THE UNIVERSITY OF SOUTHERN MISSISSIPPI
OFFICE OF TECHNOLOGY DEVELOPMENT (OTD) GAP FUND

SUBMISSION PROCESS

The Office of Technology Development (OTD) Gap Fund is intended to further the commercial potential of early-stage "dual-use" (military/civilian) technologies or innovations. Eligible projects may be proposed to the USM Office of Technology Development by the following entities:

1. USM faculty, staff or students who are the inventor(s)/developer(s) of the technology; or
2. Mississippi-located defense companies; or
3. Other potential dual-use technology from within USM research enterprises: or
4. Other Mississippi entities outside the university.

Funding will be awarded on a competitive basis to projects that require *a next stage of validation*, or *prototype development*, or to demonstrate that the technology (device, software platform or software application) can work and is scalable. Projects should be those that have moved *beyond the basic research stage* by demonstrating technical feasibility and thereby supporting the idea that the technology can be placed into a suitable business model. With a relatively small amount of funding, the award should increase the value of the technology and make it appealing to further investment, out-licensing, or for forming a company start-up around the technology.

Award will be in the form of "innovation vouchers" that can be used with USM or USM-approved vendors. Award funding for the second-round is $15,000 and will be for projects up to five (5) months in duration or for the duration of the grant, whichever comes first.

Eligible projects will include any new second-round submissions from the above categories, as well as any entrants that submitted in the first round of funding in January 2018.

PROPOSAL FORMAT

- A PowerPoint of between 3 to 5 slides for use in the competition presentation.
- A written proposal which shall include a Cover Page; a two page Executive Summary; and a four (4) page, or less, Discussion Section examing the technology and its commercial potential. The final page should be a one page Gap Fund Budget.
- Submissions should be on single-sided 8.5" x 11" paper with a text font of either 11-point Arial or 11-point Times, New Roman.
- The details for the proposals are set out below and the proposals should incorporate these components. Submissions should be received by the Office of Technology Development (OTD) before the due dates listed below:

1. A ***Proposal Cover Page***, which shall include the following:
   a) Title of the proposal
   b) Proposer's organization, technical point of contact (POC), including telephone/email
   c) Background intellectual property in the form of patents or copyrights (if any).
   d) Identify the Team, their experience, specific capabilities.

2. ***Executive Summary*** which should provide a concise two page summary of the proposal that addresses the technical merit and the commercial/ market potential.

a. The ***Innovation:***

i. The innovation should be clearly explained and why it is significant compared to existing or alternative technologies. The TRL should be at Stage 2 or higher (see Attachment B for TRL definitions).

ii. Identify market need; technical advantage and commercial advantage.

iii. Nature of the invention/creative work (For USM faculty, staff, & students, if the technology has not been formally disclosed, submission of an invention or software/copyright disclosure form to the Office of Technology Development will be required before submitting a proposal.); and

iv. Transferrability of commercial application for use by Department of Defense or the reverse.

b. ***Technical Program/Scope of Work*** for the award that includes the following:

i. Objective(s): The objectives, significance, and applicability of the proposed development, and a concise description of the advantages gained from the Gap Fund.

ii. Tasks: A list of the tasks, who will perform the task, the expected results, and with clearly defined deliverables and milestones. Identify and describe any special facilities, equipment, or services needed to perform the tasks.

iii. Milestones: A description of the major milestones and a deliverable schedule that clearly identifies all the tasks and the duration of the performance. All dates should be identified as within time-frame of the award.

3. ***Discussion Pages*** (No more than four (4) pages. Should be written for a general audience and pictures are welcome.)

a. ***Technology*** should be explained in the detail needed for understanding by a general audience.

i. The existing Technology Readiness Level ("TRL") of the technology level should be identified and what next steps of development are needed to make the technology more commercially attractive to its target/intended audience beyond the scope of the Gap Fund.

ii. Address how the tasks in this development and/or attract potential partners/collaborators/investors to develop the technology.

b. ***Commercial Potential*** should be discussed, e.g. a recognition of the barriers to commercialization; what can be realistically implemented; and development of a sustainable business model, etc. The "Business Model Canvas" (Attachment A) has been included to help provide a framework for understanding these issues.

i. Business Summary: How will the technology be commercialized or licensed?

ii. Customer Segments: For which customers will value be created? Provide an estimate of the market potential with evidence to justify the estimated market.

iii. Value Proposition: What value is being delivered to the customer and what problems or market needs will be addressed by the technology?

iv. Channels: Identify the channels that will be used to reach Customer Segments.

v. Customer Relationships: What type of relationship will there be with the Customer Segment?

vi. Revenue Streams: What are the customers willing to pay for the technology? What are they currently paying? How much would they prefer to pay?

vii. Key Resources: What components does the Value Proposition require? What assets are needed? (i.e.: physical, intellectual, financial, human capital, etc.)

viii. Key Partnerships: Who are the key suppliers, partners, and alliances needed to execute getting the technology to the Customer Segments?

ix. Cost Structure: What are the most important costs in the business model? Which resources and activities create the most expenses?

x. Competitors: Who are the competitors and describe the products/services that are currently being sold or offered?

xi. Competitive Advantage: Explain the competitive advantage of the technology. What is the distinct and sustainable advantage that others cannot duplicate?

4. Provide a ***Gap Fund Budget*** not to exceed one (1) page.

DELIVERABLES

Written final reports shall be submitted to the Office of Technology Development upon the completion of the project for the 1st Round no later than June 5th, 2018 and for the 2nd Round no later than September 12th, 2018. Each final report should be no more than four (4) pages and must describe the following: 1) the results of the project; 2) an explanation of any work proposed in the application but not completed, 3) a clear indication of how the results have been used and will be used, 4) the "go-to-market" strategy.

NOTE: Final reports will be required.

SUBMISSION REQUIREMENTS AND DUE DATES

All responses should be submitted via e-mail to Pamela.M.Thornton@usm.edu no later than 12:00 PM CT on April 3, 2018. Please submit only MS Word compatible files or Adobe Acrobat PDF files.

Feedback will be provided to all entrants upon submission and prior to the April 17th competition to allow tuning and possible improvement of proposals.

Questions are welcome regarding the OTD Gap Fund & potential proposals prior to submission.Please feel free to direct any questions to either of the two individuals below:

Chase Kasper
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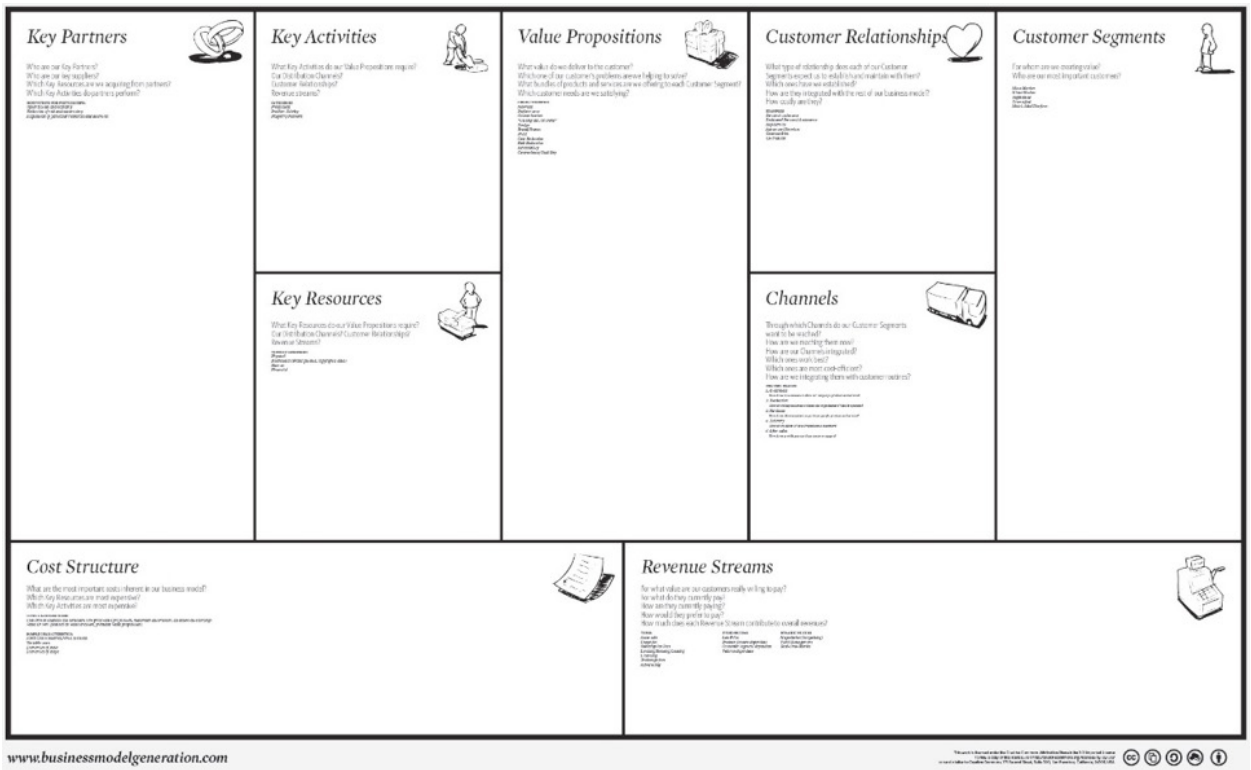
601.266.5372

Carl Hagstrom
chagstrom@hybridplastics.com
601.434.1962

Apr 17, 2018:	2nd Round Presentations and Awardee Selection
Jun 5, 2018:	1st Round Final Reports
Sep 12, 2018:	2nd Round Final Reports

ATTACHMENT A
SAMPLE BUSINESS MODEL CANVAS



ATTACHMENT B
DEFINITION OF TECHNOLOGY READINESS LEVELS (TRLS)

TRL 1 Basic principles observed and reported: Transition from scientific research to applied research. Essential characteristics and behaviors of systems and architectures. Descriptive tools are mathematical formulations or algorithms.

TRL 2 Technology concept and/or application formulated: Applied research. Theory and scientific principles are focused on specific application area to define the concept. Characteristics of the application are described. Analytical tools are developed for simulation or analysis of the application.

TRL 3 Analytical and experimental critical function and/or characteristic proof-of-concept: Proof-of-concept validation. Active Research and Development (R&D) is initiated withanalytical and laboratory studies. Demonstration of technical feasibility using breadboard orbrass board implementations that are exercised with representative data.

TRL 4 Component/subsystem validation in a laboratory environment: Standalone prototyping implementation and test. Integration of technical elements. Experiments with full-scale problems or data sets.

TRL 5 System/subsystem/component validation in a relevant environment: Thorough testing of prototyping in a representative environment. Basic technology elements integrated with reasonably realistic supporting elements. Prototyping implementations conform to targetenvironment and interfaces.

TRL 6 System/subsystem model or prototyping demonstration in a relevant end-to-end environment (ground or space): Prototyping implementations on full-scale realistic problems.Partially integrated with existing systems. Limited documentation available. Engineeringfeasibility fully demonstrated in the actual system application.

TRL 7 System prototyping demonstration in an operational environment (ground or space): System prototyping demonstration in an operational environment. The system is at or near the scale of the operational system, with most functions available for demonstration and test. Well-integrated with collateral and ancillary systems. Limited documentation available.

TRL 8 Actual system completed and "mission qualified" through test and demonstration in an operational environment (ground or space): End of system development. Fully integrated with operational hardware and software systems. Most user documentation, training documentation and maintenance documentation completed. All functionality tested in simulated and operational scenarios. Verification and Validation (V&V) completed.

TRL 9 Actual system "mission proven" through successful mission operations (ground or space): Fully integrated with operational hardware/software systems. Actual system has been thoroughly demonstrated and tested in its operational environment. All documentationcompleted. Successful operational experience. Sustaining engineering support in place.