E4B Innovation Executive Summary

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Innovation title: Bridging the Gap

Point of contact name: Shalonda Ingram/ Havisha Pedamallu/ Jacob Elnaggar
Point of contact e-mail: shalondamingram@email.wustl.edu/ hpedamallu@wustl.edu/ jelnag@lsuhsc.edu

One Line Pitch: *Closing the gaps between research and clinic to enhance personalized treatment for cancer patients*

Project Summary:

This innovation will change how basic science is translated to the clinic setting for cancer patients. The innovation directly addresses the gap between basic science to improve personalized medicine approaches. Our innovation is a network-based app and/or site that allows the clinician to directly address questions to researchers about current and on-going research that would enhance the treatment of their patients. Researchers can then provide the reviews that are relevant and current trending news on the subject. Likewise, researchers can send inquiries directly to clinicians about what research may be needed, holes that can be filled from the perspective of the clinicians that is meaningful for their patients. This would also give the clinician and researcher the ability to contact public health professionals concerning predispositions and disparities for consultation on community intervention programs they can develop to enhance the patient experiences. The really beneficial portion of this innovation would be the opposite side of the application which like most platforms allows the patient and doctor interaction. But for the cancer patient, becomes the full support and information platform which they can have their questions answered. The clinician would have the option of interacting with researcher (after identifying an expert for the patient's case) to specifically provide information on the patients' cases that will help the patients better understand what their predisposition means, and how to go about adjusting their lifestyle.

Management:

The technical team will need to have the capacity to manage the app and website. The technical side will also involve the ability to register/sign up new users for the service. Maintain payment platforms for the users (includes researchers, clinicians and patients) and sponsors. The team will also maintain the addition of ads purchased by sponsors.

The managerial team will have to manage the customers, gauge the usability and how it enhances the doctor (the end user) and the patient, whom we are actually targeting. The managerial team will manage content, as well as sponsors that will have the capability to purchase ads .

End-user Problem: Most of the medical innovations that are created in the lab do not reach the people that they are meant for because of a variety of reasons including the large disconnect between the research and medical communities, as well as a jargon-heavy method of reporting scientific advancements.

Target Market (HP): *Estimate the size of the market for the intended product and/or service. Include the initial "lowest hanging fruit" niche market, as well as the size of the broader market that can be reached, if the innovation is successful.*

The estimated market size is all cancer patients and oncologists. There are currently about 15,000 oncologists in the United States and each year, there are over 1.5 million new cases of cancer diagnosed. 60% of individuals with cancer are over age 60, and this would be our low hanging target population since they have the least access to information and are more likely to need recurrent communication with a physician or researcher.

Customer Validation:

The market for an exclusive service for the advancement in the area of oncology exists as oncology and research is in the top 5 causes of death and most diagnosed condition in the US. it is stated that 1 in 10 people will have cancer today. The challenges presented with treatment of cancers is that each case, although many times in the same organ system, the treatment option may vary from patient to patient. There are a vast number of ways breast cancer manifests from luminal or basal in addition to the types of receptors present, if any. Therefore, developing a platform to address challenges with treating a variety of molecular, pharmacological and clinically diverse cancer cases provides a viable means to enhance treatment, therefore establishing customer validation

Technology Validation: *What evidence can you present today that the product and/or service is likely to work as envisioned?*

On of the top business models for companies that is most successful is the networking approach that provides individuals the ability to freely interact according to their needs and expertise or simply their interests. This provides researchers, clinicians and patients the same capabilities in efforts to provide patients with the most helpful information possible, allowing the patient to have the best possible health outcome.

Sales/Marketing Strategy (HP): *Explain how the project will make its way from the lab to the marketplace.*

We will partner with an academic medical center with a large oncology department since they are often the ones most willing to try new and experimental treatments. We will qualitatively test how helpful doctors found the product. Then, we will pitch the service to other hospitals and oncology clinics and sell it as a subscription model. For every X number of patients or physicians, we will charge $X and have a base fee as establishment costs. The patient module will be different from the clinician-researcher module.

Business Model (HP): *Explain how the product and/or service will generate adequate revenues and profits to create a sustainable and scalable enterprise.*

The business model will be a subscription-based service, allowing academic institutions to pay for our service and provide access to their staff as a whole. They will be incentivized to use this service because it allows easier communication between researchers, physicians, and patients. It serves a similar purpose as conferences, but is much cheaper and allows constant contact, not just during the meeting time. In addition, oncology is a rapidly evolving field and it is easy to get lost in the large amount of information that is present. In addition, patients' insurance companies can also subscribe to the service to allow patients to have easy communication with medical professionals. This would be helpful for patients and payers because it would cut down on doctors visits that are expensive and time-consuming.

Competitors/alternative solutions (SI): *Summarize existing alternatives to your solution and any direct or indirect competitors you face or are likely to face in the future.*

Competitors:

- Pyx Health is a cyber bot- based technology that provides automated support. The cyber bot tracks the patient's information based on the patient's input then sends it to 'pyx pals' in a way that allows them to follow up with the patient when and if needed. This seems to be used for many mental health patients but does provide a framework or model to utilize that supports communication of the researcher, the doctor and the patient while translating complex science information into digestible accurate information for patients concerning their treatment. (https://www.pyxhealth.com/)
- Epharmix- is an SMS based technology phone-based intervention that monitors patient progress by text messaging. In articles published by the company, they employ SMS to allow patients to report their hemoglobin A1c and fasting blood glucose levels in diatetic patients. Of the cohort, they report that the levels decreased in active participants with an interaction stable up to 6months. The system also reminds patients to take medication and self-administration of medicine, and suggests interventions to challenges that the patient may be facing. This model is competitive because It takes advantage of the patient communication to track progress by patient interaction. (https://www.epharmix.com/)
- Topflight is a healthcare app developer. The scope of the applications they have developed for various institutions vary in their target population. They have developed mental health, clinical trial tracking and dietary restriction applications. Their experience in the development of meaningful applications that is rooted in their desire to compensate for the lack of patient

centered care. Therefore, this company has developed a niche in creating health care apps with the patient perspective in mind as well as the goal and need that the application will fulfill. It seems as if the company particularly partners with institutions to develop and sell their apps. This company has not yet developed an innovation with our need or target customer. (https://topflightapps.com/healthcare/healthcare-app-developer/)

Our innovation seems to have the ability to incorporate concepts of patient communication offered by these technology while maintaining the purpose that our innovation seeks to address, which is community intervention by addressing the gap between research and the clinic to improve personalized medicine. For academic institutions that actively have ongoing oncology research, the institution can employ the software initially to remove the silos within the university to ensure they have the chance to utilize the resources quickly available.

Competitive Advantage (SI): *Describe what unfair advantages you have over likely competition, that other qualified and well-funded groups could not easily duplicate.*

The competitive advantage that our innovation presents is that our innovation not only allows the patient and clinician to have access to the patient's treatment plans and physiological information, but that there is an additional component that employs the role of the researcher to provide additional information that enables a patient driven research approach that accents the treatment plan for the patient.

Ethical Risk Assessment (SI): *Describe a potential negative downstream ethical consequence of your innovation if your venture is a success; and actions and/or policies you will implement to mitigate these consequences.*

A possible ethical issue is the increase in Emergency Use Authorized (EUA) Applications submitted to the FDA. The advantage to having immediate access to researchers is the wealth of knowledge of treatments available that may be authorized for other types of cancer (or other conditions), but also effective for the patient in treatment. In these cases, clinicians will need to submit an EUA to get approval to use the suggested treatments for patients. This could lead to delay in treatment; in some cases conflict of interest could apply for researchers with relationships with companies. To address the need for EUA submissions, I believe that this would become an issue beyond our control, but we will need to place memorandums concerning the challenges the EUA path could present if necessary and develop a process to assist with facilitating the treatment. Our education based approach to patient care will be an advantage to accessing the treatments and ensuring participating patients trust and well being is maintained. Concerning conflict of interest with researchers or clinicians and their relationships with pharmaceutical companies, the patients can opt for second opinions of researchers and clinicians and also the actual literature that suggests the success of the treatment plan in question.

Another challenge we may have is the accessibility of some treatments.The pharmaceutical industry is notorious for influx in pricing for treatments, especially some cancer treatments. The price of therapies is an issue across the board in health care industries. In this case, some creativity for how to possibly partner with pharmaceutical companies or insurance companies to achieve treatment of the patients could help? But again, this would be beyond the scope of what the innovation would provide, but would directly affect the end users'.

Risk Assessment (HP): *Starting with the highest risk item that you can reasonably de-risk using additional capital, provide a list of risk factors and associated risk mitigation strategy. Please insert rows as needed.*

Risk factor	**Risk mitigation strategy**
Misinformation presented to the patient	We will limit access to adding information to verified scientific or medical professionals to maintain only correct information is presented
Our product does not have a comprehensive list of all the innovations that are made	We will provide a disclaimer that the information provided is not an exhaustive list, just new information that we are able to provide

Use of Funds (HP): *Provide a quantitative and detailed list of specific activities you intend to undertake with the capital investment you are seeking. Also provide additional funds that will be required to get the product and/or service to market. Please insert rows as needed.*

Source of funds	**Specific activity**	**Funds required**	**Deliverable**	**Delivery by**
Initial funds	App development	$70,000	App	
	Deployment and testing	$50,000	Qualitative data that the app is a viable product	
	Network building	$20,000	Network of physicians and researchers	

			willing to participate	
Total initial funds		$140,000		

Subsequent funds needed	**Specific activity**	**Funds required**	**Funding source**
	Expansion and launch of product	$20,000	Subscribers
Total subsequent funds		$20,000	

Other relevant information: