

**TO: The Program Review Committee
for Mathematics and Statistics Programs**

FROM: Dana L. Thomas, Department Chair

On behalf of the faculty, staff and students of the Department, thank you for agreeing to serve on the 2005-06 Program Review Committee. We spent a lot of time discussing and writing the attached self-analyses of the strengths, weaknesses, needs, and recent changes for each of our degree programs. In the process we learned a great deal and several suggested curriculum changes have been proposed as a result. We look forward to your review. Our hope is that our dean and the provost will read our report and yours and positive change will occur.

The department offers the following degree programs in mathematics and statistics:

Mathematics - B.A., B.S., M.S., M.A.T, and Ph.D.
Statistics – B.S. and M.S.

We had committees prepare the following 4 reports (authors listed alphabetically);

1. The report on undergraduate mathematics (B.A. & B.S.) programs prepared by Elizabeth Allman, Latrice Bowman, Jill Faudree, Kat Gustafson, and David Maxwell.
2. The report on graduate mathematics programs (M.S., M.A.T. & Ph.D.) prepared by Elizabeth Allman, Sergei Avdonin, Ed Bueler, John Gimbel, David Maxwell, Tony Rickard, and Alexei Rybkin.
3. The report on the B.S. statistics program prepared by Ron Barry and Dana Thomas.
4. The report on the M.S. statistics program prepared by Ron Barry and Dana Thomas.

These four reports are self-contained and have their own appendices. Draft versions of each report were shared with all faculty members in the department and suggestions for revisions solicited from all. Issues related to service course offerings appear in several of the reports because of the department's large service role. Notebook dividers are provided to help delineate the 4 reports.

Our departmental notebook, required for the North West Association of Schools and Colleges (NWASC) institutional accreditation, was fully updated in the summer of 2004. A single page 2005 addendum as required by our college was added this fall. This material is provided in the notebook prepared for the review committee.

Historically, mathematics and statistics were in the Department of Mathematical Sciences which also included computer science and software engineering. The latter two programs formed the Department of Computer Science as of July 1, 2005. Thus, the past year has been one of significant change for the department and adjustments are still being made.

Four major themes appear in the program reports; we have a very flexible cooperative faculty that works closely with other departments; elective offerings for majors are sparse; faculty numbers are low and turnover high; and space is problematic. I comment on each of these briefly here as a summary.

A Flexible Cooperative Faculty - mathematics and statistics faculty members teach a wide variety of courses at both the undergraduate and graduate level; no faculty member always teaches the same course from semester to semester or year to year. This is clearly illustrated in the undergraduate mathematics program report which states that during the last two years the average number of different classes taught per faculty member exceeds 6. All math faculty teach part of the calculus series as well as graduate courses and all statistics faculty teach introductory courses as well as graduate courses. On many occasions faculty members have taught independent study courses for small groups of students (with no overload assignment and little or no recognition) because students expressed interest in certain areas. In addition, faculty members are sensitive to the needs of other departments in service courses at both the undergraduate and graduate level and work with these departments on needed changes in course descriptions, frequency offering, and time schedules of individual courses sections. Our course sections are offered at all times of the day to allow flexibility for both room scheduling and student schedules.

Elective Offerings – compared to similar programs at other institutions, UAF offers relatively few electives to majors both in terms of the number of electives shown in the catalog and in the frequency of offerings of existing electives. Many regularly scheduled elective course offerings have been canceled because of lack of faculty to meet service course demands. This needs to change. A better balance between service demand and elective courses for majors should be found and we have been discussing means to do this.

Faculty numbers and turnover – the department has 15 full-time positions including 2 mathematics instructors, 9 (8.5 FTE) tenure-track mathematics faculty, and 4 statistics tenure-track positions. These numbers are small compared to other institutions of our size offering the degree programs we do. While faculty size limits elective offerings for our majors, it also currently limits the growth of other programs which are mathematics intensive such as computer science and all engineering programs because we can not adequately deal with increasing enrollment in service course offerings.

Turnover has been high among both mathematics and statistics faculty. Since 2000-01, 7 of the 15 positions have turned over; 4 due to retirements and 3 faculty members left for other positions. The department is currently recruiting one statistics position.

Instructional and office space – in 2003, when the department included computer science and software engineering, we worked closely with UAF's Office of Space Planning to summarize space allocation and needs. A copy of this report and the memo submitting it to our dean and provost is attached. While the administration has been sympathetic to the summary and request for attention to our space needs, no actions or plans have been developed to deal with the situation. The creation of the CS Department has made the space issue more severe because a space used as a conference room was made the CS administrative office. Some positive change occurred recently when our dean arranged for Alaska Native Studies to move some of their long term storage out of the Chapman penthouse so that the Department could store some items there. However, faculty and graduate student space remains a problem.

Because of the number of course sections the Department offers each semester, the vast majority of classes are taught in buildings other than the Chapman Building. Classroom assignments are frequently problematic. Mathematics instruction typically involves a large amount of writing on a chalk or white board. Many rooms assigned to classes do not have adequate board space for such instruction and our requests for correction of this problem have gone unanswered. Similarly, rooms assigned commonly do not have projectors for a laptop connection and prohibit the use of technology for mathematics instruction using specialized software.

We hope you find the reports we have prepared meet your review needs. Please feel free to contact us by whatever means you find most convenient should you have any questions.

Subject: Re: math space discussed by master planning?

From: Deborah Horner <fndgh@uaf.edu>

Date: Mon, 28 Nov 2005 12:46:50 -0900

To: Dana Thomas <ffdlit@uaf.edu>

Dana -

Individual unit space is not something that the MPC discusses. That is a level of management that is not part of the MPC's responsibilities. MPC reviews big picture plans, such as where a new building would go, or the location of a parking lot.

Paul and I are currently working on a list of campus wide space needs that will be prioritized. I am not sure exactly how he intends to formally prioritize the list (as in who needs to sign off on it), but I suspect it will go to Cabinet. He has been out of town a lot lately, so we have not determined a specific timeline on this, but I suspect it is something that will be finished early in the new year.
Deb

At 04:38 PM 11/22/2005, you wrote:

Deb:

Mathematics and Statistics is up for program review this year and we will be saying something about space in our report.

Do our space needs appear in any current space planning documents? I could not find them on the web.

Have the space needs of our department ever been brought to UAF's master planning committee? If so, when? Are there any committee meeting minutes we could cite?

An answer soon would be appreciated as our review report is due next Wednesday, December 1.

Thanks

Dana Thomas
Chair, mathematics and statistics

Request for Space to Provost & Space Planning

DATE: June 25, 2003

TO: Paul Reichardt, Provost

THROUGH: David M. Woodall, Dean, CSEM

FROM: Dana L. Thomas, Chair

RE: **Space needs for the Department of Mathematical Sciences;
Renovation funding and a long-term plan are needed**

The Department of Mathematical Sciences has reviewed its current utilization of space and provides the summary given here to begin a conversation concerning short-term and long-term needs. Appendix 1 (not attached here) is a building layout of Chapman showing the square footage of each room. Appendix 4a summarizes current room use codes as defined by UAF's Space Planning and Management (<http://www.uaf.edu/provost/SPAM/Codes.htm>) and provides notes on proposed renovations.

The following table summarizes the numbers of faculty and graduate students and the current space allocated for offices in the Chapman Building:

	Numbers based on Fall 2002	Space Available in Chapman
Full-time faculty positions	25 Total; 18 100% DMS tenure-track 4 tenure-track with joint appointments with ARSC 3 instructors	23 private offices with windows; each faculty member had a private office in 2002-03 because we had two unfilled positions.
Adjunct faculty	5	2 with shared space; 1 with private space; two with no space.
Graduate students (teaching assistants)	27 (12 TAs; we expect 14 TAs in 2003-04)	16 desks in shared space are available for graduate students; 12 are given to teaching assistants. 6 of these desk spaces are in rooms with no windows.

Thus, we currently need 2 additional full-time faculty offices, 1 adjunct faculty shared space and 11 graduate student shared spaces. On the following pages is a description of changes we would like to make to meet short-term needs and desired changes and our long-term space needs. The Department needs your support in helping us resolve our short-term needs by identifying funding or your help in finding alternative space. We also need your continuing help in identifying solutions to our long-term space needs.

Cc: Facilities Services
Deb Brownfield

Short-term space needs

Primary Goals:

1. Create more private and shared office space
2. Use space more efficiently; eliminate one of the department's computer labs and create a single larger lab.
3. Move math lab from 3rd floor to 1st floor to raise its visibility

Deb Brownfield and Luke Hopkins have been consulted on alternative approaches to meet our immediate needs and desired changes. However, renovation budgeting is needed to reconfigure our space to do so. I have not requested estimates from Facilities Services for most of the renovations needed because we do not have the budget to pay for such renovations.

The specific renovations we would like to make within the Chapman Building are as follows (other possibilities clearly exist and we would be happy to discuss them):

1. Create a new office space in the anteroom of Chapman 210. (+ 1 private faculty office) Estimated cost = \$15,978.00 (see attached estimate from facilities services)
2. Convert Chapman 103 from a computer lab to the Math lab. Add a new wall with large windows in 103 to partition out a controlled testing area. The existing math lab is in Chapman 305. The move to the first floor will increase the visibility of lab, hopefully resulting in greater student use and success. The implementation of a controlled testing area will allow for verified on-line testing to be used more extensively, will allow faculty to schedule exams outside of class lecture time and will provide a bit more structure for offering make up exams. No estimate available at this time.
3. Convert Chapman 305 (the old math lab) to two shared office spaces by dividing the room into two and adding a new door. This will require the purchase of additional desks and chairs and cubical dividers. (+ 8 shared spaces) No cost estimate available at this time.
4. Convert Chapman 204 and 206 to a single large room. This room would be the department's primary instructional computer lab. The wall between 204 & 206 would have to be removed. In addition, the hallway wall should have windows installed for better security. This change will increase the size of our primary instructional computer lab and should help us reduce the number of lab sections for some courses (e.g., STAT 401). It also results in the elimination of an existing lab that is not used effectively at present. The department will go from 3 computer labs to 2. Given the recent IT report, this seems like a wise change. This change also eliminates 3 graduate student spaces that must be made up elsewhere. No estimate available at this time. (-3 graduate student spaces)

5. Convert Chapman 303C from a small seminar room to shared office space. This would require a change in furnishings from large tables and many chairs to desks with chairs. No cost estimate available at this time. (+ 3 graduate student spaces)
6. Remodel the kitchen area in Chapman 202. This is the only commonly used space in the building that was not renovated during the earlier work on the Chapman building. This space is barely functional and badly needs renovation. No cost estimate available at this time.
7. Locate our computer servers in the Chapman Penthouse and equipment storage. This space is currently used by the Alaska Native Language Center for storage. This would free up sorely needed space within Chapman.

Long-term space needs

Primary Goal:

Increasing enrollment at UAF translates directly to increased enrollment in mathematical sciences as almost all programs have requirements in this area. Thus, additional space will be required for this department as UAF enrollment rises.

Below are some possibilities to start the discussion on meeting the Department's future needs:

- As the Department is comprised of faculty in Computer Science/Software Engineering (9 full-time + 2 part-time), Mathematics (9 full-time + 3 part-time) and Statistics (4 full-time) one possibility is for Computer Science/Software Engineering to break off and form their own department. If this occurs, this new unit could be assigned their own space. Space with or near the Arctic Region Supercomputing Center might be appropriate given the creation of this new unit but location should be discussed with each group prior to any decision making. The potential for private and federal support for construction for these programs is especially good. In particular, the federal government and private enterprise are interested in developing the area of computer forensics and computer assurance for Homeland Security and may make funds available to support new construction for research and education in this area. In addition, IBM has provided generous equipment gifts to these programs in the past and may be supportive.
- Construct a lateral addition to the Chapman Building. There is space to the west and to the north for an addition. Such an addition could allow space for additional classrooms, faculty offices and graduate student space. As the Chapman building already has an elevator, this could provide considerable savings in new construction.
- Add a Chapman Annex building on Cooper Lane so that faculty and/or graduate students are located in close proximity.

APPENDIX 4a

First Floor

Room	Assignment	Space Code	Notes
101A	Office Service; supplies, storage, photocopier, fax	300	No windows
101B	Administrative Assistant Office	300	Window
101	Reception and secretarial staff	300	Window
102	Department Chair Office	300	Window
103	Computer lab	200	20 computers in this room with no air handling. North side of building; room overheats during summer. If funding is available, move this lab to reconstructed rooms 204 & 206. Requires that 204 & 206 get air handling. Room 103 would become the new math lab to improve visibility. Ideally, a wall would be added to partition the room into a study area and a testing area.
103A	Lab Coordinator Office	300	Room overheats during summer; No window
104	Classroom	100	
106	Classroom	100	
107	Classroom	100	

Second Floor

Room	Assignment	Space Code	Notes
201A	Shared Graduate Student Office Space – 4 desks	300	Window
201B	Faculty Office – tenure-track	300	Window
201C	Faculty Office – tenure-track	300	Window
201D	Faculty Office – tenure-track	300	Window
201E	Faculty Office – tenure-track	300	Window
201	Entry area - 1 graduate student desk		No window; not secure
202	Conference (faculty lounge)	300	Window; small kitchen area needs to be remodeled and modernized if funding is available. This is the only section of the building that was not renovated earlier.
203	Computer Server & storage room		No window
204	Shared Graduate Student Office space – 3 desks Conversion to new lab would eliminate these 3 spaces.	300	Wall connecting to 206 to be removed, if funding available, to create one large computer lab. Room overheats during summer; south side of building. New lab would require air handling.
204A	Faculty office – adjunct	300	Window; will become lab coordinator office when new lab created. This results in the loss of one adjunct space.
205	Graphics Computer Lab	200	Air circulation unit
206	Computer Lab	200	Wall connecting to 204 to be removed, if funding available, to create one large computer lab. Room overheats during summer; south side of building; New lab would require air handling.
208A	Faculty office – tenure track	300	Window
208B	Faculty office – tenure track	300	Window
210A	Shared adjunct space – 2 desks	300	No window
210B	Faculty office – tenure track	300	Window
210C	Faculty office – tenure track	300	Window
210	Entry area – under utilized		If funding available, create new office here.

Third Floor

Room	Assignment	Space Code	Notes
301A	Faculty office – instructor	300	Window
301B	Faculty office – instructor	300	Window
301C	Faculty office – instructor	300	Window
301D	Faculty office – instructor	300	Window
301E	Shared graduate student office space – 2 desks	300	No window
302	Shared graduate student office space – 4 desks	300	Window
303A	Faculty office – instructor	300	Window
303B	Faculty office – instructor	300	Window
303C	Classroom	100	Window; convert to adjunct shared space.
304A	Faculty office – instructor	300	Window
304B	Faculty office – instructor	300	Window
304C	Faculty office – instructor	300	Window
305	Math Lab – staffed by rotating graduate students to answer student questions	400	Windows; If the lab in room 103 is moved to 204-206, this room would be converted to 8 graduate student spaces. The math lab would move to 103. Cubicles walls and furniture would be required.
306A	Shared graduate student office space – 2 desks	300	No window
306B	Faculty office – instructor	300	Window
306C	Faculty office – instructor	300	Window
306D	Faculty office – instructor	300	Window
308A	Shared graduate student office space – 2 desks	300	No window
308B	Faculty office – instructor	300	Window
308C	Faculty office – instructor	300	Window

Penthouse

Room	Assignment	Space Code	Notes
Penthouse	Storage – currently in use by Alaska Native Language Center.	?	We would like to use this space for our computer servers and storage. To place servers here, we would need air handling installed.