



Individual Development Plans for MACH Students and PostDocs

An Individual Development Plan (IDP*) is a set of professional and career development strategies to help MACH students and postdocs achieve success in MACH and beyond.

**NSF defines an IDP as “map[ping] the educational goals, career exploration, and professional development of the individual” postdoc and grad student.*

Required for all NSF-supported students and postdocs.

Encouraged for non-NSF supported students and postdocs.

Roles of an IDP:

- Empowers students to take ownership of their growth and learning through a process of self-reflection, assessment and goal setting
- Facilitates conversations between mentors and mentees, allowing mentees to verify expectations and seek feedback and guidance for research and career progression
- Creates realistic road maps for long term goals, short term deliverables, progress milestones, and career development

Roles of Students/Postdocs:

- Reflect on annual research progress; establish goals, action plans, and timelines for research progress in the coming year (see Section I below)
- Complete a skills assessment, identifying areas of strength and weakness and establishing goals, action plans and timelines for improving skills in the coming year (see Section II below)
- Reflect on professional and career development progress; establish goals, action plans and timelines for progress in the coming year (see Section III below)
- Create a plan for establishing and engaging a Mentoring Network (see Section IV below)

Roles of Advisors/Mentors:

- Foster a positive and safe environment for the sharing of constructive feedback
- Review progress with student/postdoc throughout the year
- Discuss research progress and expectations; help prioritize short and long term goals to achieve research and degree milestones
- Offer insights about student’s strengths and provide guidance for areas needing development
- Create an open dialogue to help students align goals, skills, and interests with potential career paths
- Help students connect with resources and networks to advance research and career development goals



Instructions: Students and Postdocs, please work with your mentors to complete the following worksheets and upload a PDF of your completed IDP to [this folder](#).

Student Name:

Program:

Graduate Director:

Faculty Advisor(s):

Cross-Discipline Mentor(s):

Check off each of the following as you complete them:

If you have any questions, contact Moira Scheeler (MACH Program Coordinator)

- ☐ Onboarded to MACH by the MACH Program Coordinator, Moira Scheeler
- ☐ Confirmed a cross-Mentor in a field outside of your primary mentors
- ☐ Received a confirmation email that you were added to the Student and Postdoc email list
- ☐ Have invites to the MACH monthly seminars
- ☐ Reviewed MACH suggested publications on [convergent climate research](#)
- ☐ Reviewed the MACH [Integration Expectations and Best Practices](#)
- ☐ Reviewed the [MACH Data Management Plan](#) and/or [Checklist](#)
- ☐ Been added to the MACH single IRB protocol (Institutional Review Board) as a research team member in the MACH project

General Information

- Track/Major/Minor or postdoc position (if applicable):
- Progress in academic program (i.e. 1st year in PhD program):
- Anticipated graduation date or completion of postdoc position:
- Sources of financial support (stipends or salaries) for your graduate studies:
- Credits
 - Course credits completed
 - Research credits completed



MACH Student and PostDoc Individual Development Plan and Worksheets

Self Reflection

- What motivates and energizes me?
- What kinds of career opportunities do I want in the future?
- How does participating in a large project like MACH (convergent/transdisciplinary) relate to my research/'skills/career objectives?

Talents and Strengths I Can Utilize

- What do I love doing?
- What am I good at?



MACH Individual Development Plan Worksheets

Section I: Research Progress and Goals

1. Report research progress in the past year (presentations, manuscripts, grants/fellowship applications, honors/awards, data collected, conferences attended, etc.)
2. Set Research Goals (as many as applicable to you):

Research Goal(s)	Action Step(s)	Timeframe (Short-term or Long-term)	What support from the broader MACH community (i.e. other researchers, admin staff, stakeholders) would help support you in achieving your goal?

3. Reflect on Annual Research Goals Progress



Section II: Skills Assessment and Goals

1. Assess Skills and Summarize

- Highly Proficient Skills:
- Skills that Need Improvement:

2. Set Skill(s) Development Goals

Skill Development Goals	Action Step(s)	Timeframe (Short-term or Long-term)	What support from the broader MACH community (i.e. other researchers, admin staff, stakeholders) would help support you in achieving your goal?

3. Reflect on Annual Skill Development Goals Progress



Section III: Professional and Career Development Progress and Goals

1. Identify Career Objectives

- Career Objective 1:
- Career Objective 2:

2. Set Professional and Career Development Goals

Professional and Career Development Goals	Action Step(s)	Timeframe (Short-term or Long-term)	What support from the broader MACH community (i.e. other researchers, admin staff, stakeholders) would help support you in achieving your goal?

3. Reflect on Annual Professional and Career Development Goals Progress



Section IV: Establishing and Maintaining your Mentoring Network

Establishing and maintaining a professional network beyond your advisors is important for your success. Potential mentors can include peers and near-peers (more senior graduate students and postdocs), family, friends, former employers, former professors, current professors in your department, professors in other departments, other MACH team members, and professionals in your desired career field. These individuals may also make valuable future references.

Think about building a team of mentors. No one individual will be able to provide all of the components you need to be successful. When identifying potential mentors, consider:

- How might this individual contribute to your professional development?
 - What strategies would help you establish and maintain a relationship with this individual?
1. Reflect on your current mentoring environment.
 - Where do you have strong support?
 - In which areas could you use help/improvement?
 - Do you have specific mentors in mind?

2. Set Mentoring Goals

Mentoring Goals	Action Step(s)	Timeframe (Short-term or Long-term)	What support from the broader MACH community (i.e. other researchers, admin staff, stakeholders) would help support you in achieving your goal?

3. Reflect on Annual Mentoring Goals Prog



Skills/Abilities/Actions For MACH Students and Postdocs to Consider

Ethics

- ☐ Understand responsible conduct of research with human subjects
- ☐ Understand the research ethics of intellectual property, acknowledging contributions, and how to disseminate research results in a way that benefits and does not harm communities.
- ☐ Promotion of research collaborations with non-academic partners that involve reciprocity in contrast to extractive methods

Professional (Academic) Communications

- ☐ Coursework/training that included regular faculty critique of and feedback on professional writing
- ☐ Authored, submitted, or published research papers in peer reviewed journals
- ☐ Presented at academic/scientific professional conferences or meetings
- ☐ Presented results from MACH activities to professional, nonacademic audiences (e.g., industry, government)

Convergence/Co-Developed Research

- ☐ Communicate with researchers in multiple disciplines
- ☐ Understand the meaning of convergence research as it relates to multi-disciplinary, interdisciplinary, and trans-disciplinary research.
- ☐ Develop interdisciplinary communication skills needed to effectively engage in the MACH integration and co-production processes
- ☐ Co-develop convergent research questions that bring together multiple disciplines to address compelling coastal climate change challenges
- ☐ Understand differences in perceptions of timelines between academic scientists and non-academic partners
- ☐ Develop strategies for collaborative production of knowledge that respects the lived knowledge of non-academic partners
- ☐ Articulate a shared vision between research partners

- ☐ Create a shared language and vocabulary
- ☐ Develop skills & tools to collaborate across multiple disciplines (e.g., computational reproducibility, software reusability)
- ☐ Build trust and mutual respect
- ☐ Manage conflict

Research Communications/Translation/Community Engagement

- ☐ Communicate with experts and non-experts including policy makers, the general public, and the media
- ☐ Active participation in teams engaged in research, education, and/or outreach efforts
- ☐ Coursework/training to develop media-based or information technology- based research translation/communication skills
- ☐ Receive training/instruction for applying your research to address public policy concerns
- ☐ Produce multimedia materials, Web sites, or other cyber-enabled tools to communicate the results of MACH activities to external audiences

Career Preparation

- ☐ Engage in problem solving and critical thinking
- ☐ Develop and update a detailed CV as well as an NSF-style Biosketch, Conflict Of Interest, and Current & Pending funding
- ☐ Receive training or instruction (e.g., courses, workshops) in effective teaching practices and student mentoring
- ☐ Give a training or instruction in one of your skills
- ☐ Serve as a mentor to others (e.g., graduate students, undergraduates, laboratory technicians)
- ☐ Receive training/mentoring in grant proposal preparation
- ☐ Engage in professional interactions with nonacademic employers (e.g. industry, government) in order to learn about career pathways and opportunities