

Both sides now

At RIT, right brain and left brain come together in unique and surprising ways

After earning B.S. and M.S. degrees in performance at the Eastman School of Music, Adam Lange-Pearson developed osteoarthritis and realized he would not be able to play at the level required for a career as a cellist.

Instead, he entered RIT's B.S./M.S. computer engineering program. The Devils Lake, N.D., native excelled. In his senior year, he was chosen to serve as class delegate at convocation, where he spoke about his experiences and played a cello solo.

While this change of plans was, indeed, life altering, Lange-Pearson doesn't view music and engineering as polar opposites.

"What I came to realize is at a fundamental level, one can find beauty in almost everything," says Lange-Pearson, an engineer at IBM in Rochester, Minn., where he works in the area of high-end server virtualization. He maintains his involvement with music as artistic director of the Southeastern Minnesota Youth Orchestra. "I have the best of both worlds," he says.

"When I have to do something difficult in engineering, my brain is thinking about shapes, moving the different pieces around in my head, and I hear music," he says. "My right brain gets involved in my left brain. . . I see that in some of the really brilliant people I work with at IBM.

"The creative process in engineering these days takes place at a lot of different levels. In solving (engineering) problems, you have to be very creative."

RIT provides a home to people on both ends of the spectrum – and many who fall somewhere in the middle.

UPON HIS ARRIVAL AT RIT LAST

year, President Bill Destler immediately embraced RIT's blend of right brain and left brain activity. An international authority on high-power microwave sources and advanced accelerator concepts as well as an accomplished musician and one of the world's foremost collectors of antique banjos, Destler applauded the university's unique mix of artists and designers on the one hand, and scientists, engineers, and business leaders on the other.



Adam Lange-Pearson '99, performing at convocation in 1999.



Chance Glenn Sr., associate professor of telecommunications engineering technology, singing The Star Spangled Banner during RIT President Bill Destler's inauguration ceremony.

That observation became the inspiration for "Imagine RIT: Innovation and Creativity Festival," a public showcase of the best of RIT (see related story this page).

The notion that the two hemispheres of human brains lead separate lives, so to speak, emerged in the 1950s and '60s. Psychobiologist Roger Wolcott Sperry and his team at California Institute of Technology conducted research on patients whose brains had been surgically split as a treatment for severe epilepsy.

They determined that the left hemisphere of the brain is occupied with language, analytical, linear, and objective thinking. Meanwhile, the right hemisphere manages the spatial, non-verbal, perceptual, intuitive, subjective functions. Sperry won the Nobel prize for physiology or medicine in 1981 for his split-brain discoveries.

Both sides of the brain are at work in everyone, but for many of us, one side seems to dominate. From this comes the popular notion that left-brain types are the fact-oriented engineers, scientists and accountants, while right-brainers are artists and dreamers.

"I DON'T LOOK AT ONE SIDE OF THE brain," says Chance Glenn Sr., associate professor of telecommunications engineering technology. "To me, it's all about creation."

And, he adds, "I like the freedom in the academic world to create."

He has turned his creative energy to a variety of projects. A singer and composer, Glenn has written more than 100 songs. He launched a music production company and produced and performed on two CDs – one of which was nominated for a Grammy Award in 2000. He was co-founder and chief technology officer of a start-up technology company, Syncrodyne Systems. Since arriving at RIT in 2003, Glenn has performed frequently at campus events. Two years ago, he launched a technical publication, *The Journal of Applied Science and Engineering Technology*.

"Techno geek, artsy fartsy, athlete – I was all of those," says Glenn. "One reason I do a lot of things is I want to affect people's lives – hopefully in a positive way. The honest truth, I'm still searching for the real me."

FOR MANY OF US, CLEAR INDICATIONS of right-brain or left-brain orientation appear in childhood. For example, Therese Hannigan '91, '92 (graphic design, publishing) and Ali M. Ali '04 (new media design) loved to draw. Hannigan expected to study engineering in college, but persuaded



Can you imagine?

The first "Imagine RIT: Innovation and Creativity Festival," a public showcase of the best of RIT, takes place 10 a.m. to 4 p.m., Saturday, May 3. PAETEC, the Rochester-based communications company, is premier sponsor of the event. Admission is free.

More than 400 projects and activities are being planned by students, faculty and staff, in addition to events organized by each of the eight colleges. Visitors will find demonstrations, exhibitions, performances and hands-on activities throughout the campus, with some of the larger exhibits on display at the Gordon Field House and Activities Center.

The festival will be family friendly, with traditional festival fare: carnival rides, music, food and activities for the kids.

Here's a list of some of the projects expected to be displayed. For more information, visit the festival Web site at www.rit.edu/imagine. Live video and a real-time photo gallery will be displayed on the Web site during the festival.

- Electric bicycles
- Interactive mini-golf hole
- 21st century news
- Workshop of theater techniques bridging deaf and hearing cultures
- Formula Car unveiling
- Animatronic dog
- Preservation of ancient manuscripts using imaging technology
- The Best of ImageMovementSound Festival
- Space tourism
- Nutrition and the Mediterranean diet
- Hearing tests and demonstrations of different hearing problems and therapies
- Past Meets Present: A Century of Women Students at RIT
- Cyber intrusion threat and impact projection
- Mindfulness meditation: instruction and practice
- Better Me fitness demo
- Mine detection with swarm robots
- Photographic and artist-rendered images of gross anatomy
- Performance and production of an original song
- Factors that may influence inhaled particle deposition in the lung
- Water quality of Allen Creek
- Printing with variable design
- Sustainable project design
- Student-built "green" car
- The Changing Library
- Capoeira performance combining acrobatics, music, dance and martial arts
- Exposure to toxic pollutants: How does your community rank?
- 2007 Baja SAE Rochester World Challenge documentary screening
- Human everyday movement / behavior as dance
- Computerized vending machine
- Electronics recycling outreach and activism

www.rit.edu/imagine
Saturday, May 3



Teamwork at Dumbwaiter Design, from left: Mike Roushey, third-year new media design student; Therese Hannigan '91, '92 (with laptop); Marc Gurney '08 (new media interactive design and development); Ali M. Ali '04 (red sweater); Sarah Merchant, fourth-year new media design student (with ear-phones); and Dezirae Moore '07 (graphic design) .

her parents to let her major in design. Ali's parents wanted him to go into architecture, but when he heard about new media design, "It turned out to be just what I wanted. I wanted to do something artistic, but practical."

Artistic talent alone won't guarantee success in the graphic design industry, both say. Technical skills are essential – and the technology changes all the time. "You're



Roy Berns, Richard S. Hunter Professor of Color Science, Appearance and Technology, had his first paying music gig at age 12.

forced to be a lifelong learner," says Hannigan. "It's not enough just to keep up. You have to stay ahead."

Hannigan started her own design company in 1996, but closed it in 2005 to start a new company, Dumbwaiter Design, with Ali and several other RIT grads. The new media design firm specializes in interactive, motion and print design including broadcast design, Web sites, microsites, 3-D animation, games, DVD design, presentations, brochures and identity design for large and small business clients.

Hannigan also teach full time in the new media design program; Ali teaches part time.

"I've found there are three types of students in the new media program," Hannigan says. "Some thrive on the creative, some focus on technology. But some do both and wouldn't be happy doing just one or the other."

ROY BERNS DEVELOPED AN INTEREST in music as well as art in early childhood. He started playing guitar at age 7, and had paying gigs by age 12. He allows that he was not a very good student in high school, although he did well in math and art. Berns studied textile science at the University of California-Davis, and that led him to color science.

Now the Richard S. Hunter Professor of Color Science, Appearance and Technology in RIT's Carlson Center for Imaging Science, Berns continues his passion for



Al Biles, professor and undergraduate program coordinator, Information Technology Department, performs frequently at community events.

music as one-third of Lumière, a trio that performs gypsy jazz in a style inspired by Django Reinhardt. (Another RIT faculty member, Peter Ferran, professor of fine arts, plays clarinet.) The group plays weekly at Rochester's Little Theatre, as well as other occasional appearances around the area. Berns has also taught for the past four summers at the Puget Sound Guitar Workshop.

"I think performing is a different level than just playing with friends," says Berns. "It's riskier, more intense. The skills I have developed as a working musician make me more comfortable in front of a class, and more sensitive as a teacher."

He sees no conflict in being a scientist with a strong right-brain orientation. "I'm able to use my creativity in research," he says. "I want to be around smart people who have talent, whether they're right brain or left brain. We need all types."

A CASUAL OBSERVER MIGHT GUESS that the Golisano College for Computing and Information Sciences would be the epicenter for left-brain activity. But this is the home of a unique music maker: Al Biles, professor and undergraduate program coordinator, Information Technology.

Biles, an accomplished jazz trumpeter, is



Self-portrait with harmonica by Cassi Fecho, third-year imaging and photo technology major.

the inventor of GenJam (short for genetic jammer), an interactive genetic algorithm that learns to play jazz solos. Biles began working on GenJam during a professional development leave in 1993-94, and has continued to expand its repertoire of tunes and styles. Biles and GenJam play together regularly at RIT functions and at other venues, often under the billing of the AI Biles Virtual Quintet.

Biles began the project as an academic exercise, expecting to write some papers and possibly present at a few conferences. But it "began to evolve from a piece of technology to focus more on the music."

"GenJam is a formidable sideman," he says. "It does some nice stuff."

In fact, Biles has gone to conferences all over the world, and recently co-edited a book, *Evolutionary Computer Music*, which contains a chapter on GenJam.

It fits perfectly in the multimedia arena, an example of how music can be used in a technological setting – while maintaining the human element.

"Right brain, left brain – it's an illusion, a vast oversimplification," says Biles. "In IT, we're focused on how people use technology."

THIRD-YEAR IMAGING

and photo technology major Cassi Fecho is a classically trained singer, plays piano and is teaching herself to play harmonica. Despite her passion for music, she says, "I am most definitely left brain."

Her interest in photography began in elementary school, before she had ever taken a photograph. But at RIT, Fecho realized she is more interested in the science than the art of photography.

In her field, she can go in either direction. But she feels that many students at RIT tend to become caught on one side or the other.

"For the most part, I see RIT as mostly left brain, until you

walk into Building 7" (home of the College of Imaging Arts and Sciences). "Unfortunately, there's not much opportunity to mix."

Jen Loomis, a fifth-year software engineering major, agrees. "I think a lot of students at RIT are capable of doing both," she says. "I do think RIT has a tendency of putting people into boxes based on major. It starts from the get-go."

HOWEVER, EFFORTS ARE WELL

underway to make RIT more integrated, says Katherine Mayberry, vice president for academic affairs. All students now have the option of pursuing a minor. More than 50 choices are available, including foreign language, art history, philosophy, accounting, entrepreneurship, imaging science, marketing, theater arts, engineering management, and journalism.

Through the Center for Multidisciplinary Studies in the College of Applied Sciences and Technology, students can create undergrad and graduate degree programs tailored to their interests and aspirations. In addition, a growing number of double majors are being offered. Examples include an M.S. degree program in new product development (Saunders College of Business and Kate Gleason College of Engineering); B.S. program in new media publishing (College of Imaging Arts and Sciences and Goli-sano College of Computing and Information Sciences); and a B.S./M.S. program in mechanical engineering and public policy (KGCOE and College of Liberal Arts).

"There are clearly a lot of students who are trying to engage the different sides of their personalities," says Mayberry. "We're developing more multidisciplinary programs. Students want more options, and we are working to make them available."

Participating in one (or more) of RIT's 150-plus organizations is another option for students to explore other interests – and other aspects of the RIT experience.

Loomis, for instance, is editor of the *Reporter*, the weekly magazine published by students, and also plays trombone in the RIT jazz ensemble.

"My experience at *Reporter* has been amazing. If I had gone to a larger school, with tons of liberal arts majors, I don't think I would have gotten the opportunity to work in the capacity that I do at *Reporter*. I'm a software engineering student learning about art. That's cool."

Kathy Lindsley



Fifth-year software engineering major Jen Loomis is editor of *Reporter* magazine.