

Learn Through Discovery Projects Hatchery

MENTOR/ADVISOR HANDBOOK 2020 - 2021



Learn Through Discovery Initiative - Projects Hatchery

California State Polytechnic University, Pomona

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WELCOME TO LEARN THROUGH- DISCOVERY PROJECTS HATCHERY

Welcome to the Learn Through Discovery Initiative (LTD) Projects Hatchery at California State Polytechnic University, Pomona. Thank you for providing your students a Signature Polytechnic Experience (PolyX). The LTD Projects Hatchery puts the mission of CPP into action. Students learn how to use their knowledge to create innovative solutions to community problems.

The LTD Projects Hatchery provides a framework and resources for students who are engaged in PolyX. The goal of the Hatchery is to complement the guidance of the mentors by identifying common expectations and milestones that are applicable to projects in a variety of disciplines, as well as provide financial support to student teams that demonstrate the ability to meet self-identified project milestones.

BENEFITS

All students are encouraged to take advantage of the resources offered by the LTD Projects Hatchery, even if they are not planning on applying to become a President Discovery Fellow. Becoming a President Discovery Fellow is only a small part of the program, the program also offers all students the opportunity to:

- Learn how to apply what they're are learning in their classes to benefit communities;
- Learn about career options in research, community engagement, and entrepreneurship;
- Meet students from across campus, not just in their discipline;
- Work with students from across campus on projects;
- Receive support from staff, faculty, and peers;
- Learn about programs and scholarships that can give students the opportunity to conduct research, serve the community, or become entrepreneurs while still a student at CPP;
- Receive assistance in applying to programs and scholarships; and
- Have the potential to become a Presidential Discovery Fellow, which includes a scholarship.

LEARNING OBJECTIVES

Students will:

- Have the opportunity to reflect on the importance of the topics discussed in their major courses;
- Be able to transfer and apply the knowledge obtained in their courses to create an innovative solution to their project;
- Feel more confident in their roles within their disciplines;
- Understand the importance of service and engaging with the community;

- Learn how to implement an interdisciplinary approach to problem-solving;
- Develop and complete a project that meets the following three criteria: research, innovation, community outreach; and
- Understand the value of a true polytechnic education.

DISCOVERY FELLOW PROGRAM ADMINISTRATORS

Projects Hatchery Coordinator

Eisen K. Ipac

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Eisen Ipac graduated from Pomona College in 2019 and received her Bachelor's degree in Mathematics. As a low-income, DACA-mented student, she dedicated her undergraduate experience towards immigrant activism and work around high school education, specifically working with underrepresented high school students from the local area through the on-campus college access program. As one of the STEM Vistas at CPP, she will be closely working with OUR and LTD, and is excited to help college students realize some of their ideas through Projects Hatchery!

Projects Hatchery Coordinator

Marmar Tavasol

BA – Philosophy, Cal Poly Pomona

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Being part of the Project Hatchery with Learn Through Discovery had a major impact on Marmar, so continuing service as an AmeriCorps VISTA in their CSU STEM diversity program as a part of the CPP team is a natural next step. Marmar's experiences at Cal Poly Pomona strengthened her commitment for social issues and community involvement. Bridging the gap between academia and the community by making education more accessible for underrepresented minorities has been the goal of different projects they've been involved in, including leading *Cut the Bias* events, teaching with the *Prison Education Project*, assisting with research on formerly incarcerated individuals in higher education, serving as the president of the CPP Philosophy Club and Phi Sigma Tau Honors Society as a student, and other community projects.

Faculty Director for Learn Through Discovery Initiative

Dr. Winny Dong

Ph.D. - Materials Science and Engineering UCLA

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Since joining Cal Poly Pomona in 2000, Dr. Dong has focused her efforts on creating an environment where all students and faculty can develop their strengths. Dr. Dong is dedicated to serving the diverse population of CPP and has worked to bring various grants, totaling over \$9 million, to increase participation by underrepresented groups in science and engineering. Also, Dr. Dong remains active in research and has been funded by NASA/JPL, the Department of Energy, the American Chemical Society, among others for her scientific work. Dr. Dong is also Director of Projects and Undergraduate Research for the College of Engineering, a Co-PI on an NSF STEP grant to increase graduation rates in STEM, and serves on the CPP Foundation's Executive Board. She is the co-founder of the Entrepreneurship in STEAM (ESTEAME) program and the co-founder of the CPP-NASA Technology Assessment Program.

Assistant Vice President for Academic Innovation

Dr. Olukemi Sawyerr

Ph.D. - Strategic Management, University of North Texas

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Dr. Olukemi Sawyerr is the Assistant Vice President for Academic Innovation at California State Polytechnic University, Pomona. Previously Dr. Sawyerr was the inaugural Director of the Student Innovation Idea Lab (iLab) and Professor in the Management and Human Resources Department. She is a founding faculty member of the Entrepreneurship in STEAM (ESTEAM), the NASA Technology Assessment, and the Startup NASA programs. She has consulted for several organizations including the Ad Sales Division of Comcast, has taught executive education at the University of California Los Angeles' Collins Center for Executive Education, and has held visiting professor positions at various universities including the University of Texas at Arlington, Hong Kong Baptist University, and Beijing Institute of Technology. Her research interests include strategic entrepreneurship in emerging economies. She has authored publications in multiple journals including the *Strategic Management Journal*, *International Small Business Journal*, *Journal of Small Business Management* and *Journal of High Technology Management Research*. She has presented at numerous national and international conferences including the University Business Forum sponsored by the European Commission.

SUMMARY OF ROLES

There are two key roles for leaders in the Hatchery: the mentor and the advisor. Each role plays a different part in ensuring the success of the students that participate in the program.

MENTORS

The mentor's role is to guide the students through the design and implementation of the project by providing advice and feedback based on disciplinary expertise and/or experiential knowledge. Because the Projects Hatchery is a multidisciplinary program, its staff are not equipped to help students with the specific details and processes each project requires. While Hatchery staff are able to provide general tasks that suit a wide array of projects, the mentor is able to tailor these general tasks to the team's own project.

Project Hatchery mentors may be faculty, staff, or from an external source such as a private company or organization. However, each team is required to have at least one faculty mentor overseeing their project to ensure that the project is centered around education and research.

Some of the duties and expectations of the mentor are:

- Prioritize the student(s)' educational growth
- Listen to the student, as they explain their idea for a project, and guide the development of forming the idea into a realistic project.
- Communicate with the student about the methodologies that are needed to develop the idea (literature review, customer discovery, budgeting, IRB approval etc.).
- Inform the student of the unpredictable nature of implementing a project; the need for individual initiative, accountability, and adaptability; the prospect that the project may not achieve expected results, even if the student performs at full capacity; and the process of responding to a failed experiment, a null hypothesis, or inconclusive results.
- Inform the student of the expected time commitment for conducting the project and for writing the final document and assist the student with developing, and adhering to, a realistic timeline.
- Assist the student in the discovery of resources, other researchers, and/or events that will help in the development of their project.
- Establish timelines and expectations for periodic progress reports from the student and meet with the student on a regular basis, to monitor progress and offer support and guidance regarding research/creative activity.
- Review drafts of any documentation, reports, and/or papers and provide feedback.

- Assist the student in preparing oral or poster presentations of the project, and help the student to identify an appropriate venue for the presentations (e.g., discipline-specific conference; CPP Student Research, Scholarship, and Creative Activity Conference; classroom setting; lab meeting; community event; etc.).

Mentors who are willing to honor the duties and responsibilities of their position are invited to fill out a [Mentor Commitment Form](#) and attend our monthly Hatchery meetings.

ADVISORS

Projects Hatchery Advisors are familiar with the LTD Projects Hatchery process and complement the mentors' role by being a liaison between the student team and the Projects Hatchery. Advisors help guide teams through the different phases of the program and the general processes of projects development.

Advisors are assigned 2-3 teams from Phases II, III, & IV of the program. Their role is to:

- Meet with each team assigned to them twice per semester to discuss the Hatchery team's progress, challenges they face, and steps for moving forward;
- Help teams develop attainable goals for completing the phases of the Hatchery;
- Attend monthly meetings to provide feedback on team presentations and offer general advice and counsel during discussions; and
- Communicate with Hatchery staff on team progress, issues, and concerns.

Advisors can be faculty or staff from Cal Poly Pomona.

PROGRAM COMPONENTS

As a Hatchery member, students will be expected to comply with all program components to ensure their project's success. The following provides a brief overview of key program requirements. Please note that as the Hatchery evolves over time, necessary changes will occur to ensure that students are getting the most out of the program. Participants and mentors will be notified before they take effect.

APPLYING

Any student, whether an undergraduate or a graduate¹, and regardless of major, is invited to apply to the Projects Hatchery. Furthermore, all students who apply will

¹ The program does not fund Masters theses or Doctoral dissertations, graduate students who wish to participate may do so with a project that is not their thesis/dissertation

have the opportunity to participate in the Hatchery. We accept all new applications².

The application for the Hatchery can be found at our [website](#). **IMPORTANT NOTE:** At this point, students just need to have an idea or a topic that they would like to explore. They do not need to have done any research, since the phases of the program is intended to guide their idea and develop it into a working project.

Submitted applications will be reviewed weekly. For an application to be reviewed by the next review date it will need to be submitted **BEFORE** midnight on Sunday prior to the review date. Once the application has been reviewed, the students will be notified of their acceptance into the program and provided with details for the next steps they will need to take.

Team Action Plan

Once your students' project is reviewed by the Hatchery Advisory Board, they will meet with the Projects Hatchery Coordinator to develop an individualized Team Action Plan (TAP). While some of the details of the TAP is universal within the program, there is also a degree of customization to this plan to tailor it to the needs of the project participants. Participants should not look at the details of their TAP as strict requirements, rather they should look at the plan as suggestions to help keep the project on task and progressing. As they move through each phase they will be asked to complete a new TAP.

Present to Hatchery Advisors

Before the team can move through the phases of the Hatchery, they will need to present the idea to the Hatchery Advisors at one of the Hatchery's New Team meetings (held on the third Friday of every month).

Pre-Test Survey

Every participating student will be asked to complete a pre-test survey. It is not required to fill out the survey, but it is required that students click on the link and either choose to complete the survey in its entirety or opt out of doing the survey all together.

PHASE I - EXPLORATION

Exploring the Idea

In this phase teams will mostly be working on finding out what kind of research has been done on the idea already and determining what kind of interest or need there is for it. This may be done in the form of either a literature review, customer discovery interviews, or both. The appropriate method for exploring their idea will be

² Provided that applications follow campus guidelines and local, state, and federal laws

determined by the end of the application process

Mentor Commitment

Before students can move on to Phase II they will need to have had all mentors on their project submit the Mentor Commitment Form linked above in the Mentor section of *Summary of Roles*.

Moving on to Phase II

Once your team has finished exploring their topic, they will submit all their work and apply to continue into the development phase. Your involvement as the mentor is crucial at this point and will greatly impact the retention rates for the teams. Phase applications will be reviewed every week.

PHASE II - DEVELOPMENT

The purpose of the development phase is to plan how your team can transform their idea into a concrete project. In this phase the team will:

- Update their TAP
- Write a proposal that outlines the purpose, scope, and methodology of the project, which includes:
 - A project timeline
 - Personnel assignment descriptions
 - A budget
- Meet with one of the Hatchery Advisors to ensure the proposal is complete

Other tasks that may need to be completed in this phase may include:

- Applying for IRB approval (if using human subjects for research)
- Collecting preliminary results
- Building a prototype.

NOTE: this phase is the last chance to pivot or change the project before implementation.

Once the team has completed their project proposal, they will submit it to the Advisory Panel for consideration³. Once the Panel has approved the proposal, the team will meet with one of the Hatchery Advisors to go over any final details.

PHASE III - DISCOVERY FELLOWS I

³ Every team may submit their proposal for Phase III a maximum of two times. If after the second attempt the team's proposal is not accepted, then the team may be asked to leave the program.

Once students are accepted into Phase III of the Projects Hatchery – they become President’s Discovery Fellows and become eligible for project funding. In phase III the team will fully implement the project. This is also the phase in which the team becomes Fellows and can begin to receive funding. During this process they will continue to coordinate with Hatchery staff for dispersal of funds, and be required to attend monthly meetings to keep us updated on the work being done. Your involvement as a mentor is most important during this phase. Your expertise in the project will be required to help the team implement the project.

By the end of this phase the team will be prepared to disseminate their results and report them to the Hatchery.

NOTE: Please see “Funding” Section for further details.

PHASE IV - DISCOVERY FELLOWS II

Once the completed project in phase III are finalized, there will an option of continuing the work and receive additional funding. To move on to phase IV, the team will reexamine the previous project and either repeat it on a different community, or increase the scope of the project to appeal to a broader community.

To continue to phase IV your team will be asked to submit a new proposal on how the project’s focus has changed, why it has changed, and what you anticipate the new results will be. There will be a new proposal, a new project timeline, budget, and personnel assignments. The team may also be asked to submit a revised literature review and/or customer discovery interviews; as well as, seek new approval from the IRB.

Once accepted into phase IV, your responsibilities will be the same as phase III.

HATCHERY MEETINGS

On the first Friday of every month from 1-3pm, during the academic year, Hatchery members, administrators, mentors, and other guests will meet to go over program updates, present and discuss current projects by the participants, and any other activity administrators believe will enhance the experiences of the participants.

NOTE: Links to all necessary forms and guides can be under the “Documents” tab in Blackboard.

CONFERENCE

CPP Student RSCA Conference

The LTD Fellows are encouraged to participate in as many professional presentations

as possible, and will rely on you, the mentor, to guide them in preparing and presenting at various conferences. Participating in conferences has numerous benefits for the aspiring fellows including getting projects noticed, enhancing speaking skills and networking with students and professors from around the country, possibly the world!

To help prepare the teams for these conferences the LTD collaborates with the OUR to encourage fellows to present their projects at the CPP Student RSCA Conference. Fellows are encouraged to invite their colleagues, friends, and family.

FUNDING

The Projects Hatchery provides funding for student teams once they reach the third phase of the program. The released funds are \$8,000 for teams of 3 or more CPP students, or \$5,000 for teams of 1 or 2 CPP students. All funds are released based on a staggered schedule. 1/3 of the funds will be released at the beginning of Phase III, 1/3 will be released at the midpoint of the project, and the final 1/3 will not be released until after the team completes their project and disseminates the results to the Hatchery staff.

If your team needs more than 1/3 of your budget to be released earlier than outlined above, they must complete an Early Funding Disbursement Form (on Blackboard), specifying why they would need it earlier (to purchase supplies, databases, etc.), and it must be approved by you as the team mentor. They must also meet with one of the Hatchery coordinators to be approved. Please note: approval is not guaranteed.

Project Supplies Reimbursement

The LTD wants to encourage participants to tackle any project that is feasible both within your academic schedule and during your time at Projects Hatchery. Therefore, the Hatchery reimburse students for qualified project costs incurred while completing the project. Please make sure that team budget has been approved before students make any purchases (can find forms in Blackboard). Faculty directors will review and approve/decline requests accordingly. Teams will be notified of the decision by email within 2- 3 business days after they submit the form.

- Examples of items that qualify: project supplies, printing costs, electronic survey costs, etc.

Please have students maintain all original receipts for incurred costs and then turn these receipts in to the LTD Staff for reimbursement. Contact the LTD Staff for further details.

Travel Reimbursement

The LTD wants to encourage fellows to present their work at professional conferences across the country. Limited funding is available to help students achieve these goals. To request funding for travel, students must turn in a Travel Authorization Request (available on the LTD Blackboard site), at least two weeks **BEFORE** travel. If they do not plan on presenting their project at professional conferences, they could also use travel funding to cover travel costs associated with their project. The LTD Staff will notify them regarding the approval of the travel request by email within 2-3 business days after they submit the form. If approved, have students save all original receipts related to the travel (including boarding pass). Once students return from their trip, work with Staff to be reimbursed.

Important Note

Reimbursements will only be paid out for purchases that take place after the reimbursement forms and budget have been submitted and approved by Hatchery staff. Any purchases made before approval is obtained will not be reimbursed.