



MBARI Internship Mentoring Agreement

What is an Internship Mentoring Agreement (IMA)?

An IMA provides a planning tool that identifies both professional development needs and career objectives. IMAs serve as a communication tool between the intern and the mentor and/or internship coordinator(s). IMAs should be established at the beginning of the internship and the intern should take the lead in completing and updating the IMA and should discuss progress regularly with their mentor.

What is the purpose of the IMA?

As an intern, you own your career and what you are able to obtain from our internship program. That means not only being responsible for your research, but also actively getting the training you need and seeking guidance from your mentors and hosts. If you have questions or additional objectives related to your intern position, these IMA meetings are a great time to bring them up.

Overview of the steps in creating and using an IMA

- Step back and self-assess
- Plan a meeting with your mentor/host
- Lead the discussion
- Complete the “Action Plan” and follow up
- Meet at regular intervals to revisit your IMA

Details:

- Interns should have at least one mentor who will guide them on their research, career opportunities, and support their networking by introducing them to colleagues and including them in group meetings.
- Interns will also have an internship coordinator(s) who will also support their networking with other interns as well as with colleagues. The Coordinator(s) will also provide guidance about the internship program and MBARI.
- The IMA includes a self-assessment for the intern in which they will identify strengths and areas of improvement for different skills and areas of knowledge.
- The Action Plan of the IMA encourages the intern to establish concrete steps in the meeting with the mentor. The Action Plan should be kept accessible and checked on it every couple of weeks.

Mentor/host responsibilities in supporting the intern

1. Assist the intern in clarifying their career objectives. Use the self-assessment and action plan to discuss ideas.
2. Assist the intern with setting goals as they develop the IMA. These could include research milestones, writing the final paper, presenting at the intern symposium, publishing, conference presentations, etc.)

MBARI Internship Mentoring Agreement

Intern name and pronouns: Isaac Wax (he/him)

Intern host lab or program: Autonomous coastal profiling float (CPF)

Intern mentor name(s) and pronouns: Gene Massion (he/him)

Important Internship dates:

June 9th, 2025. First day orientation and meeting with mentor

August 13th, 2025. Annual Intern Symposium. Oral presentation of project

August 15th, 2025. Final day of program. Final project paper due.

Agreement for meetings between intern and the mentor

The intern and mentor should identify approximate meeting dates (suggested interval is *at least weekly*) and then an additional meeting for IMA review (every other week). Please be aware of and sensitive to time zone issues.

Weekly Meeting Time: Monday - Thursday, 10:00 AM

IMA Review Meeting Time: Friday, 9:00 AM

General MBARI expectations

- You will be asked to sign the MBARI Code of Conduct. MBARI is committed to providing a safe, productive, and welcoming environment for all participants, no matter what role they play or their background. This includes respectful treatment of everyone regardless of gender, gender identity or expression, sexual orientation, disability, physical appearance, age, body size, race, religion, national origin, ethnicity, level of experience, political affiliation, veteran status, pregnancy, genetic information, as well as any other characteristic protected under state or federal law.
- You will be asked to participate and complete a course on the Responsible Conduct of Research (this is a NSF obligation for NSF funding and a good general overview that is worth taking) prior to starting the internship.
- MBARI expects that you and your mentor will exhibit mutual respect for your respective thoughts, viewpoints, and ideas throughout the internship. This includes a commitment to communication – an especially important issue for a virtual internship program. If there are any issues, MBARI expects you to inform the internship coordinator(s) immediately.
- MBARI expects that you and your mentor will work on this IMA prior to starting the program on June 9th and then meet to discuss it during that first week so that it can be modified as needed. You should continue meeting and refining this IMA throughout your internship program.
- Understand that, even virtually, your commitment to the MBARI internship is the equivalent of a full-time position (40 hrs/wk minimum), and must be your primary commitment during the program period. As such, we strongly advise against taking on additional commitments (e.g. jobs, courses) during the intern program, similarly to if we were operating in person. If you need to take some time off, please coordinate your request with your mentor and the internship coordinator(s).

Action Plan: Outline specific goals for the duration of your internship

Short summary of the intern project

Get one or both CPFs running on the test bench, test tank and hopefully at sea. Additionally, chose one additional project.

What are your goals/expected results of the project as a prioritized list. This should include an initial attempt at a timeline (maybe weekly goals to start with?)

Week 1 – Get oriented, complete training, develop task list.

Week 2 – Start working on floats

Week 3

Week 4

What are your expectations and desired outcomes from the internship program

I want to contribute meaningfully to the success of the CFPs. I have one additional smaller project where I am setting up a more efficient motor driver for the CPF pumps. I am excited to strengthen my technical skills across all disciplines, with a particular focus on improving my embedded programming abilities. I am also eager to learn the best engineering practices and methodologies used in the development of the CFPs. Beyond technical growth, I hope to gain experience working with interdisciplinary teams and developing more effective collaboration strategies. I am also looking forward to improving my professional networking skills and learning more about the science aspects of the projects going on at MBARI. Ultimately, my goal is to come out of this experience as a stronger, more well-rounded engineer with a better skill set for research collaboration.

INTERN - SELF ASSESSMENT

1. Write about your short-term and long-term career objectives (e.g. a career in research, teaching, the private sector, etc.).

I am currently pursuing my Bachelor's degree in Electrical Engineering. After graduation, I am considering either continuing on to a graduate program or going directly into the private sector. I love working on multidisciplinary projects that combine both hardware and software, and in the short term, I see myself working as a full-stack hardware engineer with an electrical engineering focus. In the long term, I am not sure yet. I enjoy teaching and could potentially see myself working in a research or academic setting. I am especially interested in ocean engineering and am actively exploring it as a career path. I am also drawn to the electric vehicle and aerospace industries, though I want to avoid working in the defense sector. Additionally, I am fascinated by semiconductor device physics and could see myself pursuing a PhD if I find a topic that truly excites me.

2. Fill out this self-assessment, and then review it with the mentor. Identify areas for improvement by comparing current skills and strengths with those still needed. Mentors may have feedback on why these skills are valuable in a certain career.

Skills/knowledge	Strengths	Areas for improvement
Discipline specific knowledge	EE: Board level design, schematic capture, debugging, PCB layout, basic component selection (FETs, regulators, ...) SW: Basics of C/C++ for embedded systems, basic data structures, Python scripting for analysis and simulations ME: Strong hands-on skills (machining, prototyping), comfortable with statics, dynamics, and basic strength of materials. Experience designing pressure vessels and systems for ROVs/ AUVs	EE: Missing a lot of knowledge from upper div courses work I am yet to take. SW: Overall, all want to become more comfortable with embedded programing. I do not have a good work flow I follow when developing. I find middleware, RTOS and state machines to be confusing. Also bad at reading through code bases efficiently. ME: Know little about FEA, have set up few non-garbage-in-garbage-out simulations. I know basically nothing about fluids (hope to learn some basics and learn about added mass...). Would like to see the process used for designing pressure vessels for high pressure applications. Hope to learn processes for designing control loops.

Research skills (synthesize existing work, data analysis, writing, etc.)	- Reading documentation - Have written tech docs and documentation for MATE and other projects I have worked on in the past	- Could improve my ability to scan/find documentation faster - I do not have a clean work flow for technical writing
Research tools (statistics, lab skills, software, etc.)	Lab skills: Test equipment (scopes, power supplies, function generators), Debugging, Soldering, wiring, documenting, assembling stuff Statistics: Spreadsheets, Python, Matlab Software: KiCAD, LTSpice, Git, LATEX, Linux, Solidworks, Autodesk, Solidworks PDM Programing: C++, C, Python, MATLAB, Microcontrollers	Lab skills: Never really used logic analyses before. I am sure there are a bunch more cool tools at MBARI that I have never used before. Statistics: I am not sure exactly. Software: I know you were talking about Mathcad, I have never used it before, but seems like it could be a really nice tool to use for calculations. I have never touched Simulink or much of what MATLAB has to offer.
Research collaborations (how to find collaborators, develop those relationships, etc.)	In my time in the Cabrillo Robotics Club I did a lot of leadership in the form of managing people working on engineering projects, but know nothing about research.	I know nothing about this and am excited to learn. I look forward to learning some about the science aspects of the projects going on at MBARI.
Understanding publishing process (where to publish, authorship, responding to reviews, etc.)	I have absolutely no experience with this.	I would be interested in learning the basics if the opportunity presents itself, but do not think this is applicable to my internship.
Communication (skill with presenting or writing work, being heard in meetings, etc.)	I am not good at this.	Would like to get better at it.

Project Management (planning the components of a project, meeting deadlines, etc.)	I have built and followed Gantt charts and to-do lists in the past. Also, have developed tracking systems for keeping CAD organized like workflows of building BOMs with part number data bases and dash numbers.	I have never found a system that works well. I plan things in a way where it is not actually that helpful. I would like to find project management strategies that I am able to stick to throughout a full project.
Time management (block out work time on calendar, define milestones with mentor, etc.)	I am not great at time management. I will make to-do lists for myself but do not have many more strategies beyond that.	I hope to learn better time management strategies

Isaac Wax

Intern Signature

5/7/2025

Date

Gene Massion

Mentor Signature

23June2025

Date