

SPRING 2022

Student Academic Grant (SAG) Packet

Within this packet you will find the following information:

- Types of SAG Awards / Grants
- Selection Criteria
- Application

Types of SAG Awards / Grants

There are four types of academic grants that can be awarded. All four types of grant applications require that you identify and obtain the signature of the faculty mentor/advisor who will sponsor the activity. In your application, you are asked to classify your needs according to the following definitions:

1. Conference

This type of grant is intended for students who will be presenting their work at a conference, with preference in funding to students in this order: (a) giving a talk, (b) presenting a poster, (c) participating in the conference in another capacity, and (d) simply attending a conference. Conferences are by far the most common type of SAG and the category most often funded.

2. Independent Study / Research

These grants are generally awarded for semester-long research projects. The project may be part of a faculty member's research program or a completely independent project (student-designed with faculty input) that the faculty member has agreed to mentor. Applicants must demonstrate their need for funding beyond what their faculty mentor has available. This necessitates a letter/email from the faculty mentor explaining the need for additional funds.

3. Competition

This type of grant is for students who are participating in a competition. However, this grant is not for the Olin Competition Teams.

4. Eureka

Seed funding is available to students (as well as to faculty and staff members) to stimulate and facilitate innovative research and educational initiatives. Novel approaches that promote collaboration and diversity of perspectives with "reasonable risk" and promise of new capabilities are encouraged. Eligible activities include research projects related to academic activities, implementation of ideas to improve institutional processes, course development initiatives, and intellectual vitality efforts expanding the overall knowledge base of the community. As these unforeseen opportunities may arise outside of the regular application review period, a portion of the yearly budget will be set aside to fund meritorious Eureka applications. *These grants are not for students who simply missed the application deadline.*

Document Requirements

1. Application

All academic grant applicants must complete the attached one-page application in addition to the information listed under “Required Documentation Checklist” in full by the announced deadline. Please carefully review the “Selection Criteria” and “Important Information” listed below when preparing your application.

2. Final Report, Reflection and Reimbursement Requests

If you receive a grant of any form, you will be required to complete a **full final report** that conveys the details of your project to Student Affairs and the Selection Committee that includes any relevant information or documentation, such as Design Review slides or project photographs. In addition, a **one- page reflection piece** is required. See “Required Follow-up Checklist” on the application page for details. If any of these items are not submitted, future requests will not be considered, as Screening Criteria will not have been met. Both the final report and reflection will be made available to the Olin community via the Olin Repository. All awardees are asked to upload their files using this process:

- 1) Go to <https://phoenixfiles.olin.edu/>
- 2) Scroll to the bottom and log in with these credentials:
Username: olin-student
PW: Phoenix1735!
- 3) Select "Add New Phoenix Files Item" from Tools (on the top/blue menu).

Deadline

The posted application deadlines will be announced at the start of each semester. **The application submission deadline for the Spring 2022 semester is Monday, February 14th, 2022.**

Except in unusually pressing circumstances, all applications are reviewed as a batch soon after the application deadline. Any applications received after the deadline are unlikely to receive funding because the Committee has a limited amount of money allocated for distribution of grant funding each semester.

The Committee will meet shortly after the application deadline to review all proposals and determine funding levels. If a student or group has not met all Screening Criteria (below), the proposal will not be forwarded to the Committee for consideration at that time. The Selection Criteria assist the Committee in determining if the proposal is fundable.

Screening Criteria

1. *Olin Student Participation*

Applicants must be currently enrolled Olin students.

2. *Academic Standing*

Participating Olin students must be in good academic standing. Students in good standing may continue to apply even though others on the grant may not be eligible to continue.

3. *Past Performance*

Participating Olin students must have completed all reporting requirements for prior awards.

4. *Completeness*

Proposals must be completed to the satisfaction of the Committee.

Selection Criteria

1. Proposal Quality

Consideration is given to the clarity, thoroughness, and feasibility of the proposed activities.

2. Academic Merit

Consideration is given to the intellectual merit of the activity and the benefit to the applicants.

3. College Welfare

Consideration is given to the benefit to, consistency with the mission of, and reflection upon the College.

4. Use of Resources

Consideration is given to the resources required to complete the proposed activities relative to the resources available and to the proportionality of the costs to the benefits. Evidence of good stewardship of SAG resources – for example, the inclusion of a detailed budget that demonstrates efforts to minimize costs and optimize resources – will positively reflect on the application.

5. College Policies

Proposed activities are checked to be consistent with the operational policies of the college, including safety, purchasing, and facilities policies.

Important Information

1. Space

If you are participating in an activity on campus, you will need to identify space in which this activity will occur. If it will be in an Academic space that is not a faculty member's research space, you may need to seek permission from Facilities. If you plan to conduct the activity in the Residence Hall, you will need to seek permission from the Office of Student Life.

2. Budget

As you prepare your budget, please keep in mind that the funding for this program has limits. The committee typically has approximately \$20,000 to distribute for the entire year and always has requests for much more than that amount. Your budget proposal should **justify and clarify your budget needs**. Explain reasons for travel and how you arrived at flight and lodging expense estimates (include screenshots of flight searches and hotel websites for costs). Requests for lodging reimbursement are limited to two nights, even if the event is for a longer period, and room-sharing is expected. Allowable travel expenses are generally limited to conference and transportation fees. Meals, transportation to/from airports, and hotel internet charges are excluded. To enable funding of the greatest number of applications, your request may be considered at a reduced funding level. Therefore, we ask that you include a statement indicating whether you will still be able to conduct your activity if partial funding is awarded. Include estimates, when applicable, of all items to be purchased and relevance to the project. If materials or equipment are purchased, Olin will generally own them following completion of the project. Please indicate where they will be located after the project is finished. Also, please list any sources of additional funding for your proposal.

4. Examples of Past Proposals

Examples of past proposals and final reports are available in the Student Academic Grants folder on the Public Drive.

5. Travel

If you are traveling to a conference or event, you **MUST** submit the Travel Authorization and Indemnity Form.

****THIS APPLICATION MUST BE TYPED****

Office of Academic Affairs Funding Request Application Spring 2022

Name(s) and Class: Merwan Yeditha, Human Interactive Robotics Lab Date Submitted: 2/14

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
				Yes	No	N/A
Will you be presenting a talk?				<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Will you be participating in a poster session?				<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Will you have to miss classes?				<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Have you made arrangements to make up class time?				<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Have you received support before?				<input checked="" type="radio"/>	<input type="radio"/>	
<i>If so, provide details in an attached note.</i>						
Have you submitted this proposal to other departments at Olin?				<input type="radio"/>	<input checked="" type="radio"/>	
<i>If so, provide details within your proposal.</i>						

Name of faculty advisor/sponsor: David Barrett

Faculty advisor signature **(REQUIRED)**: David Barrett

Amount requested: \$600 Amount Approved: _____ *(To be completed after review)*

REQUIRED DOCUMENTATION CHECKLIST: Submit the below documents **TOGETHER** with this application page:

- General Description** of activity and anticipated goals, outcomes and benefits.
- Budget and resource requirement and justification.** Include information about alternative/supplemental funding sources. State clearly if the activity will occur if partial funding is awarded (versus full amount requested).
- Space Requirements** Identify space needed/requested for this project. NOTE: Spaces will require prior approval for use as noted for Spring 2022.
- Project timeline** including start and end date.
- Travel Authorization and Indemnity form** (if applicable).
- Letter/Email of Support from Faculty Advisor:** Provide an email (or letter) from your faculty advisor and ensure that it is submitted along with all other application documentation.

Email COMPLETED application and proposal (combined into a single pdf)

Barb Luciano (bluciano@olin.edu).

DUE DATE is on or before Monday, February 14th, 2022

REQUIRED FOLLOW- UP CHECKLIST:

- FINAL REPORT:** The final report is due to Academic Affairs (bluciano@olin.edu) **within one week of the end date of the project or activity.** Include a conference program if you are presenting or participating in a poster session. Attach copies of any posters, presentations, etc.
- REFLECTION PIECE:** Please also attach a one-page reflection describing how this supported activity has enhanced your academic development.
- Kindly **upload your Final Report and Reflection Piece** using this process:
 - Go to <https://phoenixfiles.olin.edu/>
 - Scroll to the bottom and log in with these credentials:
Username: olin-student
PW: Phoenix1735!
 - Select "Add New Phoenix Files Item" from Tools (on the top/blue menu).

SAG Additional Documentation

Human Interactive Robotics Laboratory

General Description

The Human Interactive Robotics Laboratory (HIRO), formerly known as IRL, is a team of 6 students and several new members showing interest who are highly interested in the social robotics space, namely human-robot interactions. In the past, we have worked with our UR5 robotic arms to build interactions in the game space, such as Tic-Tac-Toe, Sudoku, Set, and Chess among others. Over the past 15 semesters as a project team, we have made substantial progress with well scoped semester-long projects that culminate in the end-of-semester Olin Exposition. We have consistently been able to produce a polished interaction sequence for the public to experience. In the past year, despite limitations posed by the pandemic, we performed in-depth research on Artificial Intelligence, specifically reinforcement learning with students implementing and learning about the alpha-zero algorithm, using it to design a reinforcement learning agent for Connect 4. In past semesters, we have explored topics such as computer vision, object feature extraction, path planning, and control. The success of our team over the last semester and the last few years in exploring these fields and creating engaging, interactive experiences has inspired us to continue our exploration into the fields of computer vision, machine learning, and human-computer interaction.

This semester, we are going to continue our long-term research that was paused during the pandemic. This research is centered around performing a real-time collaboration task between human and robot to accomplish a common goal. We plan to leverage past learnings and progress along with new learnings to write a research paper with the intent of presenting our findings at robotics and automation conferences. The neural networks and machine learning algorithms we will be researching and utilizing for computer vision, scene understanding, and path planning are very computationally intensive. Our research is heavily dependent on sensor data collected by our Kinect camera, which does not always provide the ground truth accuracy we require for some of our high-precision robotic assembly and path-planning tasks. By purchasing an Intel RealSense depth camera, we will be able to get high-precision LiDAR scans and depth heatmaps, which will allow for us to gain more accurate scene understanding in carrying out our path-planning and robotic arm research. Additionally, we would like to purchase a high-wattage power supply to power our high-performance GPU workstation.

Notes:

Alternative funding sources are available but limited. We have a small club fund, but large purchases like ours are discouraged. Getting funding from our faculty sponsor is

possible, but funding is unclear and should be considered supplemental. To be clear, the activity will go on if partial funding is awarded.

Budget/Resource Requirement and Justification:

Robot Arm Gripper Power Supply	\$50
850W 80+ Gold Power Supply	\$150
Intel RealSense Camera	\$400
Total	\$600

Space Requirements

Our space requirements are already met. We have a dedicated space for HIRo in the Robotics Lab where we do research along with our robot arms. The GPU server will be placed in the Robolab and will not require any extra storage space within the Robolab.

Project Timeline

Start Date	02/08/2022
Project Formation	02/17/2022
Research and Exploration Begins	02/21/2022
Preliminary Research Complete	03/04/2022
Proof of Concept Complete	04/22/2022
Research Complete	05/05/2022

Notes on Prior Support:

We have received funding in the past, most recently in the Fall 2021 semester. We were able to utilize this funding during this semester and make great progress towards our research goals.

REIMBURSEMENT REQUESTS: Original itemized receipts of purchase are required for reimbursement. All reimbursement requests must be submitted to Barb Luciano in Academic Affairs (bluciano@olin.edu) within two weeks of the purchase/expenses.