Dear colleagues,

We write as a community of untenured faculty in STEM fields to request that President Martin and the committee of six convene an ad hoc committee to examine the college's research support infrastructure and propose improvements to it. An addendum to this letter provides a collection of specific examples of issues that we and other untenured STEM faculty members report have impacted our research productivity, as well as ideas for potential solutions. Some of the contributed examples have been experienced by small numbers of untenured STEM faculty, while others are more common. We provide the full list in the hopes that, in aggregate, they speak to the need for the college to reexamine the ways in which it supports faculty research.

We appreciate and applaud the hard work and support of existing staff. Many offices at the college have been working diligently to meet our needs and address issues that we've raised individually or in small groups. These include our ADCs and colleagues in the grants, controller's, provost and dean of the faculty, IT, and academic technology offices. A goal of this letter is to advocate for these colleagues, so that they are supported in making the staffing and policy changes necessary to better enable faculty research.

In our collated examples, we have identified four broad areas for improvement in supporting the research efforts of untenured STEM faculty. In order of priority, these are: grants support, IT support, student research support, and administrative support. Most of our proposed solutions fall into the categories of: increased staffing, more detailed training of new faculty, and clarification or revision of existing college policies.

We were all drawn to Amherst College based on its commitment to supporting both innovative teaching and active, cutting-edge research. Although we are not as experienced in the nuances of college governance as our senior colleagues, and share some trepidation about raising these issues in a public forum, the recent explosion of student interest and faculty hiring in STEM lends this effort some urgency. Many of the issues we raise here likely apply not only to untenured STEM faculty, but to faculty and staff across all divisions of the college. Other groups undoubtedly have additional concerns that we have not captured. Our inability to speak to the broader Amherst College faculty and staff experience is why we believe that an ad hoc committee charged with looking at the college's research support infrastructure broadly and across disciplines is a necessary first step.

Sincerely,

Biology
Marc Edwards
Jeeyon Jeong
Sally Kim
Katerina Ragkousi
Mona Wu Orr

Chemistry
Chris Durr
Jacob Olshansky

Computer Science
Scott Alfeld
Kristy Gardner

Matteo Riondato
Will Rosenbaum

Environmental Studies
Rebecca Hewitt
Ashwin Ravikumar

Geology
Rachel Bernard
Victor Guevara
Nick Holschuh

Mathematics and Statistics
Brittney Bailey

Ivan Contreras
Katharine Correia
Amalia Culiuc
Shu-Min Liao
Nathan Pflueger
Karamatou Yacoubou Djima

Physics and Astronomy
Kate Follette

Psychology
Michael Cohen
Elizabeth Kneeland

ADDENDUM - Identified Areas for Improvement and Proposed Solutions

Grants Support

We do not have access to full institutional data about grant submissions and acceptances. However, in collating all current (and publicly available) National Science Foundation awards to Amherst College Principal investigators, we find that current untenured faculty and faculty who were untenured at the time of the award are the principal investigators on $3,116,222 of the college's active NSF grants, 49% of the total NSF funds administered by the college. We suspect that this basic pattern holds across other granting agencies. In other words, untenured STEM faculty are very active in and successful at obtaining federal funding to support our research work, but do not feel fully supported in proposing for and administering these grants.

Problems reported by untenured STEM faculty in this area include:
1. Delays in review of grant budgets and other documents, leading to a mad scramble to make all requested changes as the deadline approaches
2. Delays in formal submission of grants to funding agencies, or early submissions unsanctioned by the faculty principal investigator
3. Insufficient or decentralized information about college policies on job classifications, cost overheads, allowable expenses, etc.
4. A lack of information and support around post-award administration - how to hire, report effort, purchase equipment, etc.
5. Opaque college-level policies about certain standard types of awards (cooperative agreements, research support agreements, federal subcontracts)
6. The allocation of all discretionary funding to the college, rather than a division of these between the college, the home department(s), and the faculty principal investigator themselves, which is common practice at other institutions.
7. An opaque and non-intuitive grant pre-approval process through GrantsLink

In order to address these issues, we propose:
● That the college redistribute existing staff or hire new personnel to support grant submission and administration at the college. In particular, we believe that a full time grant-submission specialist and a full time post-award grant specialist are necessary. Many of our peer institutions (e.g. Middlebury, Smith, and Mt. Holyoke Colleges) follow this model, and we suggest that the college begin by surveying their grant staffing models.
● That the college revamp the grants website to provide detailed, centralized, and easily navigated information about compliance criteria, grant submission timelines, job classifications, approval procedures, cost overheads, budget templates, boilerplate language for standard grant documents, etc., and that an introduction to these resources be provided as part of faculty orientation.

- That the college put in place the structures required to accept federal funds administered under cooperative agreements, research support agreements, and subcontracts, which are required to accept many awards from NASA, the Department of Energy, DARPA, etc.
- That the college revise its policies on the allocation of discretionary funds to be divided between the college, the home department(s), and the PI.
- That the college re-evaluate the grant pre-approval process through Grants Link, and create a document explaining the process, requirements, and timeline for approval.

IT Support for Scientific Computing

The college has recently hired a number of scientists, statisticians, and computer scientists with more complex computing support needs than the college is currently equipped to handle.

Problems reported by untenured STEM faculty in this area include:
1. There are a range of IT and Academic Technology staff with relevant expertise in certain aspects of high-performance computing, but none with the "whole picture" of what is required. This results in delays and miscommunication about needs, and sometimes ineffective solutions.
2. The desire to transition to cloud solutions for research will alleviate some local administrative burden, but introduces new complexity surrounding cloud administration, cloud access controls, and costing (especially with cloud instances managed through central IT), which faculty researchers are not fully equipped to handle without additional support.

In order to address these issues, we propose:
- That the college hire a dedicated research computing support staff member, or contract with a company that provides such support. That support person must sit at the intersection of scientific computing and cloud computing, having relevant expertise in:
  - Scientific computing basics (package managers, common computing languages, version control, parallel computing, shell scripting, CPU/memory intensive processing)
  - Cloud computing infrastructure
  - High-volume data storage and data management
  - Network administration
- That the college develop standard policies for cloud cost allocation between users and IT. This is critical for proper budgeting on the part of the faculty, as the lack of personal administrative control over cloud computing resources adds inefficiency to their use and additional cost per effective compute hour.
- That the college put infrastructure in place to store, archive, and publicly distribute large datasets, for example by contracting with UMass libraries to share their data archiving service.

Policies Regarding the Involvement of Students in Faculty Research

There is enormous pressure placed on untenured STEM faculty to support student research. Many of us enjoy this work immensely, and find that students contribute substantially to our research. At the same time, there has been some frustration around administration and advertisement of the various college internship programs.

Problems reported by untenured STEM faculty in this area include:
1. The deadlines to apply for Greg Call funding change from year to year and are inconsistently advertised, requiring that faculty actively monitor the submission portal to meet application deadlines. As a result, missed deadlines disproportionately affect new faculty, who are less aware of campus practice surrounding the program.
2. Many recently hired STEM faculty had explicit offers for Greg Call funding support in their offer letters, but some were not aware of the program at the time of hire and were not offered this support.
3. During the COVID-19 pandemic, the college adopted a 1 intern per faculty member policy. This has exacerbated the effect of the pandemic on our research programs and resulted in many faculty having to spend internal or external award money to cover student salaries that would normally have been covered by the college.
4. A lack of recognition of the labor involved in student research mentoring. Student researchers are not currently solicited for letters during reappointment and tenure. Compensation for summer research supervision has grown and has been appreciated, but not all programs come with equivalent faculty and student supports (SURF, Greg Call research internships, Schupf scholars, incubator, etc.), even when the research work is equivalent.
5. A lack of support around the hiring of post-baccalaureate research assistants. It is difficult to get them hired, and the college will not offer them housing. This makes it harder to recruit for and fund these positions, which are important in that they allow us to reap the rewards of having supported students in our laboratory over several years, and support students in bringing projects to publication.

In order to address these issues, we propose:
- That the Greg Call application be put on a standardized deadline system, and that a separate email be sent to all eligible faculty each time the application opens.
- That the college or departments make incoming faculty aware of the Greg Call program at the time of hire, allowing individual faculty to negotiate for an appropriate number and duration of Greg Call internship support in their offer letters.
- That faculty who spent research funds to support student interns during the COVID-19 pandemic be reimbursed for those expenses, and faculty who were encouraged to take fewer Call interns than guaranteed in their offer letters be allowed to "roll over" those interns into future semesters.
- That, beginning as soon as possible, the college implement a policy of gathering a list of students who completed significant research experiences under a faculty member's guidance (including, but not limited to, SURF, Greg S. Call fellowships/internships, and research assistantships paid by grants or startup funds). These students should be

solicited for retrospective letters, whether or not they have taken a class with the faculty member.
- That the college takes a holistic look at the various forms of formal research mentoring that faculty engage in and considers how the myriad research programs could be most effectively implemented and equitably compensated.
- That the college provides subsidized housing for postbacs for up to a year after they graduate and documentation/support around how to hire and compensate them.

Administrative Support

Many colleagues have expressed frustration with the amount of administrative support for research, particularly expenses. This is the least of the four areas of concern that we outline in this letter, however amending some of these issues is a simple way to give us more time in the day to do the most important work of the college - teaching, research, mentoring, and service.

Problems reported by untenured STEM faculty in this area include:
1. The switch to Workday has shifted the burden of reimbursement submission, student hiring, approval of hours, and purchasing from ADCs to faculty. In many STEM labs, especially wet labs, these actions happen frequently, and the amount of time required is substantial. Many of us are not equipped to handle these additional duties, and at least some ADCs are also dissatisfied with this shift.
2. Neither the original financial reporting suite nor Workday are structured at present to make it easy for faculty to monitor or administer internal and external awards. Workday requires complex navigation of many menus to find award information, and makes it difficult to determine remaining balance, itemized expenses, etc.
3. Many untenured faculty report that they found it difficult to "learn the ropes" of the financial reporting and reimbursement systems. Rules about receipts, allowable expenses, financial accounting, etc. were not detailed at the time of faculty orientation and are not easily locatable, resulting in many mistakes and frustrations.
4. Several faculty report having been denied reimbursement for certain expenses that they were not aware were prohibited. Others report reimbursement payouts that do not match submitted expenses. In these cases, faculty were not informed of the problems surrounding those items until they discovered the discrepancy and asked for clarification.
5. A number of issues have been raised about the receipts-based reimbursement system, including the inordinate amount of time required of faculty and ADCs to compile, total, convert, separate, and audit receipts for smaller expenses like meals and transportation.
6. Support for faculty caregivers during research travel is lacking at the college level and more broadly.

In order to address these issues, we propose:
- ADCs be given permission to, and training in, the procedures involved in submitting reimbursements, purchasing orders, and the hiring of student workers on behalf of faculty in Workday

- The Workday awards interface be modified to enable efficient and effective monitoring of internal and external awards through a single centralized page where awards can be selected from a simple list and seen in general and itemized forms.
- That financial reporting, reimbursement, internal and external award administration, and the rules surrounding them be explicitly addressed at faculty orientation.
- That faculty and ADCs be notified directly if and when errors or prohibited items are found in their submitted reimbursements.
- The college move to a flexible reimbursement system with an option for per diem reimbursement of meals and incidental expenses.
- All faculty be offered access to college purchasing cards so that they do not have to fund research expenses out of pocket and wait on reimbursement.
- That the college implement progressive policies in support of faculty caregivers by enabling internal funds to be allocated for: travel expenses when children must accompany faculty on research travel, supplemental childcare during research travel, and reimbursement of the shipping of breastmilk when necessary.