

Why We're Here

BY AMY BENSON BROWN

Fresh approaches to teaching and learning

A wave of curricular innovations is rolling across the College of Arts and Sciences, drawing professors and students across many of the boundaries that traditionally have defined learning. The name of one of the courses that greets first-year students at Emory, Creativity and Collaboration, captures the spirit of many new teaching initiatives. Divisions among disciplines, between graduate and undergraduate education, and between the classroom and community are all being challenged as professors adapt teaching practices to help students grapple with the complexity of the pursuit and application of knowledge today. And the trend toward multidisciplinary approaches to problem solving at the highest levels of academic inquiry now shapes many students' experiences from the moment they walk into their first classes.

Multidisciplinarity from Day One

"Creativity and Collaboration" is one of the latest in a line of seminars begun in 1999 to give freshmen a small seminar experience and close contact with a faculty member early in their undergraduate education. Professors in music, art, dance, and theater team up to introduce students to the common principles of the creative process. Students in the fall of 2004 began the term by studying either music with Associate Professor Steve Everett, dance with Associate Professor Lori Teage, theater with Associate Professor Leslie Taylor, or visual arts with Lecturer Katherine Mitchell. After midterm came a kind of curricular musical chairs as students switched focus, sampling another creative discipline, before ending the term with a multidisciplinary collaborative project. While people associate creativity most closely with the performing arts, Everett hopes that the course's emphasis on engaging students in the process of forming and nurturing creativity across disciplines might be replicated in other



parts of campus. "Any group of linked disciplines, like English and the social sciences," he says, "can examine how ideas come about and the process of nurturing them."

While students have had a buffet of choices among freshman seminars in recent years, few focused on the sciences until Professor of Chemistry David Lynn brought ORDER to the curriculum. Like "Creativity and Collaboration," ORDER (On Recent Discoveries by Emory Researchers) guides freshmen across the terrain of several related disciplines while stressing, in the words of student Stephanie Whisnant, "the underlying themes that define science." Unlike most freshman seminars, ORDER shifts the focus from the work of senior faculty to that of graduate students. In a competitive process, five graduate researchers are selected to teach a two-week module on their own research in Lynn's seminar. In addition to giving the graduate students valuable experience in communicating their own work, the course brings undergraduates face to face with real research and with the graduate students' infectious excitement about their unfolding discoveries.

"Without contact with graduate students," Lynn argues, "the college student does not see the whole of the academic enterprise." On a recent tour of universities with his daughter, Lynn was struck by the apologetic attitude of top institutions toward their use of graduate students as teachers. "Each school failed," Lynn says, "to capture the positive and essential element that graduate students bring to academe. Particularly in the sciences, the funding structure has allowed graduate and undergraduate education to evolve along separate tracks, to the detriment of both. We hope that ORDER will find ways to mend that divide."

ORDER also aims to bridge divisions across the disciplines. The multidisciplinary approach of ORDER seminars, like one in the fall of 2004 that brought together researchers from neuroscience, sociology, chemistry, psychology and anthropology, allows students to see the necessity of collaboration across fields in solving scientific problems. The teachers also progress in their search for a common language. "To sit in a room of teacher-scholars,"

says Dawn Comeau, one the course's researchers and a graduate student in women's studies, "and hash out what language and methodologies to use to talk to undergraduates to show them the underlying processes of science – that's really doing interdisciplinary teaching and it's exciting." The course has been effective in capturing students' interest in science early, as many ORDER students go to work part-time in research labs after the course. The interactive learning that characterizes both "ORDER" and "Creativity and Collaboration" also serves as a foundation for the students' experiences in many upper-level courses.

Taking it to the Streets (and Creeks and Corporations)

Sponsored by the Center for Teaching and Curriculum, Emory's Theory Practice Learning (TPL) Program aims to strengthen the connection between academics and contemporary social issues by training teachers in "experiential education" – learning by doing. TPL courses, says former program director Preetha

Ram, integrates activities like internships, community service, and field trips into the curriculum to boost students' active engagement in learning. The pedagogical theory underlying TPL, Ram explains, holds that concrete experiences lead students to reflect on their own observations and formulate principles that serve as guides to further action and analysis of problems. Faculty from a wide variety of disciplines in the College, such as anthropology, religion, biology, Jewish studies, and environmental studies, use TPL techniques in their courses.

Students in Anthropology 240, for example, encounter the culture of the Gullah people who inhabit Sea Islands from the Carolinas to Florida. After reading ethnographies of the Gullah, they travel to St. Helena Island and visit the Penn Center, the main center for Gullah research. "This course," Assistant Professor Tracy Rone says, "affords students the opportunity to study the culture deeply through course readings, lectures, sound recordings, and film. And the trip provides hands-on engagement." Eating Gullah food, touching the famous "tabby" walls of Gullah buildings, and

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Professors Jack Zupko and Anne Hall take their interdisciplinary water course out of the classroom, touring a treatment plant (left). Some Emory students intern at CNN (far left).

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attending concerts of Gullah music brings their reading to life. And students understand the dilemmas involved in preserving Gullah culture amidst the area's booming tourism industry much more concretely when they are stuck in traffic caused by the development and thus witness the impact first-hand.

But unplanned interactions with local people sometimes provide the most realistic taste of ethnographic work. “We stopped in at a fish fry,” Rone remembers, “and you could see students really begin to see what it means to be an anthropologist, figuring out who you can talk to, who's going to let you in.” Similarly, an impromptu stop at a bowling alley allowed students to hear Creole spoken freely, as a community elder regaled them with stories of Martin Luther King's visits to the Gullah community.

“While most Emory students have heard of Hilton Head and some have visited the island and frolicked in the sun and played tennis or golf, most have very little knowledge about the cultural heritage of the region,” observes Rone. Through a blend of theoretical study and practical observation, “this site that was previously seen as a place for leisure and entertainment is transformed into a locus for meaningful conversations about the impact of tourism on the environment, the tensions between capitalism and maintaining cultural heritage, and questions about who decides whose heritage gets preserved and why,” she says.

As with all TPL courses, learning through personal engagement equips students not only with deeper knowledge of their subject but with skills they can transfer to other situations. Just last fall, Melissa Burroughs (Emory '04) called Rone to say the interviewing she did for her ethnographic project gave her the confidence to interview patients, a task that many of her classmates at Harvard Medical School found outright intimidating.

Taking learning to the streets – or elsewhere beyond the classroom's four walls – is part of many other courses too. Environmental studies, for instance, requires both a service learning course for majors that emphasizes learning through working and an internship program for academic credit. When Emory's chief environmental officer, John Wegner, teaches the service learning course, he creates an artificial environmental consulting company with which the class negotiates. Students have investigated watershed management for the Peavine Watershed Alliance and done contracts for Facilities Management at Emory. Instead of regular

class sessions, the group holds “company meetings.” There are no lectures, and most of the work is done outside of class. Unproductive students are “fired”: dropped from the class, as they might be in the working world. While many students enjoy the flexibility and creativity of the course, the experience can be demanding. During the Watershed Management Project, for instance, any time it rained more than an half an inch – even in the middle of the night – someone had to go out and measure it.

“This kind of course demands a lot of self-motivation and resourcefulness in problem-solving,” Wegner notes. “Students learn that they can learn on their own, on the job, and in many other ways besides sitting in a class. And after all, most of the things we do in our working lives aren't what we've been trained for but things we have to learn how to do on our own.” This term Wegner's class will tackle issues he is working on himself, for an environmental report on the state of Emory. This requires measuring what is happening to the forests, to energy use, to recycling – in short, anything Emory does that has an impact on the environment.

The environmental studies internship, rather than setting up virtual companies, sends students off campus to test their theories in actual environmental organizations. “The internship lets students who want to do environmental advocacy see what it is really like,” says Wegner. Ten to fifteen students each year do internships, which can dovetail with a summer job. Students regularly work with groups like the Southface Energy Institute, CNN, Fernbank Science Center, the Sierra Club, and the Georgia Conservancy. Some internships even take students overseas.

Environmental studies major Lijing Xu helped to reduce sulfur pollution for a company in Beijing, China, and found that what she learned through her internship was very different from her classes, much more specialized and specific. “While it made me realize how much I don't know about environmental science, it was great to learn on a much deeper level and to see it in person,” reflects Xu. Internship experiences like Xu's often are rewarding personally as well as intellectually. “The kindness of the Chinese people at this company,” says Xu, “toward an odd not-quite-Chinese, not-quite-All-American girl was overwhelming.”



Environmental studies intern Lijing Xu enjoys dinner with her Beijing hosts (far left) and visits a nearby park (near left). Fernbank Science Center (right) provides local internship possibilities.

Preetha Ram, senior lecturer in chemistry, and Emory student Katie Rodby bring a Theory Practice Learning course to local elementary students.



Intellectual Ecosystems

One of the most interesting aspects of curricular innovation in the Arts and Sciences at Emory is the trend toward faculty initiatives which sprout offshoots in the undergraduate curriculum. The pursuit of knowledge among faculty, graduate students, and undergraduates seems at times a kind of intellectual ecosystem, with change in one arena fostering change in others. For instance, a recent interest in water as a focus of interdisciplinary learning began with the Piedmont Project, a faculty initiative to investigate how to support environmental sustainability on the Emory campus. This spring's two-day Science and Society Symposium, "Water in Our Lives," and an accompanying interdisciplinary upper-level course grew out of a faculty retreat last year at which professors learned about water issues in Atlanta and global public health perspectives on water and disease. The aim is to integrate classes with less formal activities and to collaborate with other universities; Georgia Tech and Atlanta University Center faculty also participated, according to Science and Society Director Arri Eisen. Science and Society undergraduates helped plan and coordinate the symposium.

Students in "Water in Science, Philosophy, and Literature," cotaught this spring by associate professor of philosophy Jack Zupko and associate professor of environmental studies Anne Hall, attended the symposium as part of their course. "We're looking at water supply and water quality issues," says Hall, "at the local, regional and global scales. Aquatic ecosystems have been threatened by engineering projects to prevent floods, dams built for hydroelectric power, overuse of water resources, and industrial and domestic wastewater releases." This generation of students, asserts Hall, can be key players in reestablishing a balance between human needs and water supply.

As an environmental scientist, Hall's passion for this topic is a natural fit. But students will also discover what a scholar of

ancient philosophy brings to the study of water issues. "The understanding of water in the Middle Ages," explains Zupko, "predates the division of learning into so many branches. Then, philosophy and natural sciences were one." Perhaps with the curriculum, as with water itself, everything old is new again. "The Greek treatment of water – at once philosophical, scientific, and literary – models for us a way to think about the elements where the strands of inquiry are wound all together," says Zupko. As Zupko and Hall crossed their fields of expertise to explore this topic, they warned their class of juniors and seniors to say goodbye to comfort zones. "If you're a scientist we're going to make you think about the natural world poetically; and if you're a humanist, you're going to engage the science," said Zupko.

A less structured kind of initiative bubbling up in another corner of the academic ecosystem pushes students across a different boundary. Advanced graduate students often enjoy a relationship with faculty based on a shared fascination with the questions of their discipline and a sense of camaraderie in the pursuit of answers. Two years ago comparative literature professor Dalia Judovitz decided to try to replicate what is best in that relationship by fostering connections between graduate students and undergraduate majors in her department. While less formal than the ORDER seminar, the "Intellectual Buddies" program similarly encourages interaction that benefits both levels of student. Graduate and undergraduate pairs meet for coffee a few times each semester to talk about ideas and issues in their field.

Such casual interactions can subtly strengthen the sense of intellectual community in a department. According to Brian McGrath, a dissertation-stage student, the program works. Undergraduates have a chance to voice questions and anxieties they may not feel comfortable sharing with faculty members, and graduate students get to talk with them about the questions of their discipline without the pressure of grades getting in the way. "People often comment about how Emory undergraduates are so concerned with grades," McGrath remarks, "but from this process, I get to see their genuine interest in the issues." The active engagement that this informal mentoring program encourages is a common denominator of many of the curricular innovations in the College. "What I really like about this program," McGrath reflects, "is that it reminds me that these intellectual questions are really why we're here." ∞

