

# uncg research

spring 2007

Research, Scholarship and Creative Activity



## SIGHT, SOUND AND SYNAPSES

Conducting research on  
the minds of musicians

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THE WORLD IS FACING A CHANGE in its economy as profound as the Industrial Revolution in the 18th century. Prior to the Industrial Revolution, the economy was based on manual labor. Following the Industrial Revolution, the economy was dominated by industry and the manufacture of machinery. We are now rapidly moving from a manufacturing-based to a knowledge-based economy. No longer are we in competition with individuals in our community, our state or even our country. The competition for economic well-being is global.

To quote Dr. Charles Wessner, director of the Program on Technology, Innovation and Entrepreneurship for the U.S. National Academies, "Innovation is essential for competitiveness."

Universities, home to innovations, are seen as critical to this change. By some they are viewed as the economic engine driving the change. By others they are viewed as the catalyst. By all they are viewed as essential.

North Carolina has seen the necessity of engaging more fully with the universities as it moves from an economy based on manufacturing and agriculture to one that has greater reliance on technology. In his inaugural address in March 2006, President Erskine Bowles presented a challenge to the entire 16-campus UNC system and, in so doing, made a promise to the people of North Carolina: "In partnership with business, government and the other sectors of education, this University must continue to seek out ways to help every region of North Carolina foster and stimulate economic development."

For the first time, the UNC Board of Governors has included "regional and state-wide economic development" as one of its seven "strategic priorities." They went on to define economic development as "those activities occurring at the intersection of the public and private sectors designed to increase the long-term economic well-being and quality of life of its citizens. Workforce development, leadership development, public policy analysis, capacity building, the creation of intellectual capital and technology transfer are all relevant components. It is important to note that this definition implies a focus on long-term capacity building rather than short-term growth."

UNCG, a regional urban campus, has a long and robust history of engaging with the surrounding community in ways that improve economic well-being and quality of life. This role has become even more important as the Triad seeks to redefine its economic core and overcome the loss of 40,000 jobs in the last five years. This issue of UNCG Research captures some of the activities that illustrate this role.

**Rosemary C. Wander, PhD**  
Associate Provost for Research and Public/Private Sector Partnerships

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A sea change for a fishing village

“All these occupations are disappearing. Work is so central to identity. This is the last great generation of fishermen, the last who are able to do it in an artisanal way.” Matt Barr

In 1999, Sneads Ferry was a sleepy fishing town. For generations, fathers taught sons the craft of the catch and a love of the sea.

By 2006, when Matt Barr in the Department of Broadcasting and Cinema completed “Wild Caught,” his documentary on the fishing way of life, much had changed. Tourism was taking a foothold, imported seafood was hurting sales, and government regulations were making it difficult to eke out a living on the water.

“I couldn’t do the same film now,” Barr says. “When I started in 1999, I had the idea of looking at one fishing community — its powerful sense of spirituality and palpable sense of community and how this whole thing works together.”

He began by simply spending a year in the town, gaining the fishermen’s trust. Then he began filming what he sensed, even then, was a disappearing way of life.

As time went by Sneads Ferry began experiencing an incredible amount of growth. People who hadn’t spent generations on the water were coming in and changing the town’s identity. Government restrictions on what fishermen could and couldn’t catch, coupled with competition from imported seafood, were making it hard for even the most seasoned fishers to continue.

Barr’s film has shone a spotlight on the issues and will continue to be seen in the state and across the nation. It has been accepted at the RiverRun Film Festival in Winston-Salem and the Delray Beach Florida Film Festival, and has been shown in New Orleans at the International WorkBoat Expo and the Core Sound Waterfowl Museum, among other venues.

“The film has taken on a whole new life beyond the documentary,” he says.

“The film has become part of the advocacy for the fishing

community. It’s changed how fishermen feel about themselves and their work.”

He has also continued to film as fishermen battle against zoning laws and fight back in other ways.

The film is the cornerstone for the Unheard Voices Project, a nonprofit organization devoted to recording the stories of working class people whose livelihoods are threatened by globalization and other change.

Barr has received funding from North Carolina Sea Grant to have the film interviews transcribed and given to the library at NC State. A companion book is in the works. Barr anticipates it will be an illustrated oral history that will allow him to develop the themes of change more thoroughly than film will allow.

“The research continues,” he says.

PHOTO: MATT BARR

Turning the tide

DR. SUSAN ANDREATTA, A PROFESSOR OF ANTHROPOLOGY, and her undergraduate research assistant Anne Parlier didn’t know much about fish. They learned quickly, however, when they were asked to improve the plight of North Carolina’s fishermen by developing a marketing campaign to promote local seafood.

Parlier sums it up succinctly: “It’s not about fish; it’s about people,” she says.

Their project, called “Harnessing Consumer Preferences to Create New Markets for N.C. Seafood,” was funded for the first year with \$21,000 from North Carolina Sea Grant. They have applied for a second sea grant to further their work.

Marine experts contacted Andreatta, who had worked with small farmers for 10 years, asking her to translate her skills to the seafood industry. Shrimpers in particular have been hurt by state and federal laws — for example, laws against killing shrimp predators like turtles and sharks — as well as stringent regulations and cheaper seafood being imported from Asia. The market for North Carolina-harvested shrimp plummeted from \$110 million in 1995 to \$64 million in 2005.

“At the end of the day we’re losing the fishermen,” says Andreatta, whose efforts are primarily based in Carteret County and who got to know many of the fishermen there through her research. Those fishermen were carrying on a 300-year tradition. Now, she says, “they use the expression, some of them are going to get ‘land jobs.’”

Most people who visit the coast assume they are eating fresh local seafood. The fact is, Andreatta explains, much of it comes prepackaged from Asia.

Her marketing strategy primarily involves education and brand recognition. They plan to use a Carteret Catch logo on local products to encourage restaurants and fish houses to buy local seafood and to make consumers more aware of what they are eating.

“It’s about people figuring out a creative way of bringing the consumer to the fisherman,” Andreatta says. “Know your fisherman; put a face on a fish.”

Matters of life and death

FOR MORE THAN 30 YEARS, philosophy professor Dr. Terry McConnell has been examining life and death issues in medical ethics, and lately he’s found that literature and film have offered some new areas of research and new ways to engage his philosophy students.

“What I wanted to do was find which pieces of literature have relevance for medical ethics,” says McConnell. “I really didn’t have the idea of doing research, but the more I read, I found it would be a good way to look at contemporary issues.”

The oldest of his teaching texts is George Bernard Shaw’s 100-year-old play “The Doctor’s Dilemma,” in which a physician has developed a cure for tuberculosis. He has a limited supply of the vaccine and must decide not only which of the sufferers should be cured, but what factors should be considered in making a decision.

Two 21st-century works are:

- The movie “Wit” (HBO, 2001), in which an English professor is diagnosed with terminal ovarian cancer. She is

enrolled in a treatment protocol, but her condition worsens. The action pivots on the conflicting roles of doctors who are both practitioners and researchers, and how should they balance their obligation to act in the patient’s best interest and yet continue to gather data that could help future patients.

- Jodi Picoult’s novel “My Sister’s Keeper” (2004), focusing on a family in which the parents have “created” a second daughter to be a donor for her older sister who has leukemia. The conflict comes to a

head when the younger daughter, at age 13, is expected to be a kidney donor. She rebels and seeks medical emancipation. The essential question is whether it is ethical or moral to create children to be donors for their siblings.

“Some of these questions would appear to be no-win situations, but they are the kinds of medical ethics questions that doctors and health workers face regularly,” says McConnell. “Authors of novels and plays have a different insight on these kinds of things than philosophers or

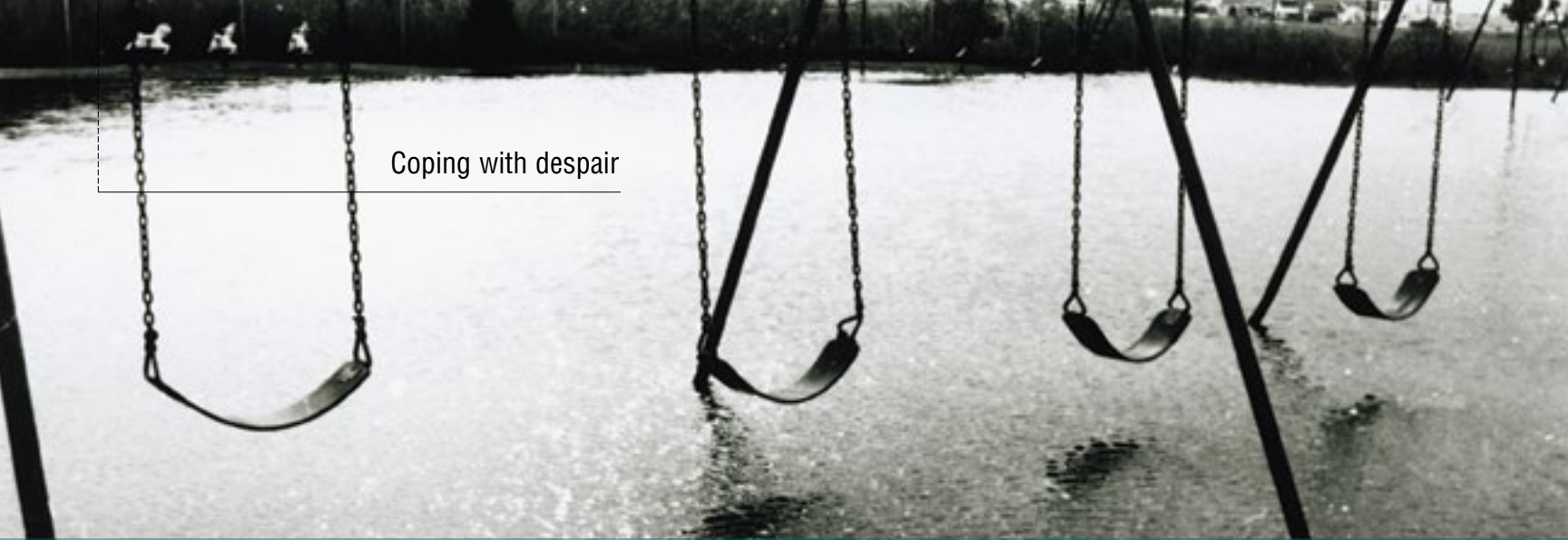
scientists. My thought was, ‘How can we mine these for insight?’ It’s a very good teaching vehicle; people get the conflict immediately.”

McConnell has seen a change in attitudes. When he started teaching medical ethics 30 years ago, the celebrated Karen Ann Quinlan case was 18 months old. Her family was attempting to remove life support for Quinlan, who had been in a persistent vegetative state for some time — and her physicians and the hospital would not allow it. Today, it is often the

case that physicians tending to a patient in a persistent vegetative state will advise the family that nothing can be done, and families will retain life support even when there is no hope. The term “medical futility,” or keeping the body alive when no benefits are produced, has become widely used to describe such situations.

McConnell’s writings on life-and-death in literature have been published in his book, “Inalienable Rights,” and the Journal of Medical Ethics as well as a forthcoming anthology, “Bioethics Through Film.”





Coping with despair

DR. RICHARD COWLING TAKES A HOLISTIC approach to psychological and emotional healing. Cowling, a nursing professor, is embarking on a new research project to help women who survived childhood abuse share how they have managed life transitions and their experiences with health care providers.

His research on depressed women began several years ago while he was working in Virginia. "As a mental health clinical nurse specialist, I learned from depressed people that they wanted to go beyond their clinical diagnosis and the physiology — they were seeking to understand what was underlying their unrelenting feelings. So I invited people to share their experiences of despair, knowing that some of them would be clinically depressed. Women showed up on my doorstep."

Eventually, Cowling began to weave each woman's story into a tapestry of sorts, retelling the story through images and music. "It's a way of expressing the breadth and depth of their despair. Despair was infused throughout their lives, and it would manifest itself in their lives. This helped them to put their despair in context and gain an understanding of the totality of their lives and was a resource for developing strategies to improve the quality of their lives."

Cowling, who treated the women as co-researchers throughout the project, found that many factors were associated with despair in women. Among the most prevalent in his work were: childhood abuse, loss of a loved one, chronic illness, clinical depression and infertility.

His new study will focus on women who were

abused as children. The study will involve two stages — identification of affected women and development of focus groups. His questions are threefold: 1) How do women deal with major life transitions in light of childhood abuse? 2) How can the health care system be more responsive? and 3) How can we develop research approaches that are sensitive to the needs of women who have survived childhood abuse?

Cowling is recruiting women for the study. In the future he hopes to collaborate with musicians, writers and artists who can work with the women to tell their stories in creative ways.

"The stories these women tell are very powerful," he says. "What I would like to do is see us move toward a program that is grounded in their personal power."

Can you hear me now?

WITH CELL PHONE USAGE in the United States topping the 200 million mark and growing, knowing where to locate new cell phone towers for optimal reception is critical not only to wireless providers, but also for emergency responders and homeland security.

"It's expensive for wireless carriers to lose customers, and municipalities must have wireless network coverage for safety, especially since 9/11," says Dr. Rick Bunch, assistant professor of geography who specializes in the theoretical and applied aspects of Geographic Information Science and in Geographic Information Systems (GIS).

To that end, Bunch, director of the Center for Geographic Information Science and Health at UNCG, uses GIS to create maps showing where cell phone towers should or shouldn't be located.

The computer-generated maps are made by using sophisticated algorithms such as the Okumura-Hata model that predicts the behavior of cellular transmissions and the COST-321 model that examines the properties of receivers and transmitters. Topography, height of transceivers, the megahertz of new and existing cell phone towers, and the capacity of cell phone towers to handle the volume of calls are also factored in to the data.



Once the maps are produced, wireless network providers and other users can clearly see where "holes" — areas of no coverage — exist, along with buffer zones where there is adequate coverage. Bunch and two geography graduate students have been working with a telecommunications consulting firm to site new cell phone towers from Washington to Florida.

"We model existing coverage and then model out coverage so that municipalities can plan for cell phone coverage to fit future population growth," says Bunch. Calculating where to put cell phone towers also helps municipalities avoid putting towers where they will be eyesores.

Getting the best cell phone reception also ensures that first responders and other emergency personnel can always get reception, says Bunch, who has worked with the North Carolina Health Surveillance and Informatics Unit to provide and analyze field data used to prepare bioterrorism responses.

Bunch anticipates his research will be used to help wireless providers develop on-site mobile communication networks in areas that have experienced devastating events such as Hurricane Katrina.

Fostering the next generation of scientists

Researcher studies students' 'science identities'

FOR DR. HEIDI CARLONE, her latest project is one more piece of the puzzle: a quest to discover how to foster good scientists in the classroom.

Carlone, a researcher in the Department of Curriculum and Instruction, recently won a five-year, \$600,000 National Science Foundation Grant that will allow her to find out what teaching practices build a positive science identity in students. She defines science identity as a person's competence, performance and recognition by self and peers as a scientist.

Carlone will study science classrooms and track student progress over the next several years, but her interest in science identity goes back to her dissertation, which she developed into two journal articles.

Her original study involved girls' responses to traditional versus reform-based teaching methods in high school physics. Reform-based curricula are rare and involve practical physics applications in fields such as medicine and sports.

The results surprised her.

"All the literature was saying, 'Girls like science tied to the real world,'" she recalls, but although both teachers were excellent, the girls in the traditional class responded more positively. "The girls seemed to embrace the traditional class. They knew how to be good receivers of knowledge. The norms in the non-traditional class were so different that the girls didn't know the rules of the game."

Those study results intrigued Carlone. "It got me focused on identities and the kinds of people we produce, celebrate and marginalize in the classrooms. And the ways that girls in particular take up or reject those messages."

Carlone later decided to put her definition of science identity to the test. She teamed up with a colleague who had researched 15 women of color planning careers in science. The researchers divided the women into three categories — research scientists, altruistic scientists and thwarted scientists. They also rated the women in terms of competence, performance and recognition as scientists by themselves and others.

Carlone concluded that the recognition factor was invaluable to budding female scientists: "The thing that mattered most for these women's career paths was whether or not they were recognized by meaningful others as someone with potential in science."

Pigments of an artist's imagination

FIGURING OUT HOW FAST CERTAIN COLORS CHANGE over time is about as interesting as watching paint dry, right? Wrong. That's because museums all around the world need to know how to use proper lighting to ensure that the delicate paints, pigments and lacquers used to create timeless works of art don't fade away.

Enter Mark Gottsegen, associate professor of art, who has developed a method for testing the lightfastness of color, a measure of color's ability to not fade or change. Gottsegen's method, which incorporates two standard measures of lightfastness testing, is being used by 15 institutions around the world, including the Museum of Modern Art in New York and the Tate Modern Art Museum in London.

Gottsegen uses tools such as a lightfastness correlation study panel, one of which is located at the Weatherspoon Art Museum, to observe how exposure to light affects paintings, textiles or photographic prints. The mounted panel contains small swatches of oil paint, acrylic paint, watercolors, gouache, colored pencil, printed digital material, children's crayon, aluminum foil and specially treated blue wool, all mounted side-by-side.

To understand how light can degrade the mixed media in the panel, Gottsegen first takes a reading of the samples with a spectrophotometer to derive a numerical value for each color using a color language called CIELAB. He then exposes them to normal gallery or museum light to assess any color change.

He then compares the readings to those recorded on a blue wool card: a panel containing side-by-side strips of wool colored with a blue dye that fade after exposure to a known amount of light. When a change occurs in the blue wool, curators know it's time to remove the object from display.

By correlating these two methods that measure the effects of light on different types of materials, Gottsegen is able to provide museum curators and gallery directors with information about the best way to safely display their artwork.

"Art is not forever — it requires lots of care to keep paintings and drawings in good shape" says Will South, curator of collections for the Weatherspoon Art Museum. "Mark Gottsegen's research is helping museums around the world do that."







## Change of heart

Research Excellence Award winner and critical care nurse **Dr. Patricia B. Crane** has spent nearly 30 years working with heart attack patients. Her research focuses on cardiovascular disease in older adults, primarily women. She joined the faculty in 2001 and is an associate professor in the School of Nursing.

**A POPULATION AT RISK:** I am really passionate about heart disease in older adults. This is a population that has really been understudied and underrepresented, especially in drug development. And yet, they are the greatest consumers of our drugs and the greatest consumers of our health-care system. I think it's very important to give them a voice.

**PREVENTING ANOTHER HEART ATTACK:** I was interested in why adults 65 and older tended not to go to cardiac rehabilitation after they had a heart attack. In fact, only 20 percent of them do. Of that 20 percent, even fewer women go; and if the women do go, they don't stay the full time. I wondered how these older women knew how to take care of themselves to prevent another heart attack. They may not have had time to understand education about cardiac care because the length of stay in the hospital after an MI — or myocardial infarction, which is the official medical term for a heart attack — has gone from 10 to 14 days in the late 1980s, to between three and six days today.

**FATIGUE AND BETA-BLOCKERS:** One unexpected finding of that study was that all of the women but one talked about being tired, exhausted or fatigued. I thought maybe this fatigue was preventing them from engaging in healthy behaviors. So I designed another study to explore their fatigue, examining 64 women who were six to 12 months post-MI, to determine factors that might contribute to fatigue and how this fatigue may contribute to their participation in physical activity. I found that most women are fatigued six to 12 months post-MI. Depression and a lack of sleep contributed to that fatigue, but fatigue did not contribute to a decrease in physical activity. An interesting finding from that study related to beta-blockers, which are a type of medication given to heart attack survivors that decrease the workload of the heart. I hypothesized that beta-blockers were causing the fatigue because they lower your blood pressure. In fact, I found that the 61 women in the study who took beta-blockers were less fatigued than the women who didn't.

**ADDING NEW VARIABLES:** From there, I designed another study, which I am currently conducting. It involves women, but I included older men since my hypothesis was that older women do poorer than older men. I also included physiological measures, such as their hemoglobin to see if they are anemic. I'm looking at a relatively new biomarker, called a B-Type Natriuretic Peptide, to see if the heart is pumping effectively. I'm also looking at an inflammatory marker. The preliminary results indicate that the inflammatory marker is more intriguing than the other physiological markers.

**TWO STUDIES OF AFRICAN-AMERICAN WOMEN:** I have another trajectory that looks specifically at African-American women. We studied community-dwelling African-American women and their cardiovascular risk and physical activity, which we measured with pedometers. In a second study, I conducted a small, randomized clinical trial to see if an intervention would affect physical activity. All the women wore pedometers, and they were randomized to either a pedometer-only group or a pedometer with a tape recorder that they could use to describe their physical activity. I thought if they had someone they were accountable to — kind of like Weight Watchers — they would have more incentive to be physically active. And the result from that study said no, they didn't.

**A HOLISTIC APPROACH:** The nice thing about nursing research that I value is that it looks at people holistically — not just biologically, physiologically, psychologically or sociologically. Nursing research puts all of these together and gives a voice to elderly people that other disciplines are not doing in the same way. It's making a significant contribution to making people's lives better.

## The cannabinoid code

Research Excellence Award winner **Dr. Patricia H. Reggio** is a computational chemist who researches compounds found in marijuana called cannabinoids. Specifically, she builds computer models to understand the action of the cannabinoids at a molecular level. By explaining how cannabinoids affect the nervous system and appetite, Dr. Reggio's research helps pharmaceutical companies develop medicinal and therapeutic uses of specific components contained in marijuana that bypass its psychoactivity or other adverse effects. For 21 years, her research has been supported by the National Institutes of Health. Reggio joined the faculty in 2004 and is the Marie Foscue Rourke Professor in the Department of Chemistry and Biochemistry. She has served as the department's head since August 2006.

**HOW CANNABINOIDS AFFECT THE BRAIN:** I've been involved in a project for about 25 years now that has to do with the cannabinoids. Scientists have learned that a receptor for these substances exists in the brain. It's called the cannabinoid CB1 receptor because the first compounds known to bind to it were from *Cannabis sativa* (marijuana). The cannabinoid receptor system has now been shown to be a major feedback system in the brain. One of the clinical applications involves compounds that act as inverse agonists at CB1.

**MANAGING THE MUNCHIES:** If you listen to anecdotal evidence, pot smokers will tell you marijuana gives them the "munchies." In fact, cannabinoid agonists (compounds that turn the CB1 receptor on) are now used as appetite stimulants for wasting syndrome in AIDS patients. Well, cannabinoid inverse agonists (compounds that turn the CB1 receptor off) have been shown to have the opposite effect on appetite. They have been called "anti-munchie" drugs. One of the projects we have worked on is trying to find out exactly how CB1 inverse agonists work.

**MEDICAL AND COMMERCIAL IMPLICATIONS:** Nearly every major drug company in the world has had CB1 inverse agonist projects going on for the past five years due to these drugs' potential as appetite suppressants. I have actually licensed one of my computer models — because what I do is computer modeling — to a major drug company to improve their lead cannabinoid inverse agonist quickly to shorten the time necessary to get their compounds into clinical trials.

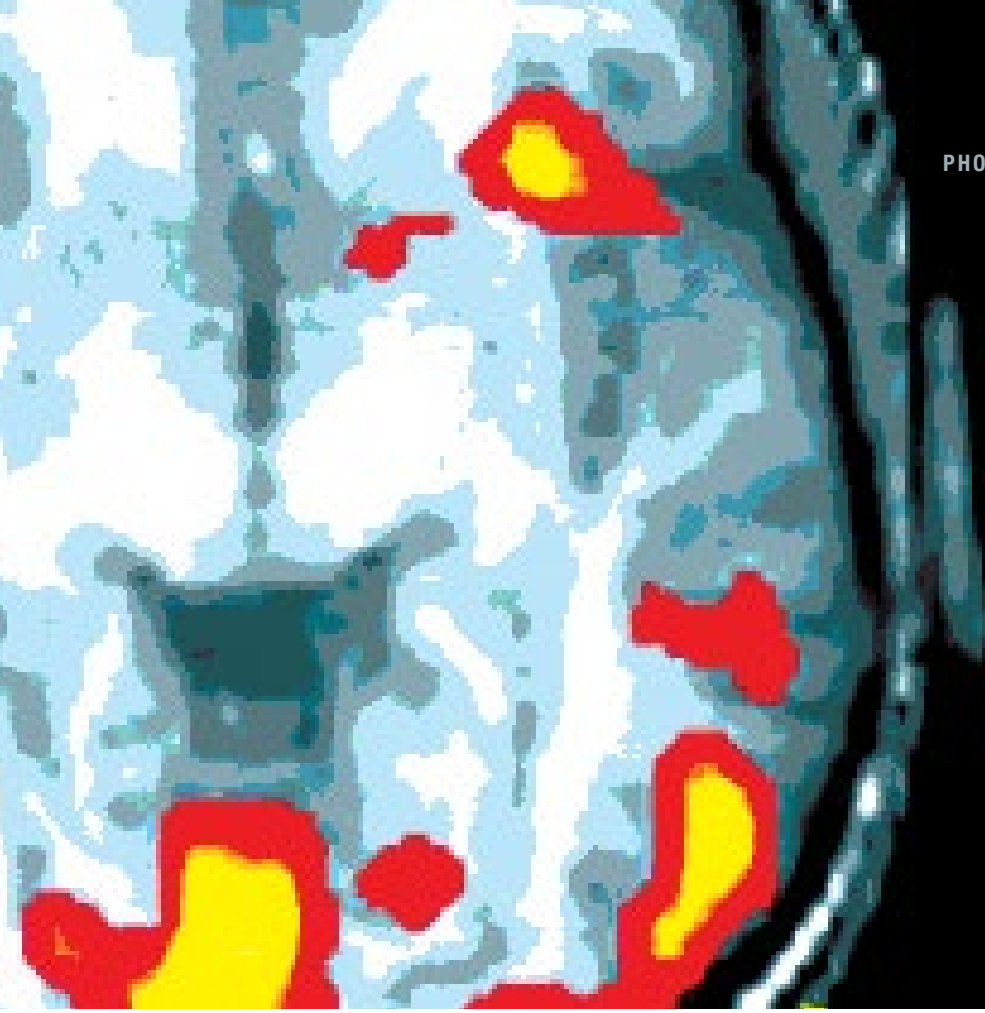
**THE DANGERS OF SMOKING:** When you hear in the news about people wanting to smoke marijuana for medical reasons, such as to reduce their intraocular pressure in glaucoma or to alleviate nausea after chemotherapy or to use marijuana as an appetite stimulant — marijuana does really do all these things. The problem is that marijuana also produces psychoactivity and therein lies its abuse potential. Unfortunately, since the CB receptors are all over the brain, and these effects are all produced by turning the receptor on, it's nearly impossible to create a drug that would still have these beneficial effects and avoid the psychoactivity.

**CHEMISTRY AND COMPUTERS:** As computational chemists, we construct computer models of the cannabinoid CB1 receptor. We can look at how drugs bind to it, and what you would have to do to change the drug to help it bind better. We are also interested in how things work. What is the sequence of steps to turn the receptor on or turn the receptor off? We design compounds to test ideas, and the compounds are actually made and evaluated experimentally so we know whether we are right or if we need to change things. We also have collaborations with molecular biologists to test ideas we have concerning the specific binding regions of cannabinoids at CB1. We've used experimental collaborations with computer modeling to come up with a really refined model of what this receptor must look like in the brain.

**RESEARCHING THE CB2 RECEPTOR:** We have also started working on the second cannabinoid receptor, CB2, which is found primarily in the immune system. There are lots of compounds now that are very selective for the immune system CB2 receptor that don't bind to the brain CB1 receptor. This selectivity allows one to bypass the psychoactive side effects produced by CB1 and look at what kind of therapeutic potential there is for something that binds to the second receptor and not the first one. ●



BY BETH ENGLISH, UNCG RESEARCH EDITOR  
PHOTOGRAPHY BY CHRIS ENGLISH, PHOTOGRAPHY EDITOR



## BLACK TAILS, WHITE SHIRT, GRAY MATTER



THE CAR RADIO IS BLASTING ARETHA FRANKLIN. “*R-E-S-P-E-C-T, find out what it means to me,*” you sing along at the stop light, head bobbing, fingers tapping the steering wheel. “*Oh, sock it to me, sock it to me, sock it to me, sock it to me...*” At the green signal, you glance at the directions in your hand and start focusing on the buildings alongside the road. Much as you love Aretha, your fingers move to the radio’s volume button and turn it down.

Why?

Call it concentration. Call it having a hard time mentally multi-tasking. Or, if you’re a neuroscientist, call it difficulty with sensory integration.

The brain is a marvelous thing. Our frontal lobes help us with higher-order thinking and long-range planning. The areas on the sides by our ears interpret sound. A strip across the top of the brain controls touch and movement. Vision is located at the back of our heads. Regions between these areas are where sight meets sound and movement meets thought. And those are the areas where we sometimes have trouble.

The ability to process visual and auditory information at the same time is a specialized skill. All people have it to some degree. But some people are much better at it than others. Take music conductors, for example. On the podium, a conductor must simultaneously read the music score, interpret it with physical gestures and monitor the actual sounds produced by the musicians. Additionally, experienced conductors can immediately locate “who” played “what” wrong note.

For the last two years, Dr. Don Hodges, director of UNCG’s Music Research Institute, has studied the ability of conductors to process sight and sound compared with a control group of untrained musicians. Teaming up with Dr. Jonathan Burdette and Dr. David Hairston of the Advanced Neuroscience Imaging Research Lab at the Wake Forest University School of Medicine, Hodges has determined that, yes, conductors do a better job with sensory integration. Burdette and Hairston, with their expertise in fMRI (functional magnetic resonance imaging) have helped him see why.

## Music shapes the brain. Want proof? See how conductors’ brains differ from the rest of us.

### SIGHT, SOUND AND SYNAPSES

The trio started with a group of 40 people — 20 conductors and 20 people without musical training. The average age was 34 and 33, respectively, and both groups were matched for other demographics such as gender and years of experience.

“We started with behavioral studies, so we could tease it apart,” Hodges says. “First we gather data outside the lab, then we look to see what’s going on in the brain that leads to that behavior.”

The first study asked participants to listen to two pitches and indicate which was higher or lower. As the respondents got them right, the pitches moved closer together until the respondents gave an incorrect answer, at which point the pitches moved farther apart. Eventually, each person established a “threshold” of pitch difference where they could be accurate 75 percent of the time.

Not surprisingly, conductors were faster at differentiating between the pitches and their pitches were much closer together.

To test visual perception, researchers showed participants two circles in sequence and asked which appeared first. With this study, both the conductors and the control group performed the same.

Then came the tricky part — adding sound to sight.

The subjects were shown the same circles and heard beeps. The beeps sounded either simultaneously with the appearance of a circle or were delayed. Normally, everyone is more accurate at reporting which circle appears first when the sounds follow the appearance of the circle. However, the conductors responded even faster than their control counterparts. In other words, they got even more of a benefit from using multiple senses than the control group.

In another test, subjects sat in a black room surrounded by small red lights, not unlike Christmas tree lights. As they saw a light come on, they pointed a yoke toward the light and pulled a trigger, shooting a laser beam toward the perceived target. This was also done with sounds from several small speakers. When the sounds were added to the lights at the same time, the conductors — once again — were able to combine the visual and auditory cues much more efficiently than the control group.

So why are conductors able to integrate their senses better than untrained musicians? Are they

### MRI HAS MORE THAN ONE MEANING FOR DR. DON HODGES.

While his research uses the brain imaging done by functional MRIs, his research is one piece of the larger MRI on campus — the Music Research Institute.

Hodges is director of the institute, which was established in 2004. While his research focuses on neuroimaging, other researchers are working on topics ranging from music-related hearing loss to genetics. The MRI has more than 30 projects under way.

Hodges wants the MRI to be “a focal point for all kinds of things.” The interdisciplinary research may originate in the School of Music but partners are drawn from other departments or from the community.

Projects are clustered around eight areas: biometric, neuroimaging, music-related hearing loss, genetics, music

education, ethnomusicology and music performance.

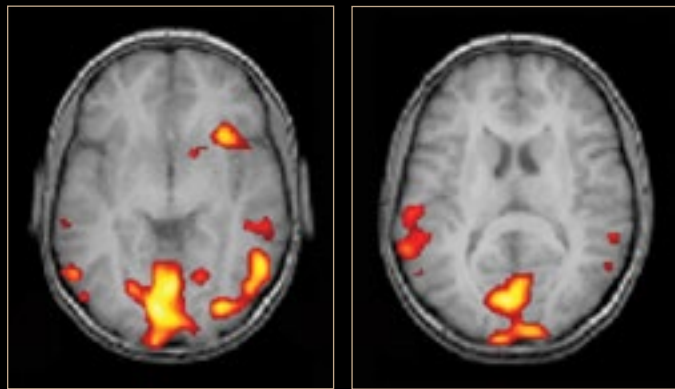
The over-arching concept is to understand the phenomenon of music in all its forms. For example, one project examines the primal roots of music by studying the musicality of bonobo apes. Another explores the motivations and consequences of government involvement in Burma’s music culture. Yet another examines the impact of music education programs on schools. In March, Hodges reported findings showing connections between music education and child development to U.S. congressional staff members.

Hodges believes the cumulative research and findings will reshape music’s future as a critical partner for other academic disciplines. “One of the possibilities is our research will raise the profile of music as something that is absolutely critical to our lives and to our future.”

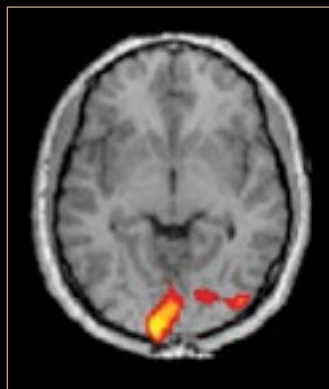
For a full listing of research projects in the MRI, go to [www.uncg.edu/mus/mri](http://www.uncg.edu/mus/mri).



CONDUCTORS



CONTROL



fMRI brain scans, like the ones shown above, reveal that music conductors' brains function differently when processing both sight and sound. Scans of conductors like the School of Music's Dr. Rebecca MacLeod show blood flow to both the visual and auditory parts of the brain. Scans of untrained musicians, however, show blood flow only in one area. The control group tended to "turn off" the other parts of their brain to focus on one sense at a time.

LISTENING TO THE BONOBOS

Can jamming on electronic keyboards with bonobo apes provide clues to how humans first learned to communicate? That's the question Dr. Patricia Gray, clinical professor and senior research scientist at the Music Research Institute at the School of Music, is addressing through her research with the bonobos, members of the great ape family that also include chimpanzees, gorillas and

orangutans. Because bonobos and humans share close to 98 percent of the same DNA, Gray believes that studying their ability to create music alongside their human counterparts will provide greater knowledge of how human communication developed.

To find out how bonobos may have contributed to humans' musical and linguistic abilities, Ryan Daniels,

born that way or have they trained themselves to be that way? It's a bit of the chicken and the egg conundrum. Conductors are required to make their eyes and ears work together to be successful. And when you choose a profession, you tend to be somewhat biologically disposed to doing those things well.

But ...

"When you do musical things, it changes the brain," Hodges acknowledges. "However, there's nothing sacred about music in that respect. Everything you do has the potential to change the brain."

Burdette notes that other labs have seen some people show a difference in this type of integrated brain activity with only a year of musical practice.

But the scope of the study can't really answer the question of *why*. It can only address the *what*. And that *what* continues to be probed further by the researchers.

This winter, the group set out to study what happens when the difficulty factor in the tasks is bumped up a notch or two. With the previous data in hand, it was time to see what was actually happening in the brain. Were the brains of the conductors working differently than the control group?

In short, yes.

An fMRI measures brain function by looking at blood flow to various areas of the brain. Neuroscientists want to see where neurons are firing, and blood flow is the key.

"Our first question — if you ask someone to do a hard task and an even harder task in one sense will the brain activity in other senses decrease even more?" Hairston says. "Second — if you have someone who's used to doing a hard task, how will that affect the turning off of other senses?"

To test this, they had subjects do the pitch discrimination task either at their own threshold, so that it was very hard, or at an easier level, so it was only a little difficult. This was done using a special kind of scanning with silent periods so that subjects could hear the tones (typically an MRI scanner is very loud).

Looking at the scans of the conductors, it was evident several areas of the brain were being used at once. Not true of the control group. Those people shut down the visual parts of their brain to concentrate on sound.

Remember the example of the driver listening to the radio? The same concept applies.

A decrease in brain activity in certain areas is not surprising. "People innately want to inhibit their other senses," Hairston says.

With the preliminary data analysis, they've drawn some conclusions.

"We know when we make the task harder, the non-musically trained will shut off the visual part of their brains," Hairston says. "But conductors don't turn off any more than when the task is easier. They're so accustomed to doing difficult things that they've compensated for this already."

a sophomore majoring in music performance who is working under Gray's direction, spends his days in the School of Music's psychoacoustic laboratory analyzing what he terms "peeps" and "wah-wahs" — vocalizations made by one of humans' closest relatives.

"The research is to find out if musical language preceded spoken language," says Daniels, who plans to

travel with Gray to the Great Ape Trust in Iowa to observe the bonobos up close later this year.

Daniels listens to recordings of Gray playing electronic keyboards with the bonobos as well as recordings of other scientists speaking to the bonobos. Using software that isolates audio variables such as pitch and rhythm, Daniels analyzes what he calls "sonic

TRIO

Both Hodges and Burdette have first-hand experience with conducting. Hodges has three degrees in music education, plays the French horn and has served as an orchestra conductor "for a long time," as he says.

Burdette, while a neuroscientist, has taken several classes on conducting to feed his passion for music.

They, along with Hairston, share a deep respect for each other's abilities, and Hodges believes they are the only musician and neuroscientist collaborators in the field. It's a partnership that pays off. "If I sit with neuroscientists, my knowledge about the brain is definitely limited by comparison," he says. "And sometimes I find neuroscientists doing musically naïve things." For example, some neuroscientists might call the people in the control group "non-musicians." Hodges prefers the term "untrained musicians" because almost everyone has some type of music in their life.

Burdette says he was interested in studying the impact of music on the brain before Hodges came to UNCG. Likewise, Hodges has long held a similar fascination, writing "The Handbook of Music Psychology" and conducting a series of neuroimaging studies of musicians with colleagues at the University of Texas in San Antonio.

When Hodges first arrived at UNCG's School of Music in 2003, he looked forward to heading up the new Music Research Institute but he was uncertain if he could continue his studies in brain imaging. "I was collaborating with colleagues at a medical school where we had access to equipment dedicated to research rather than shared with clinical needs. When I came here I thought, 'I'm never going to have that again.'"

Then he met Burdette. He and Hairston were already studying sensory integration issues like dyslexia on equipment dedicated to research.


"Clearly, in music, this is a no-brainer. How eyes and ears work together in music, special localizing tasks — conductors have developed this expertise."

Previously, Hodges' research took advantage of the PET (positron emission tomography) scanner available at the UTSA medical school. PET scans were quiet, but require small doses of radiation. Here, the fMRI "is non-invasive but enormously noisy. I had to shift and take advantage of what was available."

Thus, his studies shifted from using musical stimuli to using musicians as the model. To perform the studies, the auditory and visual tasks had to be done in quiet breaks between scans.

The results are fascinating. But Hodges says, "it seems like such a tiny piece of something."

Across the country other people are beginning to study the impact of music on the brain — its emotional component, association with memory, place in evolution. Some researchers are out to refute Steven Pinker's statement that music is merely "auditory cheesecake."

"But it's a small drop when compared to language studies," Hodges says. "We're making tiny baby steps in the grand sea of music in the brain." 

clues" — vocalizations made by the bonobos that he believes show the bonobos listening and responding to humans in their own specific language.

When Gray and the bonobos play keyboards together, Daniels is able to hear the bonobos directly responding to changes in the music. "Melodically, the bonobos are able to play in the same key as humans," says Daniels. "When

Dr. Gray changes key, the bonobos modulate along with her."

Part of the challenge is to come up with a human vocabulary to describe the bonobo's language, says Daniels, adding that he is still devising ways to classify the bonobo's series of sounds that range from low growls to high-pitched chirps. "It's not even known what the bonobo's vocal range is," he says.



The image of a professor sequestered away with leatherbound books and like-minded students is a myth. The simple truth is universities are engaging with corporate, civic and arts communities like never before.

Some long for a discrete split between the “real” world and the academic world. But was that ever the case? One thinks of Galileo at the University of Padua pondering pure science but also creating practical advances to the telescope and microscope. Newton at Cambridge advancing not only the fields of optics and mathematics, but also helping safeguard England’s economy by finding ways to restrict counterfeiting. Pasteur at the universities of Strasbourg and Lille pondering germ theory but also introducing pasteurization, helping to save his nation’s beverage industries.

Professors have always provided innovations and essential research needed for new products and for enhancing old ones. Corporate and civic leaders have long had a place on university boards of trustees or visitors at universities. But something has changed in the past decade. The world has become keenly competitive. The oceans have shrunk. Borders mean little. And from the new rising powers in Asia to the Old North State, the role of public universities is being envisioned in a whole new way.

## UNCG moves to help reposition the region’s economy

# THE ECONOMIC ENGINE THAT COULD

“IF WE DON’T WAKE UP ... our state and our nation are going to be a second-rate power before we know it.”

Erskine Bowles, president of North Carolina’s 16-campus university system, stands before the annual dinner of the Greensboro Partnership and lays out the facts. The audience of area business and civic leaders listens intently. Will our schools produce workers that have the skills and abilities to meet the challenges of the 21st century?

The UNC system president speaks of foreign competition and of the changes in technologies. “It’s a crisis, and we’d better start treating it like one.”

He speaks of competing in a knowledge-based global economy. Those satisfied with the status quo are living in a fool’s paradise. “Those people better wake up. The next new thing ... it’ll be created in India or China.”

There are low graduation rates for our overall citizenry in North Carolina — something that must be improved. “That was fine in our day [with plenty of textile mills] — but you know what? Those jobs are gone. They are never, ever coming back.”



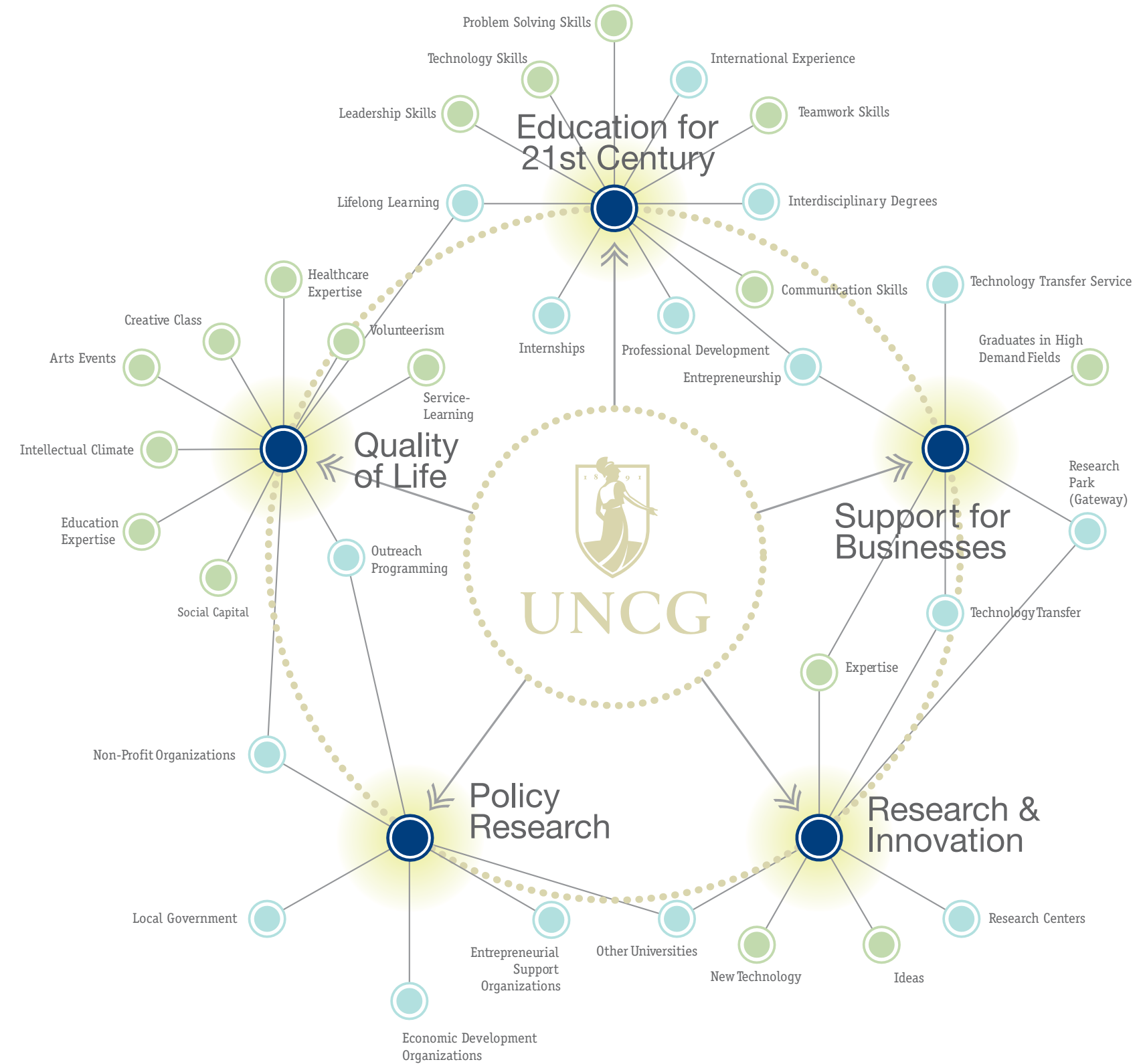
President Bowles pauses for emphasis. “Most jobs are created by small businesses,” he sharply states, as many in the audience nod their heads. “If we produce more entrepreneurs, it will change the state.”

Bowles has the audience’s attention. He speaks of accountability and efficiency measures.

And he speaks of his relationship

with UNCG Chancellor Patricia A. Sullivan. “Pat and I, we get it. We are at a dead run. We will produce the types of graduates you need.” The audience of corporate and civic leaders applauds enthusiastically, but Bowles waves it off. “We don’t deserve applause. It’s what we’re paid to do.”

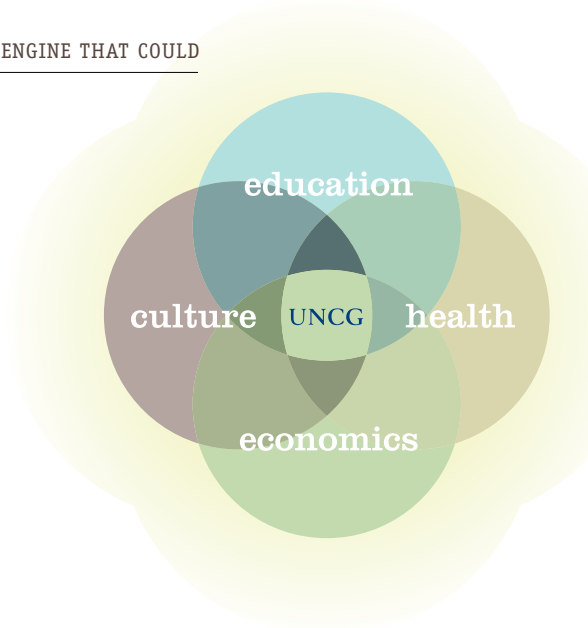
BY MIKE HARRIS, UNCG RESEARCH ASSISTANT EDITOR  
AND BETH ENGLISH, UNCG RESEARCH EDITOR  
PHOTOGRAPHY BY CHRIS ENGLISH, PHOTOGRAPHY EDITOR  
GRAPHICS BY ERIC PETERSON, GRAB CREATIVE



● External partners, alliances or beneficiaries  
● UNCG initiatives, programs and capabilities

**TIES THAT BIND — AND BUILD CAPACITY FOR GROWTH.** UNCG’s initiatives and relationships thread their way throughout the community and region, supporting the economy in myriad ways. They tie directly into the five goals of the UNC Board of Governors: 1) deliver learning that meets the needs of the 21st century economy; 2) enhance the capacity of public institutions to implement successful and sustainable economic development policies; 3) enhance opportunities for research and innovation; 4) provide support and build competitive business; and 5) grow high-quality, healthy and attractive communities.





“This is a quality of life issue. Everyone should see themselves as part of this. You can’t look at economic development with one set of lenses. It’s multi-dimensional.”



The second annual N.C. Nanotech Conference in March brought nanotechnology experts, investors and executives to Guilford County. The two-day event was hosted by the Piedmont Triad Entrepreneurial Network, led by UNCG alumnus Jon Obermeyer (left). UNCG Associate Provost for Research and Public/Private Sector Partnerships Dr. Rosemary Wander was a featured panelist.

**BOLSTERING A COMMUNITY**

With Bowles leading the charge, the entire UNC system has taken economic development to heart. The Board of Governors made economic development one of its priorities this year, and representatives from all 16 campuses have come to the table as an Economic Transformation Council to hash through exactly what that looks like.

The BOG defined economic development as activities “designed to increase the long-term economic well-being and quality of life of its citizens” in all its broad implications.

With five goals in hand, the BOG asked universities to continue their mission of teaching, research and service but to do so strategically with an eye toward the community.

And that’s the message Provost Edward Uprichard wants everyone on campus to hear. “We’re already engaged, but we’re going to have to become more strategic and do more relative to community engagement,” he says. “We’re building on the base we already have. The world is changing. We’d do better to embrace change and shape it rather than react to it.”

His other message is equally clear. “This is a quality of life issue. Everyone should see themselves as part of this. You can’t look at economic development with one set of lenses. It’s multi-dimensional.”

That means there’s more than just dollars and cents to consider. There is social capital — making the region the place you want to live, to come to as a 20-something, to raise a family, to retire. One that has live music at the School of Music and around the city almost every night of the week. That provides other arts such as dance and theatre and filmmaking that help quicken the pulse of our city. That helps draw in young professionals, all part of the synergy in creating a critical mass of talent, knowledge and ambition. Look in one of the weekly arts papers — much of what’s happening in the city is on campus at UNCG or has been generated in part by the university. It creates a critical mass for the “creative class,” which helps a city thrive. Social capital translates into real capital.

There’s also the value in helping provide for those who need help. UNCG’s programs such as the Center for New North

Carolinians, Leadership & Service-Learning and the Center for Youth, Family and Community Partnerships provide for a livable area for people of all economic strata. That strengthens the fabric of our community. Less crime. Better schools. More opportunities. Developing lives and communities and human potential has very tangible benefit for the economic success of our region.

Then there’s applied research like that done by Keith Debbage, who helps the city with planning land use and development.

UNCG’s impact on Greensboro and the surrounding region is far-reaching, but it can be so much more. Campus leaders have embraced this new way of looking at UNCG’s role, being one of the first of the 16 UNC campuses to pull together its Economic Development Council and start putting plans in place to deepen that impact.

“The Council has identified several strategic initiatives and will be developing efforts to implement them with input from an advisory board composed of both campus and community folks. It’s an exciting initiative,” says Dr. Rosemary Wander, who is spearheading efforts to push economic development forward. She is associate provost for research and public/private sector partnerships. As her title suggests, UNCG views the university’s role as a win-win partnership. Additionally, outside agencies like the Greensboro Partnership have tapped into the idea and have laid out plans to use the expertise of the local colleges and universities.

As Uprichard says, universities are among the few institutions involved in the four areas that are most important to a community — education, culture, economy and health.

**21<sup>ST</sup> CENTURY EDUCATION**

It almost goes without saying that one of UNCG’s greatest contributions to the community is its graduates. That these graduates are the university’s top priority is also understood.

Scott Richardson (below right) is one of many UNCG liberal arts grads leveraging their education to make a real impact on our community. After earning his BFA in theatre design and technical direction, he headed to New York City and high-profile architectural projects, then returned to Greensboro to start his own lighting design business, Light Defines Form. His projects have included the new School of Education building at NC A&T, the Thompson Theatre renovation in Raleigh, the International Civil Rights Museum and the Wachovia Securities flagship office in Charlotte.





### TALLYING UNCG'S ECONOMIC IMPACT

A \$1.22 billion impact and more than 13,000 jobs — that's what UNCG brings to the Triad economy. Economist Andrew Brod, who heads the Office of Business and Economic Research at the Bryan School, used 2005 data to analyze the university's economic footprint.

**HIS ANALYSIS EXAMINED FOUR AREAS:**

UNCG's operating expenses — or the total purchases and salaries made by the university — account for \$426.96 million and 6,669 jobs.

Human capital impact accounted for \$699.04 million and 5,649 jobs. This is an estimate of the impact resulting from the additional income of area alumni resulting from a college diploma.

Student spending impact takes into account what students inject into the economy by way of room and board, books and supplies, transportation and personal costs. This is estimated to total more than \$90.04 million and 1,148 jobs.

Visitor spending accounts for more than \$3.66 million and 54 jobs.

**TOTAL: \$1.22 BILLION, 13,520 JOBS**

The study also calculated the economic impact of research at UNCG, which is estimated to be \$102.02 million in increased income throughout North Carolina.

What may be different is their level of preparation. In an increasingly global economy, college graduates need to have creative thinking tools, technical acumen, business expertise and the ability to communicate well. Much of that is achieved by moving outside of traditional boundaries. Today's students work well in interdisciplinary environments and, frankly, that's what we need.

Those needs are shaping the curriculum as well. Look at genetic counseling, gerontology and entrepreneurship. Each is designed to meet the needs of the 21st century and each pulls a little from several different disciplines.

Consider the biotech option in biology, the management program in the Bryan School and the Lloyd International Honors College. Each is a response to the type of community we're building. They're in addition to the hands-on learning that occurs with undergraduate research and service-learning classes.

UNCG's graduates are prepared. And the university continues to foresee the developing needs of our region so that they will be met.

**LIBERAL ARTS PROGRAMS — PRODUCING RESULTS THAT ARE LUCRATIVE?**

Step over to the offices of the nearly 40-year-old literary magazine, The Greensboro Review. Jim Clark, head of the MFA program in creative writing, has his own views of economic development and success stories.

"When I told my faculty I was going to an entrepreneurship meeting, they thought I was nuts." He notes that "entrepreneurship, it fits in with writing. The creative process — it's a way of making things happen."

He is quick to point out that a lot of his graduates make a difference in our area.

"Our MFA grads? Half of our people go into teaching at colleges or universities. One-third go into publishing/editing" in the business world, he says. And others are entrepreneurs. "About 70 percent of students we recruit from other parts of the country stay here in North Carolina — they like the opportunities and the culture here."

He's eager to drop a few names. Charles Wyrick opened his own publishing house. Quinn Dalton joined The King's English, an advertising and public relations firm, after graduating from the MFA program, rising to public relations director before publishing her first novel. Brandon Rauch moved from being the managing editor of The Greensboro Review to Kay Chemical's corporate communications specialist. Mark Caskie, a leader and editor at Pace Communications, was once poetry editor at The Greensboro Review.

And then there's Jon Obermeyer. The MFA program drew him to Greensboro, where he became the poetry editor of The Greensboro Review. From there he went into banking and business and now, as the president of the Piedmont Triad Entrepreneurial Network, is one of the leading figures in area economic development and assisting start-up ventures. Our region landing the RF Micro wafer fabrication facility in the 90s? The Business Journal is among those who gave a lot of credit to Obermeyer.

**AN INNOVATION. NEW TECHNOLOGY. A SEEMINGLY SMALL IDEA THAT CAN MAKE A BIG DIFFERENCE.**

"It doesn't have to come from a test tube!" That's one of the mantras of Jerry McGuire, director of UNCG's Office of Technology Transfer.

Tech transfer is another part of what the university is trying to achieve. Harnessing the ideas that are already being generated, and trying to ensure that, instead of being left in folders and forgotten, they are brought to the fore. As he says, it doesn't have to be a cure for cancer — new technology for managing operas or new ways to teach can prove quite valuable economically. His office is looking for innovation.

"We're getting that from all parts of the university — staff, students and professors."

Innovative ideas, submitted as "disclosures," are flowing in. "Our disclosure rates are now above the national average. We've exceeded our projections by 10-20 percent. We were at 23 last year. We're projecting 28 this year."

Each submission is scrutinized. For an idea to move forward, it

must meet three benchmarks. It must be a protectable, marketable idea. Venture capital must be forthcoming to back it. Management must be secured to get it up and running.

The university has seen success: Live Cargo, a company offering web-based storage capabilities globally, leverages the licensed encryption algorithm created by Dr. Shan Sutharharan in the Department of Computer Science. Prevention Strategies, co-owned by Dr. David Wyrick in Exercise and Sport Science, results from Wyrick's research on alcohol abuse prevention.

Two spinoff companies have emerged from work at the School of Education. Learning Together, which fosters school kids' achievement through tutoring and mentoring programs, is located in the heart of Greensboro's business district. Partnership for Dynamic Learning is located in the Nussbaum Center. This start-up business licensed pedagogy from the university devoted to the focal point of each high school senior's year — the senior project.

Additionally at the Nussbaum Center, the Tech Transfer office has partnered with North Carolina A&T's Office of Technology Transfer to create a technology transfer service for the people of North Carolina: Technology Outreach at Nussbaum. Any individual who has an invention or marketable idea can receive guidance toward licensing the innovation. McGuire says there has been little need to advertise — a lot of people are bringing in disclosures.

On campus at UNCG, the tech transfer initiative does not call on professors to *do* anything differently, really, just *think* a bit differently — about how their ideas and innovations can be used for the greater good, McGuire says.

Professors come into the academic world to teach and do research, not necessarily to be a part of pushing innovations in the marketplace, he says. And they don't have to. His office can take care of that, freeing professors to continue with their primary responsibilities.

**A STUDY IN ENTREPRENEURSHIP: A PROFESSOR AT THE FORE** Helping people. Building a company. Taking ideas and research and grant funding and propelling it all forward into products that you

### EXCEEDING PROJECTIONS FOR INNOVATIVE IDEAS

	DISCLOSURES (PROJECTED)	DISCLOSURES (ACTUAL)
2004-05	17	18
2005-06	20	23
2006-07	22	
2007-08	25	

Office of Technology Transfer

continue to develop and see do a great deal of good.

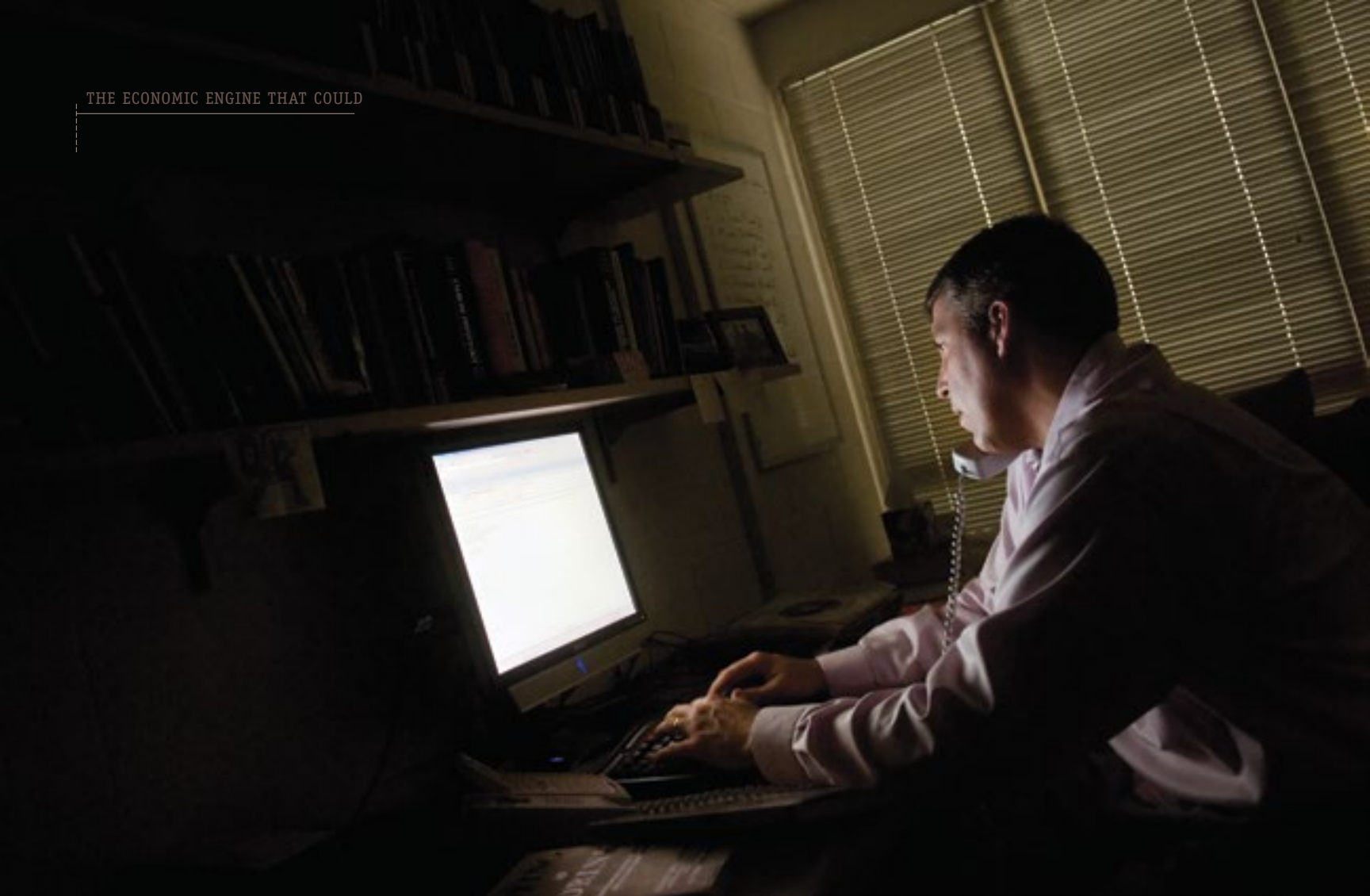
That is David Wyrick's life. It's all part of a balancing act — with the responsibilities of being an associate professor combined with helping manage his fledgling company, Prevention Strategies. That's all in addition to family life with his wife and three daughters. As he sits in his office high on the fourth floor of the Health and Human Performance Building on a Friday afternoon — surrounded by health books and journals, students' papers, pictures of his family and artwork by his oldest girls, and as he takes care of a steady flow of emails — it appears he's balancing it quite well.

"We have two products, one is College Alc and one is Crossroads," says Wyrick, who joined the university as associate professor a year ago but was an adjunct instructor for six years.

Crossroads is a high school-based drug prevention program. It's currently undergoing evaluation in five states. College Alc is an alcohol abuse prevention program, with online and hard copy/textbook components. It is much further along in development and marketing. At least 14 universities are now using College Alc, including UNC Wilmington and East Carolina. Starting next fall, incoming UNCG athletes will take a for-credit version of College Alc, he says.

The products came from his work at a small firm near the airport,





Tanglewood Research, where he was principal investigator for grants to help develop them. As you'd expect, he's passionate about their value.

He knows they do a great deal of good — the more widely they are used, the more people will be helped — and that's something he wants to ensure. And if they happen to produce benefits for the local economy in the process, so much the better.

"If it's successful, we'll eventually have employees. When I started at Tanglewood Research ... there were just the two of us, myself and the owner. Within seven to eight years, we were employing 23 people with great benefits and paying Guilford County taxes."

The Office of Technology Transfer has proven pivotal in assisting Wyrick. "UNCG helped me spin out a company, through Jerry McGuire's office, called Prevention Strategies," he says.

"If we're successful, sure, someday we could have 30-40 employees, and be a nice solid company for Guilford County," he says.

But that's far down the road. This afternoon he speaks of some issues he's pondering in the here-and-now. The most profitable way to market the materials? The proper rate of growth? The smartest times and ways to utilize vendors and outside help? He also speaks of his paramount focus on achieving tenure, an important point for any professor. Balancing academia and business and family can be done. It makes for a full life. Wyrick would say it makes for a fulfilling one.

#### A TOWN AND GOWN PARTNERSHIP

Thousands of UNCG students are involved in area businesses, hospitals and schools as interns — gaining knowledge and skills, while their efforts prove valuable to the places where they work.

This year, 2,400 students are doing internships for credit at UNCG, if you include prospective teachers and nursing students, according to Brett Woodard of UNCG Career Services.

Additionally, the Bryan School of Business and Economics has more than 500 students serving well over 150 area companies.

Internships help students get a taste of the real world, hone skills they are developing in classes, better gauge where they may best enter the workforce and the positions they may ultimately want to hold. The employers benefit greatly as well.

An immediate benefit is that they are able to make use of the student's talents and energies. It's not uncommon for interns to make an impression and to be offered jobs once they graduate.

For students who end up elsewhere, the internship provides tangible benefits. "They get to apply what they are learning in the classroom. It's great experience," Woodard says.

He cites a small upstart advertising/marketing company. An intern will work with the owner, and it will be very beneficial for them both. Great experience.

A lot of UNCG's interns are in the non-profit sector, he says, adding to the social capital in our community, and providing skills the students can take into the private sector upon graduation.

There's often that extra call to make or email to send, it seems, but associate professor Dr. David Wyrick (left) has found that helping bring his needed products to the marketplace while ensuring all his other responsibilities are met can be very satisfying. He co-owns Prevention Strategies, producing drug- and alcohol-abuse prevention programs.

INITIATIVES ARE NUMEROUS AND SPREAD ACROSS CAMPUS AND ACROSS THE REGION. HERE ARE A FEW ADDITIONAL PROJECTS:

- Bryan School and School of Nursing, dual-degree programs for business skills in medicine**
- Urban planner Keith Debbage's work in several areas of development such as biotech, transportation and logistics sector — and particularly the "Heart of the Triad" project and the Biotech Index**
- Bryan School collaborative projects with NC A&T**
- School of Nursing**
  - Outreach in Hickory**
  - Geriatric nursing program**
- School of Education**
  - Recruitment and Retention program — for the most talented teachers**
  - NC TEACH, preparing mid-career professionals to become teachers**
  - UNCG Wachovia Mentoring Network**
- Gateway University Research Park collaboration with NC A&T / UNCG**
- Creation of the Center of Research Excellence in Nanobiosciences**

Tom May, assistant to the dean for economic development initiatives at the Bryan School, points out that internships are a small part of the Bryan School's work toward boosting the business community. There's Andrew Brod's Office of Business and Economic Research assisting businesses with their specific needs. There's the MBA Outreach program, with students getting practicum experience as they assist Randolph Community College, Red Hat, Tyco, a Triad winery — they are now working with the Alamance/Burlington Chamber of Commerce on a business incubator feasibility study, May says.

On campus, the university is setting up an entrepreneurial major, possibly as early as this summer. Dr. Mary Crowe, head of the Office of Undergraduate Research, and Dr. Kevin Lowe — who teaches entrepreneurial courses — are leading that effort.

As the UNC president and Board of Governors reevaluate the mission of the university system over next 18 months, there will be more measurable accountability. There will be an emphasis on the skill-sets that industry needs, May says, such as teamwork, communication, science and technology skills, overseas experience and problem solving.

May has been directly involved in entrepreneurship in the years since his long career at AT&T where he (among other things) managed sales support overseas. He led the Nussbaum Center for Entrepreneurship for six years, helping it double in size. From his perspective, May sees a great need and great potential for universities in economic development. And he sees the culture of universities changing as they adapt to new economic realities.

#### BUILDING BRIDGES, STAYING ABOVE THE RISING WATERS

The campus has close ties with the corporate community in numerous ways and on a number of levels. But its drive to be a major player in economic development for the region is new. How to proceed? What is needed? How to best partner with the corporate community?

A big boost came this past year with the first annual Corporate Expo on campus. Many members of the region's business community

assembled with UNCG leaders to discuss ideas, air concerns and look to the future.

What was up for discussion was "a new way to think about the university's role in the community," Chancellor Patricia A. Sullivan said, referring to greater emphasis on aligning with the business community with greater collaboration.

The keynote speaker, Microsoft Vice President Robert McDowell, as well as others sparked debate. To what extent should the business community have a say in the skills college students have before they graduate? Why do some corporations have to offer remedial courses to recent U.S. college graduates? Why aren't more students engaged in interning or prospective careers? At times the debate was passionate and the questions were pointed. That was good — and the next Corporate Expo promises to provide more opportunity for frank discussion and exchange of ideas.

All in attendance seemed favorable to having more UNCG students interning and to seeing businesses leveraging the university's expertise in numerous areas.

#### A POSTSCRIPT TOWARD PROSPERITY

In the past some have spoken separately of the corporate world and the academic world. But those lines are blurred. Just as the lines are blurred as you look at a world map. With outsourcing of jobs and offshoring of responsibilities — and with many corporations having headquarters in various countries — the world is undergoing a seismic shift.

Romanian laborers come home from work and Google the news. Hundreds of patients fly to Asian countries for the latest surgery techniques at economical prices. Nomads use cell phones to connect to the wider world. Cultures are changing. Capitalism has won — in a big way. Which means, we could lose.

Seismic tremors go largely unfelt, but the waters are unsteady. There is a tsunami coming, as Bowles has said. More are recognizing that research and innovation are what will lead us to higher ground. ●





# BUILDING BLOCKS, NEIGHBORHOODS, COMMUNITIES

BY BRIAN CLAREY  
PHOTOGRAPHY BY CHRIS ENGLISH,  
PHOTOGRAPHY EDITOR

The Center for Youth, Family, and Community Partnerships puts research into practice to create a stronger society.

THEY MEET IN ROOM 203, an abbreviated classroom on the second floor of Grimsley High School with a flags of the world poster on one wall, a dry-erase board on another and pictures of China cut out from magazines and Scotch-taped to the wooden door. Also, a sign with “Have a nice day” written in five languages.

A small crew of ESOL (English for Speakers of Other Languages) students rolls in for the 2:38 period dressed in jeans, hoodies, backpacks, sweats. They lean across their desks and dally in French and spotty English until the tone sounds to begin the period.

Their teacher, Mrs. Henderson, herself a native of Romania, approaches the head of the class.

“Today your essential question is, ‘What is health literacy?’” she says, gesturing to the agenda written out on the board. A few items down are the words “Photovoice Project,” and after Mrs. Henderson introduces it, she turns the room over to Mandy Benson.

“How’s everybody doing today?” Mandy says. “I have to tell you, I went to this high school and it looks exactly the same.”

These days, Mandy is a UNCG grad student who works about 20 hours a week for the Center for Youth, Family, and Community Partnerships. The center is a big venture — tackling issues that affect children, families and communities in the hopes of making a more “just society.”

Since August, Mandy has worked on the health and safety aspects of a college program for young adults with developmental disabilities, conducted health literacy surveys at Moses Cone Hospital and taught classes showing parents how to care for sick children.

“I’m all about health literacy,” she says.

She’s devoted much of her time recently to this, the Photovoice Project with the ESOL students at Grimsley. On paper, the project poses two questions: What are the challenges to health literacy for immigrant/ESOL high school students and their families? What are the major cultural influences on health decisions for immigrant adolescents and their families?

The answer, Mandy believes, will be found in pictures.

“We’ll give them disposable cameras to answer the question, ‘What is it like to try to be healthy as an immigrant?’ We don’t know what they’re going to come back with.”

Now Mandy addresses the class.

“What do you think it means to be healthy?” she asks. “You get two weeks to take pictures of anything you think affects you and your health. These are not pictures that are going to be shared with your principal or teachers. They are just for our research, so nobody is going to see them if you don’t want them to. Don’t be afraid.”

“What is the subject matter?” a 17-year-old boy from Israel wants to know.

“When people think of health they think it is just exercise and eating right,” she explains. “But it can be drug-related. It can be sexual ... maybe someone you know has an STD.”

“It can be negative?” the boy wants to know.

“Oh yes. Depression, mental health; that’s part of this too. If you miss your country, if there’s something going on at home ... You’d be surprised at how many things in life affect your health.”

On the second floor of a building near a traffic circle in downtown Greensboro, Dr. Terri Shelton leans across a conference table.

“I don’t know that everybody has always thought of UNCG as a research institution,” the center director says, “but I can see a real commitment here to raising the bar in terms of research activity.”

For her, research starts with questions. What are the barriers to effective substance abuse treatment? Why are youth of color disproportionately represented in prisons and foster care? How can open-air drug markets be disrupted? What are the risk factors associated with adolescent suicide? How can we help caregivers better support young children’s social and emotional development?





Mandy Benson, a graduate student who works part-time for the Center for Youth, Family, and Community Partnerships, talks with a Grimsley High School ESOL class about health literacy. She is seeking to answer questions about the challenges immigrant families face when making health decisions. To do this, she gives each student a disposable camera to take pictures of what they think it means to be healthy.

“It’s definitely applied research. We take evidence-based practice and put it to work. We’re asking, ‘What would that look like if we actually went on the ground and did it?’”

And, ideally, research leads to action.

There’s action up here in the office suite of UNCG’s Center for Youth, Family, and Community Partnerships — staffers and grad students roaming the halls, open-door meetings and relentless phone work, the click and hum of electronic correspondence.

The center, founded in 1996, has recently completed 10 years of service to UNCG and the surrounding community. It has its hand in no less than 25 projects at the moment — lending support, partnering with other institutions and state departments, or in some cases, acting as the driving force behind the research that is more than just the compilation of information.

“It’s definitely applied research,” Shelton says. “It’s not always your traditional line of research. We take evidence-based practice and put it to work. We’re asking, ‘What would that look like if we actually went on the ground and did it?’”

Their current work touches upon multiple issues including mental health and substance abuse treatment for youth, anti-gang research, studying the process of disrupting street drug markets, improving the safety of communities, and examining the factors that lead to the disproportionate representation of youth of color in foster care or juvenile justice. Other areas include North Carolina adoption and foster care, early-childhood mental health and readiness and the role of faith-based communities in neighborhood schools.

The list can be overwhelming. But when you look at the results, the impact is tremendous.

Take, for example, their work with Guilford County day care centers. The Smart Start funded program “Bringing Out the Best” zeros in on children who have social and/or emotional development challenges. Because they can cause disruption to the classroom, these children are often at risk for losing their placement in day care centers.

The center, in partnership with the UNCG Psychology Clinic, helps these children develop new skills, offers training to their teachers and sometimes goes to a child’s home to ensure they have a supportive environment.

Last year, the project screened more than 250 children, trained approximately 450 day care staff in 75 different centers and delivered evidenced-based intervention to more than 50 children and their families.

As a result, 95 percent of the children were able to stay at their day care center. The center gets letters of thanks from parents who were able to keep their jobs. But the impact is even greater than that. By reaching out to these children, they are putting them on a positive trajectory for school.

The center uses not only research from other institutions but also from UNCG. One example is the Right Track Research Project, a longitudinal study that examines what happens as children grow older and begin to control their behavior and emotions. That project doesn’t create applications or interventions. That’s what the center does.

“We’re the greased sled from research to application,” Shelton says.

Guilford Child Development, which runs Head Start and Early Head Start, is another community partner. The center provides a variety of training and technical assistance for its teachers based on research that’s known to work.

“How do I take the practical step to get it into the classroom?” asks Robin Britt, director of Guilford Child Development. “That’s what the university can figure out.”

Britt and center personnel, such as Associate Director Chris Payne, have worked together for a number of years. The projects have included: building a family resource center in the Macedonian neighborhood in High Point, brainstorming as part of the School Readiness Collaborative, helping his teachers get the certifications they need and serving as a site for a multi-site treatment outcome research study.

“You’ve got to have someone with vision who can see the needs of the community,” Britt said. “It’s a really remarkable partnership.”

A unique characteristic of the center is its commitment to working with parents, families and caregivers as equal partners. It’s the

link between evidence-based practice and practice-based evidence.

“Instead of doing *to*, you’re doing *with*,” she says. “Pay attention to who is using the services and make sure these voices are at the table at all levels. It’s the only way to get to quality services and to develop programs and policies that work.”

**A**ssociate Director Jen Kimbrough has been with the center for four years and has played a part in dozens of projects, though lately her focus is on health care.

“We’re trying to understand the links between the health and literacy needs of the community and address those needs so that people have equitable access to health,” she says. Her long-term goal is to help create a health-literate community so that people have access to knowledge and care that is appropriate, culturally competent and meaningful.

One of her current projects partners is with the local adult literacy agency, Reading Connections, and involves health literacy education and the distribution of a low-literacy book, “What to Do When Your Child Gets Sick,” in several languages including Spanish and Vietnamese for residents of Guilford County.

She relates a story of a class for young parents burdened by poverty, language barriers and lack of education.

“They were talking about how to take a child’s temperature. I said, ‘Who here has a thermometer?’ Only one person in the class had one. So we got them all thermometers. This may seem trivial, but that is a big first step towards health literacy. Without basic tools and information about health, it is hard to communicate with

health care providers. Teaching the book is a bigger project than it seems.”

**T**he center’s mission has always been to encourage interdisciplinary research in the campus and the community, but as the center has grown, its focus has shifted as its procedures have been honed toward best practice.

When the center was founded it was known as the UNCG Center for Social Research, a name that was admittedly a placeholder until the organization became more focused.

“It sounded a bit too much like, ‘We come in and we study you,’” Shelton says.

It was named the Center for the Study of Social Issues in 1998, and then as the mission grew to encompass greater input from the communities served, it took on its current title in 2004.

“The title is unwieldy,” she says. “It’s big. But it says who we work with, what we’re about and how we work, through these equal, respectful partnerships.”

Her role as director, as she sees it, is to help support the research mission at UNCG.

“A project has to be consistent with our mission,” she says. “But having been in that medical culture where you had to look at the bottom line, I’m aware of the finances.”

In 2006 the center put out nearly \$5 million in proposals to county, state and federal agencies as well as grants from several foundations, securing 65 percent of them for just over \$3 million.

The money funds more than 20 full-time staff positions, 15 gradu-



## OVERVIEW OF CYFCP INITIATIVES

### HEALTH

Health Literacy  
Health Disparities  
School Health  
Health4Families

Community Outreach Partnership Center (COPC)  
Parent Information & Resource Center (PIRC)  
Community Level Assessments and Strategic Planning

### EARLY CHILDHOOD

Bringing Out the Best  
School Readiness  
Parenting Intervention for Vulnerable Families

### DIVERSITY AND INCLUSION

Reducing the Overrepresentation of Youth of Color in Juvenile Justice and Other Service Systems  
Beyond Academics, a college experience for young adults with cognitive disabilities  
Speak Your PEACE, "Connecting Our Community Through Dialogue and Action"

### YOUTH VIOLENCE AND COMMUNITY SAFETY

Project Safe Neighborhoods  
Collaborative Offender Reentry Enhancement (CORE)  
Eliminating Street Drug Markets Through Focused Deterrence  
Guilford County Gang Initiative

### CHILD AND ADOLESCENT MENTAL HEALTH AND SUBSTANCE ABUSE

ADOPTION AND FOSTER CARE  
NCKids, statewide adoption and foster care recruitment program  
AdoptUSKids

### SUPPORTING THE EFFORTS OF FAMILY/YOUTH INFORMATION, SUPPORT AND ADVOCACY ORGANIZATIONS

Working with North Carolina Families United/  
Powerful Youth Friends United, North Carolina Foster and Adoptive Parents Association, and SUCCESS (Guilford County)

### QUALITY ENHANCEMENT TRAINING AND TECHNICAL ASSISTANCE

Infant and Preschool Training on Evidenced-Based Practices  
Family-Centered Care/System of Care

### PROGRAM EVALUATION AND STRATEGIC PLANNING

HOPE VI, improving housing conditions and options  
Guilford County Substance Abuse Coalition (GCSAC)

To learn more about the center, its mission and its initiatives, visit [www.uncg.edu/csr](http://www.uncg.edu/csr).

ate assistantships from multiple departments, five parents or foster parents of children with behavioral and/or substance abuse challenges, and another five part-time consultants. Many, like Claretta Witherspoon, the family-centered care coordinator, are involved in multiple projects such as the adolescent substance abuse grant and helping the N.C. Foster and Adoptive Parents Association.

A project she's working on now, Beyond Academics, seeks to give young adults with developmental disabilities a college-type experience using a curriculum stressing independent living.

"The students in Beyond Academics will not pursue a degree. They will live just off campus, but will be coming onto campus for meals,

certain recreational and extracurricular activities, as well as their own classes and carefully chosen regular classes," Witherspoon says. "It's a great, great concept, but you need everybody to be excited about it. There's a lot of work to be done between now and the fall semester when we hope that the first group will begin."

The center will also spearhead the evaluation examining the impact of the initiative on attitudes and stigma around disability, the independent living skills of the participants and the economic impact of increased independence.

Some projects live relatively short lifespans, six months or a year, but others are ongoing, taking root and expanding over the years into large, multi-faceted organisms.

Beverley Smith is program director for NCKids, a project funded by the N.C. Department of Health and Human Services, Division of Social Services.

"We partner with all 100 counties in North Carolina to recruit foster and adoptive families. We are in essence an arm of the social services division at the state level," she says. "There are about 10,000 kids in foster care in North Carolina. Many of them will be reunited with their families, but about 700 right now are free for adoption and need families."

One of the more successful adoption recruitment efforts is the Heart Gallery, an idea begun in New Mexico in 2001 that pairs portrait photographers, who donate their time, with the children in need of families. The resulting candid portraits are effective at matching children with willing families and in raising awareness of the need for foster and adoptive families. Last year, the Heart Gallery kicked off at the Greensboro Public Library in November, which happens to be Adoption Awareness Month. The photos were made into 2'x 3' posters and displayed around the state before being exhibited at the N.C. House of Representatives in May, Foster Care Awareness Month.

"Pictures speak volumes," Beverley says. "You look at a picture and you connect with a child."

**B**ack at Grimsley High School, a student asks the pertinent question — "Why are we doing this project?"

Mandy smiles.

"That's a good question," she replies. "We just want to see what we can do that would help people new to the United States understand how



PAULA MERRITT

Tre'shawn, Montreal and Christopher are all boys looking for adoptive or foster families. These photos were taken as part of the Heart Gallery, an adoption recruitment effort that displays candid portraits of children in need of families. Last year, the gallery exhibited poster-sized photos such as these throughout the state.



ABIGAIL SEYMOUR

the medical system works, how to talk with their doctor and how to be healthier. How many of you have been to the doctor since you've been here? It's different, isn't it?"

An 18-year-old student from Ghana says it is.

"In Ghana you don't got enough money," she says. "And if you go to the doctor they don't pay attention to you. Here, if they know you going to pay the money they take care of you."

A 15-year-old student from Vietnam says his parents do not speak English and going to the doctor is difficult because they do not understand anything the doctor is telling them.

The students will get their cameras in the coming weeks. The group decides they will display some of the photos in an art show in April, and parents and friends will be invited to attend. The students will have a voice in the way the works are presented, and they will also choose as a group the small gift they will receive from the center, perhaps a Wal-Mart gift card, for their participation.

"I've always found, especially with adolescents, that you should show them you appreciate their help," Mandy says later. "It's just a little something to say, 'Thanks for helping us.'"

**"T**hese projects are all like children," Shelton says. "You can't ask me to choose my favorites. But the work we've done with addressing the overrepresentation of youth of color in the juvenile justice system is one that stands out."

The project involves review of the literature and statistics on the scope of the problem and regular meetings with focus groups who all have a stake in the discussion, from caregivers of court-involved youth, juvenile court counselors, the faith community and even the boys and girls who are currently in juvenile offender programs.

"I cannot say we've successfully solved that issue, but when I look at the process, at who comes to the table — parents of youth in the justice system, kids who shared their experiences, committed professionals and community residents — that is an incredibly powerful process. I think it is the only way we can get to the roots of the problem. The

openness, the expertise — having big enough arms for people to get angry and still come back."

The center has been funded to evaluate the process in Guilford County and around the state and to identify successful approaches that then can be taken to other communities.

Under Shelton's directorship, the center has rewritten its mission statement and vision to more fully incorporate the roles of parents, caregivers and community support. She helped usher in a new era with the name change and moved the offices off-campus to downtown Greensboro. She hopes in the next five years to add personnel, increase external financial support from \$3 million to \$5 million and make a subtle shift in emphasis on evaluation, workforce development, and policy and advocacy.

But the methods employed by the center, she says, will remain largely the same: Use proven techniques and accumulated knowledge in conjunction with all interested parties to formulate best practices in care, training and policy.

And the questions, she says, will keep on coming.


What is the active ingredient in family-centered care?

Which practices will lead to better outcomes?

How do you turn research into action?

"There's a lot of golden rule stuff in this center," she says. "The whole concept of servant leadership is the effective piece that leads to better outcomes. Lead by serving. Support by listening. Nobody is dispensable. Everybody has strengths. The folks we work with in the community, I'm so proud of the work they do. And the graduate students, when I see the jobs and schools they pursue, I think, Great, there's somebody else who will carry on this work."

The center's unique structure and mission, she says, enable it to be responsive in ways that universities traditionally have not been able to do. And she says that, along with the university and the center itself, she is in it for the long haul.

"Every night I come home and say that the world is a better place," she says. "Sometimes the successes are small. But sometimes they're big." 





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URBAN STUDIO 2006

Department of Interior Architecture

A LEAKY ROOF AND A ROTTING FLOOR had made the Glenwood home of Lillie and James Marshall almost uninhabitable. The bungalow where the couple had lived for decades, not far from the UNCG campus, was demolished in August.

Thanks to 20 interior architecture students in the university's first Urban Studio course, the Marshalls have a new home at the same address, a home designed and built specifically for them. The six-credit course was made possible by a unique partnership between UNCG and the City of Greensboro, plus generous support from local businesses. "This is a real project to help people and learn at the same time, with direct benefit to the community," student Amber Snipes said.

The students, led by assistant professor Robert Michel Charest, were selected for the course about a year ago and conducted research during the summer. In August they interviewed the Marshalls and made an intense push to finalize a design that balanced the homeowners' wishes, the neighborhood's character and the project's \$43,400 budget.

When construction began in early September, 909 Dillard Street was just a patch of raw dirt. Working from 1-6 p.m. weekdays, the students built wooden forms, cut and set rebar, and poured the concrete, one wheelbarrow at a time.

The Department of Social Work helped the Marshalls move out of their old house. They stayed with local relatives while a new home was built, but frequently stopped by. "I'll tell you one thing," Lillie Marshall said as she surveyed the busy job site in September, "they are a smart bunch of children. Some mother raised these young'uns the same way I raised my young'uns."

They made forms for the walls by stacking hollow foam blocks that fit together like Lego blocks. Filled with concrete, the walls are well insulated, low maintenance and impervious to rot and termites. The use of these insulated concrete forms is one of the ways this project can be a model, said Charest, an architect, carpenter and licensed builder in the Province of Québec, Canada.

The students framed floors, walls and ceilings; put on the roof; hung and finished gypsum wallboard; laid hardwood floors; installed trim; and built a wraparound deck. Licensed contractors did the wiring, plumbing and HVAC work.

The century-old oak mantle from the original house was painstakingly refinished and given a place of honor. The UNCG Grounds Division, where James Marshall once worked, helped landscape the yard.

The Marshalls moved home in early April.

For more information, including more pictures, visit the Urban Studio blog at [iarcurbanstudio.blogspot.com](http://iarcurbanstudio.blogspot.com). Plans are already under way for the next Urban Studio in fall 2008.

PHOTOGRAPHY BY KELLY LOWRY, URBAN STUDIO PROJECT STUDENT  
TEXT BY DAN MONTE, STAFF WRITER



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“As a student, I can think of few things that rival not only being able to see your design come to life before your eyes, but to also be a part of the amazing team of individuals making it all happen.”  
— Jennifer Tate, student

[10-25-06]



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“You can design something in the studio, but if it can’t be built, it’s no good. This will let us know what our limitations are.” — Robert Michel Charest, the assistant professor who led the course, as told to the News & Record of Greensboro

[12-10-06]



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The first Urban Studio: Adrian Boggs, Edgar Cabrera, Kylene Costa, Jevin Dornic, Latoya Freeman, McKenzie Gates, Adam Gregory, Giselle Kovac, Justin Loggains, Meaghan Riordan, Jenny K. Thornton, Sandra Boccabella, Adrienne Garwood, Kelly Lowry, Amanda Morgan, Jessica Palmer, Sarah Rigot, Amber Snipes, Christina Tapia and Jennifer Tate.



Back to basics



I start from the observation that we live in a world with problems: inequality, suffering, violence, war, racism, sexism, homophobia, environmental destruction. I ask, What is it that education should be doing to develop a generation of people who can deal with these issues? And will our children have the capacity and concern to address these tremendous human problems?" Dr. Svi Shapiro

**Losing Heart: The Moral and Spiritual Miseducation of America's Children**

By Dr. Svi Shapiro

Lawrence Erlbaum Associates (240 pp.)

Dr. Svi Shapiro, an education professor who has spent 30 years in the field, is passionate about educational reform in this country. His latest book, "Losing Heart: The Moral and Spiritual Miseducation of America's Children," outlines the dangers of what he calls a "one-size-fits-all, cookie cutter" approach to learning.

Shapiro argues that the current system, with its overemphasis on standardized testing and academic competition, is failing America's youth. The recent No Child Left Behind initiatives have only worsened the problem, he says. "Education has become a means of getting from one place to another. It's irrelevant to living their lives. The whole ethos of schooling is really about playing the game."

The "game" is all about learning to be manipulative, even cheat, he says. And the playing field isn't even, due to a huge social class gap. "Generally students who come from more affluent backgrounds know how to play the game. Their cultural capital is received from the home environment. Schools are set up to perpetuate the advantages of kids from affluent families and the disadvantages of kids from low-income backgrounds."

So how can the system adapt to provide a more positive educational experience for America's children? Shapiro says we should teach kids to think creatively, democratically, fairly — and critically, questioning everything.

"You can see the results of this failure all around you in all kinds of ways. We teach kids to be obedient drones. The idea of more critical thinking and freedom scares some people, probably because they fear losing control of students. But education has to be a place that deals with the critical and enhances the creativity of children along the way."

Turning readers on to turn-of-the-century writers

**THOMAS HARDY. JOSEPH CONRAD. GEORGE BERNARD SHAW. RUDYARD KIPLING.** For years, these turn-of-the-century British authors got short shrift in academia because they fell between the Modern Language Association's divisions of literary eras. However, the independent journal *English Literature in Transition 1880-1920* was created to remedy that situation.

"From (original editor Hal) Gerber's viewpoint, the so-called 'minor' writers at the turn of the century provided innovations in aesthetic theory, in the short story, poetry and the novel," said Dr. Robert Langenfeld, editor of the journal since Gerber's death in 1981. "He wanted to give space to non-canonical authors. He thought they should be recovered."

Langenfeld, UNGC professor of English, has carried on that mission for 25 years. As one of Gerber's graduate students, he took up the cause of the journal with enthusiasm. This year, the journal celebrates its 50th anniversary. From mimeographed pages to desktop publishing to online "printing," the journal's reach has expanded from 40 readers to 1,400.

The scope of the journal has changed as well. Now, less emphasis is given to the likes of Oscar Wilde and Joseph Conrad. "They don't need us any

more," Langenfeld said. "We have much more emphasis on women writers."

The journal also prints a large number of book reviews about other authors of that period. "It's a way to bring in other scholars and draw in a larger readership," he said.

The ELT Press, founded in 1988, continues the mission of the journal with its 1880-1920 British Author Series. "One of the reasons the press is here is scholarly books don't sell," he said. "We fill a very small niche." Typically, the press prints 500 books. In some instances, they sell out. But Langenfeld considers it a success if he sells 200-300 copies.

It's all about expanding scholarship. "It's pretty much a one-man show," he said. "I have one graduate assistant. No salaries. We make enough for the printing of the books." Funding for the journal comes out of subscriptions, and at times Langenfeld has been known to take money out of his own pocket to keep the journal going.

But it's worth it to keep it the way his old professor wanted it.

"In his view, if an academic journal is owned by the university, it would be the first thing to go when a funding crunch hit. It's better to keep it in the family, keep it private."



Growing up, I was told the acronym J.O.Y was the key to a fulfilling life. J.O.Y. reminds us that life is balanced when your priorities are: Jesus, Others ... and then, You. So, what happens when your religious upbringing doesn't make sense and all of a sudden you are O.Y.J. or just O.Y.? That doesn't spell anything, does it?

Sarah A. Martin, artist's statement, "You Are What You Love."

I am looking to my childhood friends, old Sunday-school rooms, the new generations of J.O.Y. seekers to make sure I'm not missing the point. Some of my old friends are also struggling with balancing priorities, secret desires, misplaced maternal instincts (pets) and hoping more than anything to find a place to put their love. Sarah Martin is assistant professor of art and teaches photography.

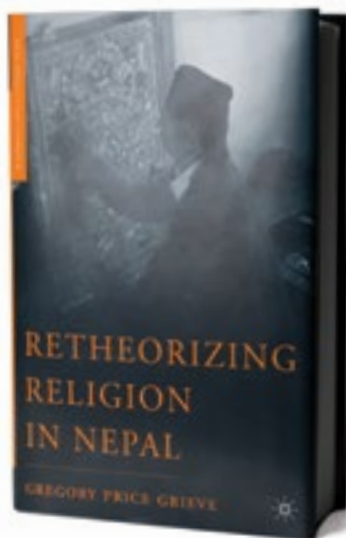
From the series "You Are What You Love," digital prints; 2006.





## Rethorizing Religion in Nepal

By Gregory Price Grieve  
Palgrave MacMillan (172 pp.)



**“HERE IS ONE OF THE FIRST MANDALAS I PAINTED.”**

Dr. Greg Grieve points to a mandala on the wall, and to the forms, the colors, the patterns he has painted using tempera pigments on cloth. Mandalas are an integral part of Hindu and Buddhist practice. Whether created from colored sand or paints, they represent the whole of the world, with a central deity surrounded by lotus blooms inside palace walls with the land and sky beyond.

Grieve, an assistant professor of religion, makes use of mandalas in his new book, “Rethorizing Religion in Nepal.” In fact, the work is created as a mandala, each chapter an integral part of the whole.

He had studied religious spaces in different parts of the world, he says. “I arrived in Nepal in 1990 during the middle of a revolution, the restoration of Multi-Party Democracy.” Perhaps not the best time to arrive. But it did offer a chance to see how political groups can manipulate and alter religions — and vice versa. “It made me reconsider how I thought about religion and sacred spaces.”

In the Western world, where the predominant religion is Christianity codified in texts for thousands of years, religion is perceived as not very fluid. Westerners tend to see religions in other parts of the world through that prism. But that’s a mistake, according to Grieve.

He speaks of a religious procession in the picturesque city of Bhaktapur (where the film “Little Buddha” was filmed). An outsider group joins in with a float — where is it decreed that they can’t? So they do. No one stops them. The culture evolves, the practices

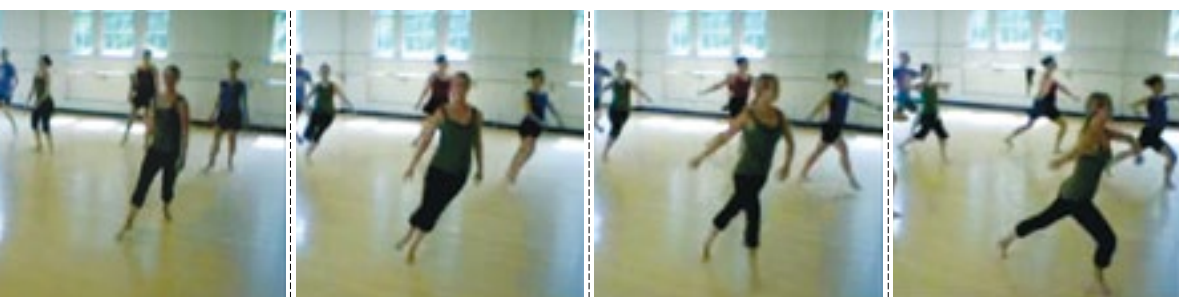
change, people adapt.

What significance does that stone statue beside an alleyway represent? Ask three people, you may get three somewhat different answers. All are true — how can you say they aren’t?

Meanings are ever-shifting — they’re a moving target. And the reader is left considering what this means for religious practices here in North Carolina. What would someone from Nepal make of them? Even after studying the texts, would the practices be fully understood? It’s food for thought. And Grieve wants this to be a conversation not just for those in academia.

That’s why Grieve, who is also a videographer/film-maker, likes to craft documentaries, where he can readily speak to a general audience. He soon plans to trace the manner in which Asian mandalas have been translated into American society. But can a short amount of footage capture the nuances? “In Nepal last summer, I shot 70 hours of film,” he says.

## Looking “beyond the mirror” to improve dance technique



IT USED TO BE THAT THE MIRROR was the only tool for providing instant feedback for dancers to evaluate the quality of their *pas de deux*. Not any more. By introducing cameras, computers and digital technology into the dance studio, Duane Cyrus, assistant professor of dance, has found new ways to help dancers perfect their *grand jetés* and assess their movements beyond the dance studio mirror.

“Every week we have some kind of video feedback,” says Cyrus, who regularly uses cameras to zoom in on his ballet and modern dance students as they execute choreography. He then emails the video clips to students so they can critique their own work and that of their fellow students. Video clips are also posted to Blackboard, UNCG’s online course management system that allows students and faculty to communicate and share data. Cyrus, who is also the artistic director of Cyrus Art Productions, sends “mini lectures,” audio-visual clips that emphasize the “salient points” of his teaching philosophy to students as well.

Cyrus says the University Student Laptop Initiative that requires all incoming, full-time freshmen for the fall 2007 semester to have laptops will be a boon to dance students. He anticipates students bringing their laptops to class to watch films of their fellow students and provide another way of looking at their performance aside from mirrors and dance critics’ reviews.

The Department of Dance offers a course in video and audio applications to dance along with providing a 12-station Macintosh lab where students can work on individual projects related to performance and technique.

“The mirror only provides information about the superficial body and its position in space and time,” says Cyrus. “This is the 21st century and it’s time for dancers to have some other ways to look at what they are doing.”

A WHITE LAB COAT HANGS ON A HOOK in Dr. Lynda Brown’s third-floor office in the Stone Building. The coat, long unused, reminds the new faculty member in the nutrition department why she’s spent weeks and months applying for grants, ordering equipment and setting up her lab. Soon that quiet lab, just a few doors down the hall, will be alive with activity, and she will be able to resume the research she’s pursued since earning her doctorate from the University of Maryland in 2003.

Brown will be using rats to explore how the hormones estrogen and leptin influence appetite, weight gain and fat distribution, work that promises to shed light on those same processes in humans. Estrogen, of course, is well-known as the primary female sex hormone. Brown and her colleagues discovered that estrogen also increases the brain’s sensitivity to the hormone leptin, which is released by fat cells.

Leptin levels mirror body fat levels, and they act in the brain to curb appetite. Thus, as our bodies add fat, we should feel less hungry. When we are overweight, however, we often develop leptin resistance, and leptin no longer suppresses appetite. Women’s brains rely on leptin as a signal more than men’s brains. The male brain tends to depend more on insulin, the blood-sugar regulator, to signal when to put down the knife and fork.

Estrogen also seems to act in the brain to influence where women store fat. Body fat can be stored just below the skin, known as subcutaneous fat, or beneath the abdominal muscles, where it’s called visceral fat. Subcutaneous fat, the source of the “pear” body type, is less dangerous than visceral fat, which surrounds the vital organs in the

abdomen. Most young women carry subcutaneous fat around their hips and thighs.

Visceral fat has been linked to heart disease and diabetes, not to mention the dreaded beer belly (the “apple” body type). Fat shifts to the visceral depot after menopause, which could help researchers understand why postmenopausal women, like men in general, are more susceptible to the metabolic syndrome than younger women. The metabolic syndrome is a group of disorders that includes obesity and insulin resistance and increases risk for heart disease.

This is where the rats come in. Female rats mature sexually at five weeks, go into estrus (heat) every four or five days, and lose the ability to reproduce at a year old. Rats live about two years. That brief lifespan allows researchers to quickly gather data about our furry, fellow mammals. Brown will track body fat, fat location, estrogen levels and leptin levels in both male and female rats. Some of the rats will eat a high-fat diet; some will not. Some will be given leptin to test their sensitivity to its anorectic effects; some will not.

Brown discovered her knack for working with animals in graduate school. When she held her first lab rat at the University of Maryland, it was love at first touch. Visit her office, and she’ll show off her rodent pictures the way some people show off photos of nieces and nephews. Her affinity for working with animals has shaped her obesity research, research she pursued for three years of post-doctoral work at the University of Cincinnati’s Genome Research Institute with renowned researcher Steve Woods. Soon she’ll be hard at work at that research again. Soon she’ll need that lab coat.



After menopause, women seem to lose protection from heart disease. The first thing I want to do is to understand why that happens. Then we’ll figure out how to fight it.” Dr. Lynda Brown



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