

Project Grant Application

APPLICANT'S ORGANIZATION

Example Organization

ORGANIZATION'S WEBSITE

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ORGANIZATION'S ADDRESS

123 Main Street
Example City, Florida 12345
United States

PROJECT LEADER'S NAME

Jane Smith

PROJECT LEADER'S EMAIL

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PROJECT TITLE

Materials Science and Engineering Motivational Camp for High School Students

ANTICIPATED START DATE

01/01/2024

ANTICIPATED END DATE

01/04/2024

TARGET AUDIENCE

High school Juniors and seniors and their parents

APPROXIMATE NUMBER OF PEOPLE SERVED BY THIS PROJECT

25

GEOGRAPHIC AREA TO BE SERVED BY THIS PROJECT

Example County area

PROJECT SUMMARY

We are proposing an engaging 4-Day Materials Science and Engineering Motivational Camp aimed at junior and senior high school students. In the first 3 days, the camp will be a combination of hands-on experiments, company visits, professional interactions, and guidance from undergraduate mentors and graduate demonstrators. In the last day, company representatives will meet with students and parents to discuss roles and responsibilities of materials scientists in the industry.

The activities and interactions are designed to demonstrate the importance of materials science and engineering and career opportunities to students and their parents. It will inspire and encourage students to pursue higher education, specifically in the field of materials science and engineering.

The hands-on activities will be performed in the undergraduate laboratories in the department of materials science and engineering (MSE) at Example University. These activities include heat treatment of different steel types and their mechanical testing, composite manufacturing competition, superconductivity, Prince Rupert's drop experiment and SEM imaging.

The objectives of this project are:

1. Introducing MSE to high school students and their parents.
2. Expose high school students to university student lifestyle by creating opportunities to have conversations with undergraduates.
3. Encourage high school students to pursue and academic degree in STEM, specifically MSE.
4. Create mentoring and leadership opportunities for undergraduate and graduate students in the MSE department at Example University.
5. Create a connection between industry and university.

The program is designed to expose high school students to materials scientists at different stages of their professional life. This will familiarize students with the field, learn about other people's passions and get inspired to be the next generation of materials scientists and engineers. Moreover, this project satisfies CGIF's mission to support the next generation of ceramic and glass professionals by allowing faculty and industry to contribute to the community through engagement with high schools.

This project is inspired from my prior role as a graduate student, where I served as a mentor during a materials camp for high school students. In this revamped iteration of the camp, we aim to address the limitations identified in the initial design. To achieve this, we will involve undergraduates in the process of shaping the activities and competitions, leveraging their insights into what sparks enthusiasm and engagement among students. Additionally, we will enhance the pre-activity lectures, making them more captivating and interactive.

This project will be done in collaboration with a local section of The American Ceramic Society.

WHAT IS THE TOTAL BUDGET FOR THIS PROJECT?

\$6,200

WHAT IS THE TOTAL AMOUNT OF SUPPLEMENTAL FUNDING YOU ARE REQUESTING? (UP TO \$2,500)

\$2,500

DESCRIBE HOW YOU WILL USE THE SUPPLEMENTAL FUNDING.

The budget will be used for the following items:

1. T-shirts with the Ceramic and Glass Industry Foundation (CGIF), American Ceramic Society (ACerS) and Example University logos for the participants. (Estimated cost: \$600)
 2. Transportation (Estimated cost: \$2000)
 3. Lunch (Estimated cost: \$1000)
 4. Room reservation for day 4 (Estimated cost: \$500)
 5. SEM time (Estimated cost: \$100)
 6. Materials and supplies (Estimated cost: \$1000)
 7. Graduate student compensation (Estimated cost: \$1000)
 8. Three Materials Science Classroom Kits
- Total estimated cost: \$6200

The funding from CGIF will be used to cover items 1, 3, and 6.

GOALS AND OBJECTIVES

The outcomes of this project will be:

1. Enhanced Recognition of Materials Importance, specifically glasses and ceramics
This outcome will be achieved through engaging activities. Students will gain an understanding of materials' significance and their properties, along with an appreciation of materials scientists' role in engineering these properties.
2. Inspiration for Higher Education in MSE
Through activities and company visits, the camp aims to inspire students and to motivate them to pursue higher education, with a specific focus on the field of ceramics and glasses in the Materials Science and Engineering (MSE) major.
3. Awareness of MSE Career Opportunities
By informing both students and parents about the job opportunities available within the MSE sector, the project seeks to broaden perspectives and career horizons.
4. Creation of Mentorship and Leadership opportunities
The undergraduate and graduate MSE students at Example University are also a target group in this project. The project will facilitate mentoring and leadership opportunities for them, fostering their growth as mentors and leaders in the field.
5. Industry-University collaboration
This event enables glass and ceramics industry and university to create network and partnership to develop a workforce for the future.

To achieve the outcomes, the requested budget will be used for hands-on activities and industry tours will be

planned. A uniform T-shirt will be distributed to create a sense of community between the students who are joining from different schools, undergrads, grads and the faculty members. This sense of community will play a pivotal role in inspiring and motivating students.

A venue will be reserved for the final day ceremony at Example University, where company representatives will present their products, and share their experience as materials engineers. The event will end with a talk from one of the respected Example University MSE faculty members.

Objective 4 will be achieved by participation of Material Advantage Student Chapter (MASC) club in planning, designing and implementing the project. Their engagement will contribute to the creation of an impactful experience.

Objective 5 will be achieved by participation of the faculty at Example University in local ACerS section meetings, and industry representatives' participation in this event.

IMPLEMENTATION PLAN

Dr. Jane Smith and Dr. John Doe will lead the execution of this project.

Here a list of major tasks and people in charge of them is provided:

1. Inviting partnering companies, February 2024, done through The American Ceramic Society led by Dr. Smith.
2. Advertising the program to high schools, March 2024, done through Mathematics Engineering Science Achievement (MESA) at Example University, led by Dr. Doe.
3. Hiring and training students, May and June 2024, Example University MSE department, led by Dr. Doe.
4. T-shirt design and order, June 2024, by Undergraduates, led by MASC
5. Design of hands-on activities and competition, June 2024, by Undergraduates, led by Dr. Smith, Dr. Doe, MASC
6. Tour Scheduling, June 2024, Example University Transportation Services, led by Dr. Doe

The support from CGIF enables establishing the summer camp program. This program will serve as an opportunity for the faculty to serve a wider community and reach high school students and teachers.

The program will be sustained by support from local section of The American Ceramic Society and faculty from Example University.

MEASUREMENTS AND EVALUTATION METRICS

The project's progress will be closely monitored by Dr. Smith and Dr. Doe. To assess the project's success, comprehensive surveys will be conducted before and after the camp, targeting high school students. The Example University students who served as mentors and facilitators will also answer a qualitative survey about their experience.

The survey design will be tailored to measure key aspects such as student engagement, emerging interest in materials science and engineering (MSE), acquired knowledge about MSE concepts, perception of opportunities within the MSE field, and the recognition of the significance of pursuing a college degree. Moreover, the surveys will evaluate the effectiveness of different hands-on activities and company visits, offering a holistic understanding of the camp's impact.

The experience of Example University students involved in the project in applying their leadership and mentorship skills will be evaluated too.

This comprehensive quantitative and qualitative evaluation, the project's progress and success, leveraging both quantitative and qualitative data to measure its impact on students, parents, mentors, and facilitators.

MISSION ALIGNMENT

The Materials Science and Engineering Motivational Camp core purpose resonates with CGIF's mission. It focuses on high school students who are the future leaders of ceramic and glass industries. The activities are strategically designed to engage students and inspire them to become professionals in ceramic and glass sectors. It allows them to explore their passion for materials science and engineering, while also fostering their interest in pursuing higher education

HOW DID YOU HEAR ABOUT US?

Email from Ceramic and Glass Industry Foundation

HIDDEN FIELD

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