

December 19, 2011

**Introduction:** Learning Communities at UNCG are a curricular initiative intended to enhance student success (learning, development, retention and persistence). A Learning Community (LC) brings faculty, students and staff together in a focused academic community organized around a thematic central thread that is intellectually attractive to interested students, faculty and other members of the community (UNCG and beyond). An LC requires academic credit bearing courses and formal credited learning that are related to the organizing theme and relevant for the student population for whom the LC is intended. Learning Communities intentionally encourage integration of learning across courses and multiple areas of knowledge/disciplines. In addition, LC's connect curricular and co-curricular learning in substantive ways designed to enhance both. An LC is led by a faculty member or a team of faculty and staff that work to develop close supportive relationships and collaboration among the members of the LC grounded in their common academic pursuit. A Learning Community may be centered in a residential setting, and as such, become a Living-Learning Community (LLC) where engaged faculty, staff and students maintain an enhanced co-curricular and social program. We propose a community that has both LC and an LLC components.

**Minimum Requirements for a Learning Community or Living-Learning Community:**

1. **An organizing topic or theme**
2. **Clearly identified student learning outcomes**
3. **Two or more concurrent classes**
4. **At least two integrative assignments**
5. **At least one required co-curricular activity related to the LC topic and student learning outcomes**

**Learning Community Title:**

**Achieving Together in Math and Science (AToMS): A Living Learning Community**

**Topic/Theme:**

A literate society needs to understand basic principles of mathematics and science, and to be able to apply them to everyday activities. Our Living Learning Community consists of students who share a common interest in mathematical and/or physical sciences. They live and work every day with other like-minded students to develop a sense of sustainability in the STEM area. Ultimately, students learn how mathematics and science are useful around us, and they achieve their goals in STEM disciplines.

**Academic Year The Learning Community Will Launch:**

Fall 2012   x  

Summer       

Spring 2013

**Narrative Explanation: Please provide a brief overview of your plans for this learning community. Who do you plan to serve, what do you plan to accomplish and how do you see the program working to achieve your goals?**

UNCG is committed to expanding and strengthening science and mathematics programs in this University in response to the need for a scientifically literate workforce in the piedmont triad. Attracting and retaining the best students in the STEM disciplines (Science, Technology, Engineering, and Mathematics) is a major part of that effort.

The STEM education community has repeatedly called for the reform of undergraduate teaching, often focusing on developing and disseminating specific instructional ideas and practices. A recent Microsoft/Harris poll indicates that only 20% of STEM students enter college feeling that high school prepared them 'extremely well' for science and math study in college. Understanding this is the first step toward repairing the situation we face in retaining math and science students at UNCG: in STEM disciplines the number of declared majors steadily declines through 4 years of college.

Cognitive psychologists suggest that a person learns more efficiently when he or she, as a member of a group, is placed in situations in which he or she is comfortable and can offer and receive critiques of his or her work. Traditionally, however, a STEM instructor's teaching style or method is usually lecture-centered due to the amount of material to be covered in the course; students are expected to passively accept the knowledge presented. A Learning Community is a supportive structure in which students can come together to learn, becoming social and "critical" friends.

We propose to establish a living learning community of students in the mathematical and physical sciences who will study together in their introductory mathematics, science and English classes, and spend out of class time together in a communal living space. Shared co-curricular activities will strengthen the community with the goal of decreasing the isolation first year STEM students frequently feel and building a foundation for upper class years at UNCG and ultimately careers in mathematics and science. As we hope to locate this (L)LC in the new Quad, commuting students will have a place to join students who are living on campus and truly be part of the community.

Our intent in offering a STEM living and learning community is to increase retention and graduation rates in STEM areas. Despite the importance of STEM areas and the presence of strong STEM departments at UNCG, about half or more freshman students leave the STEM disciplines during their first year of study (See Table 1).

Table 1  
*UNCG Freshman-Sophomore Retention Rate (2009)*

Department	Retention
Chemistry	40%
Computer Science	41%

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Mathematics	42%
Physics & Astronomy	53%

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Why do so many students leave STEM majors? UNCG freshman face many challenges in making a successful transition from high school to university but those in STEM majors encounter several additional hurdles, including:

- a feeling of isolation from the campus and from other STEM students,
- inadequate preparation for college-level mathematics,
- challenging and sometimes confusing course requirements in the major (for example, a prospective physics major must take not only introductory physics but also chemistry, computer science, and a daunting array of mathematics courses almost sufficient for a second major), and
- significant demands upon the student's time by difficult courses and frequent labs.

A learning community can help alleviate many of these demands on prospective science and mathematics students. By enrolling in courses together students will build a community of STEM scholars who work together on assignments, lab reports and exam preparation. Tutors and mentors dedicated to the community will provide support for learning and models of successful STEM scholarship, and in particular, will assist students with weaker mathematics preparation become successful in STEM coursework. Co-curricular activities provide the opportunity to further engage with and become acculturated within a larger STEM community. One-on-one advising by the STEM departments beginning prior to their first semester at UNCG will assist students make the most effective use of the freshman year to meet major course requirements in a timely fashion. Students (with need) will be encouraged to apply for programs such as STAMP and for available department scholarships so that they may have sufficient time to devote to the more difficult coursework and labs they encounter as STEM majors. All students will be encouraged to participate in open STAMP events as part of the co-curricular activities of the STEM LLC.

By establishing a common interdisciplinary course of study the student-scholar community will be strengthened, and student isolation (real and imagined) diminished. By establishing a vigorous program of outside speakers, students will be engaged in understanding the real world and work applications of what they are learning. By encouraging students to undertake service projects, such as tutoring students in UNCG's Middle College, they will learn their role in the larger university community of caring individuals. Teambuilding activities and field trips occurring each semester will include both the students living on campus and those that do not. Upper-class mentors will provide support and help students navigate these "gatekeeper" classes. Finally, faculty will be dedicated to the learning community, serving as mentors and participating in some co-curricular activities.

By design, students will be scheduled for 2 or 3 classes together. FFL 101 and CHE 111 will serve as the lynchpins. As FFL 101 is capped at 25 students and most Mathematics courses will have no more than 50 students per section beginning in Fall 2012, we hope to have a first year freshman cohort of 50 students, some of whom will live on campus. The STEM (L)LC

consists of 4 cohorts – chemistry, computer science, physics, and mathematics; each cohort will have 12-13 students. All students in a science cohort will take the first course in their major: for example, CHE 111 with 112 (lab) for chemistry cohort, Physics 101 for physics cohort, and CSC 100 (a new course currently under development) for computer science cohort. Math majors will take one of the science courses, usually CHE 111. Students will move together as a group into second semester taking ENG 230, MAT 151, and one of CHE 114 with 115 (lab), CS 130, or PHY 291. See Table 2 below.

Table 2.  
*The sequence of Required Courses*

Discipline	Fall 2012	Spring 2013
English	FFL 101	ENG 230
Mathematics	MAT 150, 191,	MAT 151, 292
Chemistry	CHM 111 w/ 112 (lab)	CHM 114 w/ 115 (lab)
Computer Science	CSC 100 or CSC 130	CSC 130
Physics	PHY 101	PHY 291

Note: MAT 150/151 will have a section dedicated to the STEM LC. CHE 112 and 115 will have dedicated lab sections with carefully selected TAs. FFL 101 and ENG 230 will focus on technical writing and will incorporate a service-learning component in which students will write and reflect upon their experiences in service activities (tutoring Middle College students, assisting with Science Olympiad or Math Competitions, etc.). The writing assignments will be integrated with other core courses.

In designing a cohort, gender ratio is an important factor. The need to prepare more women for careers in the mathematical and physical sciences is a critical national goal. We hope that the first (L)LC cohort will be evenly split between men and women as this is a better representation of the gender diversity on this campus. Our goal is a 50:50 male-female split, though it is possible that the interests' of incoming students may generate a slightly different ratio (60:40 is, for example, acceptable if we can't reach 50:50).

Communication is the key for AToMS success. Various types of communication – collaboration within and among faculty, connections between faculty and students and collaboration between students is essential for success. Communication must be focused on both the curricular and co-curricular content in the STEM (L) LC. To this end, we envision two strands for the STEM learning community: both a living/learning community and a learning community. Students who live on campus and commuters will be invited to participate. All students will have opportunities to actively participate in various academic and service activities, including mentoring UNCG's Middle College and other high school students based on lesson study projects. Students in the living learning community will have the additional support of living in a supportive environment. All students will have common assignments that cross disciplines, support from faculty and the additional support of graduate students in their disciplines to help them be successful at UNCG. All students will be invited to "field trips" to business and industry, guest lectures, and other

service activities, such as participation in Science Olympiad and mathematics competitions, which relate to their particular STEM field.

**What do we plan to accomplish:** At the end of the first year, we hope that 60% of the incoming freshmen in the(L) LC who thought they would continue in these STEM areas do so. In addition, the (L)LC will:

- increase student success in MAT 150/151
- begin to change the teaching/learning methods for students' in these STEM courses to become more collaborative and learner focused
- integrate a technical writing class to support STEM areas and increase students' communication skills
- increase students' ability to communicate their science/math to others through participation in co-curricular activities
- create new partnerships on campus and especially with the new Middle College

**Recruitment:** Other universities across the country are developing STEM focused “learning communities.” Ohio State University, for example, seeks to recruit and maintain a diverse pool of STEM majors (see the September 2011 issue of the AAC & U, [http://www.aacu.org/aacu\\_news/AACUNews11/september11/feature.cfm?utm\\_source=news&utm](http://www.aacu.org/aacu_news/AACUNews11/september11/feature.cfm?utm_source=news&utm)). While not focused on learning communities, OSU is engaged in the same issues as UNCG: how to recruit and retain underrepresented groups in STEM. With the help of UNCG's Director of Learning Communities we will develop effective recruitment strategies to market this opportunity. To understand if we are having an impact, following these students is essential. We would also like to know if we can attract typically underrepresented students (women and minorities) to enter and remain in STEM areas.

**Leadership and Commitment to the project.** The proposed AToMS (L)LC will be administered by two Co-Directors who will receive release time to coordinate the faculty, the curriculum and the co-curricular activities. These coordination efforts will be especially critical with regard to the English classes since these provide integrative assignments combining what students are learning in STEM classes with their services experiences and must fit cleanly within the English department curricula. In addition, the Co-Directors will advise and mentor students in the (L)LC.

The Co-Directors will teach at least one of the core courses. The Co-Directors will serve as a liaison to the Middle College and attend co-curricular events, work with students and teach the FFL course if required. To make this project even more effective, we request funding for a graduate assistant. This person will work closely with the Co-Directors to assure that rooms are available for speakers, supplies and food are ordered (as needed), connect students to service opportunities participate in FFL, and be a resource for the learning community.

Two critical components of this (L)LC will be student tutors and mentors; both groups will report to the Co-Directors. Tutors will be part of the Student Success Center under their SSP (Student Study Program). Each tutor, with oversight from the SSC, will work with groups of 4 – 5 (L)LC students. Student mentors will be upper-class majors selected from the Chemistry, Physics, Mathematics or Computer Science departments. Mentors will live in the dorms with (L)LC students and work with them on a more informal, beyond-normal-class-time basis.

**Student Population Served: (e.g. class rank, major restrictions, language, mathematics or other prerequisites, etc.)**

New freshmen in STEM areas, including:

Chemistry (12-13 students)

Computer science (12-13)

Mathematics (12-13)

Physics (12-13)

Total: 50 incoming students

**Student learning Outcomes: (Explain what you expect students will know and be able to do as a result of participating in this learning community)**

The LC students will:

- Demonstrate the ability to use design concepts to create strategies for problem-solving processes that advance the development of new ideas and implementation within the context of a scientific and/or mathematical model.
- Comprehend the “language of mathematics and science” to assist in the development and implementation of scientific and/or mathematical concepts and their applications.
- Demonstrate how to solve a problem or settle a problematic situation using science and/or mathematical ideas, concepts, and models through the use of mathematical and/or scientific analysis.
- Strengthen their scientific and/or mathematical knowledge through the use of student-oriented teaching methods.
- Demonstrate the ability to practice the concepts learned in a controlled environment through the successful completion of assignments.
- Improve communication skills to be able to convey concepts in science and mathematics to each other and to those in the outside community.
- Develop an appreciation for the value of student diversity in interests, opinions, and demographics through the (L)LC environment created.
- Display social skills required to work together across diverse demographic and/or disciplinary groups.

## Required LC Courses:

### Fall 2012

\*FFL 101 (Collaboration, Communication, and Inquiry)

CHE 111 (General Chemistry I) with 112 (lab) \*\*to be integrated with FFL 101

Choice of MAT 150, PHY 101, MAT 191

\*\*CSC 1xx or CSC 130

### Spring 2013

ENG 230 (English Composition II)

CHE 114 (General Chemistry II) with 115 (lab) \*\* to be integrated with ENG 230

PHY 291 (General Physics I with Calculus)

CSC 130 (Introduction to Computer Science) or MAT 151

\*FFL 101 is speaking intensive, service learning

\*\*CSC 1xx (Computer Science Principles) is a new course being designed as a broad introduction to computer science.

**Please note: We intend to build on the first year and create, if approved, a sophomore level Living Learning Community for students who both live on campus and those who do not.**

**Teaching Strategies:** Teaching in learning community courses at UNCG is intended to be a “high impact” academic practice. Below, please identify the high impact practices you expect to use in your LC courses. Check all that apply.

**HIGH IMPACT EDUCATIONAL PRACTICES (please check all that apply)**

<p>Communicate high expectations x</p> <p>Provide prompt feedback x</p> <p>Instruction and practice of team building and active listening skills x</p> <p>Team based / collaborative assignments and projects x</p> <ul style="list-style-type: none"> <li>• Team based / collaborative writing</li> <li>• Team based / collaborative research</li> <li>• Team based / collaborative oral presentation or performances</li> </ul> <p>Systematic investigation and research x</p> <p>Use / application of empirical observation x</p> <p>Introduction to / use of new technology x</p> <p>Information literacy assignments x</p> <p>Critical inquiry x</p> <p>Engaging “big questions” x</p>	<p>Integration of multiple areas of knowledge or disciplines x</p> <p>Frequent writing x</p> <p>Guided revision of writing and / or speaking</p> <p>Writing and /or speaking in various forms to various audiences x</p> <p>Disciplinary specific writing x</p> <p>Guided/ instructed practice of oral communication</p> <p>Frequent practice/use of quantitative reasoning x</p> <p>Field based / experiential learning</p> <p>Service learning and reflection x</p> <p>Internships</p> <p>Capstone project / culminating experience</p> <p>Others:</p>
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(Adapted from AAC&U LEAP Report, “High Impact Educational Practices: What They are, Who has Access to Them and Why They Matter”, George Kuh (2008)

**Integrative Assignments:** An important requirement for learning communities is to provide students with the opportunity intentionally and substantively to link learning in one course/discipline to learning in other courses/disciplines. At least two such assignments are required. Please identify the kinds of in-class and homework assignments you will use to help students to achieve such integrated learning.

With the chemistry and FFL courses as the common core for all students in the learning community for fall, these courses will be the lynchpin for integrated assignments. The service learning component of FFL will link the Middle College to the CHE112 chemistry lab to provide a valuable learning experience for the Middle College students. The LC students will serve as instructors and one-one-one coaches for the Middle College students as they participate in a hands-on experiment in the Sullivan Science Building chemistry lab. The MAT course will be linked to the CHE 112 lab to integrate some of the mathematical principles (elementary algebra, equations, inequalities, relations, functions, transformations, graphing) to the data work up for two or more experiments. Although the ENG 230 course is scheduled for the second semester, technical writing will be introduced into the CHE112 course. Working through the FFL course, professional writing will be introduced in the first semester, with an in-depth writing experience being associated with the second semester. In that semester, two formal laboratory reports on the students' science investigation will be required, with close integration with ENG 230. During the second semester, both the mathematics interaction and the service learning teaching of the Middle College by the LC students will continue.

Speakers will be invited to come to campus to speak to, and interact with, students on scientific topics of general interest. Examples of such speakers who have visited campus in the past year were Dr. Keivan Stassun (Vanderbilt University) who spoke on "Astrophysics in the Era of Big Data" and Dr. Thom LaBean (Duke University) who spoke of "Self Assembling Materials". The talks will be interdisciplinary and introductory, and the speakers will be chosen on the basis of their ability to speak to young scientists. Speakers will also be chosen based on their ability to relate their science to everyday life—emphasizing again that science and mathematics are all around us and that we use these disciplines every day. A second assignment, also required as a part of the FFL 101 curriculum will involve an essay written in response to one of the talks that the students hear. As the program develops, additional integrated assignments will be added.

In preparation for the visits we will work with instructors in FFL 101 or ENG 230 and to assemble preparatory reading-and-reporting assignments that will provide supplementary and background information to give students a taste of the topics about which they will learn from the speakers. In some cases this will involve reading and reporting on several articles on the topic at hand. In other cases the entire class may read and discuss an appropriate book on the topic. Oral reports on aspects of these readings will be devised, and assigned to students with each student expected to give at least one oral presentation to the FFL 101 class on the topic.

Integrative assignments between mathematics, chemistry, physics and computer science will evolve naturally as more and more students travel in a cohort in the learning community. At this point integrating assignments with English assures that all students will be engaged in integrated activities. Again, we want to show students that science and mathematics are relevant to their lives every day.



**Co-curricular learning:** Learning communities are intentionally designed to offer students with opportunities to link classroom-based learning to learning opportunities outside the classroom through participation in a variety of activities and programs. At least one co-curricular activity is required. Please identify specific outside-of-class programs and activities in which students in your learning community will be required to engage.

**Examples:** OLSL sponsored leadership development workshops and community service activities, OMA sponsored dialogues, panel discussions and cultural activities, events sponsored by Campus Activities and Programs (e.g. Days of Caring, Leadership Academy and Spartans Leading Spartans), Team Quest experiential learning activities, Wellness programs, Housing sponsored programs, campus film series, art exhibits, and speakers.

Two types of co-curricular activities will be required of students in our Living Learning Community. The first will involve a tutoring program that our students will provide for the high school students on the UNCG campus as a part of the Guilford County's Middle College Program. Our students will take a brief training program and then tutor Middle College students in science and math (1.5- 2 hours a week). Staff at the Middle College are very excited about this possibility. Tutoring and mentoring, possibly with visits to UNCG's labs, will create a greater partnership between the Middle College and UNCG as well as an opportunity for enrichment activities for these Middle College students.

Tutoring is often the best way for a student to really learn a subject, and will be particularly appropriate for our students who plan to enter careers in science or mathematics. A possible unpredictable corollary benefit could be that some of our students may discover that they have a previously-undetected interest in teaching that could encourage some to enter that profession. Many of our students do well as tutors is indicated by the surprisingly large number of students in UNCG STAMPS Science Scholarship program that serve as science and mathematics tutors in UNCG's Student Success Center.

A second type of co-curricular activity will be one day events. These include Science Olympiad, mathematics/computer science competitions, and activities that evolve from the partnership with the Middle College. UNCG hosts one of the state semi-final Science Olympiad competition for middle and high school competitors which is directed annually by Drs. Walsh, Muir and Horton. Competition is held in all fields of science and mathematics. Our students will volunteer as judges and event leaders as well as coaches and leaders for any teams that compete from Middle College. This project will give our students valuable exposure to local science and/or mathematics teachers and students, and to an exciting out-of-class application of the traditional science that they have learned for years.

Team building activities will be used, particularly at the beginning of the fall semester, to generate a sense of community among our cohort of students and enable them to get to know each other better at the beginning of the year. Part of this team building will take place using

the "Team Quest" facilities at Piney Lake. Students will go through the rope course, share a meal and participate in other team building projects.

Students will visit other local business and industry or university centers as can be arranged. For example, we would like to be able to take students to the JSNN to begin to understand nano-science and nano-technology. Conversely, graduate students in these areas as well as faculty will be invited to meet with the (L)LC students. Students will also participate in field trips to UNCG's Three College Observatory and the UNCG Planetarium as a way of broadening their exposure to different fields of science. Programs will be offered through Greensboro's Edible Garden and the Natural Science Center, and students will be given the opportunity to volunteer at these sites. Other activities in which (L)LC students may participate will include NSF funded activities such as the Celebrations associated with the new HERPS project and Greenway Day (GK-12).

We plan to participate in the program offered by the New York Times that enables students to buy daily subscriptions to the Times at a substantially reduced rate. The program also offers students the opportunity to meet with journalists such as science journalists via Skype to discuss articles that have appeared in the Times and important issues of the day.

One important co-curricular aspect of Living Learning Community will be upper class students who will serve as mentors to the first year students in the community. We will ask that dorm space be made available for these mentors. Mentors will live with the community, attend community co-curricular events, help with training of tutors, advise students, share meals with students and in general play the role of a big brother or big sister to our (L)LC members. We will recruit upper class students who are already established in their majors in science or mathematics to serve as mentors, and provide them with housing in exchange for their service.

**Please explain how the co-curricular activities you identified above will contribute to students' achievement of your stated learning outcomes**

### **Lecture Series**

Students will:

- begin to understand real world and work applications for their chosen field
- interact with professionals from outside UNCG
- respond to cross class assignments to increase their communication skills and better understand the integrated nature of mathematics and science

### **Middle College Tutoring**

Students will:

- Engage in service-learning activities as their tutoring experiences will be discussed in class and in their living environments
- Consolidate their learning through teaching
- Mentor middle college students in science and mathematics competitions
- Practice concepts learned
- Begin to determine if they might want to pursue a career in teaching

### **Science Olympiad**

Students will:

- Mentor high school students in problem solving and critical thinking
- Apply their knowledge to new situations
- Engage in service activities

### **Mathematics/Computer Science Competitions**

Students will:

- Mentor high school students in problem solving and critical thinking
- Apply their knowledge to new situations
- Further develop teamwork and leadership skills
- Engage in service activities

### **Other One Day Events**

Students will:

- Interact with professionals to learn about the everyday applications of science and mathematics
- Understand that science and mathematics are used in many different venues each day
- Increase their ability to work as a team and collaboratively

And, student might form different career aspirations.

**Contributions to Campus Wide Objectives: From the list of overall campus goals below, identify any goals whose achievement will be advanced by your proposed learning community.**

### **University Values:**

The University of North Carolina at Greensboro, a community including students, faculty, staff, and alumni, will demonstrate commitment to its core values:

- **Inclusiveness**--A welcoming and inclusive academic community, based on open dialogue and shared governance, offers a culture of caring with visible, meaningful representation of differences.
- **Collaboration**--Interdisciplinary, intercommunity, inter-institutional, and international collaboration is reflected and rewarded in teaching, research, creative activity, community engagement, and infrastructure.
- **Sustainability**--Academics, operations, and outreach are conducted with careful attention to the enduring interconnectedness of social equity, the environment, the economy, and aesthetics.
- **Responsibility**--A public institution, the University responds to community needs and serves the public in a systematic fashion through the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity.
- **Transparency** --Open decision-making, clear goals, and measurable outcomes enhance performance, trust, and accountability.

The proposed learning community will share all of UNCG's values, though it is particularly evident that foremost among these for this (L)LC will be inclusiveness, collaboration, and responsibility.

### **General Education Goals**

Foundation Skills (critical thinking, effective communication, information literacy and/or quantitative skills)

The Physical and Natural World (fundamental principles of mathematics / science)

Knowledge of Human Histories, Cultures and the Self (describe, interpret and evaluate ideas, events and expressive traditions that have shaped human experience through inquiry and analysis in the diverse disciplines of the humanities, language, history and art.

Knowledge of Social and Human Behavior (describe and explain findings derived from principles of empirical scientific enquiry to illuminate and analyze social and human conditions.

Personal Civic and Professional Development (active citizenship, social responsibility, ethical awareness, respect for multiple perspectives and cultures, and capacity for open inquiry and life-long learning)

### **Strategic Plan Goals**

**Strategic Area 1: Access to Education and Student Success**

**Strategic Area 2: Health and Wellness Across the Life Cycle**

**Strategic Area 3: Education and Leadership Development**

**Strategic Area 4: Economic, Cultural and Community Engagement**

**Strategic Area 5: Internationalization**

The proposed (L)LC addresses Strategic Areas 1, 3, and 4

**Explain any other Campus Wide Goals not checked above:**

## FOR LIVING/LEARNING COMMUNITY PROPOSALS

Number of students anticipated: 1st Year 40-50 Future Years 60-75

**Residence Facility Needs:** From the list provided, indicate your facility needs by checking all those items that are required for the success of your (L)LC and those you may prefer, but are not essential.

	<u>Required</u>	<u>Preferred</u>
Class room in the residence hall (seating 25 or less)	X	
Class room in the residence hall (seating 30 or more)	X	
Class room teaching station	X	
Seminar/conference room		
Large multipurpose meeting room (capacity of 60 +) Occasionally	X	
Video conferencing	X	
Sound proofed practice room		
Social lounges on residential floors	X	
Study rooms on residential floors	X	
Faculty or staff office space		X
Faculty-in-residence apartment		
Equipped Office center (fax, copying, phone, etc.)		

### Explain any additional facility needs you anticipate needing:

We have a strong preference for space for this community in the remodeled Quad dorms. There are several reasons for this preference. First among these is the availability of learning nodes and smart classrooms in the remodeled quad. These facilities will be especially valuable for English, mathematics and computer science classes that make heavy use of high speed internet accessibility and image display.

Secondly, an important part of our co-curricular activities will be the service learning component of FFL 101 and ENG 230 that will involve mathematics and science tutoring of students in the Middle College high school classes. These high school students have classes that are held in the School of Health and Human Performance which is adjacent to the quad dorms. The ease

of meeting with students will be helped enormously if the dorms and headquarters of the (L)LC are immediately next door to the classrooms and gathering spaces of the Middle College.

In addition, the close proximity of the Quad dorms to the Walker Street Parking Deck will be very attractive to those first year students who do not live on campus but to whom our Learning Community appeals. It is important that we have a cross section of students in this Learning Community, and making it easier for students who commute to campus by car to attend events at our (L)LC is very appealing.

**Commuting Students:** If the proposed Living/Learning Community will include non-residential /commuting students as participants, please explain the scope and extent of their involvement in the (L)LC and the means you will use to engage them in (L)LC activities:

We expect some sizeable percentage of our students (more than 10%, less than 50%) will live in the local community but participate in our classes, lecture series and co-curricular programs. All portions of our program are designed to include local students who do not live in the dorm but who take the time to attend our events in the afternoons and evenings. We will encourage this kind of participation, and most of us are used to significant numbers of such students in our science and mathematics majors. As freshmen students in the STEM (L)LC will enroll in the same courses, scheduling “events” will not conflict with UNCG coursework. We realize that many UNCG students, both those living on campus and off campus, also work. Every effort will be made to announce special events in advance in the hope that students can adjust work schedules.

**What else do you wish us to know that will help us better understand and evaluate your proposal, including anything not previously mentioned that you need in order for the LC to be a success.**

UNCG's retention data indicates that students who enter as freshman in mathematics, physics, chemistry, and computer science frequently do not remain in their majors to graduation. The data also suggest that students who are living on campus are more likely to stay in a STEM area than those who do not live on campus. We believe that a key to retaining these students may be community engagement at the university, as well as faculty and student mentoring, in addition to the academic work they undertake.

Certainly a crucial aspect of the success of this (L)LC will be the instruction that our cohort of students receives in the courses the students will be taking. We will encourage enrollment, where possible, in course sections in which the instructors have demonstrated success in teaching introductory students, but in many cases these instructors have already been chosen by their departments (and in most cases chosen for this very reason). Of particular importance, however, are the courses that will offer our students GRD credit for it is these courses that go a long way toward insuring that these science students can read, analyze and write well, and that they can communicate with others who are not scientists, and further communicate scientific principles to communities outside the sciences. These skills cannot be taught to these first year students as though these GRD courses are just another science course or just another English course, or that these students are learning to write reports merely for their science labs. Students need dedicated instruction in how Gen Ed principles (reading, writing, critical thinking, oral communication) may be directly applied to their area(s) of study.

While ENG 230 or similar courses could be taught by qualified but transient instructors (for example, by graduate students, who are not permanent faculty) we would strongly urge that such not be the case for this learning community. Instructors in these GRD courses should be hired on full-time, yearly or multiple-year contracts so that they may demonstrate commitment to our students, to the course sequence and to the University over an extended period of time.

We ask that the instructors for ENG 230 be hired, after consultation between the Department of English and Dean Roberson's staff, as a full-time instructor (teaching 3 or 4 courses per semester, with benefits). A full-time instructor will have a stronger commitment to the courses in our (L)LC, and will develop, after several semesters, a better understanding of what it will take for this course to succeed with our science students. Given that these (L)LC require, additionally, work outside the classroom (with other (L)LC instructors, in advising the student cohort, and in planning, on occasion, extracurricular cohort activities), it is especially important that the teaching staff for the Gen Ed (L)LC courses, particularly English, be full-time, tenure-track or have continuing lecturer status.

**Budget --- STEM (L)LC**

			<u>Per semester</u>	
			<u>or per course</u>	
Release Time (1 course per semester) for Director	2	\$ 5,000	\$	10,000
Director's Assistant (possibly a grad student: 2 semesters)	1		\$	12,000
in-state tuition for Director's Assistant	1		\$	5,600
Instructor for Eng 101/102 (2 sections per semester)	4	\$ 4,000	\$	16,000
Team Building Events (including TeamQuest, etc)			\$	1,000
Supplies for Tutors			\$	2,000
Student Field Trips: transportation, fees, etc			\$	3,000
Student meals for events, tutors/tutees, mentors, etc			\$	4,000
Discretionary Funds: faculty meals, honoraria			\$	3,000
Upperclass Mentors	3	\$ 2,400	\$	7,200
NY Times \$20/per student per semester	2	\$ 1,000	\$	2,000
<hr/>				
	Total		\$	67,800
<hr/>				

### List all faculty and staff involved

Name	Department	Email
1. William Gerace (co-director)	Physics & Astronomy	w_gerace@uncg.edu
2. Julia Jackson-Newsom (co-director)	Office Research & Planning	j_jackso@uncg.edu
3. Steve Danford	Physics & Astronomy	danford@uncg.edu
4. Dohyoung Ryang	Mathematical Sciences	dryang@uncg.edu
5. Carol Seaman	Mathematical Sciences	ceseaman@uncg.edu
6. Lynn Sametz	Ctr for Youth, FamilyCommunity	l_sametz@uncg.edu
7. Steve Tate	Computer Science	srtate@uncg.edu
8. Jerry Walsh	Chemistry & Biochemistry	jwalsh@uncg.edu

### Expectations of Lead Faculty in partnership with the Co-Director:

Design, develop and coordinate the Learning Community

- Recruit and collaborate with other faculty and departments
- Teach a course required for the learning community
- Be involved in the development of assignments and other opportunities that enable students to integrate learning across courses.
- Plan and participate in LC community building, social and co-curricular activities additional to formal class time contact
- Serve as a mentor for the LC students
- Assist with assessment efforts
- Supervise graduate assistant

PLEASE EMAIL SYLLABI OF THE REQUIRED LC COURSES TO JOHN SOPPER AT [jrsopper@uncg.edu](mailto:jrsopper@uncg.edu)

**Learning Community Team Signatures:** Please print this page and obtain the signatures of all faculty and staff members principally involved in the LC. Submit the signed signature page to John Sopper, 132 A McIver Building along with your completed proposal.

L(L)C Title: Achieving Together in Math and Science (AToMS): A Living Learning Community

Signature \_\_\_\_\_  
(Principal Contact / LC Lead Faculty Member)

Date: \_\_\_\_\_

Dept: \_\_\_\_\_

Other (L)LC faculty/ Staff:

Signature \_\_\_\_\_

Date: \_\_\_\_\_

Title: \_\_\_\_\_

Dept: \_\_\_\_\_

**Please print this page and obtain the signatures of the relevant Deans, Department Heads or supervisors of those involved in the LC. Return your signed copy to John Sopper, 132 A Mclver Building.**

LC Title: Achieving Together in Math and Science (AToMS): A Living Learning Community

Dept Head: \_\_\_\_\_ Date: \_\_\_\_\_

Dean: \_\_\_\_\_ Date: \_\_\_\_\_

Dean: \_\_\_\_\_ Date: \_\_\_\_\_

Dean: \_\_\_\_\_ Date: \_\_\_\_\_

Supervisor: \_\_\_\_\_ Date: \_\_\_\_\_  
(Staff)

Supervisor: \_\_\_\_\_ Date: \_\_\_\_\_  
(Staff)

**Director of Housing and Residence Life (For LLC's)**

\_\_\_\_\_ Date: \_\_\_\_\_

Approval of LLC use of residence hall rooms and other space(s) requested in this (L)LC proposal

Submit your completed proposal form with the necessary signatures to John Sopper at [jrsopper@uncg.edu](mailto:jrsopper@uncg.edu), or 132A McIver Building, UNCG campus

**Requested Revisions:**

**APPROVAL:**

\_\_\_\_\_ Approved      \_\_\_\_\_ Approved with Amendments      \_\_\_\_\_ Disapproved

**Name:** \_\_\_\_\_

**Date:** \_\_\_\_\_