DEPARTMENT OF MATHEMATICS & STATISTICS
THE UNDERGRADUATE CURRICULUM & STUDENT EXPERIENCE
FALL SEMESTER 2015

1. Part One. Analysis of Current Curriculum

Overview. The Department of Mathematics and Statistics is in a crisis. The number of majors in our Department increased from 148 in Spring 1995 to 583 in Spring 2015, while the number of tenure-system faculty decreased from 53 down to 38 in the same 20-year span. In recent years, the *rate* of increase of our majors has taken a big jump: The number of **primary** majors alone rose from 344 in 2013, to 385 in 2014 (a 12% year-to-year increase), and to 477 in 2015 (a 24% year-to-year increase). At the same time, our Department has to cope with an ever increasing volume of service teaching for the entire campus, in lower-division courses naturally but to an increasing extent, in upper division courses as well. From calendar year 2010 to calendar year 2015, enrollment in lower-division courses in Math 131-132-233-235-331 (Calculus, Linear Algebra, and Differential Equations) which serve many CNS and Engineering majors grew from 3608 to 5252, an increase of 45%. During the same time period, enrollment in 300-500 level courses in Mathematics grew from 932 in 2010 to 1217 in 2015, an increase of 30%.

The above figure does not include the increased enrollment in upper division Statistics courses, which have also been significant. We can look at a single course, STAT 515, to illustrate the challenges we face at the upper division. STAT 515 is a required course for a number of majors across several colleges on campus and one which is critical as a mathematical foundation of Data Science. Enrollment for this course increased 73% in a 3-year period (2012 to 2015), from 198 to 344. With the addition of the Professional Masters Program in CICS, the Informatics Program, also in CICS, and the Certificate in Data Science, all of which require STAT 515, not to mention the rise in our own number of majors, we expect an acceleration of enrollment in this course. To put it in concrete terms, we can look at the impact of these trends in terms of number of sections. A section of STAT 515 is ideally capped at 35 but in reality we have had to allow excess enrollment of up to 50 per section to meet demand. Even if we compute in terms of sections of 50, we have already had to increase the number of sections per year from 4 to 7 (that alone justifies the addition of one faculty member since the teaching load is 3 per year per faculty member). We expect the number of sections next year will be as high as 9 or 10.

While we are glad that the campus is making plans for expanding Data Science endeavors on campus, we have to report that having to absorb the resulting significant increased demand from other departments in Engineering, CICS, and CNS comes at a time when we are already struggling to catch up with a huge jump in the number of majors in our department. Our desire to provide at least minimally acceptable service for these constituencies is running up against the call for us to plan for creating new programs at the graduate or undergraduate levels for students concentrating in Mathematics & Statistics.

Ever since a massive wave of retirement in 2002 (when 14 of 50 tenure track faculty members retired in one year), the Department has lived with the tension of balancing our responsibility to the campus overall vs. the responsibility we have to our own majors. We are proud of our record of honoring both of those responsibilities by achieving efficiencies wherever we could. Without significant investment in additional faculty lines within the next two years, the Department will need to decide whether to cut back on lower division courses in order to facilitate 4-year graduation pathways for math majors, or to cut back on upper-division courses to support 4-year graduation pathways for all other majors.

1.1. **Curricular coherence and accessibility.** The Department has organized the major into seven concentrations. This structure provides a great deal of built-in guidance for undergraduate majors, and is at the same time quite flexible. The smallest concentration is called "Individual" and allows students to build their own course sequence with the initial guidance/approval of the academic advisor and the final approval of the Chief Undergraduate Advisor. The largest concentration is "Actuarial" which has been a growth sector for a number of years since we set it up as a concentration after several years of advising students through an individual course sequence that accomplished many of the same goals. Our greatest curricular coherence difficulty has been with the actuarial concentration, as it requires students to take some courses in the Isenberg school. Unfortunately, many of those courses are oversubscribed and our students are frequently shut out of the courses they need when they need them. We have taken steps to create alternative pathways for the actuarial concentration as a result. The other concentrations are "Pure," "Applied," "Computational," "Statistics," and "Teaching." The latter prepares students for a career as secondary school teacher; the curriculum for this specialized concentration has received quite a bit of national attention, especially in relation to the adoption of the Common Core Curriculum in Massachusetts and most other states. We have just put through the Senate a number of changes to this concentration in Fall 2015 in order to modernize it. However, one significant hole in the concentration is a lack of a capstone course – which is one of a set of courses included in the most recent set of recommendations by the Conference Board of Mathematical Sciences.

The Department requires only one course outside the Department for our majors: a programming course, nearly universally CS 121. Some students take CS 187 instead, but it is in fact becoming impossible for math majors to get into CS 187. Although we have never had an issue with our students finding enough seats in CS 121, in recent years the faculty has discussed the desirability of offering our own programming course. CS 121 is centered on teaching JAVA - which is a fine program and appropriate for teaching basic programming skills, but students rarely resort to it as the language of choice for doing computations in mathematics and statistics. We are considering a proposal to teach a 300-level course based on a combination of Matlab, R, and Python as a substitute for CS 121. We can tentatively call the course MATH 310 Computation and Experimentation in Mathematics & Statistics.

One point to note regarding the Integrative Experience – we have had to close IE courses such as MATH 455 and MATH 456 and STAT 525 to students outside the major so that we could meet demand from our own math majors. This is a pity, since these project-based courses benefit a great deal from having students work in cross-disciplinary teams (2 math majors, 1 ECE major, and 1 CS major make an excellent team for example).

Through additional staffing, we would eventually like to return to our practice of allowing students from other majors to take these courses.

As a result of the dramatic drop in faculty size, our curriculum at the upper division has shrunk tremendously over the last 15 years (the same has happened to our graduate courses). We have taken steps to mitigate this, with the support of the Dean who has authorized a temporary increase in the number of Visiting Assistant Professors. For instance, we have

- added a new course MATH 524 Analysis II, which is needed for students who want to go on to graduate study in mathematics
- brought back MATH 475 History of Mathematics as a regular offering, which is a national requirement for students in the teaching concentration but was not taught for over nearly 15 years. Moreover, we now have approval for this course as an Integrative Experience class.
- created a new course MATH 571 Introduction to Cryptography, which will serve not only math majors, but CICS and engineering students as well.

In the lower division courses for scientists and engineers, over the last 15 years, we have doubled the standard class size from 30 to 60. This is still far below the section size for calculus at many Universities. We have a strong commitment to maintaining our contribution to the General Education program through our lower division offerings. However, we must examine ways in which these offerings could possibly be offered in a more efficient manner, so that we may allow some relief for the pressures at the upper division.

Due to the need to be as efficient as possible, in our lower division offerings, math majors do not currently have a pathway distinguished from students majoring in Engineering, Physical Sciences, and Computer Science. This has some negative consequences for math majors. First, math majors do not get to gel as friends and form a community immediately upon arrival on campus. Often the first class that a math major has in which the majority of students are math majors is MATH 300 which typically is taken second semester of sophomore year and sometimes first semester of junior year. This is a very significant drawback. Lack of community is probably the largest issue facing our majors. We are therefore considering offering math-major versions of MATH 235 and MATH 331. Also, being understaffed, the Department currently does not have capacity to teach freshman seminars. Our postdocs (VAPs) all teach a heavy load of two courses per term already to meet our service obligations, and our graduate students also are needed for the same purpose. Ideally, every math major would be offered a seat in the fall of their freshman year in a 19-person seminar, taught by a faculty member. We currently have no plans for offering such courses – but dearly wish to do so once we have enough faculty members. We anticipate needing about 4-5 such sections every fall.

1.2. **Clarity of communication.** The 7 concentrations within the math major are clearly laid out on our website and are fully documented in SPIRE and on students' ARRs. We believe the requirements are clear for students to follow. However, we plan to provide a few more online tools for students to track their progress. The Chief Undergraduate Advisor adjudicates all curricular issues for majors and minors and is available for a large number of office hours every week. The CUA's hours are supplemented by office hours

held by three other long-time advisors. In addition, the Assistant to the Undergraduate Program, Jake Lagerstrom, is a key resource for our students.

Twenty years ago, when the number of math majors was 150, a single faculty member (who was no longer research active and contributed to the department instead by taking on heavy service assignments) was able to handle advising as the Chief Undergraduate Advisor, with a small amount of administrative support. Today, with 575 majors, 477 of whom are primary math majors, the job of the Chief Undergraduate Advisor is significantly heavier. We appreciate the support of the Dean and the University in approving a new position of "Academic Advisor" (filled by Jake Lagerstrom). This additional infrastructure has already proved critical.

The Department openly acknowledged last year that meeting our advising obligations has been a significant challenge and took steps to improve our processes. First, since in the first year or so, students generally do not need specialized advice, we have chosen to concentrate our efforts in advising students who have nearly completed lower division classes. Once a student signs up for MATH 300, or declares a concentration within the math major, or is a math major in their junior year, the student is assigned a tenure track faculty member as advisor. Prior to that point, students receive group advising, and also have access to a number of lecturers (as well as the CUA and his assistant) for any questions they may have. Nearly every tenure track faculty member in the department advises majors (approximately 17 majors per Professor). The Department has made a number of improvements to how advising done, which we will document in the Spring 2016 report.

1.3. **Effective use of faculty time.** The senior survey regularly reveals that mathematics majors do not find the Mathematics & Statistics faculty accessible enough. In large part, this is because the Department invests significant resources in the success of lower division students across all majors. In the lower division, the Department has maintained an emphasis on teaching calculus, linear algebra, and differential equations for scientists and engineers in classes of 60, with a small number of sections of size 30 offered as well. In the upper division, classes for math majors rarely have enrollments of less than 35. During the past few years, enrollments of up to 50 have become frequent. Even courses such as the Writing Course for Majors (MATH 370) which should be capped at 25 are usually allowed to over-enroll up to 35 students, due to high demand and lack of enough tenure track faculty allocated to the Department. We have experimented successfully with a TBL version of MATH 370 in recent years. The overall picture is that too many upper division classes have enrollments approaching 50. Especially in several classes run as Integrative Experience classes, the faculty are stretched thin, and the results are rarely as one could wish in terms of faculty accessibility. Moreover, since the diversity of classes we offer has shrunk, students sometimes must take classes which approximate their interests. For instance, the students in the teaching concentration should have a Capstone class devoted to them, and the Statistics as well as Actuarial students need a course on time series which we offer only intermittently as staffing permits. It is facile to say, but nonetheless true, that there is simply no substitute for addition of more faculty resources to address many of these issues.

2. Part Two: Goals for student learning and the student experience

2.1. Broad Learning Goals. The mathematics program at UMass Amherst has three broad goals. First the students learn basic material such as linear algebra, differential equations, and statistics needed to successfully attack a wide range of problems. Second, they learn to think with rigor. Lastly they learn to approach apparently unsolvable problems by studying simpler problems, doing experiments and bringing together different concepts. The requirements for a mathematics degree provide the student with maximum flexibility in designing an overall course of study to meet his or her scientific, educational and career goals. The beginning courses emphasize computational skills, problem solving, and the understanding of basic concepts. As students progress, they must solve problems that are less and less routine and more abstract or intricate. Some upper-level courses emphasize proofs and the understanding of abstract structures, while others emphasize advanced computational methods or the formulation and analysis of mathematical or statistical models of reality. A number of the courses involve the use of computers in a fundamental manner in the development of the material covered.

As the use of computational tools in mathematics and beyond is becoming more varied and pervasive, we need to revamp our curriculum so as to (1) infuse more computational techniques throughout many of our courses and (2) to introduce more specific courses that explicitly focus on the use of computational tools.

2.2. Diversity. Part of the desire of bringing back MATH 475 History of Mathematics which had been pushed out of our offerings by enrollment pressure and loss of faculty numbers is that this is a course where students can encounter in a systematic way the development of mathematics in the hands of diverse cultures and individuals across time. Some informal means of addressing the issue are practiced in the department. Many faculty members include mention of prominent women mathematicians when the opportunity arises. We have made some strides in increasing the number of female math majors, but reaching a 50-50 mix continues to be an aspirational goal. One of the Department's goals is to find ways to help math majors build a community for themselves within the department starting in freshman year; currently math majors take nearly all of their math classes with engineering and science majors, so they don't connect with each other as easily though academic experiences.

2.3. Internationalization. There are two Study Abroad programs that the department specifically encourages for math majors. The Budapest Semester in Mathematics (BSM) is a longstanding program that draws students from all over the world to spend a semester immersed in an intense theoretical immersion in mathematics, with a particular emphasis on combinatorics and discrete mathematics. This program has recently expanded into a second one: Budapest Semester in Mathematics Education (BSME); it is targeted to students in the Teaching concentration preparing for a career in secondary mathematics education. We sent one student to the inaugural year of this program and have scheduled a promotional visit to our department by its Director in Spring 2016. We also routinely host exchange students, undergraduate as well as graduate, for a semester or two from England and Germany in particular.

3. PART THREE: CURRICULAR REVISION ACTION PLAN

Priorities: Undergraduate Education. The Department has a dual mission of meeting the needs of the general undergraduate body on the one hand, and those who major in mathematics and statistics on the other. One of the largest teaching units as measured by student credit hours, the Department provides instruction for more than 14,000 students per academic year. Some 85% of the Department's student credit hours are generated by non-mathematics majors. Yet the Department is also one of the larger units on campus as measured by the number of majors. From AY2009-2010 to AY2013-2014, enrollment in lower-division courses such as Calculus, Linear Algebra, and Differential Equations, which serve many CNS and Engineering majors grew from 3392 to 4585, an increase of 35%. We offer a comprehensive set of undergraduate programs in pure and applied mathematics, as well as in statistics, distributed over seven concentrations. These programs currently serve more than 550 mathematics & statistics majors.The department's biggest challenge for many years has been that the very heavy "service" obligations at the lower division have had an undesirable effect on our ability to offer the appropriate number and variety of courses at the upper division (and graduate) levels. With the sudden jump in the last two years in the number of math/stat majors, we need to rethink our past philosophy of prioritizing the needs of the general undergraduate body over those of math/stat majors.

Over the next few years, we hope to:

- improve the quality of recitation sections in MATH 131, 132 and incorporate uniform use of team-based learning ideas
- add recitation sections for STAT 240, MATH 235, and eventually MATH 233, MATH 331, STAT 515, all to be 4 credits
- experiment with larger lecture sections of 131 and 132 so as to allow more resources to be devoted in the upper division
- increase the number of sections of upper division classes and reduce average class sizes in those classes to about 30
- increase the variety of offerings at the upper division, with a particular emphasis on modernizing the stat offerings
- increase the number of courses offered for the actuarial concentration
- modernize the training of undergraduates in computational mathematics & statistics through curricular updates & additions
- work with the Commonwealth Honors College to consider a core mathematics curriculum approach for CHC students
- expand the Research Experience for Undergraduates program
- enhance the quality of advising of undergraduate majors, especially in career advising
- improve the accessibility of mathematics & statistics faculty to undergraduate majors
- improve and expand the support services offered to students by creating a one-stop-shopping Mathematics Help Center.

We present our near-term action plan in three categories: A. Resource-neutral, B. Requires Departmental investment only, C. Requires strategic University investment.

A. Undergraduate Action Plan: Resource-Neutral

- As of Spring 2016, we have changed the requirements for the teaching concentration, which will alleviate pressure on MATH 551 (Numerical Analysis); instead, we are going to offer an additional MATH 471 (Number Theory).

- The new requirements commit us to offering a section of MATH 475 (Math History) every year. We began offering this course only last year after 15 years of not offering it. We have successfully converted MATH 475 to an Integrative Experience course, which will hopefully relieve enrollment pressure on MATH 455, 456, and STAT 525.

- We are canceling a section of STAT 515H for FY17 (which we have taught every year for the past dozen years), and replacing it with a section of STAT 515. STAT 515H is limited to 25 students; demand for STAT 515 is so large that we cannot afford to leave 15 seats (or more) empty, despite the curricular and pedagogical benefits to Honors College students. Even with this change, we anticipate having to add an additional section or two of STAT 515. With the increased interest in Data Science, there has been dramatic rise in enrollment for STAT 515. This has catalyzed us to impose more uniformity among the sections, including the creation of an online homework system (with an accompanying addition of in-class quizzes) as well as devoting more TA support to this class.

- We will offer one or more sections of MATH 131 and MATH 132 in 99-person Team-Based-Learning format (instead of the standard 60-person section) per semester. This is a pilot program to determine the viability of offering MATH 131 and 132 in larger sections. If we offer two such sections, we will save one 60-student section - we will convert the resulting savings into a course release for a faculty member who will work on developing materials for teaching the class in a TBL format, and who will also lead of team designing worksheets to be used in the recitations for these courses. Currently, the recitation sections are largely ineffective. Developing curricular materials for recitations to become more student-centered is a time-consuming task that by itself more than justifies the course release. Appropriate supports must be created in order to cope with a larger class size – having it in a TBL classroom is not enough. We can illustrate this issue with a concrete example. Every semester we offer five to six sections of Math 331 (Differential Equations), an important service class taken mostly by students in engineering, physical sciences and even economics and biological sciences. A year ago we experimented with combining two 60-seat sections of Math 331 into a single, 120 seat section. This experiment did not work very well because we did not provide the instructor with any additional TA support to handle the extra office hours and email queries.

- We plan to investigate interest in collaboration from our colleagues in CICS and the College of Engineering on offering a selected number of Math 131/132 discussion sections for students in engineering and computer science. This is revenue neutral, but only after one-time setup cost at the level of support for a couple of summer graduate TAs. Currently every section of Math 131 and Math 132 (both are 4-credit classes) has a weekly discussion, in which the graduate TA will go over additional examples and answer questions about homework and lecture material. This is typical among peer institutions. Students in a typical discussion section come from very diverse backgrounds, so the TA can only work out general examples and problems that are not discipline-specific.

The Department will coordinate with the engineering departments and Computer Science to schedule a number of discussion sections targeted towards students in each of these departments, and our faculty will collaborate with those in these departments to design active-learning projects specific to their fields. We have had preliminary discussions with some of these departments and the reaction has been very positive. A similar program has recently been successfully implemented at the University of Illinois at Urbana-Champaign, and the Mathematical Association of America recently published several volumes of classroom-tested source books for active-learning calculus projects. We will consult these resources and make appropriate modification to suit the needs of the UMass students. With the support of a couple of summer graduate TA, the Department can put together a solid set of active-learning projects for these targeted Math 131/132 discussions. Once the program is in place, and should it prove successful, we will be happy to create similar targeted discussions for other departments if they can provide a stable group of students within specific time slots and if there are resources for the initial setup.

B. Undergraduate Action Plan: Departmental Investment

- In FY17, the Department will hire Emeritus Professor Eduardo Cattani to teach two upper division undergraduate courses in the Fall term (MATH 300 and MATH 545), at the cost of $27,500. Professor Cattani is an exemplary teacher and mentor ? he brings tremendous value to the department?s upper division courses at a comparatively low cost, especially when the negligible fringe cost is included in the calculation of what it would cost to teach those courses using regular tenure-stream faculty or VAPs.

- In FY17, the Department will continue to pay all salary, fringe, and other costs associated with a VAP (Gufang Zhao), who will teach 4 courses of 60 students each (4 x 60 x 3 = 720 student credit hours). This represents the third year of an investment in the teaching mission of the department at the cost of approximately $54,000 in salary and research funds per year, plus fringe per year.

- In FY17, the Department will appoint a VAP in the area of Applied Mathematics to teach 4 courses; the cost, including fringe, will be fully covered from grants garnered by Professor Panos Kevrekidis, who will be released from his teaching duties (2 courses per year). Thus, at no cost to the college, the Department will offer two more courses than it would have been able to teach otherwise, representing a net gain of 360 student credit hours at no cost to the college. The two additional courses will be to add a section of MATH 300 (Fundamental Concepts in Mathematics) and a section of MATH 545 (Applied Linear Algebra), both of which have seen dramatic increase in demand this year from math majors.

- In FY17, the Department will continue to invest in enhancing existing online courses and to create some new courses. The most important planned addition (in terms of financial impact) is STAT 515. We also plan to videotape the MATH 551 and MATH 552 lectures in preparation for online versions of one or both of those courses starting Summer 17. We also plan to launch of several 1-credit courses in mathematical computation and numerical analysis. We believe the 1-credit format (for courses on using MATLAB, R, and Python, for example), would draw a bigger audience, especially from industry,

than a 3-credit course. The department generally invests $3000 to $5000 per course for designing a new online course. We plan to increase our investments in online courses so as to increase revenue from this source.

- Begin to offer a course in Time Series on a regular basis to meet the VEE (Validation by Educational Experience) requirement of the actuarial professional societies.

- Expand the REU program by actively recruiting students from Five Colleges, particularly Mt Holyoke and Smith - our hope is that some of them would subsequently apply for our graduate programs. This is a modest investment of about $3500 per students. We also need to increase the stipends from $3000 to at $3500, as the stipend has not changed for ten years. The Department has generous support of alumni for this (in particular from Joan Barksdale).

- Increase the visibility of work done by undergraduate by offering many more awards to our best students in a number of categories. We will dedicate gift account funds for the purpose.

- Institute a well-funded Lecture Series for undergraduates focused on possible career paths for math/stat majors. Would particularly invite alumni. The first such talk to be given in Spring 16 by Robert Reitano. Funded from the gift account.

C. Undergraduate Action Plan: Strategic Investment from College & University

- We plan to convert Math 233 (Multivariable Calculus) and Math 235 (Linear Algebra) to 4-credits, through the addition of a recitation section. The cost consists of: (i) A one-time setup cost at the level of a couple of summer graduate TA, and (ii) an on-going cost of three to four graduate TA for each of Math 233 and Math 235. Currently both Math 233 and Math 235 are lecture-only, 3-credit classes. Comparable courses in most peer institutions, including MIT, have an additional weekly discussion. There is an urgent need for a discussion section for Linear Algebra (Math 235), a very popular service course that provides crucial quantitative tools for machine learning and mathematical modeling. This is also a challenging course for many students, since unlike calculus, to properly utilize these tools it is not enough to just memorize the computational recipes; the students must understand the underlying concepts, a first for most students. Instructors in turn must devote considerable class time on theoretical materials, leaving little time for applications and examples. This pedagogical issue is not unique to UMass: Most peer institutions deal with it by adding a weekly discussion section so the instructors can focus on the key concepts and main applications, TA can then work out The need for a discussion section for Math 235 is equally urgent. In its current 3-credit format, we can only cover in Math 233 about 80% of the content of a standard multivariable calculus class as taught in peer institutions. Specifically, we can only cover just one of the three basic integration theorems, and we have to leave out most of the applications. This last issue has been particularly problematic for students in physical sciences and engineering, which constitute the majority of the Math 233 population, By adding an extra weekly discussion, Math 233 instructors can relegate the working out of computational examples (which is an essential and non-trivial component of the course) to the TA and focus the class time to the core topics.

- The College has agreed to invest in one VAP to work with Professor Hongkun Zhang (3-year temporary appointment). This VAP will allow us to maintain the same level of teaching capacity since we are losing VAP Robin Koytcheff who was hired on a one-year term.

- The Department requests hiring one more VAP to teach 4 courses in AY16-17 on state funds, to support the (lower as well as upper division) undergraduate program (though of course a VAP also makes significant contributions to the research activity of the department). Hiring this VAP would allow us to offer a new course MATH 571 (Intro to Cryptography), as well as add three other sections in the undergraduate program which we anticipate we will need to keep up with addition of new students. Our projection is that we will need to open 120 more lower division seats (in MATH 131, 132, 233, 235, 331) in Fall 16 than we did in Fall 15 and 60 more lower division seats in Spring 17 as compared to Spring 16. In addition, we expect at least one but probably two additional sections of STAT 515 will be needed as well.

- The Department has relied increasingly in the use of temporary lecturers to serve the needs of undergraduate in the lower division; we have gone from 1 or 2s FTE temporary lecturers 3 years ago to approximately 5 FTE temporary lecturers this year. While we are hoping/assuming that the college will continue to fund this number, we request running a national Lecturer search from which we hope to draw at least one but hopefully several new temporary lecturers, and converting at least one of them to permanent lecturer down the road. The exact number of temporary lecturers needed will be dependent upon the success of the tenure track and VAP searches, to be determined later this spring. Depending on how quickly the plans for a proposed online Masters degree program in Actuarial Science comes together, we may draw on the lecturer search to hire a qualified candidate for helping with designing and teaching those online courses.

- The Department is instituting new dedicated Help Centers for MATH 331 and STAT 515, two courses which large enrollment which largely serve Engineering, CS, as well as CNS but are also crucial for our own majors. These are to open for the first time in Spring 2016 on a very small budget (less than $3000); we hope to expand them and find better space for them in FY17. For the computers needed for the new Help Centers, we plan to use funds from the college from Lab Fees, with a small supplement from the Department. For a bigger strategic investment, we ask to go ahead with a commitment to one single very large room (capacity 75) to be dedicated, hopefully on the first floor of Lederle, as the all-encompassing Mathematics & Statistics Resource Room.

- With the addition of many new postdocs, visitors, and temporary lecturers (especially the latter), the Department is in desperate need of more office space. We continue to propose the immediate allocation of 13A to Mathematics & Statistics for this purpose.