**SURPASS PROGRAM CALL FOR PROPOSALS (INAUGURAL 2022)**
**FULL PROPOSAL SUBMISSION GUIDE**

**Revision 1.0**
- Updated language on total award in Section 3.6.
- Updated guidance on WSE Budget Template in Section 4.9.
- All referenced submission templates are now available on the SURPASS website at https://surpass.jhu.edu/

*Dated: 8/14/2022*

**1.0 SURPASS OVERVIEW**

The SURPASS initiative is a multimillion dollar initiative that will harness the ingenuity and technical abilities of the Whiting School of Engineering and the Applied Physics Laboratory, two great divisions at one of the world's leading research universities, to tackle grand challenges by developing transformative innovations and solutions. This is an unprecedented opportunity that it will push our institutions toward new discoveries and deeper relationships.

**Contact Information:** Surpass@jhu.edu

**Important Dates**

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| Full Proposal Submission Closes | September 19, 2022 |
| Oral Presentations | Week of October 5, 2022 |
| Award Notifications | November 1, 2022 |
| Project Start Date | January 1, 2023 |

**2.0    PROGRAM DESCRIPTION**

SURPASS will provide ***cross-divisional teams*** funding to support up to 5 projects for pilot-year investment for projects that have the potential to lead to upwards of $100 million in external funding. Priority will be given to projects that offer impactful translational research and propose a viable path toward translation. The initial award period will be 18 months with possible extension to a multi-year performance period. Successful projects will be eligible for additional investment by SURPASS and other JHU programs following the primary period of performance. These select projects will be eligible for up to two more years of follow-on funding. The goal of this investment is not only to develop revolutionary new technology, but also to build interdivisional teams, facilitate collaboration, and increase joint staff/faculty appointments. SURPASS will break the mold for the way university divisions work together. Additional information on the SURPASS program is available at: https://surpass.jhu.edu/

**3.0     PROPOSALS AND SELECTION – PHASE II (INVITED PROPOSALS)**

Proposed research projects for SURPASS will be considered and evaluated in a gated, two phase proposal process. In Phase I, proposers were requested to submit a whitepaper outlining their project, which was reviewed against criteria outlined previously. A limited number of whitepaper submissions were selected to move forward, and those teams have been invited to submit a full proposal for consideration as well as provide an oral presentation of their concept in Phase II. Teams were notified of their status the week of July 11th.

Teams invited to proceed to the full proposal phase will be provided with additional resources to develop and refine their concept, including dedicated ideation and development sessions with technical facilitators; and modest funding to support labor efforts for APL staff requiring a charge number.

**3.1     Program Scope**

Proposals to this program will argue for addressing a compelling challenge and present a vision for solutions to that challenge. These challenges are not bounded to any specific field of research or impact, so proposals in any research area of relevance to WSE and APL are encouraged.

**3.2     Period of Performance**

Projects submitted should be for an 18-month period of performance, based on the award notification and project start dates provided in Section 1.0.

**3.3     Proposer Eligibility**

Each team must have at least one PI with an appointment in APL ***and*** at least one PI with a primary appointment in a WSE Department.  Anyone at APL can be a PI provided they have the support of their local leadership. WSE faculty with a *primary faculty appointment (i.e., TT-faculty research/teaching professor, research engineer/ scientist, etc.) in a WSE Department may apply as PI. Faculty members who hold <u>primary</u> appointments in the Department of Biomedical Engineering and the Department of Environmental Health and Engineering are also eligible.  U.S. citizenship, while not required, may be necessary for certain proposals and will be considered on a case-by-case basis. ***Note:  Secondary faculty appointment or affiliation with a WSE Department is not eligible.***

Key personnel that are not affiliated with WSE or APL are acceptable for the proposal, but only when they are critical to the program. Please include discussion and justification for this in the Collaboration Plan section of the proposal (as describe in Section 4.4 below).

**3.4     Publication of Research Results**

Broad publication of research results under this program is fully encouraged. Publications with APL authors or co-authors will be reviewed by the standard APL process prior to release.

**3.5     Restricted Research Elements**

Proposals for restricted research topics (Controlled Unclassified Information, Controlled Defense Information, Export Controlled data) will be considered for funding, provided sufficient collaboration can be accommodated between both organizations. An alternate submission process will be provided for restricted submissions compliant with APL security requirements. Please contact SURPASS representatives as soon as possible to make proper arrangement for submission and for access to qualified file sharing and collaboration tools if needed during proposal development. SURPASS staff can be reached at surpass@jhu.edu.

**3.6     Project Scope and Scale Refinements for Full Proposal**

It is expected and understood that over the course of development and refinement of the project proposal, changes in scale, scope, support and budget may emerge; and SURPASS leadership encourages this level of refinement.

The only items of specific sensitivity at this point are changes to the PI's (not key personnel) of the project. If your team intends to change either the APL or WSE PI, please notify the SURPASS team as soon as possible for consideration and evaluation.

As a reminder, there is no minimum or maximum budget limitation at this point, but be advised that the total budget allocation for the SURPASS Program is $3.75M for the project award period of 18 months, and the total portfolio of projects awarded will be within this cap. The total number of awards, if any, will be based on individual merit of each, but is not expected to exceed four (4).

**3.7     Innovation Coaching Sessions**

To aid you in your proposal development, members of the APL Design Thinking group will facilitate a series of sessions of which at a minimum PI's must participate. The sessions include:
- One-hour Teaming Workshop - The goal of this workshop is to establish best practices for interdivisional teaming and to initiate development of the collaboration plan to be presented in the proposal.
- One-hour Innovation Development Canvas (IDC) workshop, the end result of which will be included in the proposal (see Section 4.5).
- One-hour Storycraft workshop to develop and refine the messaging in the full proposal and oral presentation.
- One one-hour choose-your-own support with Design Thinking facilitator. This can include pitch practice, additional work on Innovation Development Canvas, or any other item the team requires within the innovation coaching space.

**4.0     FULL PROPOSAL SUBMISSION PROCESS**

Submissions for SURPASS whitepaper proposals should be submitted via webform, at the following address: https://johnshopkinsuniversity-prsqv.formstack.com/forms/surpass_submission_form. Submissions are due no later than 5:00 PM Eastern Time on 19 September 2022. Section 4.11 below outlines the review consideration which will be used in the final selection of proposals for award.

**4.1     General Requirements:**

Proposals must include the following elements in the main volume:
- Joint Submission Cover Letter (does not count towards page limit)
- Table of Contents (does not count towards page limit)
- Joint Technical Volume (10 page limit)
- Innovation Development Canvas (does not count towards page limit)
- WSE/APL Integrated Milestone Schedule (does not count towards page limit)
- Quad Chart Overview (does not count towards page limit)
- Technical Appendix (does not count towards page limit)

Proposals must include the following elements in the budget volumes:
- WSE Budget Volume (no page limit)
- WSE Budget Spreadsheet (MS Excel Format)
- APL Budget Volume (no page limit)
- APL Budget Spreadsheet (MS Excel Format)

Proposal submissions should adhere to the following:
- Figures and tables must be numbered and, when referenced in the text, be referenced by that number. They should be of a size that is easily readable and may be in landscape orientation. They must be formatted to print on an 8.5 x 11-inch paper size.
- Proposals will be single-spaced with one-inch margins on all sides. Font should be Times New Roman (11-point minimum). Smaller font may be used in figures and tables, but must be legible.
- Proposals must be in portrait orientation except for figures, graphs, images and pictures.
- Page numbers must be included.

The main volume should be submitted in its entirety as a single Adobe PDF file. The WSE and APL Budget Volumes should be submitted separately as PDF files, and the budget spreadsheets should be submitted separately in their native MS Excel format (XLS).

**4.2     Submission Cover Letter (1 page, PDF)**

A submission cover letter must be provided, which should include:
- Project title
- PI contact information
- Signatures from both WSE and APL submission representatives (PI or contracts administration as appropriate)

At template for the Submission Cover Letter will be provided shortly.

### 4.3    Table of Contents (1 page, PDF)

A table of contents outlining the section of the Technical Volume through Technical Appendix.

### 4.4    Technical Volume (10 pages, PDF)

The technical volume should include an Overview or Background, and address the four critical elements outlined below – Technical Approach, Collaboration Plan, and Future Funding Considerations.

#### <u>Overview/Background</u>
- Explain the problem your proposal addresses and why it is important. Consider for whom you are solving this problem and their current unmet need.
- Outline the impact that the project will have on the field of research.
- Describe the necessary background for an experienced scientist or engineer to understand the reasoning behind your technical approach.

#### <u>Technical Approach</u>

The technical approach section should address the proposal Innovativeness and Technical Challenge, and briefly outline your approach to identifying and mitigating risks in execution.

*Innovativeness*
- Describe how your proposal idea will fundamentally transform the field within the next decade.
- Explain how your proposal idea is truly a revolutionary innovation that takes advantage of and/or responds to disruptive opportunities (or counters such disruption).

*Technical Challenge*
- Describe the technical approach of the proposed research program.
- Describe the extent to which it introduces new or improve on current capabilities in the field.
- Explain how your proposed approach will be discovering enabling techniques or experimental approaches, not merely applying existing technology or experimental approaches in a new way.
- Explain how the research program integrates fundamental and applied research elements together to address the challenge, and how it sets the stage for system prototypes and eventual translation out of the research environment and into the world at large.

*Risk Identification and Mitigation*
- Briefly describe the significant technical and operational risks to the project and your proposed approach.
- Explain how you will identify the emergence of risks, and your plans to make course corrections in the technical approach or project plan to accommodate them.

#### <u>Collaboration Plan</u>
- Describe how the project plays to the specific strengths of each collaborator.
- Identify which elements of the proposed work will be conducted by each team member.
- Identify the location where labor elements will be conducted or requested equipment will be housed (specific lab or primary campus designation).
- Describe your goals for publications of research results.

- Describe your concept for data sharing, management and control. Does the team have unique or specific needs for data management?
- Provide description and justification for the role of researchers, key personnel, and/or subawards from organizations not directly affiliated with WSE or APL.

**Future Funding Considerations**
- Describe how this research aligns with known or expected USGOV, commercial sector needs or International needs.
- Discuss any analysis or research you have done to assess and evaluate the opportunities for future funding, and include any indications do you have to underpin your belief that this is $100M domain.

### 4.5     Innovation Development Canvas (1 page, PDF)

Proposals must include a final version of the Innovation Development Canvas that will be developed over the course of the Innovation Coaching suite of workshops.

### 4.6     Integrated Milestone Schedule (does not count against page limit, PDF)

Proposals must include an Integrate Milestone Schedule in Gantt Chart, tabular, or equivalent format. The schedule should include task milestones, project demonstrations and program deliverables, with particular attention to task and data dependence and interdependence between the elements of the team (which should be reflective of the elements of the collaboration plan).

At a minimum, program milestones should include:
- Monthly Reports – brief one-page memos including a technical and financial update and any collaboration barriers (template will be provided)
- Team progress review (~six months into the program) – With the SURPASS Program Manager.
- Interim written progress report (~twelve months into the program) – To outline project achievements, status, and provide review and analysis of interim data and results. This report will also be used to evaluate any requests for program continuation for an additional 18 month award.
- Interim oral report – Briefing on the interim progress report to the SURPASS Program Manager and leadership.
- Final written report (due 15 days prior to program close)
- Final oral briefing (at program close)

### 4.7     Project Quad Chart (single page, does not count against page limit, PDF)

Proposals must include a single slide Quad Chart in standard format. A template for the chart format will be provided shortly.

### 4.8     Technical Appendix (does not count against page limit, PDF)

Please include Curricula Vitae for each PI, Key Personnel and sub award participants. Additionally, include a list of relevant reference publications for consideration by the review committee.

**4.9     WSE Budget Volume (no limit, PDF and XLS)**

A detailed budget for all requisite elements of the proposed project must be submitted. The budget must include:

- Detailed expenditures by category (in MS Excel Format)
- Monthly planned cumulative expenditure projections (burn rate profile) in chart format (in MS Excel Format)
- Budget narrative
- Identification of location where labor elements will be conducted or requested equipment will be housed (specific lab or primary campus designation)

For development of WSE proposal budgets for SURPASS, PI's should use the full on-campus research F&A rates for labor and appropriate direct expenses. Additionally, this proposal does not need to be submitted to JHURA for review via COEUS as it is an internally funded non-sponsored award.

The budget spreadsheets should also be submitted as an MS excel document with formulas left available for evaluation purposes. Budget templates will not be supplied, PI's are directed to use whichever template/format is currently in use by their department, center or institute.

**4.10     APL Budget Volume (no limit, PDF and XLS)**

A detailed budget for all requisite elements of the proposed project must be submitted. The budget must include:

- APL Assistant Director transmittal letter
- APL Statement of Work
- APL Cost Proposal
    - Detailed expenditures by total project (18 month), fiscal year, month, and task
    - Monthly planned cumulative expenditure projections (i.e., project spending report chart)
    - Budget Narrative

APL staff who are planning to submit a proposal should assume contract rates with 6.5% fee for all costs, and should fully burden all expenses. More detailed information regarding APL proposal development is forthcoming. Contact Genna.Marr@jhuapl.edu for questions. Task orders under this task will be passed under master agreement JHU to APL Master Collaboration Agreement JAWS 38709 FEA 3-18-2022. Please contact surpass@jhu.edu to request a copy of the most recent MCA.

The budget spreadsheets should be submitted as an MS excel document with formulas left available for evaluation purposes. Templates to follow shortly; one may expect them to closely follow extant standard divisional formats.

**4.11     Review Considerations**

Proposals will be reviewed by a selection team of WSE, APL and independent subject matter experts. They will be evaluated on technical approach, collaboration plan, future funding consideration, appropriateness of proposed budget, as well as strategic considerations from senior WSE and APL leadership.