Chemurgy 2.0 EWD Seed Funding Program Solicitation – JULY 2025

What is Chemurgy 2.0?

The Chemurgy 2.0 vision is that *Iowa is known for supporting human needs via biomanufacturing* or in other words: ***Meeting human needs with things that grow.*** The Chemurgy 2.0 Project will enhance research capacity and infrastructure for Iowa's bioscience and manufacturing industries while supporting the development of a diverse and skilled biomanufacturing workforce.

Chemurgy 2.0 is funded through EPSCoR RII Track-1: Building capacity across Iowa to meet human needs from things that grow and has three technical focus areas:

- Plastics for Additive Manufacturing (PAM)
- Fibers for Flexible and Rigid Materials (FRR)
- Proteins for Diagnostics and Therapeutics (PDT)

And includes novel Social Cognitive Career Theory (SCCT) research aimed at supporting education and workforce development goals.

NSF Award Number: 2242763

What is the Chemurgy 2.0 Education & Workforce Development (EWD) Seed Program?

The Education & Workforce Development (EWD) Seed Program aims to support pilot and starter outreach and education initiatives that:

- implement and test lessons learned by the SCCT team to Chemurgy 2.0 Logo, the state of Iowa with various images of advanced biomanufacturing and a portrait of George Washington Carver,
- support stronger and more diverse participation in education and workforce development, especially among rural populations, and
- increase interest and persistence in biomanufacturing educational programs within the scope of one or more of the project technical aims.

The EWD Seed Program will release an annual call for proposals to support the direct program costs of projects designed to implement at least one SCCT team recommendation with a specific target audience and connected to at least one technical focus area. Successful proposals will demonstrate promise increasing interest and/or persistence implementing and evaluating at least one SCCT recommendation within a technical focus area and with a desired audience.

Target Audience: The audience is the group of people who directly benefit from participation in the project. Each year, the allowable target audience for projects will expand to include the previous year's audiences and new audiences. This is in order to apply the SCCT's findings as they are announced. The anticipated target audiences are:

Round 1 - community college and undergraduate students (especially undecided/searching students and students declared in a biomanufacturing program); faculty and admissions/recruiter staff and/or industry staff/recruiters in biomanufacturing.

Round 2 - high school students, and all of the audiences from round 1

Round 3 - preservice and inservice STEM educators and career counselors, middle school students, and all of the audiences of round 1 & 2

EWD Seed Program Annual Priorities: Each call for proposals will include a description of types of priority projects that will be funded in the current year. The priorities are selected based on the recommendations of the SCCT research team.

Current Priorities (Round 2)

Round 2 Proposals are accepted in two priority areas - **Growing Future Biomanufacturing Professionals** and **Sharing Authentic Iowa Biomanufacturing Stories**.

Potential Project Directors are encouraged to discuss their project ideas with the EWD Seed Funding Program committee chair, Marcy Seavey, Marcene.seavey@uni.edu and/or a member of the Chemurgy project before submission.

Growing Future Biomanufacturing Professionals Projects

(anticipate funding 4-6 projects in Round 2)

Growing Projects build tomorrow's biomanufacturing workforce in Iowa by directly impacting high school through undergraduate students and/or individuals who impact student career decisions (such as science educators, career counselors, community college & university admissions and recruiting staff, and biomanufacturing professionals who participate in youth outreach).

Examples of projects that directly impact students include (but are not limited to):

- High school afterschool program focused on a biomanufacturing theme
- Work-based learning pilot program focused on a biomanufacturing theme
- Design of new exploratory course introducing students to Iowa NSF EPSCoR research
- High school or community college Summer Research Program in a chemistry, biochemistry, biology, materials science, materials science engineering, or computer science department where the research focus is based on using biological materials or processes to solve a human need.
- Community college field trips to university or industry labs where biomanufacturing activities take place.

Examples of projects that impact individuals who can impact student career decisions includes (but are not limited to):

- High school counselor webinar series with panels by Iowa biomanufacturing industry professionals and faculty.
- Mentoring workshop for industry professionals who want to offer job shadows or internship programs.
- As a match for a school district and local business submitting an Iowa STEM BEST proposal for a project focused on a biomanufacturing project. EWD Funds would need to be in support of specific activities, such as providing training and networking time for school & industry staff.

These are examples only.

All Growing Projects must provide a connection to at least one of the Chemurgy 2.0 Focus areas, whether through a formal partnership between the project team and a focus area team or by showing that the project's content aligns with the scientific knowledge and methodologies of the specified focus area(s).

Sharing Authentic Iowa Biomanufacturing Stories Projects

(This is a continuation of the Round 1 Priority; anticipate funding 1-3 projects in round 2)

Sharing projects focus on providing experiences for members of the Iowa biomanufacturing community to engage in building shared language about Biomanufacturing and provide a mechanism to collect and disseminate specific stories about careers in Biomanufacturing to a target audience. These projects should aim to gather and share distinctive narratives highlighting careers in Biomanufacturing, its significance in addressing societal challenges, and its role in community enhancement. Projects must connect to at least one of the Chemurgy Focus areas. Preference will be given to projects that showcase a range of individuals from Iowa, spanning various industries, educational backgrounds, and career paths. Projects must include in their plan a description of the process to be used to collect, create, and disseminate the stories.

The Iowa biomanufacturing community includes:

- undecided/searching community college and undergraduate students exploring biomanufacturing,
- decided community college and undergraduate students in chemistry, biochemistry, bioengineering, medical bioengineering, material science, and other related majors/programs or programs that feed into these programs such as biology, physics, computer science, engineering, and chemistry.
- university faculty/researchers studying biomanufacturing topics
- university and community college admissions/recruiters,
- biomanufacturing industry researchers
- biomanufacturing industry recruiters

The project target audience must be one of the following:

- Iowa high school students
- Iowa K12 educators
- Parents/Families with middle or high school students
- community college/university/industry recruiters

Providing experiences for members of the Iowa biomanufacturing community means that they should be actively engaged in the development of the stories presented in the end product. How this is to be accomplished should be described in the proposal (workshop, interviews, company tours, etc.).

Building a shared language about Biomanufacturing means utilizing Chemurgy 2.0 resources, the Success and Challenges in Biomanufacturing 2023 Report, and other resources to frame the program while collecting individual stories.

Collecting and disseminating specific stories means that an output of the project should be one or more real products. The project must include disseminating the product(s) to at least one target audience and collecting basic analytics about impact and reach. The products must be available in the future for use by the project's lead institution and partners, the Chemurgy 2.0 team, and/or at least one of the target audiences (school counselors, industry recruiters) to further a shared vision of Iowa as a hub of Biomanufacturing and a source of expertise in these areas. Examples include but are not limited to a limited or on-going podcast, a video, a series of newspaper articles, a lesson plan, an interview protocol, a best practices document, a poster series, a digital comic book, a group of trained facilitators.

All Sharing projects must provide a connection to at least one of the Chemurgy 2.0 Focus areas, whether through a formal partnership between the project team and a focus area team or by showing that the project's content aligns with the scientific knowledge and methodologies of the specified focus area(s).

Overview

Proposal Window: Round 2 Will open on or before July 1, 2025. Proposals will be due by August 4, 2025.

Proposal Requests

Requests are accepted in two funding levels:

1. **Mini-grant:** Projects requesting up to $5,000.
2. **Impact Projects:** Projects involving team members or participants from at least two partners/organizations and requesting up to $15,000.

The committee anticipates awarding up to $100,000 (6-10 proposals) in the current funding round.

Important Dates

- **Call for Proposals Released:** annually on or before July 1.
- **EWD Seed Workshop** @ Chemurgy 2.0 Symposium Annual Meeting
    - Round 2 Workshop will be July 24, 2025
- **Proposals Due:** annually on the first Monday of August @ 11:59 p.m.
- **Notification to Applicants:** No Later than last Friday in September.
- **Project Period of Performance:** Award announcement through July 31 annually
- **Consultations:** By arrangement, in September or October
- **Midterm Reports Due:** annually on the last Friday in January
- **Symposium Annual Meeting Presentations:** see **Chemurgy 2.0 Events** page, generally end of July
- **Final Reports Due:** annually on the last Friday in August
- **Final Accounting Due:** 45 days after the final report is due.

Project Expectations

- A project staff person will present the results of the project at the next Chemurgy 2.0 Annual Symposium Meeting. To facilitate this, projects are required to include travel to the next Chemurgy 2.0 Annual Symposium Meeting for a minimum of 1 senior project personnel in the project budget.
- Project Directors will participate in a consultation (in person or via zoom; 1 hour) with EWD Seed Project PI, Marcy Seavey, within 1 month of the award announcement.
- Project Directors will submit a midterm report and a final report.
- Project staff will implement the SCCT pre-/post-survey with their participants and provide the results with the final report.

How to Apply

1. Review this document including eligibility requirements, proposal guide, the review process, project expectations, and additional resources.
2. *Consider* attending the EWD Seed Project Workshop at the next **Chemurgy 2.0 Annual Symposium Meeting**. Participation will include an opportunity to learn from the PIs of each of the Chemurgy 2.0 Focus Areas and participate in discussion about EWD Seed Projects with committee members.
3. Download the **Proposal Template** and **Budget Template** and complete them for your project.
4. Save your completed proposal as a pdf.
5. Submit BOTH the Proposal and the Budget by including them as email attachments and sending the email to: **EWD_See.p72v7bqvafi9skv3@u.box.com** by the 1st Monday in August annually.

Please name your files using this format: project_director_lastname-EWDproposal and project_director_lastname-EWDBudget.

Applications with components not submitted by the deadline will not be considered.

Eligibility

Proposals are not accepted from individuals.

Every project must have a Project Director (PD). The PD is the leader of the project and responsible for all reporting. The PD must apply through an institution that fits one of the following categories:

- Iowa Public or Private accredited Institution of Higher Learning
- Iowa Public or Private PreK-12 School
- State of Iowa, County, or City Governmental Organization (Iowa Department of Education, County Conservation Board, City)
- 501(c)3 Nonprofits operating in Iowa

The lead institution must fit into one of the categories above.

Project partners may also include Iowa-based for-profit businesses. Organizations and individuals based outside of Iowa may be included on the project if the budget clearly justifies how all project dollars benefit Iowans.

The lead institution must be registered with SAM.gov and supply their Unique Entity ID on the proposal cover sheet. Proposals submitted without a Unique Entity ID cannot be reviewed. Please note: It can take up to 10 days after completing an application for a Unique Entity ID to become active.

Allowable Expenses

The budget should account for all direct project costs. The budget may include F&A for non-participant costs at the lead institution's federal F&A rate. In the absence of a Federally negotiated rate, applicants may include indirect costs at the de minimis rate of 10% of the project's modified total direct costs.

The budget must include transportation for *at least* one project staff to present at the Chemurgy 2.0 Annual Symposium Meeting. Mileage and/or vehicle rental, per-diem excluding the provided lunch are expected expenses. Hotel accommodations for the night before the meeting may also be included, as needed.

No voluntary match or in-kind are allowed in the project budget. The proposal may discuss funding of projects on-going or next phase *after this project is complete* in the sustainability section of the proposal.

Project funds are released on a reimbursement basis. Project Directors will submit requests for reimbursement with appropriate documentation. Staff will not release funds to projects with outstanding reports.

Non-allowable expenses:

- Equipment and/or Computers.
- Out of state travel for Iowans.
- Sub-awards to other organizations.
- Promotional Swag

Promotional swag encompasses items distributed for marketing or branding purposes, such as baseball caps adorned with a company or university logo. Conversely, items used during the project activity, whether branded or not, are classified as participant or project supplies. Promotional items are not allowed. Reasonable project/participant supplies are allowed. An example of a project supply could be a journal used to take notes during a workshop or a USB drive used to share digital files between participants.

Proposal Guide

Proposal Sections

Section 1 - Cover Page (complete the table in the Proposal Template, does not count toward page limit)

- Title
- Lead Institution
- Lead Institution Unique Entity ID#
- Project Director (Name, Title, Email, Phone, Address)
- Proposal Type (Mini-grant or Impact Project & Priority)
- Target Audience
- Chemurgy 2.0 Focus Area(s)

Section 2 - Proposal (Sections A-E should be *no more than* 4 pages total, single spaced)
It is anticipated that sections B & C will provide the majority of most proposals.

A. Project Overview
Briefly introduce the project, the target audience, the project goal, and 1-3 **SMART** objectives that will guide the project.

B. Project Plan
Describe what will be done *to meet the objectives*; how will the audience be recruited and what will the audience do/experience; What are the responsibilities of each person/partner on the project?

C. Project Integration
Specifically address how this project will address this Round's Chemurgy 2.0 EWD Priorities. Pre-K-12 projects: How will the project increase interest and/or persistence in a biomanufacturing within the target audience? All other projects: How will the project assist the target audience to better promote biomanufacturing with Iowa Youth?

D. Assessment Plan
If requested, projects are required to collect pre- and post-survey data from participants using an SCCT tool (which will be provided) and to communicate with the SCCT about their struggles and successes. Project directors may implement additional assessments and are encouraged to build program assessments into their projects as a strategy to improve sustainability and/or to further knowledge about their specific project. Knowing that all participants will complete surveys, use this space to describe the project team's additional assessment plans.

E. Sustainability and Dissemination
How will the partner organizations continue, build from, or learn from this project? How will the team disseminate the final product or knowledge gained? Successful projects will include either a sustainability plan, or a dissemination plan that goes beyond presenting at the Chemurgy 2.0 Annual Symposium Meeting, or both.

F. Budget Narrative (*does not count toward page limit*)
A budget narrative is an explanation of how each line item contributes to the project *and* how the subtotals were calculated. See example budget narrative for guidance.

Section 3 – Proposal Budget

Complete the budget template provided.

Proposal Documents

- **Project Proposal Template** (.doc template provided, please submit as a pdf)
- **Budget Template Form** (.xlsx template provided)

Please visit the EWD Seed Funding Program website for additional information including information about the review process and a list of past funded projects.