

Albany researchers develop brain-computer lab in Italy

Albany

When a brain-computer interface laboratory opens early next month at the [Neuromed Institute](#) in southern Italy, it will launch from a platform built in Albany.

The Italian neurosurgical hospital's new [Polo di Innovazione Cyber Brain Labs](#) is modeled after laboratories at [Albany Medical Center](#) and the state [Health Department's Wadsworth Center](#), led by Dr. [Anthony Ritaccio](#) and [Gerwin Schalk](#), respectively.

The trans-Atlantic collaboration is a story of reputation and relationship built on bonds of both brain and heart.

About four years ago, Ritaccio was approached by Dr. [Antonio Sparano](#), a neurologist at Neuromed, to develop a proposal to compete for grant money from the [European Union's Ministry of Education](#).

Sparano had studied at Albany Med and at [New York University School of Medicine](#) under Ritaccio about 15 years ago. The older and younger neurologists' connection ran deeper than research, however.

Ritaccio's father had immigrated from the Naples region, south of Neuromed's home in the small town of Pozzilli, and Ritaccio had spent his teens studying at a monastery in the area.

"We'd talk about cognitive neuroscience, but we could also talk about truffle hunting, like most Italians," Ritaccio said of his friendship with Sparano.

After he returned to Italy for work, Sparano came to know Dr. [Giulio Nicolo Meldolesi](#), the director of Fondazione Neurone, a nonprofit that funds research into neurological and psychiatric disorders.

Sparano became aware through Meldolesi of the EU grant opportunity, and reached out to Ritaccio and Schalk, whose reputations in their field span national borders. With colleagues at Albany Med and Wadsworth, they have spent the last decade developing techniques on the cutting edge of neurological science.

These include brain mapping, which allows doctors to track electrical activity in the brain specific to certain tasks, like exercising, talking, listening or playing with a toy. The ability to pinpoint such activity is important for patients about to undergo brain surgery.

Another technology, the brain-computer interface, allows paralyzed patients to create messages on a computer screen with nothing but their thoughts. Electrodes filled with gel conduct the brain's electrical activity through wires running to an amplifier and computer.

In 2012, the EU awarded \$3.7 million to Ritaccio to bring the Albany-bred technologies to Neuromed. The EU was interested in their work and also looking to support academic and economic development in a predominantly farming region in southern Italy, Ritaccio said.

While work to construct and equip the lab was under way, Ritaccio and Schalk hosted a neuroscience conference at a 16th-century monastery in Naples last year. Ritaccio got a kick out of lecturing near his ancestral home, he said.

Inauguration of the Polo di Innovazione Cyber Brain Labs is planned for Nov. 3 to 5.

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