Mote Marine Laboratory
Postdoctoral Researcher Mentoring Program

This document is adopted by reference in Mote Marine Laboratory's Policy Manual, and posted as part of Mote's website devoted to postdoctoral fellowships.

According to the Association of American Medical Colleges (2006), "postdoctoral training is an integral component of the preparation of scientists for career advancement as scientific professionals. Postdoctoral appointees typically join an institution to further their training in a chosen discipline after recently obtaining their terminal degree. This training is conducted in an apprenticeship mode where she/he works under the supervision of an investigator who is qualified to fulfill the responsibilities of a mentor. The postdoctoral appointee may undertake scholarship, research, service, and teaching activities that together provide a training experience essential for career advancement."

The National Science Foundation (2009) promulgated guidelines requiring postdoctoral mentoring programs at institutions requesting support for postdoctoral researchers in NSF proposals. In abridged form, NSF writes,

> "Postdoctoral Researcher Mentoring Plan. Each proposal that requests funding to support postdoctoral researchers must include, as a supplementary document, a description of the mentoring activities that will be provided for such individuals. In no more than one page, the mentoring plan must describe the mentoring that will be provided to all postdoctoral researchers supported by the project, irrespective of whether they reside at the submitting organization, any subawardee organization, or at any organization participating in a simultaneously submitted collaborative project… Examples of mentoring activities include, but are not limited to: career counseling; training in preparation of grant proposals, publications and presentations; guidance on ways to improve teaching and mentoring skills; guidance on how to effectively collaborate with researchers from diverse backgrounds and disciplinary areas; and training in responsible professional practices. The proposed mentoring activities will be evaluated as part of the merit review process under the Foundation's broader impacts merit review criterion. Proposals that include funding to support postdoctoral researchers, and, do not include the requisite mentoring plan will be returned without review."

This Postdoctoral Researcher Mentoring Program has been prepared by the Research Division of Mote Marine Laboratory (Mote), in collaboration with a committee comprising current Mote scientists and postdoctoral researchers. The mentoring plan advances Mote's 2020 Vision & Strategic Plan, Priority 2: "Ensure the long term prosperity of the research enterprise through focused staff recruitment and nurturing programs," specifically, the implementation of a focused program to "attract and retain the best and brightest researchers by establishing four new – and continuously rotating – two-year postdoctoral fellowship positions, with full salary/fringe/start-up costs, by 2015 and seven positions by 2020."

At least two kinds of postdoctoral opportunities exist at Mote. The *Postdoctoral Research Fellows* provided through implementation of the Strategic Plan are sought by open competition

for scientific fields that will meet overall science objectives for Mote, as defined and supported by the Research Office. Traditional *Postdoctoral Scientists* will continue to join specific research programs at Mote as opportunities arise; may be sought by open competition or the decision of a program manager or scientist, and will be supported by extramural grants to individual Mote scientists. This Postdoctoral Researcher Mentoring Program ("Mentoring Program") shall apply to both types of postdoctoral fellows as well as to new or novel postdoctoral appointments that may arise in any research capacity while a researcher is associated with Mote including all intra- and extramurally funded projects.

Mentors and Mentees

The foundation of this Mentoring Program is the relationship cultivated between a Mote scientist and his or her postdoctoral researcher. In most cases, one or two Mote Senior or Staff Scientists will be responsible for nurturing a new postdoctoral researcher. Scientists serving in such capacity are *mentors*. In some cases, a scientist associated with another institution may serve as a co-mentor but primary mentoring responsibility will fall to a single Mote scientist. Postdoctoral researchers are *mentees*. Mentees will own responsibility equal to their mentors' for their success as a postdoctoral researcher at Mote. Working together, a mentor and mentee will develop an Individual Mentoring Plan that specifically addresses the individual mentee's needs for professional and career development. Mote's Research Office will provide support for mentors and mentees by identifying resources and tracking the progress of individual mentoring plans.

Individual mentoring plans begin with in-depth conversations between a new mentee and a mentor assigned by the President & CEO of Mote. If possible and appropriate, this discussion will take place during the development of proposals that include requests for intramural or extramural support of the prospective mentee if his or her identity is known.

Individual mentoring plans have three critical components. The first component is the mentee's Self Assessment including professional and career goals, and core competencies. The second component is an Individual Development Strategy prepared by the mentor and mentee to address mutually-decided refinements of skills already achieved and mastery of new or advanced skills in the arenas of professional and career development. The third component is the Postdoctoral Compact, a set of commitments by the mentor and mentee to implement the Training Strategy. The compact is signed and dated by the mentor and mentee.

Self Assessment

New postdoctoral researchers have a unique opportunity to benefit from the Mote mentoring program by identifying areas of needed and desired growth in their professions and careers. Mentor and mentee will agree on the form of the self assessment, which typically addresses six core competencies: discipline-specific conceptual knowledge; research skill development; communication skills; professionalism; leadership and management skills, and responsible conduct of research. Other competencies may be added by the mentor or mentee.

Individual Development Strategy (IDS)

The IDS is basically a scope of work through which the mentee's growth will be nurtured during the postdoctoral fellowship. The IDS identifies specific competencies for development; tasks required to address each competency; their logical order and timing; the amount of independence the postdoctoral researcher requires, and when and how periodic assessments of

progress will be made over the period of the fellowship. Though all independent development strategies will share some elements (responsible research conduct, laboratory/field safety, regulatory considerations, etc.), the particular IDP will be unique owing to its responsiveness to the mentee's needs. Ample resources exist to aid the mentor and mentee in defining responsive IDS tasks.

Postdoctoral Compact

The Compact is a set of mentor and mentees affirmations and commitments that cement their relationship. A mentee's commitments may be of the form, "I acknowledge that I have the primary responsibility for the development of my own career" and "I will develop a mutually defined research project with my mentor that includes well-defined goals and timelines." A mentor may assert, "I will ensure that the postdoctoral appointee has sufficient opportunities to acquire the skills necessary to become an expert in an agreed upon area of investigation, and I will provide the appointee with the required guidance and mentoring, and will seek the assistance of other faculty and institutional resources when necessary" (AAMC 2006). The compact serves both as a pledge and a reminder to mentors and their mentees that their conduct in fulfilling their commitments to one another should reflect the highest professional standards and mutual respect.

The Scope of Individual Development Strategies

As noted above, the IDS reflects the deliberations between mentor and mentee as to what nurturing tasks are necessary in terms of Mote's Postdoctoral Mentoring Program, sufficient in terms of the mentee's specific needs, and achievable over the duration of the fellowship. It is incumbent upon the mentee to investigate and consider the widest range of relevant core competencies during the self evaluation. It is incumbent upon the mentor to survey strategies used by other Mote mentors in the past, and those of other institutions, to recommend tasks that address the mentee's needs as part of his/her IDS. A typical IDS will establish effective dates for the duration of the appointment; identify specific skills and strengths the researcher needs to develop, and define approaches to obtain specific skills and strengths together with time frames (FASEB, date?).

Necessary Elements

Mote's Postdoctoral Mentoring Program addresses core institutional, professional, and career considerations for every new researcher by requiring these IDS elements:

1. Orientation to Mote Marine Laboratory and Research Division
2. Self Assessment including Core Competencies
3. Individual Development Strategy
4. Postdoctoral Compact
5. Conduct of Responsible Research Training
6. Quality Assurance, Intellectual Property, Research Permits/Regulations
7. Institutional Animal Care and Use Committee (IACUC)
8. Human Subject Protection Education
9. Interim Progress Meetings/Reports and Final Fellowship Success Evaluation

Elective Elements

Using the self-assessment including core competencies as guides, the mentor and mentee will expand upon the core elements required above to develop an IDS that addresses the

researcher's particular professional and career considerations by incorporating appropriate measures from the following list. The list is illustrative; mentors and mentees may define and implement other measures as part of the IDS, as deemed necessary.

1. Professional Development: Remedial/Advanced Skills
    - English
    - Statistics
    - Research Design
    - Laboratory/Field Methods
2. Professional Development: Extramural Support
    - Building Investigator Teams
    - Framing Research Questions and Approaches
    - Writing Proposals
    - Grant Management
    - Reports
3. Professional Development: Communications
    - Digital Networking in Science
    - Public Speaking
    - Organizing a Talk
    - AV Aides
    - Posters
4. Professional Development: Publications
    - Preparing Manuscripts
    - Figures, Tables and Graphs
    - Submitting Mss
    - Responding to Reviews
    - Reviewing Proposals and Manuscripts
5. Career Advancement: Networking at Mote
    - Postdoctoral Colloquia
    - Mentoring NSF REU and Mote Interns
    - Supervising Mote Staff and Volunteers
    - Interacting with Other Mote Divisions
6. Career Advancement: Networking in Science
    - Diversity
    - Other Marine Research Institutions
    - Professional Societies
    - Professional Meetings
    - Postdoctoral Resources at Other Institutions
    - Technology Transfer
7. Career Advancement: Looking Forward
    - Resumes
    - Academia, Government Service, NGOs, Consulting
    - Applications and Interviews
    - Negotiating Salaries and Benefits
    - Confidentiality Requirements

Success of the Individual Mentoring Plan

Success will be evaluated by monitoring the personal progress of the Postdoctoral Researcher through self-assessment and completion of the IDS. Mentors will meet with mentees at least twice annually to produce written progress reports. At the conclusion of a single postdoctoral fellowship the mentor and mentee will collaborate on an evaluation of the overall individual mentoring plan's success. This evaluation will inform the next IDS in the event a postdoctoral researcher enters a second fellowship cycle at Mote. Mentors will collaborate with the Research Office to track the postdoctoral researcher's progress toward his/her career goals after finishing the postdoctoral program at Mote.

Revising & Updating this Postdoctoral Monitoring Program

Mote's President and CEO will cause a programmatic review of the lab-wide Mentoring Program every third year but more often as conditions warrant. The President will appoint past and present mentors, and mentees then resident at Mote, to participate in the review and prepare the report.

References

Association of American Medical Colleges (AAMC). 2006. Compact between postdoctoral appointees and their mentors. www.aamc.or/postdoccompact.

Federation of American Societies for Experimental Biology (FASEB). no date. Individual development plan for postdoctoral fellows. http://www.faseb.org/portals/0/pdfs/opa/idp.pdf.

National Science Foundation (NSF). 2009. NSF 09-29 April 2009. Chapter II – Proposal preparation instructions, Section j. Special information and supplementary documentation. www.nsf.gov/pubs/policydocs/pappguide/nsf09_29/aag_6.jsp.

The following page is for use in NSF proposals.

Mote Marine Laboratory Postdoctoral Researcher Mentoring Plan

Mote Marine Laboratory (Mote) adopted an institution-wide Postdoctoral Researcher Mentoring Program (Program) in May 2013. The Program, developed by a committee comprising Mote scientists and current postdoctoral researchers, is an institutional policy and the Program is a direct report to Mote's President & CEO (President). The Program applies to all existing postdoctoral appointments as well as to new or novel postdoctoral appointments that may arise in any research capacity while a researcher is associated with Mote including all intra- and extramurally funded projects. The foundation of this Mentoring Program is the relationship cultivated between a Mote scientist (mentor) and his or her postdoctoral researcher (mentee). Mentees' own responsibility equal to their mentors' for their success as a postdoctoral researcher at Mote. Mentors and mentees develop an Individual Mentoring Plan (Plan) that specifically addresses the individual mentee's needs for professional and career development. Mote's Research Office provides support for mentors and mentees by identifying resources and tracking the progress of individual mentoring plans. Plans begin with in-depth conversations between a new mentee and his/her mentor, who is assigned by the President & CEO of Mote. These discussions will take place during the development of proposals that include requests for intramural or extramural support of the prospective mentee if her/his identity is known. Plans have three critical components: (1) the mentee's Self Assessment including professional and career goals, and core competencies; (2) an Individual Development Strategy (IDS) prepared by the mentor and mentee to address mutually-decided refinements of skills already achieved and mastery of new or advanced skills in the arenas of professional and career development, and (3) the Postdoctoral Compact, a set of commitments by the mentor and mentee to implement the Training Strategy. New postdoctoral researchers have a unique opportunity to benefit from a Mote fellowship???? by identifying areas of needed and desired growth in their professions and careers. Mentor and mentee agree on the form of the self assessment, which typically addresses six core competencies: discipline-specific conceptual knowledge; research skill development; communication skills; professionalism; leadership and management skills, and responsible conduct of research. Other competencies may be added by the mentor or mentee. Mote policy requires each IDS to include orientation to Mote; self-assessment including core competencies; the postdoctoral compact; conduct of responsible research training; quality assurance, intellectual property, and research permits/regulations; and IACUC and human subject protection education.

The mentor and mentee expand upon the core elements listed above to develop an IDS that addresses the researcher's particular professional and career considerations by incorporating appropriate measures from professional development and career advancement training including remedial/advanced professional skills; extramural support skills; communication skills; publication skills; networking in Mote, other marine institutions, and science; and career skills that nurture the mentee's post-fellowship placement. Mentee success is evaluated by monitoring the personal progress of the researcher through self-assessment and completion of the IDS. Mentors meet with mentees at least twice annually to produce written progress reports. At the conclusion of a single postdoctoral fellowship the mentor and mentee collaborate on an evaluation of the overall Plan's success. Mentors collaborate with the Research Office to track the postdoctoral researcher's progress toward his/her career goals after finishing the postdoctoral program at Mote. The complete Program is viewable at http://isurus.mote.org/MML_PRMP.pdf.