



THE UNIVERSITY of NORTH CAROLINA
GREENSBORO

Inspire. Change.

Integrating Teaching and Research

Spring 2009, Issue II

Contents of Newsletter

URA	2
Interviews	
Dance	3
Interior Architecture	3
Business	3
Developing departmental curriculum	4

Office of Undergraduate Research recognizes that it is logistically impossible for every UNCG undergraduate student to have a one-on-one faculty mentored research experience.

Integrating research in the classroom is a way to introduce research to more students and it helps build skills students need to participate in a one-on-one

research project. If we become deliberate with scaffolding research skills into the curriculum, we can enable students to "hit the ground running."

It will take teamwork for a department to develop a comprehensive research-rich curriculum. OUR is here to help. **Check out the table on page 4** of this newsletter for a start. I am

interested in facilitating discussions about integrating T/R with individual faculty members and with departments as a whole.

And, in this newsletter we provide an avenue for you to learn how your colleagues have been able to integrate T/R within their classrooms and degree programs.

Chemistry and Biochemistry's B.S. degree with a Research Concentration

The Office of Undergraduate Research

University of North Carolina at
Greensboro
1613 Moore Humanities & Research
Administration Building
Greensboro, NC 27402-6170

Phone: (336) 334-4776
Fax: (336) 334-4115
E-mail: reseinit@uncg.edu
Website: www.uncg.edu/our

The Department of Chemistry and Biochemistry offers a BS in Chemistry *with a concentration in research*, which is a great opportunity for students to explore chemistry in an investigative manner. Students who choose this concentration begin research as early as their second semester of their freshman year. The degree program requires students to engage in undergraduate research their sophomore, junior, and senior years, write a formal research paper and give an oral presentation of their work prior to graduation. Students use a variety of mechanisms to support their research experiences: volunteer, academic credit, wages, and/or stipends. The program has been in place since 2005 and more than 15 students have enrolled in the program. Students pursuing this degree will build a resume that will impress graduate and professional schools as well as recruiters for jobs in industry. For more information on the degree, visit :

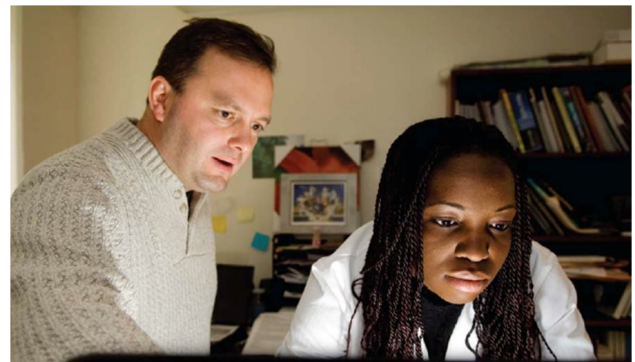
<http://www.uncg.edu/che/undergrad/research.html>

Undergraduate Research Assistantship Student Interview - Zimuzor Ugochukwu Mentored by Dennis Lajeunesse

1. **How did you find out about the research of the faculty member you worked with?** I was walking through the Science Building and came across a marine biology lab. I walked in, explained my interest, and they directed me to Dr. L, whom they thought would better fit my biological interests.
2. **Did you receive academic credit and/or pay for doing your research?** I received academic credit for my entire Sophomore year, five credits in all. I am now funded through OUR's URA program.
3. **How long did your research project last?** My project is ongoing but I have been working on it for two years.
4. **How has your involvement in the research project helped you with respect to your college experience?** It has broadened my experience. I am able to look at another aspect of college life in academics.
5. **Has your research helped you with respect to understanding the content in the courses that you have taken? Can you give a specific example?** My research has helped me to understand the content in the courses. For instance, I am taking Genetics now and the research that I have done and am doing pertains to Genetics and Cell Biology.
6. **What was the most positive aspect of your research project? The most negative?** The most positive aspect of my research is the fact that I may make a difference in the lives of others in the future, as well as being paired up with a wonderful mentor who is willing to help me in any way possible. The most negative aspect would be the difficulty in understanding some of the material. However, I do have an extraordinary mentor to guide me.
7. **What is the title of your research? Briefly describe what your research is about.** In Fall 2007, my mentor professor and I cloned CG16972, a gene which encodes a protein of an unknown function. CG16972 is expressed in a group of autonomic neuron-like cells which we are interested in studying. This gene encodes a novel protein that is slightly homologous to a protein in the human body that in its absence is the cause of a facial bone disease known as Treacher Collin's Syndrome.
8. **What do you plan to do after graduation? Has this research experience influenced that decision at all? If so, how?** After graduation, I am looking at a number of different things. I may pursue a higher degree or I may pursue my political interests. However, I am not sure at this moment. This research has the ability, if we work hard enough this year, to influence my decision in the future.

Faculty Mentor Interview - Dennis Lajeunesse

1. **What was your role in the undergraduate research project?** I help Zim analyze the data and design other experiments. We talk about the results and have weekly discussions about important science issues that relate to the experiment. I also trained her to identify certain phenotypes and use different microscopes, dissect larvae, and set up genetic crosses.
2. **What was the most positive aspect in working with an undergraduate researcher?** The most positive aspect in working with an undergraduate researcher is guiding that student through the process of science and at some point seeing the sign that they have finally learned how science works. People have misconceptions about science. There is a science that people think that happens that is exciting, and there is a reality of science that is much more tedious. It is so hard to get to those exciting results and having a student appreciate the fact that science is not always exciting yet still work hard in spite of the tedious processes and still be interested in science is very rewarding to me.
3. **About how much time did you spend with you undergraduate researcher and was it worth it?** My students work 10-15 hours a week and I am there almost all the time to help them with any problems they might have. Yes, it is worth all the time that I spend working with them.



Dennis Lajeunesse (left) working hard with his undergraduate researcher, Zimuzor Ugochukwu (right).

4. **Do you see yourself working with another undergraduate researcher sometime in the future?** Yes. Being at UNCG with a small graduate program, the most reliable research assistants I have are from undergraduates. They have provided me with an invaluable set of experiences as well as producing a great deal of data that I have used for my grants and publications.
5. **What would you advice for a faculty member who would mentor an undergraduate researcher?** It is a lot of hard work but it is well worth it. Having an undergraduate research assistant at a school like UNCG is a valuable resource that many other schools don't offer and this makes UNCG unique.

Dance (Larry Lavender)

It is highly rewarding to integrate one's research into the classroom; to guide students' pursuit of knowledge along tracks that mesh with one's own, and that interest and excite the students. Thanks to UNCG's *OUR*, I have twice been able to investigate with freshman and sophomore students the emergence, development, and implementation-through-performance of their ideas about (and struggles with) personal and social identity. These activities grew out of my Fall 2006 *Grogan Learning Community* course on Creativity in which I included a short unit on performance art, inviting first-semester freshmen to apply their emerging creativity skills to the collaborative creation of identity-based works for performance. The assignment resonated deeply with the students, and 7 of them approached me about continuing to develop performance art works under my guidance. A pilot course in *Performance Art* was created and offered during the Spring 2007 semester. This scenario repeated itself the following year when I included the performance art assignment both with freshmen in Grogan College and with students in my *Honors College* freshman seminar on Creativity and the Arts.

In working with students in the *Performance Art* courses, I assist them in identifying and exploring aspects of their personal and social lives to locate questions, issues, themes, and challenges about which they might develop performances. Through readings on perfor-

and site-specific art, numerous exchanges of draft ideas and proposals, and in-class discussions the students are guided in the use of essential creativity skills to develop and present their works. Specifically, the students strengthen their ability to *break perceptual and cognitive set* so as to see things in new ways and to devise new solution paths in pursuit of their goals; to *keep response possibilities open as long as possible* —i.e., to work without too definite a plan so as to avoid premature closure; and to utilize *heuristics* rather than conventional rules and formulas for generating novel ideas and for solving the ambiguous and open-ended problems that arise routinely in conjunction with deeply personal artistic work. My writing and teaching (and art-making) is nourished by these pedagogical exchanges, and by all accounts the students are empowered by the opportunity to express I highly unique ways their ideas-of-self in a nurturing and supportive environment.



Clockwise from the top, Performance Art students Jonathan Johnson, Rikki Gibbs, Marie Henry, Matthew Palmer, and Josh Ortiz perform "Continuous Laughter/Hopefully Contagious" in UNCG's EUC on November 8, 2008. Photo by Larry Lavender.

Interior Architecture (Patrick Lucas)

My leadership with the *Loewenstein Legacy* provides the most holistic example of my community-based approach to classroom teaching and the weaving in of scholarship to my classroom and studio. In November 2007, I directed an upper level design studio of sixteen undergraduates, two graduate students, and a fifth year student pursuing an honor's thesis to design and build a multi-sited exhibit centered on the mid-twentieth century Modern design work of Greensboro architect Edward Loewenstein. At the core of the exhibit design (and of my parallel research) stood two questions about the implications of bringing an International style to the local landscape: How did Loewenstein espouse the international tenets of Modernism through his design work in the local community? How did these very different buildings change people and the way they thought of themselves and Greensboro?

Not only did interior architecture students participate in the conversa-

tions and work to bring some resolution to these questions, the project brought students from several majors together with a community advisory board and design team, bringing the practical to the theoretical, thus engaging students to move beyond distinctions between practical and liberal education. We worked with three Department of Art faculty (Chris Cassidy, Seth Ellis, and Amy Lixl-Purcell) and 60 art students who brought digital skills and design acumen to the project. Graduate students in history engaged in a companion material culture seminar with a focus on the mid-century to help the exhibit with contextual frames. Finally, 80 students in my undergraduate history/theory of design course similarly experienced a focus on the 1960s and helped to develop the wall installation to represent Modernism in design that hung in the lobby of the Gatewood Building. Students from all these walks of life and all these disciplinary areas focused on a common goal of manifesting exhibitions for two major venues, as well as a dozen **[mod] moments**, small parts of the exhibit located in various community locations. The reach was big, the design work strong...but the greatest success of the fall semester was that students learned an intellectual framework and context for design grounded in a real world application and installation of the exhibition.

Bryan School of Business (Joy Bhadury)

In the Bryan School, one important way in which undergraduate education is integrated with applied business research is through the use of experiential education courses. Faculty in these courses have students do an applied research project with an actual organization that show students how to use their domain knowledge, analytical skills, and communication abilities to solve a critical business problem for the organization. Student activities involve surveying background literature, collecting and analyzing data, drawing inferences, making recommendations, and presenting them for feedback to the management of the organization sponsoring the project.

In Advanced Marketing Management, Dr. Lew Brown, has student-teams work with a company to develop a strategic marketing plan for that company or for a new product or service the company wants to introduce. Students work with a mentor from the company on these projects. In International Marketing, Dr. Nicholas Williamson has students work with Small to Medium Sized Enterprises on "Export Odyssey", a project to develop export feasibility plans for their products. Students, as part of classes, have produced such plans for Duplin Winery (one of the largest wineries in NC) and the exciting new aviation venture in the Triad: Antilles Seaplanes. A third notable example of such curriculum based research projects would be found in Consumer Behavior taught by Dr. N. "Mac" McMillan.

Undergraduate Research Expo

Thursday,

April 23, 2009

EUC, 12-4 pm

Table 1. Example of how to build research skills into a department's curriculum

Research Skills		Course	Course	Course	Course
		"A"	"B"	"C"	"D"
Information literacy skills	Assign and discuss how to read from primary sources				
	Review a paper				
	Create an annotative bibliography				
	Compare/contrast two or more works				
	Critically analyze multiple works and write a review paper				
	Write a research prospectus				
Data collection and interpretation skills	Explain a graph/figure				
	Enter original data (i.e. learn to code)				
	Analyze data collected by others				
	Collect data using an existing research instrument or protocol				
	Create and validate own research instrument and collect data				
Computer skills	Use word processor to create and track changes in a document				
	Use spreadsheet software to enter, analyze, and visualize data				
	Use classroom management software to share data and communicate with others				
	Create a dynamic website				
	Effectively use library e-resources				
Communicating results	Write a paper				
	Write a paper and share with peers				
	Present orally to peers				
	Present to others outside the classroom in formal presentation				
	Create a dynamic website				
Group work dynamics	Ethics of data collection, authorship				
	Examine communication styles				
	Examine leadership/personality profiles and how it impacts group work				
	Create group contract with respect to responsibilities, communication and conflict resolution				
	Conflict resolution training				

