

Reply :Re: Ideation (Rapid Brainstorming) for scaffolding the outline
From : [REDACTED]
Date : 16-Jan-2018 04:18 PM
Hi [REDACTED]

Grp 1 Member B

I do agree with you that we should first define all the terms that we are using (i.e. good health and well-being) so everyone is clear about what we are talking, what is/are the problem/s and possible solutions.

Nevertheless, this microbiomes-humans relationship is a reversible one (they affect us, but we also affect them; and, in a way, there is a vicious circle involved). Hence I think we can also discuss this matter.

As scientists, we definitely need evidence for whatever we are stating/claiming in our presentation. Personally, I would identify some problems regarding humans' well-being that are of immediate concern and then find solutions for those, solutions that involve harnessing the microbiomes (within and outside our beings).

Moreover, let's not forget about the social and economic implications. I think I can give more input on this once we have a clearer idea about the points we are going to address in the presentation.

Also, I am intrigued by your proposal of coming up with new, out of the box ideas. But let's not forget that the presentation is 20 minutes max, and I have the feeling we will have a lot to talk about, so we need to be efficient. For this I would propose to find a solution to which we can all contribute, instead of proposing a new idea for each field we are working in (for short, let's go for interdisciplinarity, not for multidisciplinary).

I am also looking forward to the others' opinions. And maybe we can get more specific? I feel that we are looking mostly at the big picture.

Topic :Ideation (Rapid Brainstorming) for scaffolding the outline
From : [REDACTED]
Date : 16-Jan-2018 10:01 AM
Hi all,

Grp 1 Member A

A quick read through the paper and I feel that the environmental microbiome controls a broad range of facets of our well being. These facets run the gamut from genetic wellbeing to cognitive wellbeing with arguably, everything else that we can possibly think of falling somewhere in between.

So, I suggest that we follow the SDG approach (first the goals are listed down and then individual goals are checked against whether or not these environmental microbes play a role in achieving that goal. Conclusion: Microbes are responsible for 11 of 17 goals) — we brainstorm amongst ourselves and list down what we mean by good health and well being (are there defined standards to classify what falls under the rubric of good health? — actionable item: brief survey). Once we list down the various possibilities, we then try to re-read the paper and do a bit of survey to find conclusive evidence if the environmental microbes play a role (can be harnessed) to achieve each one of them. This approach, I reckon, is structured and can serve as a basis for outlining the presentation.

Also, since the whole point of this presentation is to foster interdisciplinary research (and not so much about the content), we can use this opportunity to think outside the box. As for me, reflecting on what I can bring to the table as a computer scientist, the first thing that comes to my mind revolves around communication among microbes to form biofilms (a bit of background — last sem I had delivered a presentation on biofilms in Dr. Rafi's journal club and was quite intrigued by the communication among microbes for the formation of biofilms). As part of the presentation, we can discuss an approach of harnessing (and manipulating) this communication to achieve well being. I suggest an understanding of the various methods (parameters) of the communication. If we have this understanding, we might try to find ways of tapping into and disrupting the quorum sensing (this is how the microbes communicate) and also try to manipulate individual parameters of that communication to tweak it to our advantage. (Outline. Does biofilms sabotage good health and well being? Is there a defined subset of identifiable microbes responsible for the formation of biofilms? What is the communication pattern that these microbes adopt to facilitate the formation of biofilms (or, what is the underlying mechanism of quorum sensing? Can we map the communication into bits (digitization)? If we alter the bits of the communication with the intention of disrupting and/or altering the message, can we predict how alteration of individual bits affect the communication? Can we predict the altered message? If we manage to develop an understanding (in part or in whole) from the previous questions, we may try looking at the bigger picture — Do microbes communicate for other purposes? What are the purposes? Do they follow a mechanism similar to quorum sensing? Can we hack into this communication and skew the communication to our advantage (well being)?

Similarly, we can all talk about something outside the box from the perspective of our individual research areas. This might sound far-fetched, but you never know, might be we are digging up a gold mine and a revolutionary idea is lurking beneath waiting patiently to be dug up by the members of our group!

I would be looking forward to your feedback on what you think of my idea for the outline.

Reply :Re: Ideation (Rapid Brainstorming) for scaffolding the outline
From : [REDACTED]
Date : 16-Jan-2018 08:12 PM
Hey both,

Grp 1 Member C

Many thanks for your sharings and suggestions for the presentation outline. I do agree that setting clear and concise definitions for the terms involved in our research question would be a good way to pave for the presentation flow to come. Perhaps a focus on extended lifespan, reduced morbidity and enhanced bodily functions may be good to address and define good health and well being. Since the target audience involves the coursemates who would be equally familiar with the UN's 17 SDGs, may be we can skip that and move in direct to our targeted SDG: Good Health and Well Being.

Though trying bring in new, out of the box ideas for the short 20 mins presentation may be quite ambitious, I think trying to include the interdisciplinary approach may be a valuable consideration, especially since we would be brainstorming towards real, practical solutions to the problem. I reckon we can try a short preliminary sharing (just 2 - 3 slides) on how we think our various disciplines can each provide solutions, or parts of a solution for an overall collaborative picture towards harnessing microbes for the targeted SDG (e.g. computational simulation specific to certain microbe function = chemical/physic characterization of activity = biological understanding of intended outcome/effect)

Other than that, I gathered from the paper that microbiomes for good health and well being may revolve around some of these point:

- Symbiotic functions: Functions in Chlorophyll and Mitochondria
- Immune development: Immune perturbation, activation and Antibiotics development
- Chemical Synthesis: Synthetic pathways and contributions to development of drugs, antibodies, pharmaceuticals
- Microbial functions: Enhancing body functions - Prebiotics and Probiotics

Just some ideas. Would be good to get your feedbacks. Thanks :)

Reply :Re: Ideation (Rapid Brainstorming) for scaffolding the outline
From : [REDACTED]
Date : 17-Jan-2018 10:02 AM

Grp 1 Member D

This is succinct. The aspects that you've outlined is easier to digest in a presentation, embodying the interdisciplinary facet altogether. I think it will be much more focused if we could simply define the terms health and well being, and work towards uncovering major findings establishing the potential of microbes or even recent discoveries that has highlighted their importance in health, followed by a discussion of pros and cons.
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Reply :Re: Ideation (Rapid Brainstorming) for scaffolding the outline
From : [REDACTED]
Date : 17-Jan-2018 10:10 AM
Yes,

Grp 1 Member E

Since we have all come to a consensus on the scope of work, I think the next step is to brainstorm on the scope in detail and maybe split the work for each to take a different topic, while bearing in mind that we need to merge them all together to fit one nice presentation with a good flow and strong message!

Reply :Re: Ideation (Rapid Brainstorming) for scaffolding the outline
From : [REDACTED]
Date : 18-Jan-2018 03:28 PM

Grp 1 Member A

Thanks, [REDACTED] for sharing the four papers explaining how microbes play a key role in reducing our carbon footprint and thanks, [REDACTED] for sharing the read on why well-being matters. Both of these should indeed come in very handy for our presentation.

As I had mentioned in my first post and as has been highlighted by Dr. Rafi both in his feedback and in his email, this presentation opens up a niche opportunity for some interdisciplinary thinking. So let us, over the next few days, discuss on how we can contribute towards achieving this goal. There are two possible approaches —

1. Each of us pick a sub-issue of well-being and talk through the solution from the perspective of our own research area (like [REDACTED] talking about how microbes help reduce our carbon footprint, I may talk about quorum sensing and microbial communication patterns etc.); OR
2. We try to think of a central issue that is directly related to our well-being (and I think this should be narrowed down from the generic umbrella term - "well-being"). Once we decide on the issue, we can each contribute by lending our own perspective towards solving this issue.

Either approach works for me, though I guess, I would be leaning a bit more towards the second as it blends in perfectly with the very idea of interdisciplinary collaboration ([REDACTED] had talked about this in one of her earlier posts). Also, I believe, this would force us to think outside the box and make for an interesting part of our presentation. Later, we can evaluate our collective position as a group on tackling the issue and talk about how we believe we can collaboratively work towards a feasible solution.

I suggest we reach a consensus on the approach to follow and brainstorm on the central issue we can address by pitching our interdisciplinary ideas.