior change are being introduced at a rapid pace, but with little or no rigorous validation. Does this, or should this, impact future research and development of health behavior measurement and motivation systems?

It would be great if the lack of rigorous validation studies did not impact future research and development of health behavior measurement and motivation system. Then we could all just do any convenient research study we wanted and claim that our poorly evaluated health behavior change interventions worked based on weak scientific evidence. There would be lots of money to be made with very little effort and lots of the appearance of productive work.

Unfortunately, I think that the current lack of rigorous validation studies is already having a negative effect on the field moving forward. We are developing interventions based on weak behavior change models and we are putting out interventions based on those models with very weak or absolutely no evidence showing that they work. It is a shame because the truth is probably that some of these interventions are actually very effective and others are completely ineffective or even harmful. Yet we are not benefiting from this information.

Also, the technological solutions that seem to be an inherent part of movement in the field of health behavior change applications tend to be relatively expensive (e.g. it is generally much more expensive to develop an iPhone app than it is to produce, publish and distribute a brochure). People with money are already very dubious of these efforts when there is very little evidence for their return on investment not only in terms of money but also in terms of the actual behavior change and health improvement that will result from their investment.

Finally, a lot of people talk about how randomized trials aren't the be all end all of validation research. That is true, but we don't have enough randomized trials of behavior change applications so that we can rationalize that it is time to turn to other ways of looking at efficacy or validity. We need to clearly answer the question: "Does it work," then we explore the intricacies of what works.

General question *(please respond to this question)*
• ==What could participants in the meeting collectively do before, during, and after the meeting to significantly impact the field of health behavior change and maintenance? Be as concrete as you can, and think boldly.==

Before the meeting, I think we can make a personal effort to actively try out as many emerging health behavior change applications as we can. And because gamification of health is an emerging topic in this area, we should personally try out a game for health or gamification application. It doesn't count to read about it, watch a video of a game, or watch someone else use it. We have to personally try one out ourselves even if we aren't "digital natives" or gamers. Anyone who is against video games HAS to personally play a game. Castleville, Words with Friends, and freecell count. This will help us have better and more productive discussions about the possibility of using gamification as means for long-term behavior change.

During the meeting we can listen to each other's point of view as much as possible, network, and make a plan to work together on a big health behavior change project.

After the meeting we can keep in touch and work together remotely to support each other and work together to do high quality research in this area and to make ground breaking health behavior change applications that will set high standards in this area.