The **letter of intent** (LOI) includes a short pre-proposal that is designed to layout the scientific problem or question that you hope to address, the reason that this particular challenge is important (e.g., why is the current state of the art not sufficient?), and your approach to the problem or question. You will want to provide enough technical content and detail to convince reviewers that you know the field, have a unique approach to address the issue, and that you have the expertise to carry out the work. The pre-proposal is not the space for you to discuss every experiment that will be done or why, however, it is a place where you will want to highlight your approach, broken down into its significant aims, and any <u>key</u> experiments, strategies, or new methods that you plan to use to make a significant contribution to the field.

<u>General Guidance</u>

• Be sure to <u>propose interesting science</u>, but don't stop there! Make sure that you also place that science **within a broader context**. What is the **need** for what you are proposing and why is what you are proposing useful and exciting? What will be achieved technically if this work is successful? Will it have a societal impact? What will change if this project is successful? These are good questions to guide your thought process and answering at least some of them clearly within your pre-proposal will help the reviewers to understand the potential impact of the work that you are proposing. In fact, if you can find a way to briefly remind the reviewers of the shortfalls of current technology and the advantages of your solutions throughout your pre-proposal, it will keep the relevance and importance of what you are proposing in the front the reviewer's minds. It might also help you to stay focused on what makes your proposed science so important!

• The best scientific creativity comes from **boundaryless thinking**. Try not to worry about what others are doing or proposing. Rather focus on presenting a good idea to approach a problem of scientific import that excites you. Then, explain it clearly in a way that a general scientific audience can understand it using your own style.

• A proposal that is written in your own **personal voice** will always be most compelling. While a few example pre-proposals are being provided here, they are only to help you imagine what a pre-proposal might look like. Feel free to use them to guide the way that you structure your pre-proposal, but do not let them constrain you. Your pre-proposal does not necessarily need to fit into or conform to these examples. Using your own genuine voice to explain your proposal and why it is an exciting approach to important science will help the reviewers to get excited about your work, too!

• Think about **potential issues and contingency plans** (e.g., why might my initial really cool idea not work, and if it doesn't, how might my team get around this issue to still accomplish the goals of the proposal so we can continue the rest of the work?). This is especially important if your second or third aims or goals rely heavily on the successful completion of an earlier part of the proposal. Identifying potential challenges doesn't mean naming everything you could possibly try. Rather, focus your attention on what aspects of your proposed work MUST be accomplished for the remainder of the work to be possible. For these critical outcomes, are there things that might cause the science, as proposed, not to work? If so, can you come up with another approach that could realistically be used to circumvent the issue? By recognizing potential issues and building tunable or diverse strategies into your proposal, you show reviewers not only that you recognize the key parts of your strategy, but also that you are a scientist who is able to adapt and overcome the challenges that are always part of the research process.

<u>The Fine Print: A Few Tips About the Details</u>

Reviewers. The reviewers for your proposal will be drawn from a multidisciplinary group of active researchers, but it is unlikely that the whole committee will be experts in your specific field or sub-specialty. As such, make sure to present your proposed work so that its import and relevance can be understood by a more general scientific audience. Too much technical detail or jargon can be off-putting and tiring for reviewers who are reading multiple applications. That doesn't mean that the specifics of a particular experiment shouldn't be included; for key experiments, including the details and why that experiment is so important, might be critical. Regardless, avoid a proposal that is <u>all</u> about the fine details of your experiments, which can lead to a dense proposal that is hard to read and which will often review less favorably.

Plan Ahead and Secure Institutional Support. It is a good idea to start the writing and planning process early. In order to officially submit a Letter of Intent to the Beckman Young Investigator program, you will need the Chief Academic Officer for your institution and your Dean to sign-off on your application. Requests for these endorsements need to be initiated from within the application portal. In addition, your sponsored research office will likely have other internal requirements and deadlines. Contacting these institutional offices and representatives early will ensure that you know what they need, and by when, in order to complete the application process on time.

Graphics. Using schemes and graphics to help explain your proposal is critical but using too many or not enough can make your pre-proposal feel out of balance. On average, consider using one well thought out scheme per page or section of your pre-proposal. Given that you only have a few pages to describe your work, utilizing high impact graphics will help you to guide the reviewers through your science without using more space than is absolutely required.

Be sure that your graphics are large enough to be read easily by the reviewers. Making a graphic smaller so that there is more room for either another graphic or more text might seem like a good idea, but if a reviewer has to strain to see the details or to decipher the labels, it is likely to reduce their enthusiasm for your work.

Templates. The Beckman Young Investigator application utilizes templates for your biosketch (CV) and research support (funding). As part of those templates, you will be asked to provide information or text that may not be common on a standard CV or funding list. Be sure to look at these templates early and leave yourself plenty of time to gather any required information and compose the extra text that is required. *At the LOI stage, these documents are not distributed to reviewers. Rather, they are used internally by the Beckman Foundation to determine eligibility.*

Blinding. All Beckman Young Investigator pre-proposals are reviewed blind, which means that the reviewers will not know who you are. Be sure to review the instructions for writing a blinded pre-proposal on the program website and within the application prior to beginning your proposal. Writing a proposal that clearly lays out an important and exciting scientific problem and why your strategy is a good way (or perhaps even the best way!) to solve it, without obviously leaning into your prior work and accomplishments, can be challenging. Be sure to give yourself plenty of time to draft and edit.

Proofreading. Be sure to carefully proofread and edit your proposal before submission. Errors in spelling, grammar, and numbering can annoy a reviewer, decreasing their excitement for the work that you are presenting.

Tip 1: If possible, ask a colleague or prior awardee to review your pre-proposal before submission.

Tip 2: It can be helpful to have someone non-technical or very far from your field review your draft. In a good proposal, these non-specialists should be able to understand the potential big picture impacts of your work, even if they don't understand the technical details. They can also give you good feedback on the overall flow and style of the writing.

Tip 3: Read your proposal a sentence at a time <u>backwards</u>. After writing and rereading something over and over, your brain begins to auto-correct errors that may be present. Reading the proposal sentence by sentence backwards will help you to catch these errors.

Use the Beckman Network. Feel free to reach out to former awardees for help and guidance as your think about your research proposal and prepare your LOI. A full list of former awardees can be found on the Beckman Foundation website at https://www.beckman-foundation.org/awarded-scientists/

Connecting to the Legacy. Given the importance of Arnold O. Beckman's career and the initiatives of the Foundation, you might want to read up on his life and accomplishments to see how his legacy might intersect with the goals of your proposal.