Minutes of the
Academic Advisory Committee on Mathematical Subjects
February 17-18, 2005

The Academic Advisory Committee on Mathematical Subjects (ACMS) met on February 17-18 on the campus of Clayton College & State University in Morrow, GA. The meeting was called to order at 1:00 pm by Jim Brawner, who thanked Anthony Giovannitti and Cathie Aust for arranging to host the meeting at Clayton College & State University. Anthony Giovannitti gave some logistical information regarding the meeting and the banquet for the evening of February 17.

Chair Jim Brawner introduced Dorothy Zinsmeister, the Board of Regents Liaison, who began a discussion of the charges to the academic committees.

1. Dr. Zinsmeister reported that the Chancellor has asked the advisory committees to look at the AP Credit for the discipline. Questions have been raised about reasons one institution would accept a certain score while another would not. She reported that a system-wide study chaired by the Vice President for Academic Affairs at Valdosta State University had indicated a wide range of scores. She charged the ACMS to look at AP Calculus AB and BC and AP Statistics to see whether some consistency could be attained and report back to the System Office by May 6 or earlier. Jack Morrell reported that the ACMS will have a comprehensive collection of Advanced Placement data on the ACMS WebCT site and invited members to update the information for their respective institutions. Some questions Dr. Zinsmeister asked the ACMS to consider include
    a. Should AP credit transfer with a student (if the AP score was accepted at the student's current institution and not the one to which the student is transferring)?
    b. What are common practices?

    Dr. Zinsmeister indicated that the Chancellor is not necessarily looking for uniformity because there may be some good reasons for non-uniformity. She also indicated that the College Board recommendations might serve to inform the committee's work on this issue.
2. Dr. Zinsmeister announced that a second conference to introduce college faculty to the Georgia Performance Standards(GPS) would be held in Tifton. She reported that the Department of Education approved the K-8 mathematics standards but not the 9-12. She thanked the ACMS for last year's work on the high school standards review; she indicated that the high level of detail from this committee prompted the Department of Education (DOE) to take the committee's recommendations very seriously. She asked the committee to look at the revisions of the standards that were conducted by a mathematics revison committee. The DOE would like feedback and perhaps an endorsement of the revised standards by 9 March. On March 10 the standards will be posted on the web site for a period of 60 days in order to gather public feedback. The standards will be considered for adoption at the May DOE board meeting. Dr. Zinsmeister pointed out that while the GPS were developed by the DOE for K-12, these standards will impact the courses we teach (particularly the teacher education

curriculum, which needs to be aligned with the GPS). Wayne Bosché announced that an article in the Atlanta Journal-Constitution reported that the new GPS were highly rated (by the Fordham Foundation) when compared to those of other states.

3. Dr. Zinsmeister announced that Dr. Frank Butler has requested that each academic committee create a set of by-laws. Several sets of by-laws have been developed, for example, Arts & Sciences and Educator Preparation each have posted by-laws on the USG website. Jim Brawner indicated that an ad hoc subcommittee of the ACMS would work to develop a set of by-laws. Dr. Zinsmeister requested that, if possible, the by-laws be developed and adopted by the end of the current semester. The ad hoc subcommittee was appointed on February 18.
4. Dr. Zinsmeister commended the ACMS upon timely availability of the minutes of the meetings.
5. Dr. Zinsmeister reported that Dr. Dan Papp is interested in knowing how budget cuts have affected the work on USG campuses in terms of quality. As opposed to being public information, she indicated that these data will be used to talk with the Chancellor, Board, and legislators. Comments should be based on data and hard evidence. She gave an example of how the situation on a campus may have changed relative to the budget cuts: "Class size has increased." The quality issue involved is that class size adversely affects instructional quality. She indicated that there should be some data to support such a claim. The data seem to support the claim that lowering class size does not make a positive difference until it is reduced to 12 or 14. There appears to be no difference in student learning with class sizes ranging from 25-40. One factor that can be cited, however, is that an increase in class size results in more papers for the instructor to grade. The impact on quality could be that fewer student assignments are made. The quality issues on which the committee should focus include: equipment, instruction, research, and supplies. It was noted that legislators place a higher priority upon undergraduate education. Wayne Bosché pointed out that if we do not collect ammunition to support getting the funding returned, the universities will be at the same point they were five or more years ago. Mylan Redfern indicated that at Valdosta State University, important areas other than instruction are being adversely affected by budget cuts. In particular, funding has been cut in plant operations, which has a tremendous potential impact on cooling (which is a significant concern in Valdosta). Dr. Zinsmeister indicated that issues such as these are worth mentioning. Wanda Eanes asked about whether tangible anecdotes, such as an increased dependence on part time faculty, were worth noting. Dr. Zinsmeister pointed out that studies generally indicate that there is no significant difference with student satisfaction and grade distributions with part time faculty vs. full time faculty. However, while a heavy dependence upon part time faculty may not have adverse affect on instructional quality, it does have an impact on the department (advisement, service, etc.). Tim Howard added that he would have needed 4 more full time math faculty positions (33% more) at Columbus State University to cover his estimates for student demand in fall 2004 and that it will be difficult to find part time faculty who will be willing to worry about alignment of instruction with the GPS. Dr. Zinsmeister requested that the

ACMS compile a list of quality issues and submit to her. Members should send items to Jim Brawner and he will compile and send to Dr. Zinsmeister.

Dr. Zinsmeister opened a discussion on the top three issues with respect to the discipline; for example, are there problems with system policies or are there issues that the committee would want the system to address. She asked whether faculty morale was a problem on our campuses. Several items that adversely affect faculty morale and well-being were mentioned that deal with compensation and benefits: changes to health care (increase in premiums and reductions in coverage), delayed raises, salary compression and inversion, decrease in university system contributions to the optional retirement plans. It was noted that faculty members are not willing to do a lot of extra work and that while more faculty are looking for positions elsewhere, it is hard to hire top candidates.

There was a question from the floor regarding how regents communicate with the legislature. Dr. Zinsmeister indicated that while the Chancellor wants to be the primary source of communication, or to have USG lobbyists have direct communication, it is true that most board members have their own connections and some of them do approach legislators directly. She cited Georgia Southern University's Wild Game Supper as a way for public relations folks to make contact with legislators since this annual event coincides with the legislative session. She also pointed out that some of the larger institutions have lobbyists.

Wayne Bosché opened a discussion on the MATH 1001 Quantitative Skills course. At Dalton State College, he is teaching one section of the course. He reported that the course is going well, however, enrollment is not as high as he had hoped because the word did not get out to advisors. The course was designed from the course outline approved by the ACMS last year and it is an Area A choice for non-science majors at Dalton State.

Dr. Zinsmeister asked which institutions were planning to offer the course in the fall and which are considering offering the course. The following institutions will be teaching MATH 1001 next year: Dalton State College, Armstrong Atlantic State University, Gordon College, Coastal Georgia Community College. Discussions are ongoing at the following institutions, but the course will not necessarily be offered next year: Clayton College & State University, Augusta State University, Columbus State University, Waycross College, Albany State University. Lila Roberts noted that at Georgia College & State University, students were required to take an Area A mathematics course and a mathematics course in Area D. Most non-science majors elect to take elementary statistics as their Area D course so a significant number of students are already getting good background in quantitative reasoning.

Jim Brawner noted that at Armstrong Atlantic State University the plan is to phase out MATH 1101 Introduction to Mathematical Modeling and incorporate more modeling into MATH 1111 College Algebra. Sam Robinson indicated that at Augusta State they are considering MATH 1001 but wondered if it would be a suitable prerequisite course for Physics. Jim Brawner said it would be at Armstrong State and would be a satisfactory

prerequisite course for elementary statistics and sophomore courses for education students. He noted that MATH 1101 was not an appropriate prerequisite for sciences that involve higher mathematical skills.

Valerie Miller expressed concern about the amount of overlap (in the topics listing) with elementary statistics courses so that students can receive credit in both MATH 1001 and in the elementary statistics. Jim Brawner pointed out that the topics list served as a guide. Wayne Bosché said that the course was intended to be an informal introduction to statistical reasoning, not a formal treatment. He said that the course outline is very flexible with respect to the time spent on individual topics. He also pointed out that not all students take the introductory statistics course but statistical reasoning was very important in almost every area of study.

Valerie Miller asked if there could be some faculty development opportunities for faculty at institutions planning to incorporate MATH 1001 into their curriculum. She noted that lack of faculty development and training for MATH 1101 is possibly the reason it has not been a successful course. Wayne Bosché said that at Dalton State, they identified faculty would had an interest in teaching MATH 1001. Dr. Zinsmeister wondered about the possibility of offering a system-wide workshop for faculty who would be involved in teaching MATH 1001. She asked the group for a show of hands of interested individuals (10+ people indicated they would be interested). She indicated that there are collaborative opportunities (in the area of quantitative skills) with other states. She said that Georgia participated in an NSF proposal that was not funded on the first submission; a proposal has been re-submitted but there is no current word on the status of the second submission.

The question was asked if MATH 1001 would prepare liberal arts students for the quantitative part of the GRE. It was noted that it could possibly provide better preparation than MATH 1101 or MATH 1113. It was also noted that appropriate marketing was necessary in order to ensure that advisors place students in the course. Jim Brawner noted that at Armstrong Atlantic, there was a presentation given about MATH 1101 at a general faculty meeting. This was an effective strategy to inform the faculty about the course.

Dr. Zinsmeister gave a brief history of the origin of the course (see ACMS minutes from 2004). She pointed out that topics lists do not give any information about outcomes and assessments. She asked how the learning outcomes would be measured. Jack Morrell suggested developing a set of problems that would be suitable for the course. Each institution could submit its own syllabus to the ACMS WebCT site. This would give broad opportunities for seeing how the course is being covered. A discussion board would be open for everyone for posting Syllabi, Tests, Questions.

Dr. Zinsmeister asked which institutions require mathematics courses in both Area A and Area D. The following institutions require two mathematics courses: Georgia College & State University, Kennesaw State University, Southern Polytechnic State University. The following institutions allow either mathematics or computer science in Area D: Floyd

College, Georgia Perimeter College, Clayton College & State University, Albany State University.

There was additional discussion about the 9-12 Georgia Performance Standards. It was recommended that the standards be circulated among colleagues to get feedback. Wayne Bosché noted that the new document addressed at least 80% of last year's ad hoc committee's concerns. Tim Howard noted that the previous draft included sample tasks but they are not in the revised version—only content standards are included. It was noted that tasks are currently in the process of being developed.

The group was reminded that the new standards have topics from Algebra and Geometry woven vertically into the Math I and II curriculum rather than having distinct Algebra and Geometry courses. In the revised standards, Precalculus replaced Math IV. The core Math I-IV will be sufficient to fulfill the Regents' CPC requirements.

Jim Brawner suggested that responses from ACMS be made via WebCT discussion by March 1. He will send electronic copies of revised standards to the group. Additional information may be obtained from the Department of Education web site. Some initial concerns involve ease of student transfer into/out of Georgia, textbook availability, and faculty development. He will remind the group about providing input.

Jack Morrell introduced our guest speaker for the evening. Mark Saul is Program Director for the Division of Elementary, Secondary, and Informal Education at the National Science Foundation.

Business Meeting

Jim Brawner convened the business meeting at 8:30 on February 18. Anthony Giovannitti introduced Thomas Harden, President of Clayton College & State University. Dr. Harden welcomed the group to the Clayton College & State University campus.

Representatives/Visitors in Attendance

Abraham Baldwin Agricultural College	Stephanie Holcomb (for Joy Shurley)
Armstrong Atlantic State University	Jim Brawner
Atlanta Metropolitan College	Jack Morrell
Augusta State University	Sam Robinson
Clayton College & State University	Anthony Giovannitti
Coastal Georgia Community College	Bob Balman
Columbus State University	Tim Howard
Dalton State College	Wayne Bosché
Floyd College	Brent Griffin
Fort Valley State University	Alvina Atkinson
Georgia College & State University	Lila Roberts
Georgia Perimeter College	Robby Williams
Georgia Southern University	Martha Abell
Georgia State University	Valerie Miller (for Johannes Hattingh)

Gordon College	Allen Fuller
Kennesaw State University	Victor Kane
Macon State College	Wanda Eanes (for Barry Monk)
North Georgia College & State University	Ed Green (for John Cruthirds)
Southern Polytechnic State University	Joel Fowler
University of Georgia	Joe Fu
Valdosta State University	Mylan Redfern
Waycross College	Jim Helms

Minutes accepted: A motion was made to accept the minutes of the February 2004 meeting of the ACMS as previously distributed. The motion was seconded and approved by voice vote.

Jim Brawner gave the Executive Committee's list of nominees for the Executive Committee, noting that he will not be serving on the ACMS next year so that there will be no past-chair for the 2005-2006 year. The list was approved by voice vote to create the following 2005-2006 Executive Committee:

Lila Roberts	Chair	Georgia College & State University
Brent Griffin	Chair-elect	Floyd College
Wayne Bosché	At-large	Dalton State College
Joe Fu	At-large	University of Georgia

After some discussion regarding the location of the 2005-2006 ACMS meeting, the following motion was made, seconded and approved by voice vote.

> **Successful motion:** The ACMS will hold its 2005-2006 annual meeting at Georgia College & State University on a Thursday afternoon and Friday morning to be determined so that it does not conflict with the Valdosta Math Technology Conference or the Georgia Perimeter Math Conference.

There was some discussion about the possibility of having a faculty development opportunity in conjunction with the ACMS. More discussion on that possibility followed in the Faculty Development subcommittee report.

Subcommittee Reports

Assessment of the Major: John Stroyls(Chair), Joel Fowler, Tim Howard, Joy Shurley. Nothing to report.

Computer Science Liaison: Joe Fu(Chair), Ijaz Awan, Robert Balman, William Snyder. The committee had some questions regarding relationships between computer science and mathematics. It was pointed out that there are some mathematics courses that are cross listed with computer science, such as Numerical Analysis. Historically, computer science and mathematics departments have often been in a common department. Ed Green reported that at North Georgia College & State University, computer science is in

the department with mathematics but some of the computer science faculty would like to have a separate computer science department. Lila Roberts reported that at GC&SU, computer science is with mathematics but there have been initial discussions about CS moving to the department with Information Systems. Anthony Gioviannitti indicated that at Clayton College & State University, CS may form a separate department. Martha Abell reported that at Georgia Southern University, CS split from Math and entered a new College of Information Technology. She said that this has caused changes in the mathematics that CS students have traditionally taken. For example, students can take calculus at any time. There is a move to reduce or eliminate linear algebra from the CS curriculum. There is already a less rigorous course in Discrete Structures. Joel Fowler indicated that at Southern Polytechnic University the discrete structures class was changed so that the prerequisite was precalculus (formerly it had a calculus prerequisite). Tim Howard described the two tracks at Columbus State University—the Applied CS track discrete math course does not require calculus but the Systems track requires calculus and upper division discrete math. The request to change the discrete math course was prompted by a request from the ACCD. The question was raised as to whether elimination of linear algebra was common. It was suggested that the subcommittee make a comparison of math requirements for CS majors among the USG institutions. The committee was charged with determining recent math course changes for CS majors and other changes of interest to math. A suggestion was made to make contact with the ACCD.

Distance Learning: Wayne Bosché (Chair), Martha Abell, Jim Dias, Robert Wynegar. Wayne Bosché indicated that members of the ACMS would be polled to see if there were issues of interest relative to distance learning. He and Martha Abell will communicate with the membership. He indicated that he would report about eCore courses. He reported that there is a push to make seamless the process of students receiving credit for eCore coruses. There is an eCore calculus class offered in Fall semester for the first time. Alvina Atkinson reported that at Fort Valley State University approximately 30 people were enrolled in College Algebra and about 23 remain. In precalculus approximately 15 students were enrolled and 10 remain. There are two sections of Statistics with 25 in one class and 10 in the other. It was reported that students who do well in math often will do well in an eCore class; nontraditional students often do very well. eCore was designed to address the very nontraditional students (who are often very much more motivated) that the university system did not serve well with traditional classes. Dr. Bosché indicated that in eCore classes, 80% of assignments are proctored and 20% of assignments are online. He also indicated that assistance is available from Advanced Learning Technologies (http://alt.usg.edu/) with respect to WebCT Vista, other technology enhancement tools, SCOUT, Teaching and Learning Online Courses.

Jack Morrell indicated that if a student is enrolled in an institution that is not one of the eCore institutions, a student may enroll for an eCore course as a transient student. This is known as Multi-Institutional Functionality (MIF). Since the discussion was focused on technology, he also reported from the Council on General Education that just having "technology" as part of the name of a course was not sufficient for approval of a course in Area D.

Faculty Development: Alvina Atkinson(Chair), Johannes Hattingh, Bruce Landman, Zephyrinus Okonkwo, Mylan Redfern. Alvina Atkinson proposed two workshop ideas for Faculty Development which could possibly be held in conjunction with the ACMS meeting in 2006. One idea was to focus on the MATH 1001 course. Specifically, what is the distinction between MATH 1001, MATH 1101, and MATH 1111? How should these courses be taught so that, for example, MATH 1101 doesn't become the same as MATH 1111? Another idea was to have a workshop devoted to the Georgia Performance Standards. Specifically, the workshop could address various questions. For example, how will the new standards affect learning support and the undergraduate curriculum? How do we change precalculus and calculus? How do faculty need to prepare prospective teachers so that they can effectively deliver the new curriculum? How do we change the curriculum? Can we expect students to be better prepared and if so, how do we modify the curriculum to accommodate this level of preparation? A third idea would be to invite someone from Advanced Learning Technologies to provide a hands-on experience to focus on WebCT, eCore, and Web Enhancement. It was commented that we do not have a budget for bringing in a speaker but the ALT would probably have a packaged workshop that could be delivered at no cost to the ACMS. Alvina will be communicating with Lila Roberts about faculty development activities related to the 2006 ACMS meeting at GC&SU.

A request was made to send to the subcommittee (Alvina Atkinson: atkinsona@fvst.edu) information about regional conferences. Three conferences were specifically mentioned: the Georgia Perimeter Conference in February, the Annual Learning Support Conference in April, and the Valdosta State University Mathematics Technology Conference in February.

Mathematical Awareness: Allen Fuller(Chair), John Cruthirds, Sam Robinson, Yang Wang. Allen Fuller indicated that the subcommittee noted that the charges to this committee had been developed in a different technological era. He wondered if there is a need for the charge as it currently stands or if there is a need for this subcommittee. A suggestion was made that the charge could be revised so that a responsibility could be to maintain a website that could promote mathematics in the general community. For example, math tournaments, special campus events, new degree programs, could be information that could be shared with faculty members. The subcommittee will develop and propose a new charge for the coming year.

Placement/Learning Support Liaison: Lila Roberts (Chair), Edward Bolton, Tony Giovannitti, Victor Kane, Danny Lau. Lila Roberts reported that many institutions had responded to the placement and learning support survey and that there appears to be few commonalities among institutions regarding testing and cut scores. In general it appears that two-year schools have more comprehensive testing programs. She indicated that the subcommittee would be working with Jack Morrell to develop an online "placement survey" similar to the textbook survey so that more information could be obtained.

Victor Kane reported that Kennesaw State University has taken up the charge to help to improve retention by improving the potential for a student's success in mathematics.

They are looking for effective placement testing procedures. Several institutions have advocated mandatory placement testing for all incoming students. Valerie Miller provided excellent details about a comprehensive placement testing program at Georgia State University that has been highly successful for students who follow the placement recommendations. She distributed detailed information about the testing program, cut scores, and data that has been collected that documents the effectiveness of the testing program. She indicated that an online version of the COMPASS test could provide a centralized database that could be used statewide to be able to access student test scores.

Stephanie Holcomb expressed concerns that system minimums on COMPASS and SAT Math scores are too low. She wondered whether a recommendation for higher minimums could be made by this committee. It was pointed out that such a recommendation should be made with supporting data. The suggestion was made that members should collect data from their respective institutions so that the ACMS could work to develop a recommendation to raise system minimums to submit to the Regents.

Course and Textbook Information: Brent Griffin (Chair), James Helms, Barry Monk, Robby Williams. Brent Griffin reported that everyone who has not done so should take the Textbook Survey on the ACMS WebCT site. The survey should be completed even if no changes have been made to textbooks. He indicated that next year there would be a technology survey to determine which institutions use technology or calculators in mathematics courses.

Curriculum & Transfer Credit: Jack Morrell(Chair), Jim Brawner, Timothy Brown, Roberta Yauck. Jack Morrell reminded the group that AP credit would be examined systemwide. He also reported that Dorothy Zinsmeister will ask for DFW rates to be recomputed and reminded the group that such reports may show discrepancies with the data at a particular institution. He asked the group to take another look at Area A learning outcomes (see 2004 ACMS minutes).

Old Business

There were no old business items to discuss.

New Business

Jim Brawner asked for volunteers to serve on an ad hoc committee to develop a set of by-laws. The following people volunteered to work on this: Alvina Atkinson, Tony Giovannitti, Jack Morrell, and Lila Roberts. It was suggested that this group look back through the minutes to obtain procedures that had been approved by the membership. It was also recommended that the ad hoc committee look at by-laws that had already been developed.

Joe Fu reported that there have been changes in the Calculus sequence at UGA. Interested individuals should contact him to determine specifically what changes had been made.

Martha Abell indicated that at Georgia Southern, the B.S. in Education degree (leading to secondary certification) will be discontinued. The College of Education has proposed that students obtain a B.S. in Mathematics with a fifth year MAT that leads to certification. She asked how other institutions were handling the revision of the preparation for secondary teachers. Tim Howard reported that at Columbus State they now have a B.A. in Mathematics degree with Teacher Certification. On paper, the degree can be completed with 123 total credit hours but, with the foreign language and a technology requirement, it will possibly involve 128 hours of coursework. Jim Brawner reported that at Armstrong Atlantic, the degree leading to secondary certification is a B.S. in Mathematics with Teacher Certification. The problem in developing an undergraduate program that provides a major in the content area with teacher certification is the number of hours in education and student teaching.

Wanda Eanes requested that members share syllabi for mathematics courses for early childhood education majors. In light of the new degree program in early childhood education recently approved for Macon State, they are in the process of developing content courses for the degree.

Victor Kane asked the group about numbers of minors in mathematics. He wondered about the pros and cons of a minor in mathematics. Tim Howard said that at Columbus State students have an option to take non-proof-oriented courses that lead to a minor in mathematics.

Jack Morrell requested that members take a look at the online Calculus Inventory and make changes as necessary.

It was suggested that the Executive Committee could possibly seek National Science Foundation funding through ATE or EISE for a workshop on Quantitative Reasoning.

Jim Brawner thanked the committee members for their attendance at the meeting.

The meeting was adjourned at 11:30 am.

Respectfully submitted,
Lila Roberts