



Mathematics and Statistics 2010-2015 Strategic Plan

I. EXECUTIVE SUMMARY

1-2 pages

<p>A. Mission and goals:</p>	<p>Mission/Vision - The planning process was based on the understanding that the Department's mission is three-fold:</p> <ul style="list-style-type: none"> • to provide quality programs and courses of instruction in mathematical sciences and Mathematics Education at both the undergraduate and graduate levels; • to foster research and other professional activity in the mathematical sciences and Mathematics Education; • to interact with the larger university community and with appropriate segments of the local, state, and national communities to provide services relating to the mathematical sciences and Mathematics Education. <p>The department of Mathematics and Statistics aspires to remain at the forefront of the growth and transition of UNC Charlotte into a Research Extensive university of 30000+ students. The department set itself on this course early on and is sustaining its development through the extensive range of its responsibilities. The department meets the challenges of offering important and high quality general education courses such as College Algebra and Introductory Statistics to a majority of the University's students. The department's undergraduate programs are again attracting more majors including future teachers. The department expects to continue to grow its undergraduate programming with attractive contemporary offerings in computational science and a minor in statistics. The department is committed to its high quality graduate programming and expects to continually increase both the size of the Ph.D. program and the number of students graduating each year.</p>
<p>B. Summary of process used to develop unit goals:</p>	<p>August department meeting to sensitize the faculty to the upcoming period of strategic planning. This was followed by a series of e-meetings in which department-wide discussion items were conducted. The department's commitment to increasing its strength in computational science was punctuated by the invited visit and presentation by a nationally recognized expert, Professor Steven Orszag, at the end of October. This sparked increased traffic in the on-going e-meetings. A draft document was circulated for comments at the end of November (without benefit of the soon to be adopted template).</p> <p>The department held two full faculty meetings in February to retrofit the plan into the present format. A revision was circulated between the meetings. The plan was approved by a vote at the second meeting.</p>
<p>C. Summary of major goals in strategic plan:</p>	<p>Goal #1: Establish a national presence in Stochastic and computational modeling. Promote multi-disciplinary research and applications. #2: Nurture and support fundamental and applied research, graduate programming, and community</p>



	<p>engagement in Statistics and Mathematical Finance. #3: Strengthen efforts across the curriculum to encourage, support, and properly train current and future teachers of mathematics. #4: Develop and support efforts for early math success to help, University wide, promote degree completion. #5: Maintain a high level of research productivity and increase grant submission rates. #6: Review and revise department assessment and advising practices for the undergraduate major programs. #7: Improve efforts to increase the diversity of our faculty, graduate teaching assistants and future math teachers while also fostering a greater awareness of diversity among future math teachers.</p>
<p>D. Summary of new resources required to achieve new goals:</p>	<p>A resource room dedicated to tutoring math and statistics students. Two new lecturer positions, one to assist with continuing growth in Math Ed instructional responsibilities and one to assist with the proposed resource center and the recent dramatic growth in freshman math classes.</p> <p>New faculty positions to play catch-up with recent losses for the multiple purposes of handling the large number of SCH managed by the department; strengthening the department's twin goals of improving research excellence in Applied Mathematics and Statistics/Finance; and ensuring coverage in upper level core courses in teacher training (geometry and discrete mathematics).</p> <p>The one unfortunate benefit of recent faculty losses is a temporary solution to the office space problem, but the department hopes to soon experience a repeat of this office space shortage.</p>

II. ENVIRONMENTAL SCAN/ UPDATES SINCE LAST FIVE –YEAR STRATEGIC PLAN
1-2 pages

<p>A. Assessment of cumulative progress in meeting goals in current strategic plan:</p>	<p>Response time for the advising of department majors (Goal #1) has greatly improved and the trend towards broader faculty participation will be continued. Improving students' study habits in freshman math courses and student performance in General Education courses offered by the department (Goals #2 and #4) will remain at the forefront of the department's activities. The department continues to experience a healthy increase in the number of majors (Goal #3) but should do more to increase the number of those planning a career in teaching. The department basically met its goal at securing external funding but has experienced set-backs (budget) in its hiring and interdisciplinary team building (Goal #5). The Ph.D. program (Goal #6) is quite healthy but we have experienced an increase in students withdrawing and it seems timely to have a review of the process for awarding teaching assistantships.</p>
<p>B. Environmental scan/updates of challenges, opportunities, and obstacles since last strategic plan:</p>	<p>The last department 5 year plan used projected enrolment growth (which has been exceeded) to estimate the need for a faculty complement of 56 with 9 lecturers. The department instead has shrunk to the 2005 starting level of 46 faculty and 7 lecturers. The department experienced the departure of one faculty member and the retirement of another last year plus a canceled search. At the present moment, 2 additional faculty members have announced their retirements (1 phased) for the coming year. The department had a heavy teaching load in 2005, and is now teaching more than a thousand additional students with fewer resources (we also lost 2 visiting assistant professor positions). The recent and imminent departures have hit the department in core research and doctoral program areas and the upward trajectory in department external funding success would quickly be threatened if replacement positions are long delayed. The department is likely to experience quite a number (7-10) of retirements over the planning period some of</p>



	whom are still very active. Needless to say it is critical to the department's future that these positions are returned. On the other hand, replacements definitely represent an opportunity for the department to resume its recent successes in top caliber junior hiring.
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III. NEW STRATEGIC GOALS, ACTION PLANS AND PERFORMANCE OUTCOMES FOR 2010-2015

A. Department Goal #1: Establish a national presence in Stochastic and computational modeling. Promote multi-disciplinary research and applications.

B. Relationship of goal to next higher reporting unit goal:	<p><i>COLLEGE GOAL #3: To continue to nurture a culture that embraces and rewards both fundamental and translational research and scholarship.</i></p> <p>_____</p> <p><i>COLLEGE GOAL #2: To educate graduate students so that they are full participants in extending the frontiers of knowledge and are proactive in framing and addressing societal needs.</i></p> <p>_____</p> <p><i>COLLEGE GOAL #1: To educate undergraduate students in the tradition of the liberal arts with depth of knowledge in a given field, so that they are empowered with knowledge and transferable skills, and a strong sense of values, of ethics, and of the responsibility for civic engagement.</i></p>
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C. Action plans to achieve goal:	<ol style="list-style-type: none"> 1. Develop and introduce a new undergraduate degree in Computational Science with an interdisciplinary focus. Coincidentally, this type of program has been recently identified in the Chronicle of Higher Education as one of the "five majors on the rise". It is a perfect fit for the department's growing core research strength in applied computational and mathematical modeling. 2. Continue to build on the core strengths in the Applied Mathematics doctoral program to increase the breadth and range of applications of supervised doctoral and postdoctoral research. The department was on a very promising upward trajectory in strategic faculty recruitment that has facilitated multi-disciplined team building in stochastic and multi-scale computational modeling and exploration in emerging areas such as solar energy, nano-photonics and devices, bio-sensors, quantum transport, and Monte-Carlo sampling in chemical reactions. The teams require a range of expertise in areas such as: computation, numerical analysis, probability and stochastic processes, inverse problems, applied analysis, mathematical physics, and statistics. 3. To develop a Center to coordinate more aggressive growth, postdoctoral recruitment and external funding requests in the field of Stochastic and Computational Modeling. This center will help foster a stronger culture of focused interdisciplinary research and transmit department and College support for the fundamental research that is being supported by external funding.
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D. Effectiveness measures/methods to	1. The program should be crafted within a year. Assessment of the program
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<p>assess outcomes/goal attainment:</p>	<p>will be discussed by the task force in Goal #6. If approved, the program will of course need to begin graduating students in sufficient number according to system guidelines.</p> <p>2. and 3. The department will identify a discipline leader/director who will oversee the production of a center proposal and coordination/production of grant submissions. This leader will report annually on the activities that will constitute the (eventual) center’s activities. The effectiveness will be measured by active speaker series, publication of papers, the training and graduation of Postdocs and doctoral students, and grant submissions.</p>
<p>E. Assessment schedule to assess goal:</p>	<p>1. An annual report to the department chair.</p> <p>2. and 3. Annual report to department chair and review committee. Assessment of team’s resource needs will be reviewed by Chair and Advisory committee.</p>
<p>F. Person/group responsible:</p>	<p>1. The Undergraduate Curriculum committee will elect a faculty member to lead the effort.</p> <p>2. and 3. The team leader will be recruited by the Chair.</p>
<p>G. Performance outcomes for goal:</p>	<p>1. Proposal submitted in a timely manner. Students progressing through the program in a respectable number by year 3 and successfully graduating years 4 and 5.</p> <p>2. and 3. Suitable activity levels will depend on available resources. Performance expectations will be clarified and reviewed annually. The base level will be established in the first year.</p>
<p>H. Resources Required:</p>	<p>The new undergraduate program will not need new resources beyond sustaining the strength of the faculty complement in this area. One new limited enrolment course will be proposed as a capstone experience in computational modeling.</p> <p>The discipline leader will need a course release and a department staff member will devote a portion of her time to provide administrative support.</p> <p>The discipline will need new and replacement faculty positions. As the number of postdoctoral participants continues to grow, there will be additional pressure on the office space situation. A seminar room, with computer access, to house research material would be a great help.</p>

ANNUAL REPORT

<p>I. Annual progress assessment of performance outcomes:</p>	
<p>J. Follow-up plan to make changes as a result of assessment findings:</p>	

III. NEW STRATEGIC GOALS, ACTION PLANS AND PERFORMANCE OUTCOMES



A. Department Goal #2: Nurture and support fundamental and applied research, graduate programming, and community engagement in Statistics and Mathematical Finance.

<p>B. Relationship of goal to next higher reporting unit goal:</p>	<p><i>COLLEGE GOAL #3: To continue to nurture a culture that embraces and rewards both fundamental and translational research and scholarship.</i></p>
<p>C. Action plans to achieve goal:</p>	<ol style="list-style-type: none"> 1. Introduce a new Minor in Statistics. Such a program will be developed in consultation with several of the social science departments with a view to course sharing to make it more attractive to their majors while at the same time strengthening undergraduate students' grasp of statistics and its increasing role in supporting the intellectual and economic growth of the region. The existing minor in mathematics is a good model as it is a very popular option with Engineering students. Either of these programs should be of interest to students in the Belk College of Business. 2. Maintain and grow the department's commitment to the Masters of Mathematical Finance. Explore opportunities for more internationalization of the program through cooperative programs with foreign universities. Adapt to the changing role of the discipline and recruit both new and replacement faculty. 3. Applied Statistics is also a vital part of the department's doctoral program and students specialize in research in Finance and in Health and medical related research. The department foresees statistics as a rapid growth area because of imminent (and in many ways statistically similar) changes in both the health related industries and finance industries. Statistical methods, analysis, and algorithms will be needed on a wide range of topics including, but not limited to, fraud detection, policy processes, data sharing, large scale audits and analysis. The department's core strengths in statistics straddle the health industry and the financial industry. The department will seek to both focus and expand its commitment to more broad-based statistical consulting activities, to increase conversations with other units on campus that have a statistics component to their research, and seek to recruit applied statisticians to address these critical contemporary issues. 4. Consistent with the above mentioned anticipated rapid growth in the demand for applications of statistics at the research level, the department will look to formally recreate and staff a Statistical Consulting center. In the interim a department discipline leader will continue to assist with engagement in regional and university research collaborators.
<p>D. Effectiveness measures/methods to assess outcomes/goal attainment:</p>	<ol style="list-style-type: none"> 1. The Minor in Statistics will be effective but the number of students completing the minor and enrolled in the relevant courses will be monitored. 2. The Masters in Mathematical Finance is assessed and reported on by the director of this interdisciplinary program. The department will consult with the program committee to assess how effectively it is supporting its share of the program core. The measures will be the effectiveness of faculty instruction in the program and the fit of faculty expertise to the evolving subject content. 3. and 4. A discipline leader will be responsible to more visibly coordinate the department's community engagement with regional institutions (such



	as CMC) and with other departments and colleges. Annual reporting will inform the department of activities and areas that will need strengthening.
E. Assessment schedule to assess goal:	<ol style="list-style-type: none"> 1. Annual count of how many students graduate with the minor (frequently students do not declare the math minor until nearly the moment they graduate). 2. Annual reporting of the program and the department. 3. and 4. Annual report by the discipline leader to the Chair and the department review committee.
F. Person/group responsible:	<ol style="list-style-type: none"> 1. Undergraduate coordinator. 2. The department's Math Finance committee and the Program Director. 3. and 4. The Chair and the selected discipline leader.
G. Performance outcomes for goal:	
H. Resources Required:	

ANNUAL REPORT	
I. Annual progress assessment of performance outcomes:	
J. Follow-up plan to make changes as a result of assessment findings:	

III. NEW STRATEGIC GOALS, ACTION PLANS AND PERFORMANCE OUTCOMES	
A. Department Goal #3: Strengthen efforts across the curriculum to encourage, support, and properly train current and future teachers of mathematics.	

B. Relationship of goal to next higher reporting unit goal:	<i>COLLEGE GOAL #1: To educate undergraduate students in the tradition of the liberal arts with depth of knowledge in a given field, so that they are empowered with knowledge and transferable skills, and a strong sense of values, of ethics, and of the responsibility for civic engagement.</i>
C. Action plans to achieve goal:	Across the department's programs, we are committed to training future teachers, from elementary and middle grades through high school and regional colleges. Each of these is important and each draws on different strengths within the department that must be maintained. A sizable number of department majors are preparing to be "much in demand" high school math teachers and need both core upper level mathematics and statistics courses as well as math teaching methods



	<p>courses. Recent faculty losses need to be filled.</p> <ol style="list-style-type: none"> 1. Recruit a new lecturer or possibly faculty member to support the delivery the math methods courses for the training of elementary and middle grades teachers. 2. Maintain adequate faculty strength to sustain our contributions in each of the Graduate programs in Mathematics Education. Graduates of the department's masters, and even its doctoral program, are recruited by regional Colleges. The special Masters in Mathematics Education is popular with regional teachers as a part-time program to increase their profile and their enthusiasm. Most recently, the department is an active partner in the doctoral program in Curriculum and Instruction and is training future mathematics leaders for regional school systems. The departure of David Royster was a big loss to each of these programs. 3. Encourage and explore greater coordination between senior projects and undergraduate research opportunities. Faculty with research interests in the core required areas for teachers (algebra, geometry and discrete mathematics) would be particularly suitable to engage these students in meaningful explorations of these topics to experience the spirit of inquiry. 4. Seek opportunities for future teachers to obtain practical experience through tutoring and small group workshops in the department's planned resource room (goal #4). 5. More closely monitor the effectiveness of, and increase the advising / recruitment efforts for, the specially designated and enhanced sections of calculus that are designed to recruit and nurture students interested in a middle grades or high school math careers.
<p>D. Effectiveness measures/methods to assess outcomes/goal attainment:</p>	<ol style="list-style-type: none"> 1. The goal is to retain the ability to staff the teacher training courses in mathematics education. 2. Again the goal is to be able to staff the necessary courses and to have qualified faculty to supervise graduate students. 3. The quality of senior projects is regularly assessed by the Undergraduate coordinator. This will be continued and the extent to which a project qualifies as undergraduate research will be noted and reported in annual report. 4. The goal will be to interest and engage talented a number of students in this mutually rewarded activity. The measures will be the number of student-hours recruited and feedback from students served and students tutoring. 5. A survey will become a regular part of the delivery of these sections.
<p>E. Assessment schedule to assess goal:</p>	<p>Each semester each of the above Action plans will be reviewed.</p>
<p>F. Person/group responsible:</p>	<ol style="list-style-type: none"> 1. The chair and the Math Ed coordinator 2. The chair and the Math Ed coordinator 3. The Undergraduate Coordinator



	<p>4. The Associate Chair (will have overall responsibility for the resource center)</p> <p>5. The Undergraduate Coordinator and the instructor of the course.</p>
G. Performance outcomes for goal:	<p>1. All students needing the course each semester should be able to enroll without raising class sizes in these traditionally 25-30 seat courses.</p> <p>2. Steady production of Masters of Math Ed graduates and supervision of 5-10 doctoral students in C&I.</p> <p>3. Consistent high quality of senior projects with 2 or 3 per year rising to the level of undergraduate research.</p> <p>4. Participation in tutoring and leading small group workshops by about 5-10 students per semester.</p> <p>5. A full class of 30-35 students committed to a future teaching career.</p>
H. Resources Required:	We anticipate needing another Lecturer and a faculty member specifically in Math Ed. One or more faculty appointments in Algebra/Geometry or Discrete Math to regularly teach these core courses and to contribute to the general research mission of the department.

ANNUAL REPORT	
I. Annual progress assessment of performance outcomes:	
J. Follow-up plan to make changes as a result of assessment findings:	

III. NEW STRATEGIC GOALS, ACTION PLANS AND PERFORMANCE OUTCOMES	
A. Department Goal #4: Develop and support efforts for early math success which we contend will significantly help University wide to promote degree completion.	
B. Relationship of goal to next higher reporting unit goal:	<i>COLLEGE GOAL #6: To support all students' academic success, retention and timely completion of requirements.</i>
C. Action plans to achieve goal:	<p>1. Develop and staff a dedicated multi-purpose Math resource room for student drop-in.</p> <p>Mathematics is one of the most loved of the traditional liberal arts and the department is firmly committed to empowering all students with the</p>



	<p>knowledge of this most basic and highly transferable skill set. The department is responsible for delivering freshman mathematics and statistics courses as a core general education requirement for all entering freshman and most transfer students. As a rough count in the Fall 2009 semester, this was a total of 6200 students and we will see a similar number in our Spring freshman classes. The department will continue its ever evolving efforts at student retention in these critical classes. The department has recently been forced to expand class sizes in most of these classes and is concerned that some adverse effects are inevitable. As resources are restored class sizes will be reduced to more manageable levels. In recognition of the inevitable continuation of tight resources, the department will seek to help manage this situation by expanding the availability of supplemental resources. Most desirable would be the development of a dedicated resource room for student drop-in. The department envisions having a member of the instructional staff (preferably a new lecturer) taking on the responsibilities of managing the center and overseeing its staffing with qualified senior undergraduates and graduate students. This center would work in partnership with classroom instructors to facilitate a needed increase in student attention to assigned homework. The center could also be used for proctoring make-up assignments and quizzes which can be used to give students that second-chance that can be a real jump-start to future success.</p> <p>2. Calculus Plus: the department will aggressively continue its curriculum enrichment project in the Calculus sequence. Webwork has become a mainstay of Calculus I and II, and, to a great extent, is assisting in the delivery of Pre-calculus and Calculus III. The department's goal is to enrich the webwork experience by suffusing it with integrated instructional videos and hyper-linked lecture notes. The recognition of the important retention role that effective training in Calculus plays in so many majors has kept the effective delivery of this course (even with diminishing instructional resources) as one of the highest department priorities. Efforts will be made to seek external funding opportunities to support some of these curricular developments.</p> <p>3. Develop an on-line tutoring service.</p> <p>While personal contact with students is critical for many, some students may benefit from the availability of an on-line substitute. Communicating mathematics electronically still remains a challenge - especially for the students -- but technology is catching up. In addition, the department's widespread adoption of the Webwork on-line homework system is providing a common language for communication that students are mastering without much trouble. The department will explore the feasibility of supplementing on-site tutoring with an electronic alternative. Resources and training would be needed to provide a reliable service. The goal for this and the on-site resource is to have the expert help available to the students when they are most ready to learn from it -- during the intense moments of determination and desperation that we all feel when confronting a challenging math problem.</p>
<p>D. Effectiveness measures/methods to assess outcomes/goal attainment:</p>	<p>1. The effectiveness of the center would be based on the number of students being served and regular surveys of student and instructor satisfaction. DFW rates in the supported courses will be closely monitored with the</p>



	<p>expectation that they will be steady or continue to fall.</p> <ol style="list-style-type: none"> 2. The Calculus Plus proposal would be assessed based on instructor and student feedback, and on the on-going assessment of overall student performance in the course sequence. 3. Student participation and feedback would be monitored, as well as feedback from those doing the tutoring for their sense of effectiveness and efficiency.
E. Assessment schedule to assess goal:	Each of these action plans would be assessed each semester.
F. Person/group responsible:	The Associate Chair and the Chair.
G. Performance outcomes for goal:	The performance outcomes expectations will be developed and clarified as the plans are implemented and grown in scope.
H. Resources Required:	<ol style="list-style-type: none"> 1. An increase in the part-time budget to fund the increase in tutoring hours. A lecturer position to oversee the operations of the center and to assist with the ever increasing number of students enrolled in the demanding Calculus sequence. 2. The project has gotten off to a start with some funding from General Admin and the Provost's office. The department will continue this important development but will seek modest additional funding through competitive grants programs. 3. Some GTA effort would be diverted to this project. The computer resources would be coincident with the crucial need to maintain a high-end functioning web server for the Webwork project.

ANNUAL REPORT	
I. Annual progress assessment of performance outcomes:	
J. Follow-up plan to make changes as a result of assessment findings:	

III. NEW STRATEGIC GOALS, ACTION PLANS AND PERFORMANCE OUTCOMES	
A. Department Goal #5: Maintain a high level of research productivity and increase grant submission rates.	
B. Relationship of goal to next higher reporting unit goal:	<i>COLLEGE GOAL #3: To continue to nurture a culture that embraces and rewards both fundamental and translational research and scholarship.</i>
C. Action plans to	1. The department advocates maintaining and growing a faculty with strong core strengths with an applied focus that is adaptive and responsive. We



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achieve goal:	<p>will identify and rank key areas for recruitment that will support and bridge existing strengths and replace critical losses to sustain strength in core courses.</p> <ol style="list-style-type: none"> 2. Continue, and increase, the practice of faculty engagement in research and graduate education with other units. More effort at maintaining an informative department website (as well as better participation in the College site) regarding faculty research interests and accomplishments with a view to serving as a starting contact for possible external collaborations. 3. Promote and sustain the many active department seminars to help maintain the culture of research and doctoral training that permeates the department. The active seminars include: Probability, Mathematical Physics, Computational Math, Carolina Topology, Algebra, Statistics, Statistical Finance, Numerical Analysis, Analysis. It is an important goal to maintain a critical mass in each of these seminars. 4. Restore a workload policy (as resources permit) that properly accommodates the time demands that a productive research and graduate student training program requires.
D. Effectiveness measures/methods to assess outcomes/goal attainment:	<ol style="list-style-type: none"> 1. The development of, and maintenance of, a clear medium to long range staffing plan that secures wide-spread department support and the College's support for position requests. 2. An accurate and informative representation of department strengths which is easily accessible to the casual website visitor. 3. The frequency with which the seminars meet and the participation of the appropriate faculty and graduate students. 4. Resources permitting, a workload policy that is balanced and allows or encourages the research active faculty to do their work. The measures will be that classes get taught and papers get published.
E. Assessment schedule to assess goal:	<ol style="list-style-type: none"> 1. Annual review. 2. On-going. 3. Annual reporting time. 4. Annual report.
F. Person/group responsible:	The chair, the DRC and the Advisory Committee.
G. Performance outcomes for goal:	An increase to \$1.3M per year in external support; average of 2 annual publications per faculty member on research workload track
H. Resources Required:	What else, positions returned and new positions as possible.

ANNUAL REPORT	
I. Annual progress	



assessment of performance outcomes:	
J. Follow-up plan to make changes as a result of assessment findings:	

III. NEW STRATEGIC GOALS, ACTION PLANS AND PERFORMANCE OUTCOMES
A. Department Goal #6: Review and revise department assessment and advising practices for the undergraduate major programs.

B. Relationship of goal to next higher reporting unit goal:	<p><i>COLLEGE GOAL #8: to foster a self-reflective community of educators who continuously examine their processes and assess practices in all aspects of teaching and research to ensure effective outcomes.</i></p> <p style="text-align: center;">-</p> <p><i>COLLEGE GOAL #1: To educate undergraduate students in the tradition of the liberal arts with depth of knowledge in a given field, so that they are empowered with knowledge and transferable skills, and a strong sense of values, of ethics, and of the responsibility for civic engagement.</i></p>
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C. Action plans to achieve goal:	<ol style="list-style-type: none"> 1. Advising our majors? The department is not ready just yet to formulate its plans in this area (broadly conceived). We are not convinced that "advising" in the student services sense of the word is where our students need increased support. We see the need as real and more closely aligned to academic achievement and we will create a department task force to get to work on recommendations. 2. Examine the department's assessment plan for each of the Major programs in a more holistic light to ensure that each critical core skill is sure to be experienced and mastered by each graduate. This work will be added to the charge of the task force which will be studying the department's efforts at advising. 3. Expand the scope of responsibilities for course leaders for large multi-sectioned courses beyond holding course meetings. Prepare and distribute more comprehensive sets of course instructions including the critical instructions: "come to class; do your homework".
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D. Effectiveness measures/methods to assess outcomes/goal attainment:	<ol style="list-style-type: none"> 1. The task force must be formed and move swiftly to make recommendations. The effectiveness measure at the outset will be by faculty consensus on the value of the recommendations. The task force will be expected to also recommend assessment measures and methods. 2. The department's current method of assessing learning outcomes in the major will be studied and broadened to be a more comprehensive measure
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	<p>to address the growing sense among the faculty that some important core concepts are not being met by the core requirements.</p> <p>3. Instructor feedback will be sought to measure the sense that they feel they are being guided and supported by the department structure.</p>
E. Assessment schedule to assess goal:	The task force and its recommendations will be assessed annually. The effectiveness of course leaders will be assessed each semester.
F. Person/group responsible:	The department Advisory committee and the department curriculum committee.
G. Performance outcomes for goal:	Clear satisfaction of the advising system by department majors. A well articulated assessment plan for learning outcomes of department majors that addresses all identified core concepts.
H. Resources Required:	none

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I. Annual progress assessment of performance outcomes:	
J. Follow-up plan to make changes as a result of assessment findings:	

III. NEW STRATEGIC GOALS, ACTION PLANS AND PERFORMANCE OUTCOMES	
A. Department Goal #7: Improve efforts to increase the diversity of our faculty, graduate teaching assistants and future math teachers while also fostering a greater awareness of diversity among future math teachers.	

B. Relationship of goal to next higher reporting unit goal:	<i>COLLEGE GOAL #9: To sustain and enhance an academic culture that sees diversity and inclusiveness as part of its identity.</i>
C. Action plans to achieve goal:	<ol style="list-style-type: none"> 1. Incorporate aspects of diversity, especially in the teacher preparation courses. Couple discussions and lesson plans on diversity with a greater awareness of mathematics as an international connecting force. The department will foster teachers who are aware and better equipped to work with diverse students and parents in their future classrooms and surrounding communities respectively. 2. Follow up on efforts to develop students who can use mathematics as a tool to uncover inequitable issues in the world around them, and on the international stage, and share this with the rest of the community. Encourage supervision of senior projects with this as the theme. 3. Focus efforts to recruit minority students to become math majors and



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	<p>future math teachers. Increase efforts to interest minority students in mathematics during outreach visits to local schools and department sponsored events. Promote the activities of student clubs and through them provide a welcoming environment embracing diversity.</p> <p>4. Make diversity a greater part of the conversation and action in the recruitment of graduate students and faculty by appointing and empowering a diversity officer reporting to a diversity committee for each responsible committee. Increase the steps taken to attract a diverse pool of applicants. Broaden the department's mentoring program, possibly reaching out to faculty in other departments, to better support the growth of mid-career faculty.</p>
<p>D. Effectiveness measures/methods to assess outcomes/goal attainment:</p>	<ol style="list-style-type: none"> 1. Ensure that there are explicit aspects of diversity and readings of international experiences are incorporated in teacher preparation courses at all grade levels. This will be assessed through instructor self reports, course syllabuses, and assigned field experiences in the local schools. 2. Track the number of minority students becoming math majors and future math teachers. The number of outreach activities that target women and under-represented minorities in the Charlotte area. Track the number of senior projects by undergraduate students that examine inequitable issues in real life, both local and international, using a mathematical lens. 3. Develop specific plans to guide minority graduate students through the program by assigning super TAs to assist these students with the content. Recruit women and minority faculty to serve on the recruitment committees. Encourage current faculty to attend the Diversity Institute in Summer. Encourage faculty to be advisors to minority organizations on campus.
<p>E. Assessment schedule to assess goal:</p>	<p>Progress towards the goals will be assessed annually by a diversity committee.</p>
<p>F. Person/group responsible:</p>	<p>Diversity committee appointed by the Chair. This committee will reflect all the current content areas present in the department. The committee members will work collaboratively to measure the annual progress made towards the above goals.</p>
<p>G. Performance outcomes for goal:</p>	<p>Instructors in teacher training courses will make more efforts to integrate issues of diversity in their courses; future goals will be formulated based on student body acceptance or resistance to these activities.</p> <p>The number of minority math majors will be assessed and monitored; and again future goals will be formulated when more data is amassed.</p> <p>The diversity in the graduate program and the graduating class will be measurably increased; a pattern of strong efforts at recruiting from a diverse pool in faculty hiring.</p>
<p>H. Resources Required:</p>	<p>None</p>

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I. Annual progress



assessment of performance outcomes:	
J. Follow-up plan to make changes as a result of assessment findings:	