UC’s New ‘Neuroscience of Music’ Course Builds Bridges Between Two Colleges

Published June 2009

For Steven Cahn, PhD, and Gail Pyne-Geithman, DPhil, it was probably the easiest sale since the invention of Tupperware.

It was only about a year ago that Cahn, an associate professor of music theory in the College-Conservatory of Music (CCM), and Pyne-Geithman, a research assistant professor in the College of Medicine’s neurology department, began collaborating on the idea of a graduate-level course called the Neuroscience of Music.

With the enthusiastic support of College of Medicine Dean David Stern, MD, and CCM Dean Douglas Knehans, the course became a reality in time for the spring 2009 quarter.

With Stern’s interest in music (he is an accomplished clarinetist who has soloed with the Cincinnati Chamber Orchestra) and Knehans’ interest in science, the course is a natural fit and a shining example of collaboration between two of UC’s most renowned colleges. But its beginnings owe as much to coincidence as design.

“My piano teacher told me he was interested in the neuroscience of music and asked me to help him understand a paper on brain imaging,” says Pyne-Geithman, who also plays the clarinet and saxophone and sings in the College of Medicine’s women’s choir. “So I was working with him and he said, ‘You need to meet my mentor,’ who turned out to be Steven.”

Once Cahn and Pyne-Geithman were introduced and discussed their common interests, they started the Neuroscience of Music Action Group—“and then the next step seemed to be a course,” Cahn says.

They participated in the September Institute, a faculty initiative sponsored by UC’s Center for the Enhancement of Teaching & Learning, to cultivate their ideas and develop a plan for teaching and organizing the course. Cahn proposed the course to the CCM Academic Council at the end of the fall quarter.

“There was a slot for it in the spring, so I grabbed it,” he says.

Most of the students in the class are performance majors working toward a doctor of musical arts degree, Cahn says, but there are also graduate music theory majors and a few auditors and undergraduates as well.

The course is also open to neuroscience graduate students, Pyne-Geithman says.

Cahn coordinates the course, with instructors coming from multiple UC departments including neurology, cancer and cell biology, philosophy, psychiatry and communication sciences and disorders. Classes address such topics as imaging, audiology and emotion as they relate to music.

One recent class found students intently huddled around copies of a scientific paper titled “Brain Activation During Anticipation of Sound Sequences.”

Pyne-Geithman had split the students into groups and asked them to critique the paper as part of an overview of “good science” versus “bad science.” For most, if not all of them, the course provides their first exposure to scientific papers.

“I’ve really enjoyed the fact that it’s a collaboration between CCM and College of Medicine faculty,” says Jennifer Jill Araya, a master’s student in cello performance. “It’s been really interesting and really fun.”

“What I hope to accomplish is for students to understand how their concepts about musicality have some basis in neuroscience concepts,” says Cahn. “This is an effort to help them build a bridge between their conservatory musical understanding and more biologically based musical understanding—so in every phase of music, if they want depth from other perspectives this will ultimately be a great help to them.”

Cahn says the study of neuroscience and music is a growing field, and he’s not willing to leave it entirely to scientists.

“I’ve attended conferences on neuroscience and music, and it’s very evident that musicians and theorists about music are marginalized at these conferences because they don’t speak the language and they don’t present their learning in statistical ways,” he says. “I don’t want that to happen—I think musicians have a thing or two to say about the study of music.
“So I’d like to see these students be active participants in this burgeoning area of research. It’s a new challenge, a new avenue for music students to be a part of.”