Mapping the brain

Technique studies brain activity without surgery

By James E. Kloeppel

A non-invasive diagnostic tool that can study changes occurring at the surface of the brain because of brain activity has been developed by scientists at the UI. The technique is based upon near-infrared spectroscopy and is simpler to use and less expensive than other methods such as functional magnetic resonance imaging and positron emission tomography.

“Whenever a region of the brain is activated – directing movement in a finger, for example – that part of the brain uses more oxygen,” said Enrico Gratton, a UI professor of physics. “Our technique works by measuring the blood flow and oxygen consumption in the brain.”

The optical technique is fast and simple to use, Gratton said. First, light carried by near-infrared laser diodes is carried through optical fibers to a person’s head. The light penetrates the skull where it assesses the brain’s oxygen level and blood volume. The scattered light is then collected by optical fibers, sent to detectors and analyzed by a computer.

By examining how much of the light is scattered and how much is absorbed, Gratton and his colleagues in the university’s Laboratory for Fluorescence Dynamics can map portions of the brain and extract information about brain activity.

“By measuring the scattering, we can also determine where the neurons are firing,” Gratton said. “This means we can simultaneously detect both blood profusion and neural activity.”

The technique could be used in many diagnostic, prognostic and clinical applications. “For example, it could be used to find hematomas in children, or to study blood flow in the brain during sleep apnea,” Gratton said. “It could also be used to monitor recovering stroke patients on a daily, or even hourly, basis – something that would be impractical to do with MRI.”

– Enrico Gratton

Team of students redesigns an office icon

By Melissa Mitchell

Baker and the Assault on Paper.” Baker is on the aca- demic conference and C-SPAN lecture circuit and raises some controversial ideas about how to preserve texts in perpetuity while bringing important fo cus on issues related to the preser- vation of culturally important ar- tifacts. Baker blames librarians for the demise of paper copies of old newspapers replaced by microfilm. Many librarians – including me – have serious objections and reservations about Baker’s facts and argument.

The book has caused such a flap that organized a “salon” for librarians and faculty members of the Graduate School of Library and Information Science to discuss the book.

“By examining how much of the light is scattered and how much is absorbed, Gratton and his colleagues in the university’s Laboratory for Fluorescence Dynamics can map portions of the brain and extract information about brain activity.”

By measuring the scattering, we can also determine where the neurons are firing,” Gratton said. “This means we can simultaneously detect both blood profusion and neural activity.”

The technique could be used in many diagnostic, prognostic and clinical applications. “For example, it could be used to find hematomas in children, or to study blood flow in the brain during sleep apnea,” Gratton said. “It could also be used to monitor recovering stroke patients on a daily, or even hourly, basis – something that would be impractical to do with MRI.”

– Enrico Gratton

Team of students redesigns an office icon

By Melissa Mitchell

Baker and the Assault on Paper.” Baker is on the aca- demic conference and C-SPAN lecture circuit and raises some controversial ideas about how to preserve texts in perpetuity while bringing important fo

“By examining how much of the light is scattered and how much is absorbed, Gratton and his colleagues in the university’s Laboratory for Fluorescence Dynamics can map portions of the brain and extract information about brain activity.”

By measuring the scattering, we can also determine where the neurons are firing,” Gratton said. “This means we can simultaneously detect both blood profusion and neural activity.”

The technique could be used in many diagnostic, prognostic and clinical applications. “For example, it could be used to find hematomas in children, or to study blood flow in the brain during sleep apnea,” Gratton said. “It could also be used to monitor recovering stroke patients on a daily, or even hourly, basis – something that would be impractical to do with MRI.”

– Enrico Gratton

Team of students redesigns an office icon

By Melissa Mitchell

Baker and the Assault on Paper.” Baker is on the aca- demic conference and C-SPAN lecture circuit and raises some controversial ideas about how to preserve texts in perpetuity while bringing important fo

“By examining how much of the light is scattered and how much is absorbed, Gratton and his colleagues in the university’s Laboratory for Fluorescence Dynamics can map portions of the brain and extract information about brain activity.”

By measuring the scattering, we can also determine where the neurons are firing,” Gratton said. “This means we can simultaneously detect both blood profusion and neural activity.”

The technique could be used in many diagnostic, prognostic and clinical applications. “For example, it could be used to find hematomas in children, or to study blood flow in the brain during sleep apnea,” Gratton said. “It could also be used to monitor recovering stroke patients on a daily, or even hourly, basis – something that would be impractical to do with MRI.”

– Enrico Gratton

Team of students redesigns an office icon

By Melissa Mitchell

Baker and the Assault on Paper.” Baker is on the aca- demic conference and C-SPAN lecture circuit and raises some controversial ideas about how to preserve texts in perpetuity while bringing important fo
Inside Illinois

On the job: Eric Knisley

**Job:** Hired by the UI as a cement finisher in May 1993, Eric Knisley has been the crew's foreman since April 1999. He holds an associate’s degree in business from Parkland College and apprentices as a cement finisher with the Cement Masons Local 143 in Champaign.

**What is a typical day like working on the concrete crew?** Generally, we pour in the mornings and set forms in the afternoon. We do the prep work in the afternoon and then pour until the next morning. That way by quitting time the concrete’s ready to be sawed and is ready for pedestrian traffic. Our biggest customer in the summertime is the grounds department. We renovate a lot of sidewalks and bike paths and do some street work for them.

**What attracted you to working with concrete?** Probably the money as much as anything, I guess. I had a couple of friends who did it and they talked me into it.

**How many yards of concrete do you typically pour in a week or a month?** In a year, it’s probably close to 3,000. Some jobs that don’t take a lot of yardage, such as the plaza on the south side of the Chemistry Annex, are still intensive laborwise because there are decorative borders to be formed. Yesterday (July 26) we poured a street on Peabody by the north side of the Law Building and it took 272 yards. How many people do you typically have on your crew? Five cement finishers and two to three laborers. **What do you guys do during the wintertime?** Actually, there’s still a lot of stuff to be done outside. As long as the ground is not frozen we can pour concrete. If it’s 32 degrees and above, generally we can be pouring concrete.

**What do you like best about your job?** Being outside. It’s really nice to be able to drive around or walk around campus and see projects that we have been part of. We do hardscape projects that are considered part of the landscape. It’s nice to improve campuses to make places like that usable but also make it attractive. That’s pretty rewarding; to be able to sit back and say “we did this.”

**Do you get comments from passers-by?** Most people are aggravated, and that’s understandable because it’s really awkward to try to coordinate all of our material deliveries, including concrete trucks. When all the students get back, you’ve got 30,000 kids to work around, and that makes it pretty hard to get everything in and out. It creates a little bit of friction, but we just try to work with it because that’s why we’re here.

What’s the most difficult part of your job? Planning around the weather — the rain, the extreme heat like we had a few days ago really affects how much material we can place in a few hours and how many people we need on each particular job.

**What do you do if it’s raining and you can’t work outside?** If it’s raining or something like that, which doesn’t seem to have been the case much this summer, generally we get a list of maintenance-type work inside the buildings that we fall back on from time to time. We do epoxy injections into structural concrete to repair cracks in buildings. We also do urethane injections.

Since you’re working outside with pedestrian traffic and squirrels running around, have you ever had any unusual incidents? We’ve had bike riders go down the whole length of a wet sidewalk. Yesterday we had a guy walk right into where we were pouring. Usually we try to rinse their shoes off for them because we’ve got a hose handy.

Probably the funniest thing we ever had happen was when we were on South Lincoln Avenue pouring patches on the road, working toward the Vet Med building, and we had an elderly couple drive around the barricades. They were taking their sick dog to the vet and were really nervous. The man drove through the patches in the road and bottomed out, leaving his tire prints and impressions of the car’s gas tank where it had hit the fresh concrete. The only thing holding the car up was the reinforcing steel. He went through three of them before we got him stopped.

— Interview by Shariita Forrest

**Spurlock Museum**

**Storytelling workshop is Aug. 18**

Nationally known storyteller Corinne Stavish will present a storytelling workshop beginning at 10 a.m. Aug. 18 in Urbana. “And for Their Wickedness They Were Punished: The Case for Justice in Folklore” is open to the public, but pre-registration is required and seating is limited. Cost of the workshop is $15. After the workshop, participants are invited to stay for lunch and an afternoon storytelling workshop beginning at 10 a.m. Aug. 19 at the Champaign Public Library, 505 S. Randolph St., on Aug. 17. “Jewish Tales of Wit and Wisdom” will begin at 10 a.m.

Music and storytelling featured

Music of Chicago’s Maxwell Street Klezmer Band and the storytelling of Corinne Stavish will be featured at a performance from 2 to 4:30 p.m. Aug. 19 at the Sinai Temple, 3104 W. Windsor Rd., Champaign. The concert, “Far From Forgotten: A Festival of Jewish Music and Folklore,” is sponsored by the Spurlock Museum and supported by a grant from the Illinois Arts Council, a state agency. Admission is $5.

In addition, a free storytelling performance by Corinne Stavish will take place at the Champaign Public Library, 505 S. Randolph St., on Aug. 17. “Jewish Tales of Wit and Wisdom” will begin at 10 a.m.

**La Colombia Internacional**

Meetings to focus on Colombia

Scholars and dignitaries will explore wide-ranging topics dealing with Colombia — from guerilla warfare and the war on drugs to Colombian identity and poetry — at a four-day conference at the UI. The conference, titled “La Colombia internacional,” runs through Aug. 4.

Discussions, lectures, roundtables and plenary sessions, all to be conducted in Spanish, will continue on Aug. 6 in Chicago. Participants in both meetings hail from academic and governmental institutions all across the United States and Colombia, as well as from Austria, Brazil, France, Germany, Mexico, Norway, Puerto Rico and Spain.

**Did you know?**

Champaign County Health Care Consumers’ free Hotline helps 85 people each month get health care.

Annually, Champaign-Urbana Tenant Union helps 3,000 University of Illinois employees and other community members resolve landlord-tenant problems.

Your contributions to the Campus Charitable Fund Drive and to Public Interest Fund of Illinois make a difference.
Two college guides name UI a top value

Two guides that help students choose a college have named the UI at Urbana-Champaign a top value.

The Fiske Guide to Colleges 2002 names the UI one of 43 “best buys” based on the quality of the academic offerings in relation to the cost of attendance.

The Kaplan/Newsweek College Catalog 2002 recognizes Illinois as a top school in three areas—“offers the best value for your tuition dollar,” “supports diversity” and “is academically challenging.”


In terms of the quality of undergraduate life, Fiske describes UI students as “a happy, sociable bunch. This is, after all, the school that invented Homecoming.”

Fiske also lauds the range of course work available at the eight undergraduate colleges, which offer more than 150 undergraduate programs.

“Don’t be scared off by the enormity of the UI,” he concludes. “Its size is probably its greatest asset—drawing students from all over the world and offering them a multitude of opportunities not available elsewhere, so long as they seek them out.”

In addition to the UI, three other Big Ten schools were named as “best buys”—Iowa, Minnesota and Wisconsin.

The Kaplan/Newsweek Catalog provides detailed admissions information on more than 1,000 colleges and universities nationwide compiled from surveys of high school guidance counselors.