

South Dakota SHARPhub Life Science and Biotechnology

Proof of Concept Fund - Request for Proposals

Statement of Purpose

The Sustainable Heartland Accelerator Resource Program (SHARPhub) is developing and implementing key infrastructure to facilitate the translation of life science and biotechnologies from research institutions in South Dakota. The South Dakota SHARPhub Life Science and Biotechnology Proof of Concept (POC) fund:

- will serve to advance the development of novel applied technologies that have potential for commercialization and economic development.
- is not intended to support basic research, but rather it will support activities to advance technologies through the proof of concept phase. Funds through this program are intended for technologies that have already submitted an invention disclosure and could have demonstrable potential commercial appeal.
- is designed to facilitate an inventor's ability to leverage external funding to serve as a bridge toward product development and commercialization, with an objective of licensing the technology into a newly formed company in the near term.

In coordination with the National Institutes of Health (NIH), the South Dakota SHARPhub Life Science and Biotechnology POC Fund supports research that addresses the following causes:

- Diagnosis, prevention, and cure of human diseases
- Processes of human growth and development
- Biological effects of environmental contaminants
- Understanding of mental, addictive and physical disorders
- Directing programs for the collection, dissemination, and exchange of information in medicine and health, including the development and support of medical libraries and the training of medical librarians and other health information specialists

Technologies must address one or more of the following goals:

- to foster fundamental creative discoveries, innovative research strategies, and their applications as a basis for ultimately protecting and improving health

- to develop, maintain, and renew scientific human and physical resources that will ensure the Nation's capability to prevent disease
- to expand the knowledge base in medical and associated sciences in order to enhance the Nation's economic well-being and ensure a continued high return on the public investment in research
- to exemplify and promote the highest level of scientific integrity, public accountability, and social responsibility in the conduct of science.

Eligibility

To be eligible for funding through this program, technology included in proposals submitted by faculty and research staff must have an invention disclosure submitted to a South Dakota institution for higher education (primarily undergraduate institutions or any SD Board of Regents institution). When a compelling case can be made, copyrightable software may also be eligible for funding through this mechanism. The technology that the proposal is based on must not be licensed, optioned, or encumbered with other obligations. The technology must be owned or co-owned by a South Dakota institution for higher education. Preference will be given to proposals with 1) a clearly identified commercial product or method, 2) evidence of inventor(s) investment in entrepreneurial education (e.g., Startup School; SBIR/STTR Training; iCorps, etc.), and 3) pending or issued patents. Projects are funded for up to one year.

Award Amount

Awards will generally be in the range of \$15,000-\$40,000 in total costs. Indirect costs are not allowed (i.e. overhead). Direct costs, such as fringe benefits, participant support, materials and supplies costs, and other expenses including travel, etc. are allowable. Investigators are encouraged to seek additional matching funds to leverage the POC Fund resources. Non-federal matching funds are not required to be considered for POC Fund support but will be viewed as an added-value component to the submission. At time of award, contracts will be generated from BBCetc (the pass-through entity in charge of coordinating the SHARPhub) and awarded to the institutional home of the applicant. Applications are required to provide documentation via institutional official signature on the cover page that they have filed necessary assurances with their grant administration office prior to release of funds (please see the example cover sheet in the appendix).

Proposal Guidelines

I. Cover Page

Please see the appendix for more information. This is a 1-page sheet which must be signed by your authorized institutional official.

II. Proposal Narrative

The following sections are required in the proposal narrative. Proposers will be asked to quantify inputs wherever possible and ensure that evidenced-based rationale, from either primary (i.e., customer validation) or secondary sources (i.e., published reports or databases) is included to support statements provided. All acronyms must be defined at the first appearance in the proposal. Do not exceed 5 pages on the proposal narrative. Please use Times New Roman 11 pt. font, single-spaced with 1-inch margins.

- Problem (describe the problem/opportunity your technology is intended to address)
- Solution (how does your technology address the customer/users' problem and how is that solution differentiated from others competing in this space)
- Size of Opportunity (identify the target market, its size and recent trends in dollars, units sold or number of users)
- Complete the business model canvas (please see the attached document for an example. This website can also be used for reference <https://canvanizer.com/>) with hypotheses for each component. The business model canvas components PDF is considered a supplemental document and will not be counted towards the 5 page limit.
- Identify Management Team (Principle Investigator, Industry Mentor, and at least one Student are required roles, but additional roles are allowed. Provide a brief biosketch (1 paragraph each) for all team members, including their qualifications for pursuing development of this technology.)
- Current Development Status (describe technology development efforts/results to date)
- Timelines for Major Activities (identify the key next steps in the development of this technology)
- Proposal Request (amount cannot exceed \$40,000 over a 1-year period)
- Supplemental Rationale (optional) (include any other support for this proposal which will help communicate why it should be favorably reviewed). This section is included in the five-page limit for proposals.

III. References Cited

References cited in the project description should be listed in this section. While there is no established page limitation for the references, this section must include bibliographic citations only. Citations must be in AMA 10th edition.

IV. Budget and Budget Justification

Budget expenditures encumbered before the award date will not be reimbursed. Aside from four non-allowable costs (overhead, subawards, student tuition, and faculty/staff salaries), the budget items are fairly flexible. Please keep the budget and budget justification narrative to no more than 2 pages single spaced. The end of the budget justification must also briefly list any previous or current externally-funded support for the project.

Student Wages. Student wages and/or stipends are allowed; however, funding for student tuition, tuition remission or tuition scholarships (waivers) are not permitted. The role and/or task of any personnel on the project should be defined in the justification.

Other salaries. Faculty members and office/administrative staff (including visiting faculty) are not eligible for salary support.

Equipment or fabrication costs. In cases where reduction to practice requires a one-time cost to fabricate or produce a working prototype, the investigator should specifically indicate fabrication costs, the location of facilities where the fabrication will occur, and time required to produce a working prototype.

Travel. Any travel funds must be justified as essential to the project. Travel funds may be up to \$2,000 unless deemed essential to the development of the product. Please note that this \$2,000 is separate from the mandatory February 6th writing workshop travel. Additional funding for travel and lodging expenses for a *mandatory* writing workshop must be included in your proposed project budget. This workshop will be held on Thursday, February 6th in either Sioux Falls, SD or Vermillion, SD (exact location TBD).

Other. All other budget line items must directly impact the success of the project and need to be thoroughly justified; budget support must be tightly focused on driving innovations and inventions into the commercial marketplace. Utilizing contractors to develop a prototype will be considered if there is strong justification. Responsible budgeting is a criterion for award selection. Please note that utilizing contractors is allowable, but budgeting for subawards (a different method of sending out funding to another entity) is not.

Matching Funds. Although not required, state or industry matching funds are encouraged and may be considered in project evaluation and award.

V. Biosketch

Please send a biosketch that is no more than 2 pages for the PI only. This may be formatted in either NSF, NIH or other federal agency format.

VI. Letters of Support

A maximum of two letters of support are allowed, and each must be no longer than 1 page. These letters of support may serve to further describe matching fund arrangements, industry engagements or other collaborations.

Important Dates and Mandatory Events

- A full-day SBIR/STTR intensive writing workshop will be held on Thursday, February 6th in either Sioux Falls or Vermillion. Travel and lodging expenses for at least one member of the management team for this workshop must be included in your proposed project budget. Although it is required for one member of the team to attend, we encourage as many team members to attend as possible.
- Awarded proposals are required to send at least one management team member (including a student) to the SHARPhub Annual Meeting (location and date TBD) to give a presentation on the development progress of the technology. Travel and lodging expenses for this meeting will be covered by a University of South Dakota sub award.
- Earliest start date is March 2, 2020, which follows a required training on Feb 6, 2020. The project must end by April 30, 2021, and final financial and progress reports are due by June 30, 2021. Templates will be provided for all reports.

Review Criteria and Selection Process

The review process will be carried out **within two weeks** of the proposal submission date (January 3rd, 2020) and selected proposal(s) will be notified of award on January 17th, 2020. Funding decisions will be communicated to both the applicant and the technology transfer staff of their home institution.

The review process will consist of two-stage independent review. First, a review committee from South Dakota will assign a score for each proposal. Second, the SHARPhub External Advisory Board (EAC) will review the scored proposals and provide feedback to the South Dakota review committee.

Reviewers are expected to provide written critiques of the proposal. Each proposal will receive a final score on which the funding decision will be made. A brief summary of these critiques will be provided to each applicant. EAC members may seek outside opinions. All reviewers (EAC members and any additional reviewers) will be under a confidentiality agreement. Members of the South Dakota review committee or the SHARPhub EAC with a conflict with any of the applications received will be recused.

The primary criteria includes proposals that demonstrate a knowledgeable and well-rounded management team, a strong technical development plan, a well justified budget, and the potential of commercial success.

Additional elements considered in the scoring criteria include, but are not limited to, the following:

- Merit of technology opportunity in filling an identified gap in the marketspace
- Analysis of strengths, weaknesses, opportunities, threats, and competitors
- Level of student involvement in research, development, and/or project management
- Evidence of a thorough business model
- Evidence that awarded funds will accelerate product development
- Evidence that the budget is reasonable and sufficient to achieve milestones

Proposal Submission

Proposals are due by Friday, January 3, 2020 at 5:00 PM CST. All submissions must be received electronically as a single PDF emailed to **SDSHARPhubPOC@draco.bio**. Use the following naming convention for the proposal file: **SDUniversityPIDate.PDF**

Reporting Requirements

A progress report will be required after six months to ensure progress. At the end of the 1-year period, a final report that describes progress toward commercialization of the project including an updated business model canvas must be submitted. Milestones (e.g., completion of proof of concept) and deliverables (e.g., prototype or market-image product completion) must be clearly identified. All unused funds will be returned at the end of the award. Awardees will be asked to give a presentation at the SHARPhub annual meeting on the awarded project. (There are already separately-designated travel funds to cover this travel to the annual meeting.)

Contact

For questions regarding the South Dakota Life Sciences and Biotechnology SHARPhub POC Fund application, please contact:

Dakota Research and Consulting Organization:

Eric Sandhurst, MS

Jevin Meyerink, MS

SDSHARPhubPOC@draco.bio

South Dakota SHARPhub Life Science and Biotechnology Proof of Concept

Checklist

Cover Page

Project Narrative

Problem

Solution

Size of Opportunity

Management Team

Current Development Status

Timeline of Activities

Requested Amount

Supplemental Rationale

References Cited

Budget and Budget Justification

PI Biosketch

Letters of Support (maximum 2 letters, no more than one page each)

South Dakota SHARPhub Life Science and Biotechnology

Proof of Concept Fund Cover Page

Section I: Project Direction

Principle Investigator: _____ Email: _____

PI Department: _____ PI Institution: _____

Mailing Address: _____

City: _____ State: _____ Phone: _____

Project Title: _____

Total Amount Requested: _____

(Signature)

(Date)

Section II: Authorized Institutional Representative

Name: _____ Title: _____

Institution: _____ Email: _____

(Signature)

(Date)

EXAMPLE**Budget Justification****Institution: Insert Institution Name Here**

Item	Amount
Student Wages	\$15,000
Fringe	\$2,250
Equipment	\$10,000
Travel	\$2,000
Materials and Supplies	\$6,700
Consultant/Contract	\$2,000
Other Expenses	\$1,550
Total Direct – Total Request	\$39,500

Student Wages: \$15,000

A student will be funded to do _____ (project goals) throughout this timeframe. An amount of \$15,000, or 10% of the student's work, is requested.

Fringe: \$2,250

Explain how this is calculated. For example, fringe benefits are calculated by taking 15% of the student wages amount.

Equipment: \$10,000

Three pieces of equipment are being requested, which will total \$10,000. Explain here how this equipment helps to further the goals.

- Explanation of Equipment #1
- Explanation of Equipment #2
- Explanation of Equipment #3

Travel: \$2,000

Travel in the amount of \$1,100 is being requested. This will take 2 students to the _____ tradeshow. Explain the value of this travel to the project goals. Additional funding in the amount of \$900 is requested to bring two team members to the Sioux Falls/Vermillion area for the February 6th training.

Materials and Supplies: \$6,700

Materials and supplies are intended to help further the goals by _____. For example:

- \$1,000 in marketing materials design
- \$1,000 for market report
- \$3,400 for prototype design
- \$1,300 for other supplies and consumables (please list)

Consultant/Contractor: \$2,000

- Dakota Drafting LLC has quoted us \$2,000 to create the 3D image of the prototype.

Other Expenses: \$1,550

These other expenses will be necessary to carry out the project goals. For example:

- \$1,550 for shipping and handling

Total Request: \$39,500

Business Model Canvas Components

Key Partners

- i. Who are your key partners/suppliers?
- ii. What are the motivations for the partnerships?

Key activities

- i. What key activities does your value proposition¹ require?
- ii. What activities are most important to your distribution channels, customer relationships, and revenue stream?

Value Proposition

- i. What core value do you deliver to the customer?
- ii. Which customer needs are you satisfying?

Customer Relationship

- i. What relationship does the target customer expect you to establish?
- ii. How can you integrate that into your business in terms of cost and format?

Customer Segment

- i. Which customer segments are you creating values for?
- ii. Who is your most important customer?

Key Resource

- i. What key resources does your value proposition¹ require?
- ii. What resources are most important to your distribution channels, customer relationships, and revenue stream?

Distribution Channel

- i. How will your customers access your product?
- ii. Which channels work best? How much do they cost? How can they be integrated into your and your customers' routines?

Cost Structure

- i. What is your greatest business expense to consider?
- ii. Which key resources/ activities are the most expensive?

Revenue Stream

- i. How much are your customers willing to pay for your product/service?
- ii. How does this product/service create revenue for your business (high output with low return, low output with high return, subscription model, etc)?
- iii. How much does every revenue stream contribute to the overall revenues?

¹Value Proposition Template

<i>Elements</i>	<i>Statement Formula</i>
<i>Target Segment</i>	To or For _____
<i>Core Need/s</i>	Who need _____
<i>Offering Name – Description</i>	The _____
<i>Frame of Reference (used for)</i>	Is a (or the) _____
<i>Benefits</i>	That produces _____ benefits/value
<i>Point of Difference</i>	Which is unique/unlike most different _____
<i>Reasons to Believe</i>	Because _____.