

## Post-Year Three Review Action Plan - Biological Sciences

April 18, 2022

Bill Lacourse, Katharine Cole, Janet Rutledge, Pat McDermott, Philip Farabaugh, Philip Rous, Sarah Shin, Tony Moreira and Colleen Rebeiro

### Part 1 == Updates and Reflection on Action Items from APR 2017

Recommendation	Department Action	College Action	Provost's Office Action	Action Plan Update
Increase tenure-track faculty	X	X	X	From various funding sources, the department was able to recruit seven new Assistant Professors since Fall 2017. Among the seven new hires are three URM faculty and five women, which has further increased the diversity of our faculty.
Develop a multi-year vision and hiring plan	X			In March 2019 we created a five-year hiring plan that considered likely retirements in TT and non-TT ranks (those then older than 58). The need for faculty strength in emerging topics was balanced against need to maintain strength in areas critical to our research and teaching mission. Weaknesses in areas of human disease and neuroscience were noted. Five hires from various sources since 2019 have bolstered those areas significantly. We committed to continuing URM-directed hiring. Recently, the department and CNMS collaborated with UM School of Medicine on an NIH proposal to bring in as many as 10 more URM faculty split 6-4 between UMB and UMBC. We also recognized the need to replace prospective retirees among the non-TT faculty, one of whom has now retired. We recognized the potential need to expand non-TT faculty if enrollment growth continues unabated (currently 1 in 6 among UMBC undergraduates).
Release department from long-term debt		X		The Dean forgave the department's long-term debt in 2017.
UMBC ensure regular flow of new faculty and a financial plan to support start-up funds		X	X	The response of the Provost was he would "consider the Dean's hiring priorities requests through the established budget process." The problem is more basic than that. Our startup packages before 2019 were not competitive. Packages for 2019 were increased but it is unclear if they are sustainable at that level. Our department doesn't have resources to significantly increase these packages.

## Post-Year Three Review Action Plan - Biological Sciences

April 18, 2022

Recommendation	Department Action	College Action	Provost's Office Action	Action Plan Update
Chair improve feedback to faculty	X			We are in the midst of the third year of a Faculty Planning Process that formalizes this type of feedback. Faculty express satisfaction with this method of increasing feedback.
Increase graduate support on grants	X			We have been trying a variety of methods to increase faculty success in gaining federal grant support. We hired an outside expert to mentor small groups of faculty in preparing an NIH-style proposal. The expert claims 30-50% success rates (rates in general are much lower). Sixteen faculty have participated. Four grants from Federal or private sources have resulted and more may come in the future.
Graduate students apply for pre-doctoral fellowships	X			Students had been encouraged to do this in the past. Starting in 2019, we instituted a program that required all students to write a predoctoral fellowship application, and provided additional training from experts in the summer. We have averaged about three applications per year that have gone to Federal agencies and some NGOs. The competition is fierce for these grants and highly qualified students from premier institutions predominate among successful applicants.
Establish formal graduate only classes	X			We understand the desire to have separate graduate classes. We do have graduate only classes, mostly seminars, but we still depend on combined graduate/undergraduate courses. Given the very diverse nature of our graduate program and the very high undergraduate to faculty ratio (about twice the UMBC average) providing more graduate only courses is difficult. The recent hiring of seven more Assistant Professors may allow us to pilot these courses in the future.
Reduce guaranteed years of graduate support	X			We have more vigilantly monitored student progress and set a maximum number of years of support at 6 with an option for a seventh if warranted. We note that the average is about 6.5 nationally, which is close to our current number, so we don't consider this a major issue that needs a solution.

## Post-Year Three Review Action Plan - Biological Sciences

April 18, 2022

Recommendation	Department Action	College Action	Provost's Office Action	Action Plan Update
Increase professional development in first year graduate course	X			We modified the first-year course, BIOL 700, to include more professional development. We have offered a variety of workshops focusing on developing skills important to their professional development, as detailed below, and we encourage all graduate students to avail themselves of opportunities presented by the Faculty Development Office.
Improve culture of graduate student presentations	X			We now require a fifth-year formal seminar presentation to the department by all graduate students. We expanded opportunities to present at our graduate student symposium. We continue to have peer-to-peer seminars run by the graduate students as needed, and require formal presentations in journal clubs.
Increase student laboratory fees	X			We plan to ask for an increase in undergraduate laboratory fees to \$100 in recognition of the increased cost of the materials used in our largely investigative laboratory classes. We have waived laboratory fees for virtual courses during the COVID period. We will pursue this as we return to in person classes.
UMBC update laboratory equipment		X	X	More advanced equipment is available in the ILSB, including shared equipment and those in core facilities; there continues to be pressing need for updated equipment in teaching and research laboratories in the Biological Sciences building, which are extremely outdated. We are attempting to identify funding opportunities for laboratory facility renewal.
Hire more professional advisors		X		CNMS has continued to hire more professional advisors. The advising load for our faculty, which had been above 50 students, is now averaging well below 50. The CNMS advising center is examining alternatives to reduce the work of advising, for example, scheduling meetings to discuss common issues for undergraduates.
Assess success of 2010 curriculum redesign	X			This year we are doing a formal assessment of the curriculum in light of this being the 10th anniversary of the new curriculum. Results are pending.

## Post-Year Three Review Action Plan - Biological Sciences

April 18, 2022

Recommendation	Department Action	College Action	Provost's Office Action	Action Plan Update
Formalize ILSB occupation		X	X	The Dean and Provost accomplished this goal and the building is now occupied.
Make renovation of Schwartz Hall an institutional priority			X	The building is in the queue for renovation. We request that the process be expedited.
Ensure sufficient post-award staff			X	The Provost did not comment on this proposal as part of the VPR. Our impression is that every effort is being made to ensure adequate staff.

**Post-Year Three Review Action Plan - Biological Sciences**

**April 18, 2022**

**Part 2 == Current/Ongoing on Action Items from YTR**

<b>Recommendation</b>	<b>Department Action</b>	<b>College Action</b>	<b>Provost's Office Action</b>	<b>Action Plan Update</b>
Reduce TA support to one student for recently unfunded faculty members	X			The department considered this suggestion of the visiting committee and concluded that it would be self-defeating. Partly, increased funding obviates the need for this provision. We have been able to support the current number of TAs with available funds and do not see a significant problem for the future. This idea is ill advised because reducing TA availability would hamstring our faculty in their efforts to increase grant support.
Research grants provide a summer supplementary income to graduate students	X			The reviewers felt that offering a bonus above our stipend would increase our competitiveness. We are unsure of that. We notice that direct competitors (UMCP, Hopkins) provide higher stipends but do not provide health insurance; we are emphasizing the insurance benefit as equivalent to increased stipends in our recruitment website and literature.
Decrease TA staffing of lab sections from 2 to 1	X			The visiting committee felt that moving TAs to our smaller didactic classes and out of laboratory settings would improve pedagogy and training potential for graduate students. We do not believe that the current system is a problem; many of our recent graduates have moved directly into teaching positions demonstrating the value of the training provided. Also, reducing the number of TAs present would degrade instruction for the undergraduates.

**Post-Year Three Review Action Plan - Biological Sciences**

**April 18, 2022**

Recommendation	Department Action	College Action	Provost's Office Action	Action Plan Update
Prioritize Schwartz Hall renovation			X	With the occupancy of the ILSB, we will have a new state-of-the-art vivarium. This leaves our current vivarium as a large unusable space in Schwartz Hall. In addition, the building is degrading (electrical, plumbing, mechanical, structural) and will need extensive renewal soon. It is over 30 years old. Renovation of Schwartz Hall is in the queue but other projects have higher priority.
Recruit diverse faculty and graduate students	X			We have had excellent results in recruiting diverse faculty using the Pre-Professoriate program and hope to use it again soon. Our success with graduate students has been weaker recently; we plan to use direct means to increase graduate applications from diverse groups.
Is there sufficient demand for course-based research education (CRE)?	X			The visiting committee were skeptical of the demand for such courses. We have not undertaken a detailed analysis of demand but our most popular course is the “Phage Hunters” investigative version of BIOL 302L Genetics Laboratory, indicating a great interest among the majors for this kind of laboratory. A major obstacle to creating more investigative labs is insufficient numbers of non-tenure track faculty to enable the department to diversify our laboratory course offerings.
Is there need for formal undergraduate learning assistant (ULA) training course?	X			The committee thought that the many such courses could be collapsed into one. We actually use them to help ULAs to provide a consistent experience in the discussion sections and that requires separate sections. Also, increasing the size of the class would be detrimental since the lower instructor-student ratio.

**Post-Year Three Review Action Plan - Biological Sciences**

**April 18, 2022**

Recommendation	Department Action	College Action	Provost's Office Action	Action Plan Update
Consider proposed Center for Training in Biology Education	X			The reviewers supported this idea, but we believe that the center would now be redundant with expansion of the work in the Faculty Development Center.
Consider establishing research centers	X			The reviewers encouraged forming research centers. We are open to doing this. An idea for forming a center focused on environmental issues led to the grant funding the ICARE program now occupying part of the ILSB and involving faculty from CNMS, CAHSS and COEIT. The program is focused on increasing the diversity of students of environmental science at the MS level.
Should graduate students develop individual development plans (IDPs)?	X			Since the last review, we have offered voluntary IDP workshops each summer (~10 students per year). We have also provided workshops on CV preparation, figure preparation, preparation for the preliminary exam, online teaching skills, how-to-peer review, and NSF proposal prep (courtesy of CNMS).
Should there be first-year techniques mini-courses for graduate students?	X			The reviewers were not enthusiastic about this idea. Given the breadth and diversity of research, they doubted the plausibility of our faculty being able to identify a common set of techniques.