

**University Classroom Committee
Report
To the Provost
2005 – 2006**

Committee members

Stephen H. Carr, *Dean's Office, McCormick School of Engineering*
Miriam Diamond, *Searle Center for Teaching Excellence*
Jason Downs, *Associated Student Government*
Stephen D. Fisher, *Office of the Provost*
Gregory Light, *Searle Center for Teaching Excellence*
Marvin J. Lofquist, *Dean's Office, Weinberg College of Arts & Sciences*
Rick G. Morris, *Dean's Office, School of Communication*
Ronald Nayler, *Facilities Management (co-chair)*
Jacqualyn Rivera, *Office of the Registrar*
Jean E. Shedd, *Office of the Provost (co-chair)*
Bruce L. Sherin, *School of Education and Social Policy*
Erik J. Sontheimer, *Biochemistry, Molecular Biology, & Cell Biology, WCAS*
Noriko Taira, *Program of African and Asian Languages, WCAS*
Robert L. Taylor, *Academic Technologies, Information Technology*
Paul B. Weller, *Planning, Facilities Management*

September 2006

**UNIVERSITY CLASSROOM COMMITTEE
REPORT
2005 – 2006**

Executive Summary

- The Committee allocated its \$500,000 annual budget to improve the physical condition of University-scheduled classrooms in Annenberg, Fisk, Kresge, Parkes, Tech and University Halls.
- Technological improvements to Fisk 217 auditorium, funded by central administration for FY06, were made during summer 2006. These improvements included installation of high-resolution and overhead projectors similar to those recently installed in Ryan Auditorium in Tech (also funded by special central allocations during FY 2005 and FY 2006).
- During FY 2006 (the third year of the initial three-year laptop-based smart classroom program), laptop-based technology was installed in eight more University-scheduled classrooms. This brings the number of smart classrooms with laptop-based technology to 25, and the total number of smart classrooms to 55.
- University administration allocated funding to complete the laptop-based smart classroom improvement project on an accelerated schedule (FY07 – FY09: three additional years, rather than the initially proposed seven additional years). The decision to accelerate the project was driven by the swifter adoption of the laptop-based smart classroom model by faculty than anticipated. This scheme would put Northwestern in a position of advantage relative to peer institutions, with 102 of its 113 general purpose classrooms upgraded to a base level of projection technology and Internet access. (The remaining general purpose classrooms will be upgraded in conjunction with future comprehensive building renovations.)
- Utilization rates for University-scheduled classrooms, which had declined modestly, on average, over the period FY02 - FY05, appear to have leveled out during FY 2006. The scheduling policy changes implemented in FY 2002, which created additional time slots, contributed to decreases in classroom utilization; however, a pattern of increased demand, particularly between 10AM to 12PM and 1PM to 3PM, appears to be re-emerging, and will need to be monitored.
- A Web-based scheduling tool, Resource 25, was implemented by the Office of the Registrar during FY 2006, and is being used, on a pilot basis, to track usage of a selected group of departmentally scheduled classrooms. Participants in this pilot program include the School of Communication, several departments in WCAS, and the Law School. Efforts over the next year will continue to focus on bringing more departmentally scheduled rooms on line, with the eventual goal of having all departmental classrooms scheduled electronically

USE OF FY 2006 BUDGET ALLOCATION

The \$500,000 of funding available for FY06, combined with \$80,000 of unspent funds carried forward from FY05, provided a total budget of \$580,000 for physical improvements to University-scheduled classrooms. The committee implemented the projects described below for FY06, at a total cost of \$483,711. In addition, the Committee expended \$52,550 to support the installation of new technology in Fisk 217 (see below). The balance of \$43,739 will be carried forward to FY07.

- Upgraded eight classrooms in Annenberg Hall (G15, G21, G28, G29, G30, G31, G32, and 101) with new carpeting, chairs and lighting. The committee worked closely with Associate Dean Coleen Coleman in SESP to coordinate the upgrade of these classrooms with the SESP-funded upgrade of school-scheduled classrooms, to ensure all rooms were furnished consistently (and reduce the migration of furniture between rooms).
- Upgraded Parkes 212, 213, 215, University Hall 118, 218, Kresge 3-420, Tech L221, Fisk 114, in conjunction with installation of laptop technology by Academic Technologies.
- Upgraded Tech MG28, LG52, LG62, LG66, L68, LG72, LG76 with new carpeting, chairs and lighting. New projection screens, more suitable to the size of the rooms, were also installed. (Screens that were almost twice the appropriate size were installed in these rooms as part of the Tech renovation, in a laudable attempt to reuse existing fixtures that were, nonetheless, unsuitable to the task.)
- Installed additional electrical panels on 2nd, 3rd and 4th floors of Kresge, to support installation of window AC units in Kresge classrooms.

USE OF FY 2006 SPECIAL BUDGET ALLOCATION

Upgrade of Fisk 217 auditorium

Projection capabilities were upgraded in Fisk 217 during summer 2006. This auditorium is heavily used by the Art History department, which is moving rapidly to the use of digital images in teaching. Thus, this project included installation of new overhead projectors and a high resolution projector within a climate-controlled enclosure in the balcony. A larger (20ft.) screen was installed, and existing speakers and electronics relocated to better accommodate the new equipment. The special central funding allocated to this project (\$147,000) was supplemented by \$52,550 of Classroom Committee funds and will need to be supplemented by modest funding from the Classroom Committee's FY 2007 regular budget, in order to complete the funding needed for the project.

UPGRADE OF SMART CLASSROOMS DURING FY06

The Classroom Committee completed the third year of the approved three-year laptop-based smart classroom improvement project. Academic Technologies, working with Facilities Management, has completed installation of eight additional laptop-based classrooms during 2005/06.

This brings the total of laptop-based classrooms now managed by Academic Technologies to 25, and the total of the older, resident computer-based classrooms managed by Academic Technologies to 30. In addition to these classrooms, Academic Technologies also manages a set of five video conferencing classrooms on the Evanston and Chicago campuses. These video classrooms are seeing increased use for formal class meetings, particularly by faculty in the life sciences and in engineering.

A table listing the current smart classrooms available for scheduling for NU classes is provided in Appendix III of this report.

ACCELERATED SCHEDULE FOR CREATION OF SMART CLASSROOMS, FY 2007 – FY 2009

Proposal funded by University administration

The Classroom Committee, in conjunction with Academic Technologies and Facilities Management, submitted a request to Central Administration for additional funding to expedite smart conversion of remaining general purpose classrooms. The original ten-year plan (now in its third year) will be accelerated to implement smart technologies in the balance of general purpose classrooms over the next three years. Central Administration allocated the requested funding, and will also fund two required additional support positions for Academic Technologies (one beginning FY 2006, and a second beginning in FY 2009). This scheme would put Northwestern in a position of advantage relative to peer institutions, with 102 of its 113 general purpose classrooms upgraded to a base level of projection technology and Internet access. (The remaining general purpose classrooms will be upgraded in conjunction with future comprehensive renovations.)

Survey of classroom technology at peer institutions

A survey of peers, done in mid-2006, indicates that a large cluster of Northwestern's peers have upgraded 60-65% of general purpose classrooms, while a smaller group of "campuses in crisis" lag at 25-30% smart. Northwestern is currently positioned in the middle at 43% (49.5% by the end of summer 2006).

DEVELOPMENT OF TEACHING, LEARNING and TECHNOLOGY SKILLS FOR SMART CLASSROOMS

In conjunction with the development of technologically enhanced classrooms, and as part of the on-going integrated pedagogy and technology strategy, the Searle Center for Teaching Excellence and Academic Technologies continued to support faculty (and graduate student teachers) in the effective use of these technologically enhanced classrooms. As in past years, programs for faculty and graduate students were successfully presented and will be offered again in the coming year.

- **Teaching, Learning and Technology:** (for faculty, five full day intensive workshop). This year the program was held August 29th – September 2nd. During the last four years, the program has grown so that eighteen faculty from a wide cross section of disciplines and both campuses participated with five others contributing to sessions.
- **Web-based Instruction for Northwestern Graduate Students (WINGS):** This year, the program was offered as a credit bearing course through the graduate school, with fifteen students enrolled.
- **Workshops on the use of technology to enhance learning:** A two-part workshop series was offered on developing questions and using Personal-Electronic Response Systems in Winter and Spring, 2006. Approximately sixteen people attended each session.

Monitoring smart classroom use

Every quarter, Academic Technologies surveys all faculty registered for use of a smart classroom, about their experience via an on-line survey. These surveys began in the Winter of 2001 and have provided evidence of the operational quality of NU's smart classroom services and they assist the Classroom Committee in gauging faculty demand for technology enhancements.

The survey results from 2005-2006 laptop classrooms indicate that faculty are pleased with the implementation of additional laptop-classrooms for improved availability, have generally responded favorably to the laptop model, and appreciate the improved design standards for easy use.

The quarterly surveys of NU faculty who are using smart classrooms show a high rate of satisfaction by those faculty who bring their own laptop to the teaching classroom. According to the support staff for smart classrooms, these faculty appear to be more likely to have software applications and digital content arranged and configured correctly for the class meeting than are those instructors who have very specialized needs and have to use the generic workstation located in a traditional NU smart classroom.

Use of technology in these laptops classrooms remains at 60% (similar to last year's usage). Faculty scheduled in a "standard" classroom with a resident computer, use the technology on average of 66% - again, same as last year. It is interesting to note that faculty use their laptops an average 35%, even in classrooms with a resident computer.

There seems to be is a small but consistent contingent of faculty who express frustration at having to use their own notebook computers. They do not wish to carry them around campus or state that they do not own one.

Survey activities will continue during 2006-2007 to better measure the experiences of faculty in the smart classrooms and to gauge the demand for new and innovative learning technologies.

Renewal activities in existing smart classrooms

During 2005-2006, Academic Technologies invested \$234,907 of its recurring funding to renew the equipment in eight of the traditional (desktop computer-based) smart classrooms.

These eight classrooms have standard equipment including brighter projectors, 10" color touch-panels for controlling the hardware in the podium, DVD and VHS players, and a new resident computer(s). These classrooms have also been added to the Network Management system that allows AT to remotely monitor and correct system problems (or avoid them in the first place).

CLASSROOM UTILIZATION

Implementation of Resource 25 scheduling tool

In addition to providing a yearly utilization update for classrooms scheduled by the Registrar (see Appendix I), during Academic Year 2005-06 the Classroom Utilization Subcommittee continued to focus on departmentally scheduled classrooms. In the Winter and Spring Quarters pilot efforts were underway, not just to track usage of a selected group of departmentally scheduled classrooms, but to make these rooms accessible via a scheduling tool (Resource 25), and hence potentially more visible and available to users across departments within Schools. Participants in this pilot program have included the School of Communication, a couple departments within WCAS, and in Chicago the Law School. Efforts over the next year will continue to focus on bringing more departmentally scheduled rooms on line, with the eventual goal of having all departmental classrooms scheduled electronically.

Until a larger number of departmental classrooms are on line through this scheduling system, there will remain a lack of reliable information by which utilization of departmentally scheduled spaces can be meaningfully assessed.

Issues affecting classroom utilization

Utilization studies for Academic Year 2005-06 along with those over the last six years demonstrate, on average, that the decline in Evanston classroom utilization for rooms scheduled through the Registrar's Office has leveled off and, as a future trend, may be starting to increase. During the next year the following items need to be further investigated, discussed, and better understood by faculty and staff:

1) Utilization of departmentally scheduled classrooms, conference, and seminar rooms:

As departmentally scheduled classroom, conference and seminar spaces are provided with intra-departmental and University-wide scheduling accessibility, efforts can be initiated to assess their utilization and understand their impact on classrooms scheduled by the Registrar.

Progress in understanding departmentally scheduled spaces depends upon the resources available to the Registrar's Office to bring additional rooms into its scheduling software. There continues to be a need for additional staff time (and hence additional resources) to support this initiative.

2) On-going upgrade of existing classrooms:

"Smart" classrooms have higher levels of utilization than "non-smart" classrooms, though utilization of "non-smart" classrooms in the more desirable time slots is increasing.

Over the last six years the number of “smart” classrooms were increased by upgrading classrooms regularly scheduled by the Registrar’s Office. While this has more than doubled the number of “smart” classrooms, utilization of these “smart” classrooms has continued to remain higher than “non-smart” classrooms. However, over the past year – at least relative to Academic Year 2004-05 – increased utilization of “non-smart” classrooms has occurred in timeslots between 10 to noon and between 1 to 4. Upgrades that have been underway to generally improve the condition of all classrooms may be making some of these “non-smart” classrooms more desirable for scheduled classroom use by faculty in addition to the fact that these are the most desirable hours. However, these increases in utilization have also been accompanied by decreasing utilization continuing to be the case in the 8 to 10 timeslots, along with declines over the lunch hour. Over the last two years, a trend of increasing pressure on what are considered more desirable timeslots appears to be developing.

3) Decreasing effectiveness of policy changes and schedule modifications to lessen peak demand:

Policy changes were effective at the point implemented; schedule modifications created additional timeslots, which contributed to decreases in classroom utilization; however, a pattern of increased demand, particularly between 10 to noon and 1 to 3, appears to be re-emerging.

Part of the intent in adopting policy changes in 2002 was to regularize class-meeting times and spread them out over the day. While the greatest impact of this policy was seen immediately after its implementation when it did appear to spread out the distribution of courses scheduled over the day, the effectiveness of this policy over time appears to be diminishing, even though the policy still appears to be encouraging standard scheduling. The impact of modifying the standard schedule on Tuesdays and Thursdays, which allowed for an additional timeslot, has been effective.

OTHER CLASSROOM ISSUES

Library seminar rooms

The committee continues to grapple with the problem of how these classrooms can be made most useful for teaching. The walls in these irregularly-shaped rooms are ill-suited for projection or installation of fixed screens, and sound quality in the space is poor. The Office of the Registrar indicates that only a few classes meet in these rooms (size of the room limits enrollment to fifteen students).

During FY 2006, Academic Technologies introduced a plan to supply portable projectors and screens for library seminar rooms; the University Library has agreed to support check-out service of this equipment on the first floor. This flexible and relatively inexpensive solution will allow for the allocation of more resources to general purpose rooms better-suited for smart technologies.

Experimentation with document cameras

Academic Technologies has noted the increasing use of document cameras (digital overhead projector-style cameras with 40x magnification power) by peer institutions, and will install a few such cameras in smaller rooms to see if this technology might prove popular at Northwestern.

Several document cameras are currently in use at NU in teleconferencing rooms and in at least one classroom in the School of Communication.

Relocation of classes during renovation of Annie May Swift Hall and other buildings

The massive renovation of Annie May Swift that began earlier in 2006 has required the relocation of classes previously held in that building, for some period of time. The School of Communication, working with the Office of the Registrar, successfully relocated all classes to other buildings.

The relocation of classes from Harris Hall, when that building is renovated in the future, will be much more difficult; Harris is a major classroom building, and contains one of the larger classrooms on campus (Harris 107 auditorium). We need to consider carefully the University's (as well as Kellogg's) need for larger classroom spaces as we think about potential changes to the Jacobs Center and the possible elimination of Owen Coon Forum.

GOALS FOR FY07

- Develop priorities for FY 2007 funding and implement general improvements to University-scheduled classrooms.
- Work with the schools to better understand the impact that decentralized scheduling of department classrooms has on overall space utilization, and to improve the scheduling of school and department teaching spaces through use of Resource25 software, in coordination with the Office of the Registrar.
- Work with the Searle Center to develop and implement mechanisms that encourage and aid faculty in using innovative pedagogies to improve student learning. Develop strategy for evaluating faculty utilization and experience of teaching in technologically enhanced classrooms.
- Review classrooms for overcrowded conditions, recommend alternatives, and define impacts.
- Continue to review and refine the scheduling policies.
- Seek additional funding for priority projects.
- Develop a long-term plan for the Committee that would place Northwestern in the forefront of classroom education.
- Review the desirability of flexible classrooms, identify potential users, identify rooms that could be converted and define impacts.

APPENDICES

- I. Report of the Classroom Utilization Subcommittee**
- II. Report of the Subcommittee on Classroom Quality**
- III. Current listing of “smart” classrooms available for scheduling for Northwestern classes**

CLASSROOM UTILIZATION SUBCOMMITTEE SUMMARY REPORT & APPENDIX FOR ACADEMIC YEAR 2005-06

In addition to providing a yearly utilization update for classrooms scheduled by the Registrar (see Appendix), during Academic Year 2005-06 the Classroom Utilization Subcommittee continued to focus on departmentally scheduled classrooms. In the Winter and Spring Quarters pilot efforts were underway, not just to track usage of a selected group of departmentally scheduled classrooms, but to make these rooms accessible via a scheduling tool (Resource 25), and hence potentially more visible and available to users across departments within Schools. Participants in this pilot program have included the School of Communication, a couple departments within WCAS, and in Chicago the Law School. Effort over the next year will continue to focus on bringing more departmentally scheduled rooms on line, with the eventual goal of having all departmental classrooms scheduled electronically. Associated with this pilot effort will be further assessment of the process for electronically scheduling departmental classrooms using this software.

Until a larger cross-section of departmental classrooms are on line through this scheduling system, there will remain a lack of reliable information by which utilization of departmentally scheduled spaces can be meaningfully assessed, particularly relative to the number of these spaces that exist, and in relation to utilization of classrooms scheduled by the Registrar.

Classroom Utilization – Significant Items

Utilization studies for Academic Year 2005-06 along with those over the last six years demonstrate, on average, that the decline in Evanston classroom utilization for rooms scheduled through the Registrar's Office has leveled off and, as a future trend, may be starting to increase. During the next year the following needs to be further investigated, discussed, and better understood by faculty and staff:

1) Utilization of departmentally scheduled classrooms, conference, and seminar rooms:

As departmentally scheduled classroom, conference and seminar spaces are provided with intra-departmental and University-wide scheduling accessibility, efforts can begin to assess and understand the impact of these spaces relative to classroom utilization, particularly in relation to classrooms scheduled by the Registrar.

Progress in understanding departmentally scheduled spaces depends upon the resources available to the Registrar's Office to bring on line additional rooms into its scheduling software. There continues to be a need for additional staff time (and hence additional staffing) to support this initiative.

2) On-going upgrade of existing classrooms:

“Smart” classrooms have higher levels of utilization than “non-smart” classrooms, though utilization of “non-smart” classrooms in the more desirable timeslots is increasing.

Over the last six years the number of “smart” classrooms increased by upgrading classrooms regularly scheduled by the Registrar's Office. While this has more than doubled the number of “smart” classrooms, utilization of these “smart” classrooms has continued to remain higher than “non-smart” classrooms. However, over the past year – at least relative to Academic Year 2004-05 – increased utilization of “non-smart” classrooms has occurred in timeslots between 10 to noon and between 1 to 4. Upgrades that have been underway to generally improve the condition of all classrooms may be making some of these “non-smart” classrooms more desirable for scheduled classroom use by faculty. However, these increases in utilization have also been accompanied by decreasing utilization continuing to be the case in the 8 to 10 timeslots, along with declines over the lunch hour. Over the last two years, a trend of increasing pressure on what are considered more desirable timeslots appears to be developing.

3) Decreasing effectiveness of policy changes and schedule modifications to lessen peak demand:

Policy changes were effective at the point implemented; schedule modifications created additional timeslots, which contributed to decreases in classroom utilization; however, a pattern of increased demand, particularly between 10 to noon and 1 to 3, appears to be re-emerging.

Part of the intent in adopting policy changes in 2002 was to regularize class-meeting times and spread them out over the day. While the greatest impact of this policy was seen immediately after its implementation when it did

appear to spread out the distribution of courses scheduled over the day, the effectiveness of this policy over time appears to be diminishing, even though the policy still appears to be encouraging standard scheduling. The impact of modifying the standard schedule on Tuesdays and Thursdays, which allowed for an additional timeslot, has been on-going.

APPENDIX: OVERVIEW OF UTILIZATION DATA FOR REGISTRAR CLASSROOMS

Below is the summary of information for the Fall, Winter and Spring Quarters, which is shown in greater detail in attached charts and spreadsheets, and compared with classroom utilization data from previous years:

Daily Utilization for all Classrooms scheduled by Registrar:

Comparison with Fall Quarter 2000, Winter Quarter 2000, and Spring Quarter 2000 (extrapolated from two Acad. Yrs.)

Comparison with Fall Quarter 2002, Winter Quarter 2003, and Spring Quarter 2003 (Acad. Yr. 2002-03)

Comparison with Fall Quarter 2003, Winter Quarter 2004, and Spring Quarter 2004 (Acad. Yr. 2003-04)

Comparison with Fall Quarter 2004, Winter Quarter 2005, and Spring Quarter 2005 (Acad. Yr. 2004-05)

Utilization for Fall Quarter 2005, Winter Quarter 2006, and Spring Quarter 2006 (Acad. Yr. 2005-06)

Utilization based on rooms scheduled for Fall, Winter & Spring (2005-06): average of 57.4% 9 to 5 daily;

Comparison: utilization over the last few years dropped from 65% ('99-00) to 59% ('02-03) to 57% ('03-04) to 55.5% ('04-05), but overall increased somewhat to 57.4% ('05-06);

Compared to previous years based on rooms scheduled 9 to 5 daily ('99-00 vs. '02-03 vs. '03-04 vs. '04-05):

Fall Utilization: dropped from 66% to 61% to 58.1% to 57.8%, and increased to 59.3% in Fall '05;

Winter Utilization: dropped from 65% to 60% to 52% , increased in '05 to 58%, and dropped slightly to 57.5% in '06;

Spring Utilization: dropped from 65% to 56% to 54% to 51%, and increased to 55.5% in '06.

For 2005-06 classroom utilization was highest during the Fall and Winter Quarters. Relative to trends and previous years, utilization during the Fall and Spring Quarters increase somewhat, and utilization during the Winter Quarter decreased slightly. As an average and during two of the three quarters last academic year, classroom utilization increased somewhat relative to the previous year. The trend of steadily declining classroom utilization earlier in the decade would appear to have leveled off and appears to be somewhat increasing.

While for a few years distribution across times had improved with implementation of policy changes and schedule modifications, the impact of these changes appears to be lessening. Patterns, while always skewed towards peak timeslots between 10 to noon (and to a lesser extent between 1 to 3), appear to have skewed more strongly towards these timeslots during the last year, which means that increases in utilization are resulting from increased use during so-called "primetimes".

Daily Utilization for "Smart" Classrooms scheduled by Registrar:

During the Fall, Winter and Spring Quarters of Academic Year 2005-06, the number of "smart" classrooms remained at 49 (Note: During the Spring Quarter '04 the number of "smart" classrooms increased from 31 to 41, with addition of 8 more "smart" classrooms by the start of Spring Quarter 2005, hence a total of 49; 10 additional "smart" classrooms have come on line during the summer of 2006, but of course are not relevant to the '05-06 utilization study). While average utilization for "smart" classrooms across all three quarters of '05-06 decreased slightly compared to the utilization of the previous year (70% compared to 72% in '04-05), it remains roughly 20% higher (by the way, compared to 26% in '04-05) than utilization for "non-smart" classrooms. Utilization for "non-smart" classrooms 9 to 5 daily over the last year averaged 54% compared to 46% in '04-05, which is a surprising increase relative to trends prior to '04-05.

Utilization of "smart" classrooms 9 to 5 daily: Fall '02 @ 66%; Winter '03 @ 72%; Spring '03 @ 67%;

Utilization of "smart" classrooms 9 to 5 daily: Fall '03 @ 65%; Winter '04 @ 64%; Spring '04 @ 61%;

Utilization of "smart" classrooms 9 to 5 daily: Fall '04 @ 76%; Winter '05 @ 73%; Spring '05 @ 66%;

Utilization of "smart" classrooms 9 to 5 daily: Fall '05 @ 71%; Winter '06 @ 70%; Spring '06 @ 68%;

Utilization is higher compared to utilization of all classrooms: 12% for Fall; 12% for Winter; 13% for Spring;

Utilization is higher compared to utilization of "non-smart" classrooms: 22% for Fall; 23% for Winter; 16% for Spring.

Although consistent with Academic Year 2004-05, "smart" classroom usage is somewhat more skewed towards the peak timeslots between 10 to noon (and to a lesser extent between 1 to 3). Strikingly, usage of "smart" classrooms in the 9 to 10 timeslot has dropped significantly (27%). As in previously years, use continues to decrease slightly in the 8 to 9 timeslot, though with slight increased usage (in the range of 2%) in the 3 to 4 and 4 to 5 timeslots. Utilization during the lunch hour (noon to 1) dropped 5% compared to '04-05, though remains higher than '03-04 (even with the additional "smart" classrooms that came on line during this period).

As mentioned above in regard to all classrooms scheduled by the Registrar, trends also indicate high and increasingly higher utilization during the peak timeslots for “smart” classrooms; striking, however, is the increase in utilization of “non-smart” classrooms in peak timeslots between 10 to noon, as well as in timeslots between 1 to 4. In this regard, a 12% decrease in “non-smart” classroom utilization in the 9 to 10 timeslot and the lunch hour timeslot appears to reflect a return to Northwestern’s long-term historical trend of scheduling heavily during peak timeslots, which policy changes a few years ago had appeared to be successful in lessening.

Room Utilization by Building 9 to 5 daily:

In buildings with multiple classrooms scheduled by the Registrar, Kresge (73.8% compared to 75.6% in '04-05) and University Hall (69% compared to 65.8% '04-05) and Harris (68.2%) are the three building locations with the highest utilization. Tech has dropped from third in '04-05 (63.3%) to sixth in '05-06 (62%). In buildings with only one classroom scheduled by the Registrar, Pancoe Auditorium (63.7% compared to 69.6% in '04-05) and Swift Hall Lecture Room 107 (67.4% compared to 62.9% in '04-05) also have higher rates of utilization, particularly compared to Coon Auditorium {Lev. Aud.} (23.1% compared to 35% in '04-05), which has seen significant decline over the last year.

University Library, which has classrooms primarily with less than 20 seats, still has low utilization (though, unlike previous years, not the lowest, which is now Coon Auditorium’s prize): dropped from 45% in '00-01, to roughly 34% in '02-03 and '03-04, and to 21% '04-05, with an increase to 23.3% during the last academic year.

Based on Size of Room Scheduled: Up to 20 seats; 21 to 80 seats; 80 to 120 seats:

	'99-00	'02-03	'03-04	'04-05	'05-06
Up to 20:	52%	46%	43%	39%	44%
21 to 80:	65%	62%	60%	61%	63%
81 and larger:	62%	64%	61%	56%	61%

Over the last several years, the most consistent on-going decline had been in utilization of the smallest classrooms, which is the category in which the most departmentally controlled seminar/conference rooms have been added in new facilities such as the McCormick Tribune Center, Jacobs Center, Nano-Fab, and Pancoe. While utilization of these small classrooms (all of which are located in the Library) has increased over the last year, utilization is still the lowest of the size-categories. In retrospect and given the trends, the notable decrease during Academic Year 2004-05 in the use of large classrooms (81 seats and larger) appears to have been an aberration.

Seat Utilization based on the Size of Scheduled Classrooms:

Seat utilization represents the percentage of seats occupied when a room is used. Seat utilization for rooms scheduled from 9 to 5 daily has generally been somewhat higher than was the case 6 years ago, although it has dropped relative to the previous two Academic Years. Classrooms up to 20 seats consistently have had the highest seat utilization.

	'99-00	'02-03	'03-04	'04-05	'05-06
Up to 20:	61%	57%	65%	66%	64%
21 to 80:	47%	45%	53%	49%	45%
81 to 120:	48%	51%	56%	53%	44%
120 and larger:	39%	39%	44%	43%	40%
Average	45%	47%	54%	53%	48%

For any classroom potentially targeted for a decrease in the number of seats, seat utilization specific to the classroom needs to be considered, along with options for shifting some scheduled courses into classrooms with a larger number of seats.

Enrollment Utilization for Fall, Winter and Spring Quarters:

Requested maximum enrollments compared to actual enrollments for courses scheduled 9 to 5 daily:

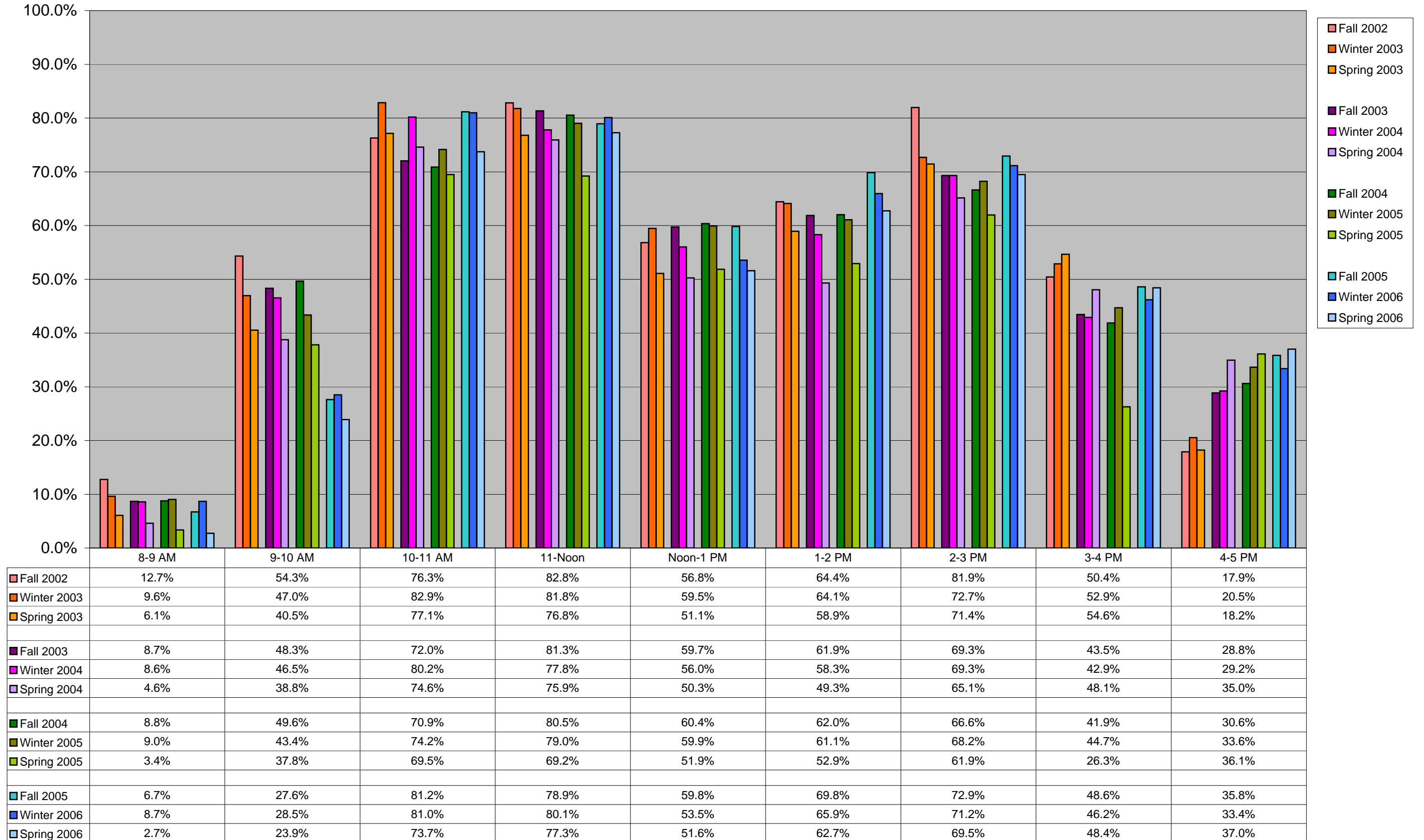
	'02-03	'03-04	'04-05	'05-06
Fall:	74%	79%	77%	73%
Winter:	70%	75%	71%	75%
Spring:	51%	74%	72%	74%
Average:	65%	76%	73%	74%

Standard vs. Non-Standard Scheduling

During the last few years a University policy encouraged standard scheduling roughly between 9 to 2 daily for courses that use classrooms scheduled by the Registrar. Starting in '02-03, the impact was an increase in the percentage of courses conforming to standard scheduling. On average, this change in policy appears to have encouraged use of standard scheduling (Types 1 & 2), even though the distribution of scheduled courses over the day are increasing pressures on the 10 to noon and early afternoon post-lunch timeslots. Standard vs. non-standard scheduling as defined by the 4 types established in '02-03 merits some discussion by the Classroom Utilization Subcommittee since, over the last 4 Academic Years, Standard Type 1 has been decreasing year-by-year from the high of 57% in '02-03 to the low of 43% in '05-06, and Standard Type 2 has been decreasing year-by-year from the high of 28.5% in '03-04 to 20.8% in '05-06. A matter to be further investigated and confirmed, scheduling conforming to none of the 4 types (two standard and two non-standard types) appears to have dramatically increased during the last year (from 7.4% in '04-05 [which is not significantly different for the two previous Academic Years] to 24.6% in '05-06), though this may be a result of the way in which discussion and lab sections were counted during the last year.

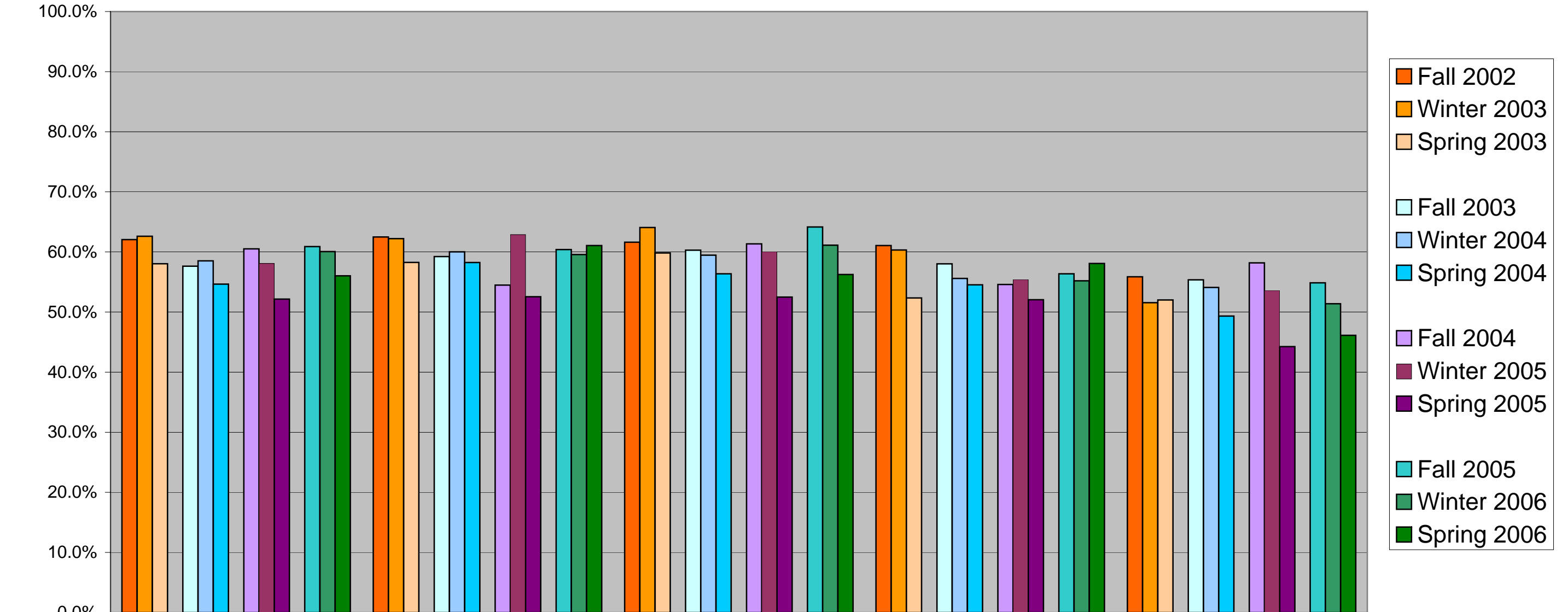
Classroom Utilization Comparison

All Terms by Time



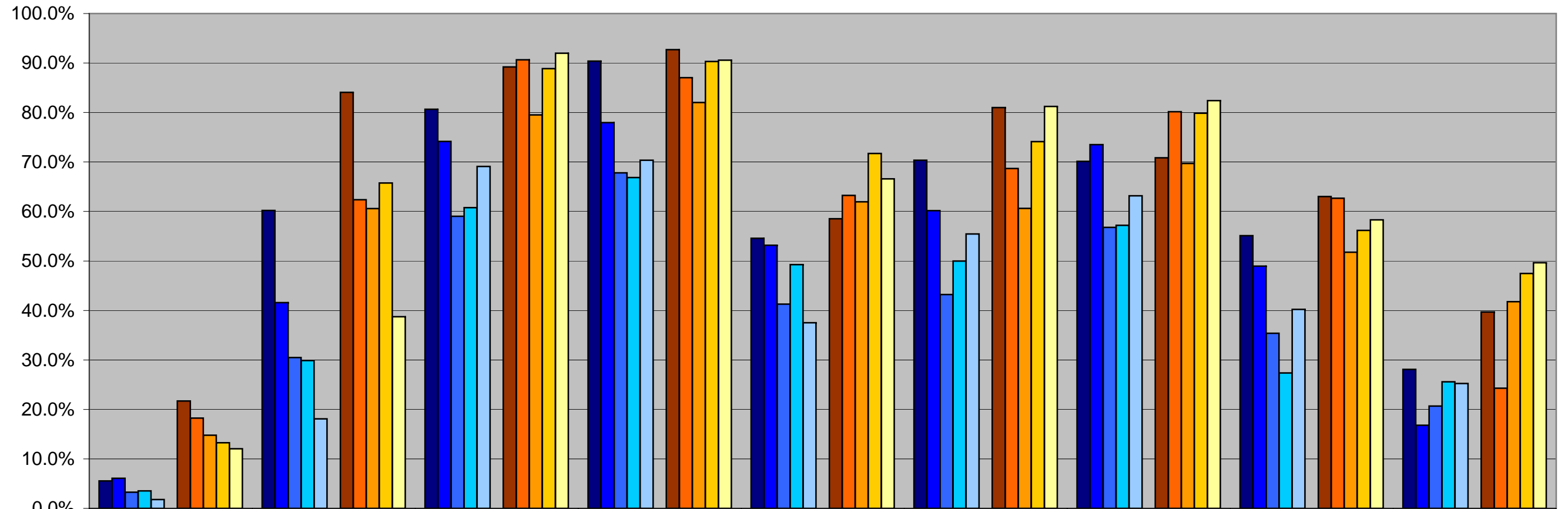
Classroom Utilization Comparison

All Terms by Day



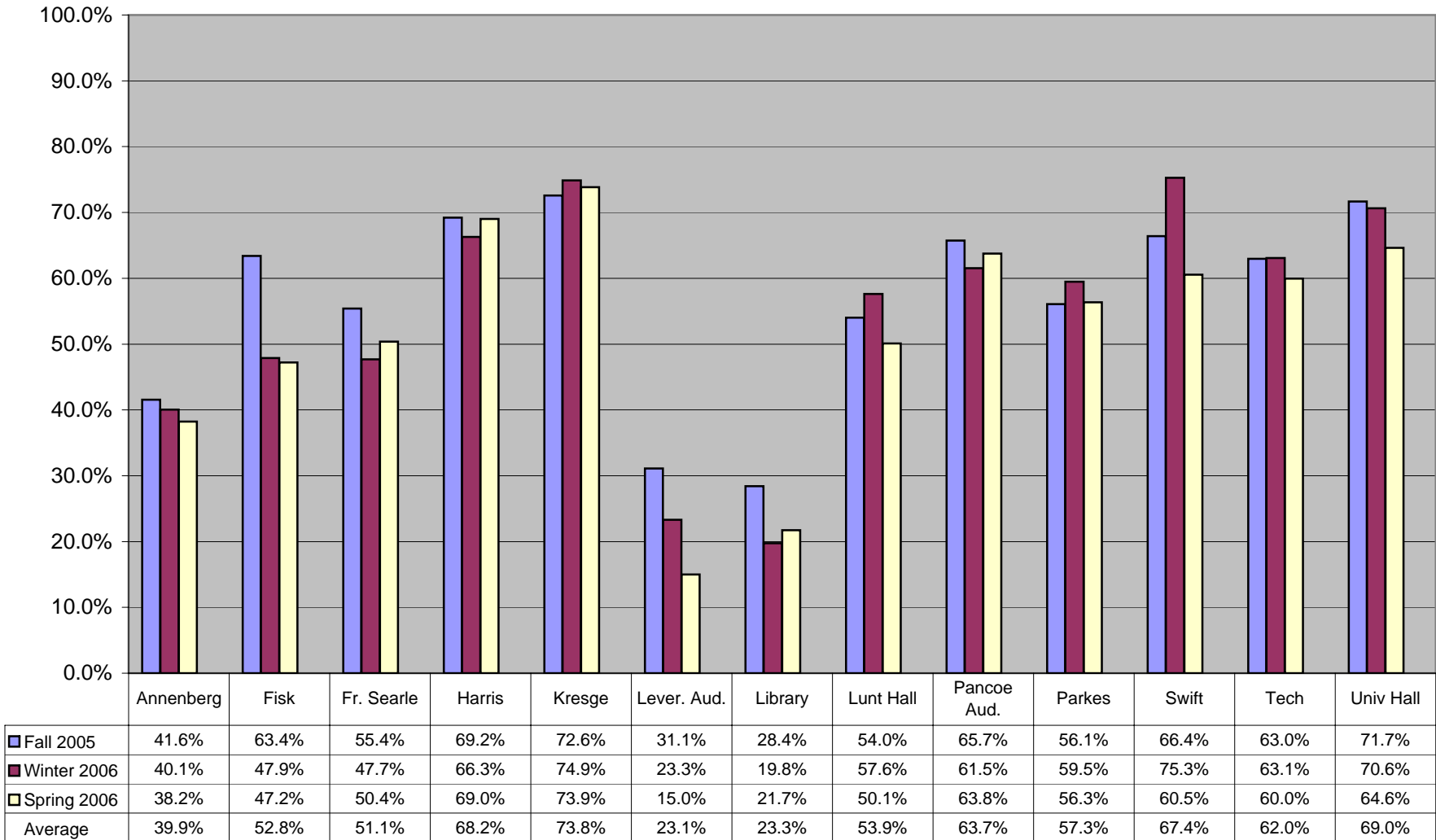
	Monday	Tuesday	Wednesday	Thursday	Friday
Fall 2002	62.1%	62.5%	61.6%	61.1%	55.9%
Winter 2003	62.6%	62.2%	64.1%	60.3%	51.6%
Spring 2003	58.0%	58.3%	59.8%	52.3%	52.0%
Fall 2003	57.6%	59.2%	60.3%	58.0%	55.4%
Winter 2004	58.5%	60.0%	59.5%	55.6%	54.1%
Spring 2004	54.6%	58.2%	56.4%	54.5%	49.3%
Fall 2004	60.5%	54.5%	61.3%	54.6%	58.2%
Winter 2005	58.1%	62.9%	60.1%	55.4%	53.6%
Spring 2005	52.2%	52.5%	52.5%	52.0%	44.2%
Fall 2005	60.9%	60.4%	64.2%	56.4%	54.9%
Winter 2006	60.1%	59.6%	61.1%	55.2%	51.4%
Spring 2006	56.0%	61.1%	56.3%	58.1%	46.1%

Average Weekly Classroom Utilization: Non-Smart vs. Smart Classrooms School Years 00-01, 02-03, 03-04, 04-05, 05-06



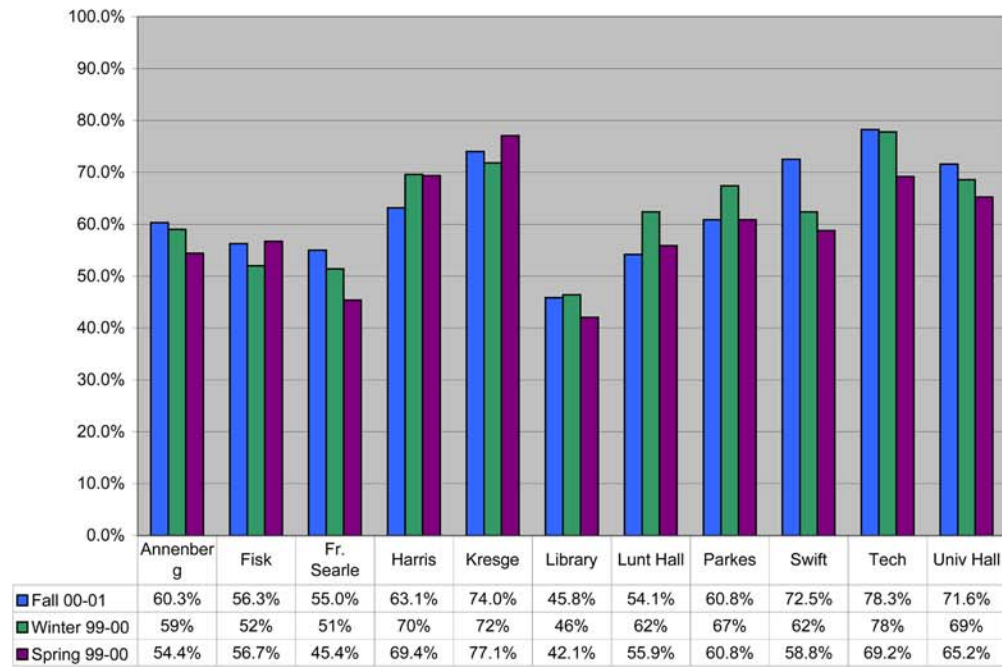
	8-9 AM	9-10 AM	10-11 AM	11-Noon	Noon-1	1-2 PM	2-3 PM	3-4 PM	4-5 PM
■ 00-01 Non-Smart Rooms	5.6%	60.2%	80.6%	90.4%	54.6%	70.4%	70.1%	55.1%	28.1%
■ 02-03 Non-Smart Rooms	6.1%	41.6%	74.2%	77.9%	53.2%	60.2%	73.5%	49.0%	16.8%
■ 03-04 Non-Smart Rooms	3.3%	30.5%	59.0%	67.8%	41.3%	43.2%	56.8%	35.4%	20.7%
■ 04-05 Non-Smart Rooms	3.5%	29.9%	60.8%	66.9%	49.3%	50.0%	57.2%	27.4%	25.6%
■ 05-06 Non-Smart Rooms	1.8%	18.1%	69.1%	70.4%	37.5%	55.5%	63.2%	40.2%	25.3%
■ 00-01 Smart Rooms	21.7%	84.1%	89.2%	92.7%	58.5%	81.0%	70.9%	63.0%	39.7%
■ 02-03 Smart Rooms	18.2%	62.4%	90.7%	87.0%	63.2%	68.7%	80.2%	62.7%	24.3%
■ 03-04 Smart Rooms	14.8%	60.6%	79.5%	82.0%	61.9%	60.6%	69.7%	51.8%	41.8%
■ 04-05 Smart Rooms	13.3%	65.8%	88.9%	90.3%	71.7%	74.1%	79.9%	56.2%	47.5%
■ 05-06 Smart Rooms	12.1%	38.7%	92.0%	90.6%	66.6%	81.2%	82.4%	58.3%	49.6%

**Average Weekly Classroom Utilization By Building:
Fall 05, Winter 06, Spring 06**

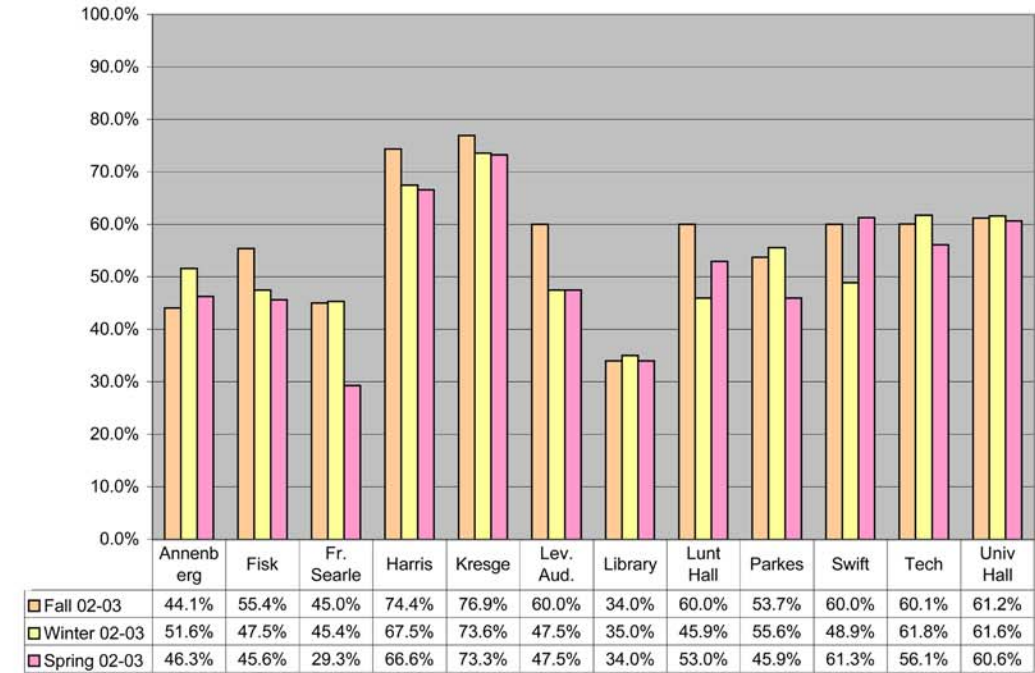


AVERAGE WEEKLY CLASSROOM UTILIZATION BY BUILDING

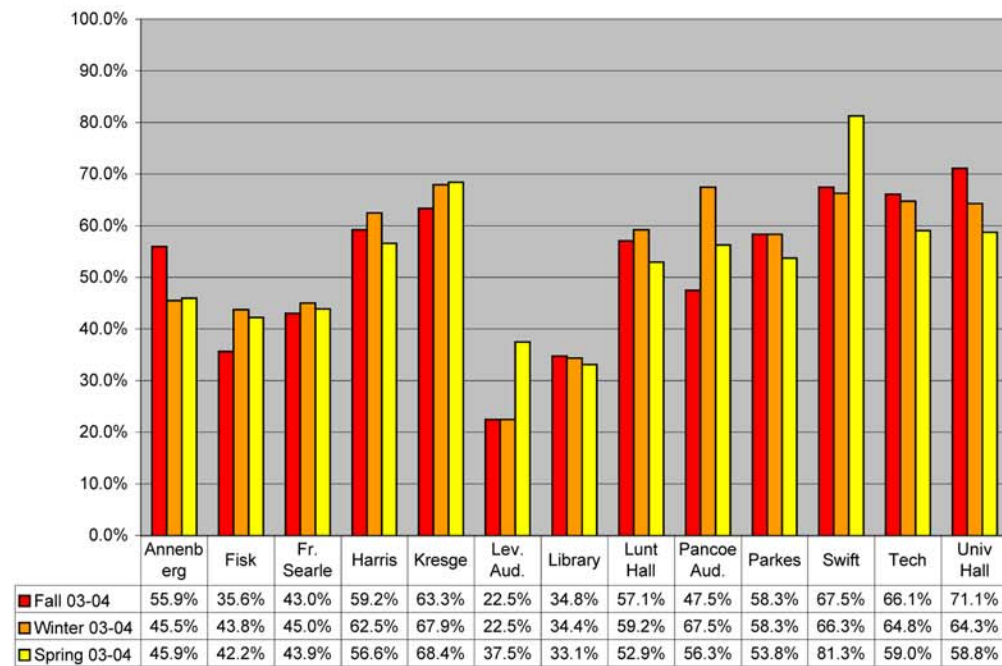
**Average Weekly Classroom Utilization By Building:
Fall 00-01 - Winter 99-00 - Spring 99-00**



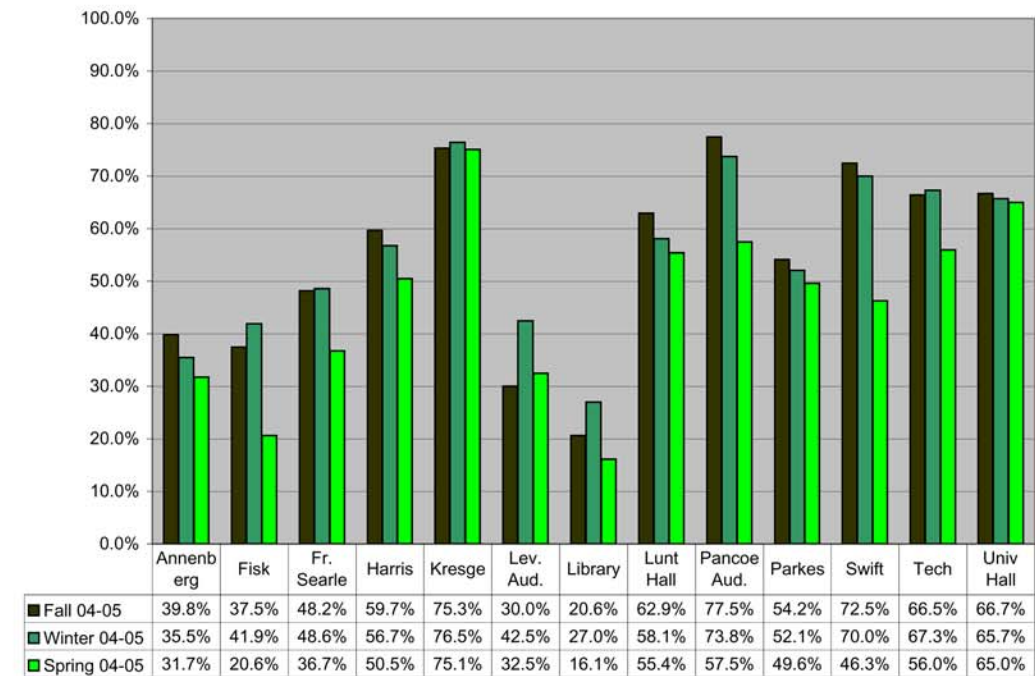
**Average Weekly Classroom Utilization By Building:
Fall 02-03 - Winter 02-03 - Spring 02-03**



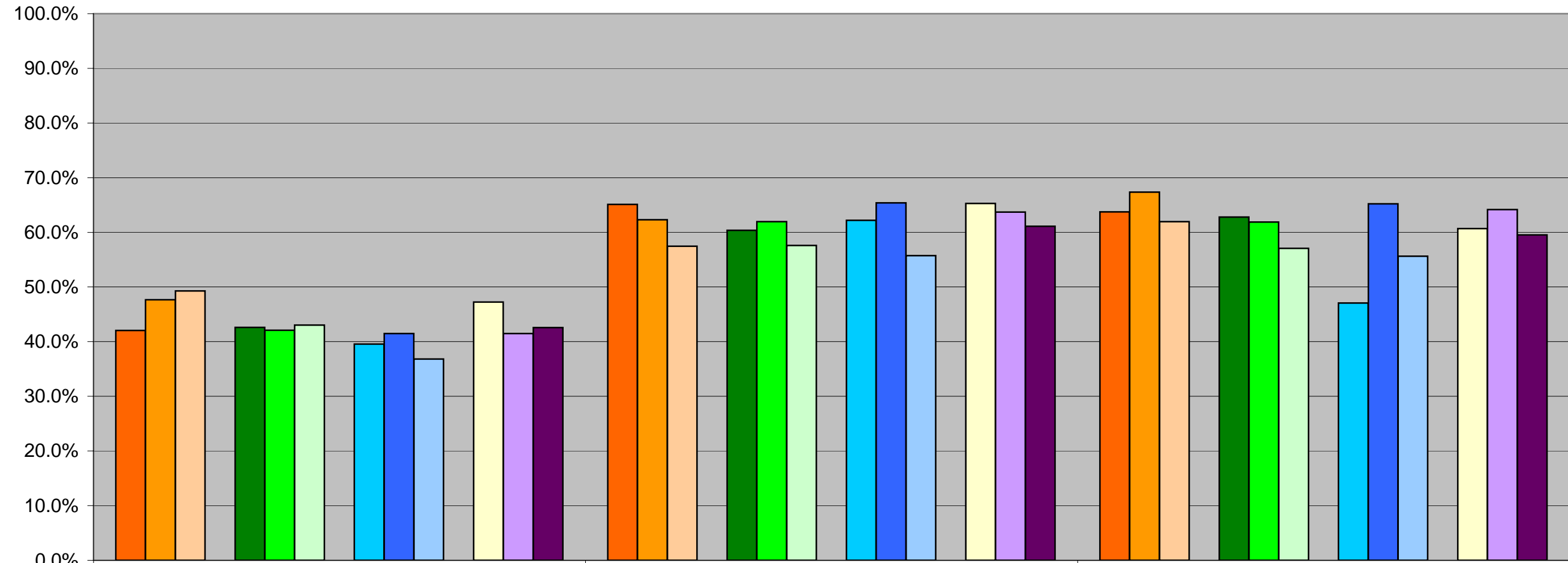
**Average Weekly Classroom Utilization By Building:
Fall 03-04 - Winter 03-04 - Spring 03-04**



**Average Weekly Classroom Utilization By Building:
Fall 04-05 - Winter 04-05 - Spring 04-05**

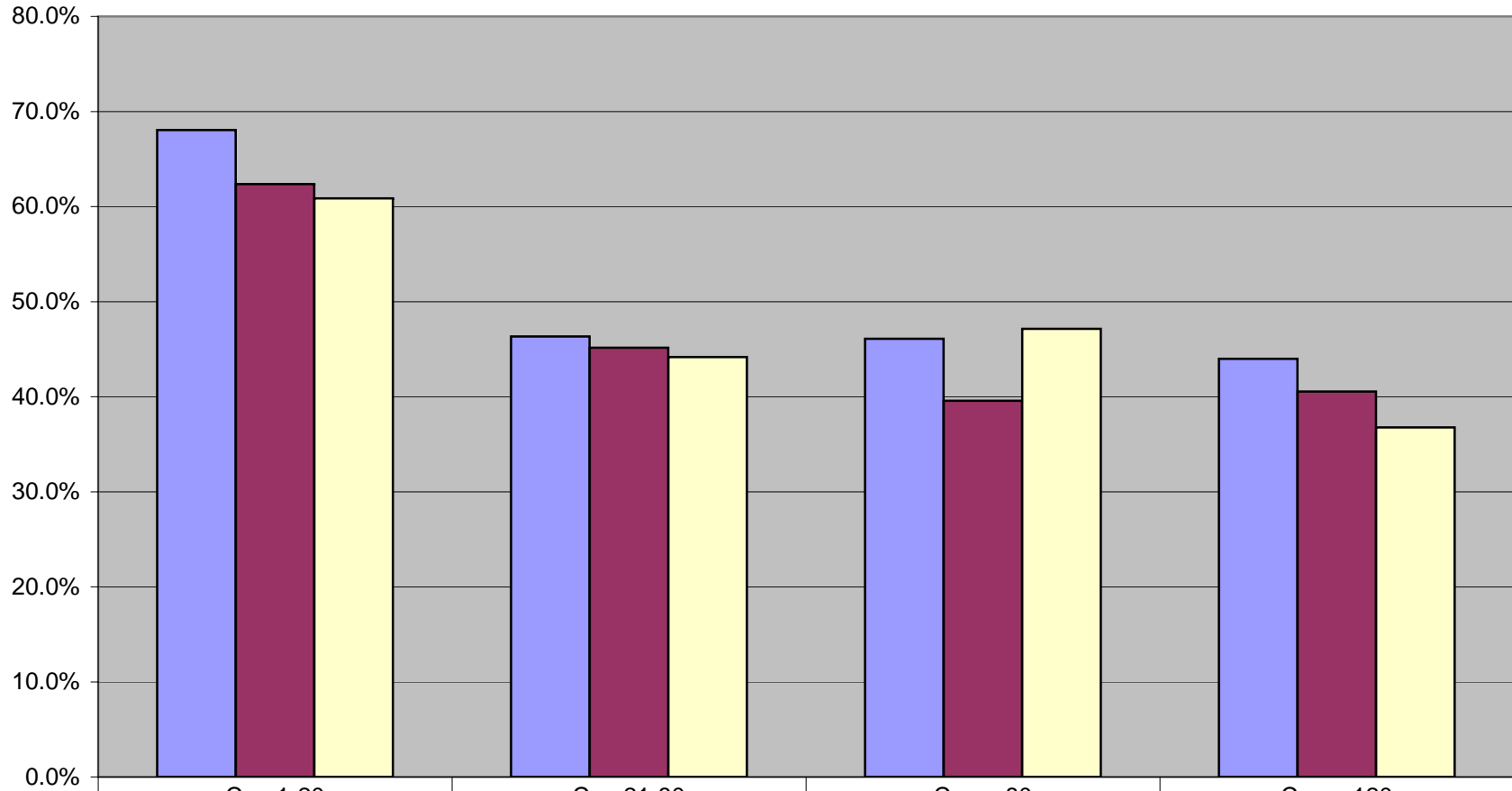


Average Classroom Utilization (9 AM to 5 PM) All Terms by Room Size



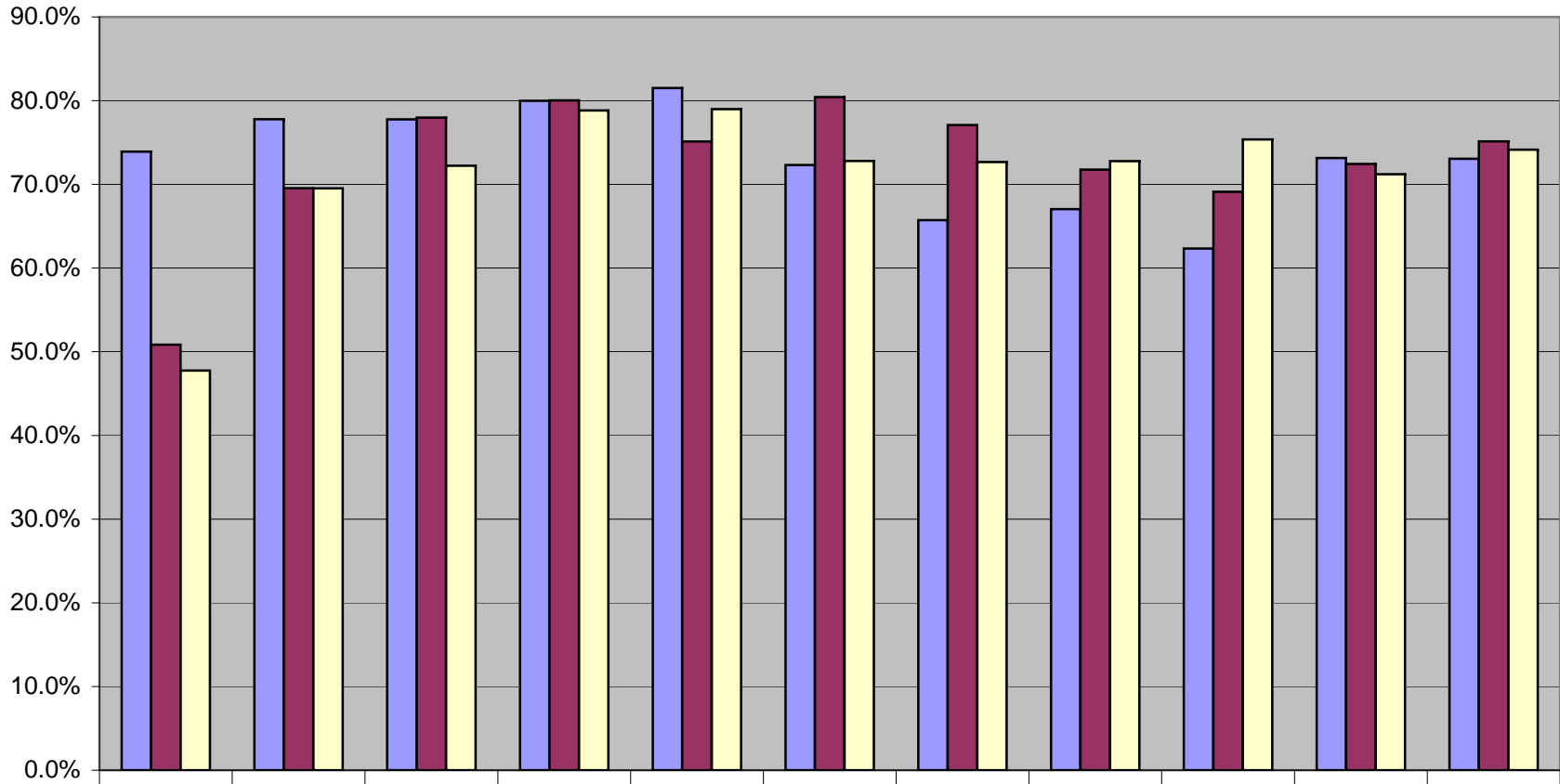
	Cap 1-20	Cap 21-80	Cap > 80
Fall 2002	42.1%	65.1%	63.8%
Winter 2003	47.7%	62.3%	67.4%
Spring 2003	49.3%	57.5%	61.9%
Fall 2003	42.6%	60.4%	62.8%
Winter 2004	42.1%	62.0%	61.9%
Spring 2004	43.0%	57.6%	57.1%
Fall 2004	39.5%	62.2%	47.1%
Winter 2005	41.5%	65.4%	65.2%
Spring 2005	36.8%	55.8%	55.6%
Fall 2005	47.3%	65.3%	60.7%
Winter 2006	41.5%	63.7%	64.2%
Spring 2006	42.6%	61.1%	59.5%

**Average Weekly Seat Utilization by Room Size:
Fall 05, Winter 06, Spring 06**



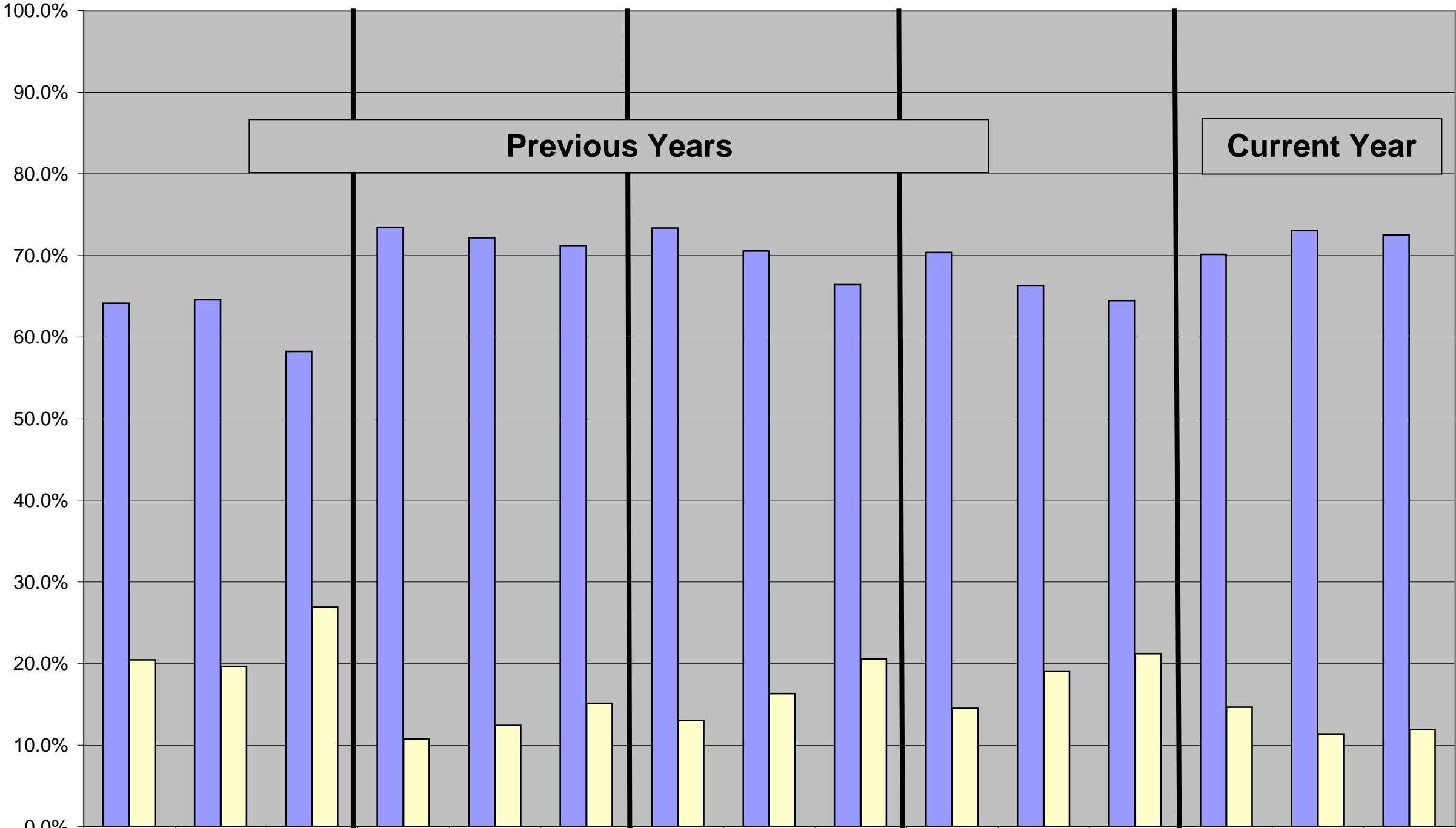
	Cap 1-20	Cap 21-80	Cap > 80	Cap > 120
Fall 2005	68.0%	46.3%	46.1%	44.0%
Winter 2006	62.4%	45.2%	39.6%	40.5%
Spring 2006	60.9%	44.2%	47.1%	36.8%

**Average Weekly Enrollment Utilization by Time:
Fall 05, Winter 06, Spring 06**



	8-9 AM	9-10 AM	10-11 AM	11-Noon	Noon-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	8-5 Avg	9-5 Avg
■ Fall 2005	73.9%	77.8%	77.8%	80.0%	81.5%	72.3%	65.7%	67.0%	62.3%	73.2%	73.1%
■ Winter 2006	50.9%	69.5%	78.0%	80.0%	75.1%	80.4%	77.1%	71.8%	69.1%	72.4%	75.1%
■ Spring 2006	47.8%	69.5%	72.2%	78.8%	79.0%	72.8%	72.7%	72.8%	75.4%	71.2%	74.1%

Standard vs. Non-Standard Scheduling by Term



	Fall 2000	Winter 2000	Spring 2000	Fall 2002	Winter 2003	Spring 2003	Fall 2003	Winter 2004	Spring 2004	Fall 2004	Winter 2005	Spring 2005	Fall 2005	Winter 2006	Spring 2006
Standard scheduling	64.1%	64.5%	58.3%	73.4%	72.2%	71.2%	73.3%	70.5%	66.4%	70.4%	66.3%	64.4%	70.1%	73.1%	72.5%
Non-standard scheduling	20.4%	19.6%	26.9%	10.8%	12.4%	15.1%	13.0%	16.3%	20.5%	14.5%	19.1%	21.2%	14.6%	11.4%	11.9%

SCHEDULE GUIDELINE COMPARISONS

BY TERM AND SCHEDULE TYPE

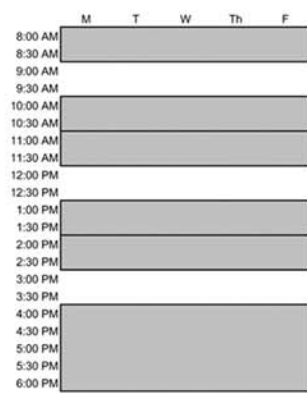
**ACCORDING TO SCHEDULING GUIDELINES PUBLISHED BY
NORTHWESTERN UNIVERSITY'S OFFICE OF THE REGISTRAR**

Fall 2003				Winter 2004				Spring 2004			
Standard scheduling		1,676.0	84.9%	Standard scheduling		1,576.0	81.2%	Standard scheduling		1,351.0	76.4%
Type 1		1,059.0	53.7%	Type 1		1,033.0	53.2%	Type 1		890.0	50.3%
Type 2		617.0	31.3%	Type 2		543.0	28.0%	Type 2		461.0	26.1%
Non-standard scheduling		297.0	15.1%	Non-standard scheduling		364.0	18.8%	Non-standard scheduling		417.0	23.6%
Type 3		182.0	9.2%	Type 3		203.0	10.5%	Type 3		249.0	14.1%
Type 4		9.0	0.5%	Type 4		3.0	0.2%	Type 4		6.0	0.3%
No Type		106.0	5.4%	No Type		158.0	8.1%	No Type		162.0	9.2%
Total		1,973.0	100.0%	Total		1,940.0	100.0%	Total		1,768.0	100.0%

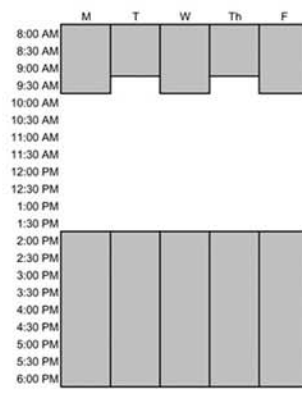
Standard Type 1



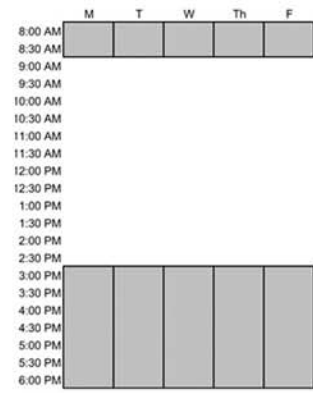
Standard Type 2



Non-Standard Type 3



Non-Standard Type 4



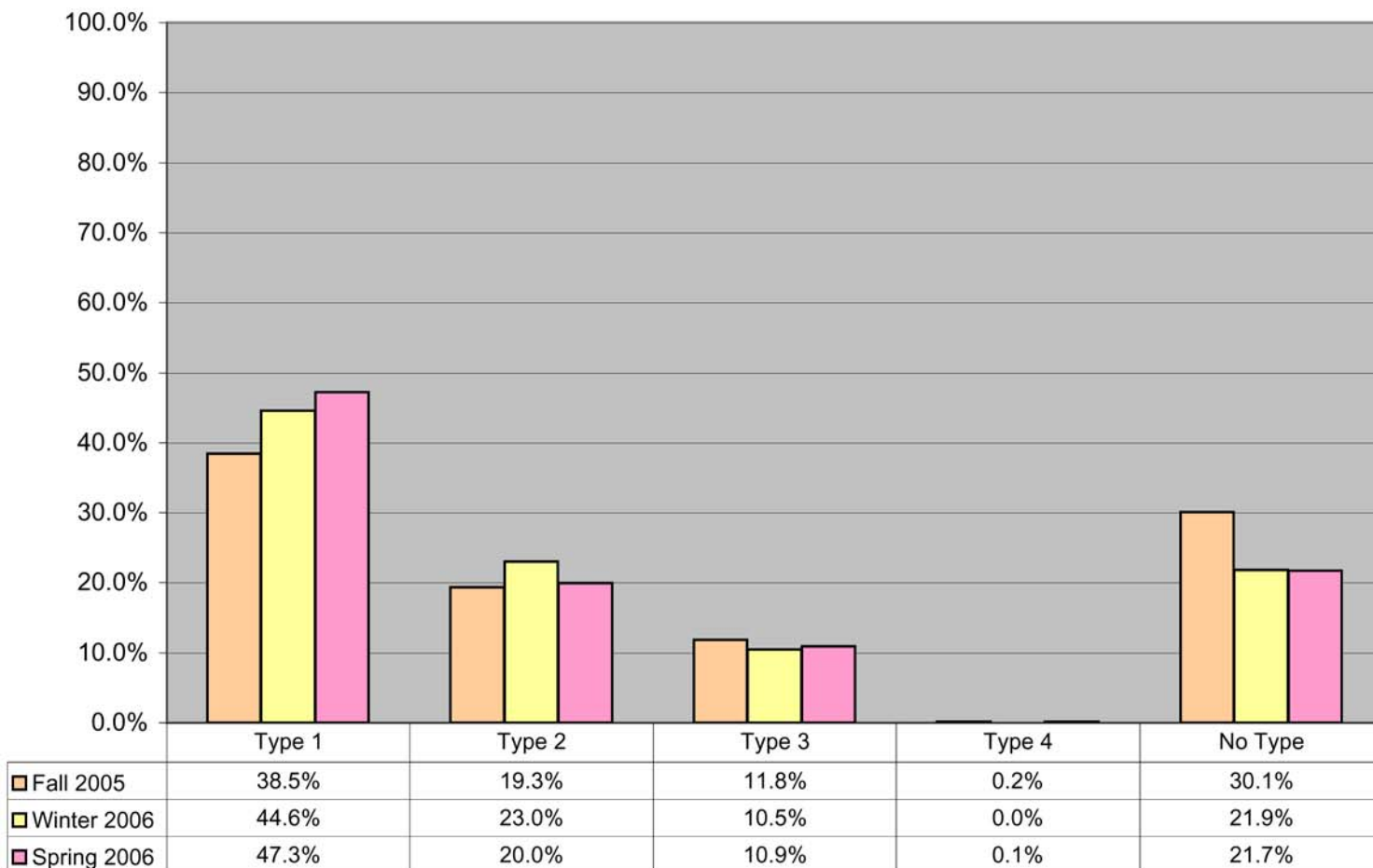
Standard Type 1 refers to courses scheduled hourly on Mondays, Wednesdays, and Fridays beginning on the hour and lasting 50 minutes; or to courses scheduled for 80 minutes on Tuesdays and Thursdays starting at 8:00, 9:30, 11:00, 12:30, 2:00, and 3:30.

Standard Type 2 refers to courses scheduled 4 or 5 days weekly at the same time, a common pattern for Science, Engineering, Math, and Language Courses.

Non-Standard Type 3 refers to classes meeting one or two days per week other than TTh; these classes are to be scheduled from the hours of 8:00 to 10:00 AM MWF, 8:00 to 9:30 AM TTh, and any time after 2:00 PM.

Non-Standard Type 4 refers to classes meeting 3 days a week other than MWF; these classes are to be scheduled from the hours of 8:00 to 9:00 AM, and any time after 3:00 PM.

**Schedule Guideline Comparisons
Fall 2005 - Winter 2006 - Spring 2006**



Appendix II – Report of the Subcommittee on Classroom Quality

In FY06, the Quality subcommittee of the Classroom Committee recommended, and the full committee approved, a variety of improvements in classrooms across campus as detailed in the spreadsheet on the following pages. Meanwhile, FY04 and FY05 funds have been very nearly expended in the manner approved by the full committee.

Making effective, or indeed almost any use at all, of the University Library seminar rooms remains a challenge to the subcommittee. Designed in the mid- 1960s, these rooms are awkwardly shaped, do not easily accommodate themselves to modern technology, and have poor acoustics thereby greatly diminishing their potential use as venues for teaching foreign language. When the new University Librarian is in place, the subcommittee will attempt to engage her in creative thinking about possible uses. Meanwhile, the subcommittee has no plans to recommend spending any additional funds on these rooms. (Originally there were two seminar rooms on each of the three floors of each of the three towers, making 18 such rooms. Some have been modified for other purposes over the past thirty years.)

Kresge elec. req'd for more window a/c	140		panels on 2, 3, 4 for future a/c window units; note: future laptop rooms also need 2 dedicated circuits (projector & podiums)	\$17,352	na	na	na	na			\$17,352		
Kresge 3-420 (272)	25	380	Improvements to FY2006 laptop room: window a/c; panel cost on 2-420 (without panel circuit would come from different floor, not best way but physically possible); acoustic panels approved and added to program at May 5, meeting	\$14,955	na	na	\$1,344	\$2,696	\$8,185	\$525		\$2,205	
Parkes 212	30	620	Improvements to FY2006 laptop room: new tablet armchairs; reswitch lights if room becomes laptop smart	\$8,700	\$8,700								
Parkes 213	40	700	Improvements to newly proposed FY2006 laptop room: request approval for this room at 2-9-06 meeting. new tablet armchairs; reswitch lights if room becomes laptop smart	\$11,600	\$11,600								
Parkes 215	30	620	Improvements to FY2006 laptop room: new tablet armchairs; reswitch lights if room becomes laptop smart	\$8,700	\$8,700								
Tech MG28	40	572	upgraded lighting, carpet and tablet armchairs, change screen	\$15,959	\$10,560	na	\$3,388				\$144	\$1,867	

Tech LG52	40	667	upgraded lighting, carpet and TORSION ON THE GO CHAIRS, change screen (chairs w/install \$340 vs. 225)	\$18,935	\$12,973	na	\$3,951						\$144	\$1,867
Tech LG62	20	324	upgraded lighting, carpet and tablet armchairs, change screen	\$9,210	\$5,280	na	\$1,919						\$144	\$1,867
Tech LG66	40	608	upgraded lighting, carpet and tablet armchairs, change screen	\$16,173	\$10,560	na	\$3,602						\$144	\$1,867
Tech LG68	38	477	upgraded lighting, carpet and tablet armchairs, change screen	\$14,869	\$10,032	na	\$2,826						\$144	\$1,867
Tech LG72	35	369	upgraded lighting, carpet and tablet armchairs, change screen	\$13,437	\$9,240	na	\$2,186						\$144	\$1,867
Tech LG76	38	522	upgraded lighting, carpet and tablet armchairs, change screen	\$15,135	\$10,032	na	\$3,092						\$144	\$1,867
Tech L221	45	571	Improvements to FY2006 laptop room: upgrade lighting (bulbs and switching); recarpet front; reswitch to provide better exit lighting at level changes. Cost does not include furniture replacement; allow \$5,000 for miscellaneous furniture repair -- including replacement of the stained upholstery with vinyl. (cost for complete carpeting & complete furniture replacement = \$48,000) per 2/10 meeting: we are not replacing furn.	\$0										

did not make improvements to L221- scope too large to fix w/15K recommend furniture replacement no work

Appendix III – Current listing of “smart” classrooms available for scheduling of Northwestern Classes

South Campus

Fisk 114 (new)
Harris 107
Harris 205
Kresge 2-410
Kresge 4-335
Kresge 2-415
Kresge 4-420
Kresge 2-435
Kresge 3-420 (new)
Kresge 4-425
Kresge 4-365
Kresge 4-435
Kresge 4-430
Kresge 4-440
Parkes 212 (new)
Parkes 213 (new)
Parkes 214
Parkes 215 (new)
Kresge 4-445
University Hall 102
University Hall 101
University Hall 121
University Hall 112
University Hall 118 (new)
University Hall 122
University Hall 218 (new)

Central Campus

Annenberg G15
Annenberg G21
Lunt 105
Swift 107

North Campus

Frances Searle 2-107
Frances Searle 2-378
Pancoe Auditorium
Frances Searle 2-407
Tech A110
Tech L150
Tech L151 (LR3)
Tech L158
Tech 171 (LR2)
Tech L160
Tech L221 (new)
Tech L251
Tech L170
Tech L361
Tech M120
Tech M113 (LR4)
Tech M166
Tech M128
Tech M152
Tech M164
Tech M177
Tech M193 (LR5)
Tech M345
Tech MG28
Tech Ryan Family
Auditorium