NAME: Undergraduate Program

INSTITUTION: Howard Hughes Medical Institute

Howard Hughes Medical Institute
Office of Grants and Special Programs
Updated – 01/15/09

DRAFT: NEW BIOMATH HIRE PROGRAM MAP

Inputs	Strategies	Outputs	Outcomes		Impacts
			(Short Term-Learning)	(Medium Term-Action)	(Long Term-Conditions)
New Faculty position External and/or institutional funding Departmental and institutional support Selection committee for new hire Faculty mentors for new faculty Grad student assistance for new faculty member Faculty release time for first year Training opportunities such as workshops and mid-tenure leave for faculty Mechanisms for tracking and evaluation New laboratory	Hire new faculty member as an additional new line in Biology Department Provide new faculty member with sufficient resources to launch research program and teaching responsibilities Provide training opportunities for faculty members and resources and support for them to integrate their training into their research and teaching Provide funding to attend workshops and visit other programs Provide opportunities for joint or courtesy appointments in Math and Applied Science Departments Use new faculty position to introduce mathematical modeling into the undergraduate curriculum at several levels Provide faculty member with personnel support during pre-tenure period	A new faculty hire in bio-mathematical modeling Number and quality of training opportunities for new faculty member in teaching and research Number and demographics of undergraduates taking new courses offered by new hire New computer and software programs available for faculty and students Number of courses developed or revised Number of awards for research and teaching to new or trained faculty member Number, demographics, and quality of other personnel involved in training in mathematical biology, especially modeling Number and quality of collaborations inspired by presence of new hire	New faculty member in mathematical biology successfully teaches new courses New faculty member in mathematical biology successfully establishes research program Students value new courses/approaches; course numbers and demand increase Other faculty begin to employ modeling in their teaching and research Graduate students obtain training in mathematical biology and modeling and employ skills in their research New research opportunities for students using mathematical biology and modeling become available Other departments collaborate and expand curricular offerings based on courses taught by new hire	New faculty member obtains positive teaching evaluations from students and faculty peer review New faculty hire obtains external funding New faculty hire is able to publish in respected peer reviewed journals New faculty member presents findings at national conferences and meetings New professor continues to provide new or expanded research opportunities and courses for undergraduates Students join research team of new hire; begin to produce data for research projects, thesis, and Honors Solid collaborations established both within and outside of department	New hire becomes successful: garners grant support, publications, and invited presentations New faculty member receives tenure and promotion New faculty member receive recognition and award for teaching and research New hire establishes long-lasting collaborations and become nucleus of additional new hires and faculty across campus New hire provides leadership in quantitative and interdisciplinary approaches Increased institutional commitment to supporting the hiring and training of faculty members with expertise in interdisciplinary and/or bio-mathematical teaching New hire participates and contributes to national effort to integrate quantitative and modeling approaches into the undergraduate curriculum

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DRAFT NEW BIOMATH HIRE EVALUATION FRAMEWORK

Evaluation Questions for OUTCOMES	Possible Indicators/Measures	Possible Data Collection Methods and Information Sources	Rank/Priority (include brief rationale)
1. Has the new faculty hire in mathematical biology become successful in research and in mentoring students in his/her program? 2. Has the new faculty hire in mathematical biology become successful in establishing new curricular activities in mathematical biology and modeling within the department? And outside of the department? 3. Did the hire of this new faculty member serve as an impetus for other faculty member to employ these approaches in their teaching and research? 4. Do the faculty members have buy-in for their activities from their colleagues and administrators and are they spurring movement locally? 5. Has the new faculty member and the curricular activities had an impact beyond the institution?	1.a. Student demand to do research with faculty members (and in his/her area) increases b. New hire continues to mentor research students who in turn succeed c. New hire successful in publications and grants 2.a. Students report positively about the teaching and mentoring by new faculty members and perform well in the relevant courses and research b. New hire's courses are well attended and demand increases c. Additional new courses employing modeling are established within and outside of the department d. New hire's courses become part of curriculum 3. a. Biology faculty member employ modeling In their teaching b. Biology faculty member employ modeling In their research programs 4. a. Courses become part of larger interdisciplinary curriculum b. Additional faculty hires in this area c. Administration support for the new position 5. a. External faculty ask for information/material about courses and incorporate it into their courses b. Science education publications and presentations c. Science education funding	1. a. Publications, presentations, grant funding b. Student research tracking; publications and presentations from students 2. a. Pre post tests b. Exit questionnaire c. Interview d. Focus group e. SURE/CURE f. Tracking undergraduate research g. Course evaluations h. Classroom observations i. Reports from peers j. Registrar records k. Course catalog l. Performance review m. Citations n. CVs o. Funder's reports p. Tracking data from our online system q. Self evaluations r. Performance reviews 3,4. Same as above 5. a. Publications, grant funding b. Citations of publications c. Invited talks on both science and pedagogy d. Undergraduate long term tracking e.g. PhD programs entered e. Collaborations outside of W&M Track requests for info Citations	Items are ranked based on how soon they can be captured during and after program activities (strategies) have occurred. However all questions and measures will be evaluated during and after each activity in order to capture the ongoing, longer-term changes in impact.