World's top minds gather here

150 scientists attend Clemson conference

By Ron Barnett
Staff writer



Clemson University is hosting the world's leading scientists and engineers at the 15th International Conference on MacroMolecular Complexes (MMC-15) to discuss the latest advances in polymers and how they play a vital role in technology. KEN OSBURN/STAFF

Move over, Charles Townes. You're not the only genius on Main Street this week.

Greenville's 98-year-old Nobel Prize-winning physicist, who now lives in California but is honored by his hometown with a statue on a park bench, would have plenty of people to talk with if he were here.

The city's IQ took a quantum leap upward with the arrival of some of the world's top scientists in "macromolecular complexes" for an international conference hosted by Clemson University at the downtown Hyatt Regency.

If macromolecular science sounds a bit esoteric, think computer-like objects a million times smaller than a human hair that can be injected into the bloodstream to find and attack a brain tumor, for example.

About 150 scientists from 22 countries — including a healthy contingent from Clemson — are giving and listening to presentations on the wonders of these molecular marvels, as well as taking in the sights of the Upstate, said Anthony Guiseppi-Elie, a Clemson professor who chairs the committee that organized the conference.

The event, held every two years, was in Helsinki, Finland, last time.

Don't be surprised that the 15th International Conference on MacroMolecular Complexes, or MMC-15 for short, is being hosted by Clemson. "Clemson has been on the international

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scene," Guiseppi-Elie said.

The scientists arrived Tuesday and will be in town until Friday.

They took Wednesday afternoon off to go golfing, visit Lake Hartwell, tour the Milliken Co., and visit an American institution that fascinates many of the European visitors, according to Guiseppi-Elie: the mall.

And, of course, to walk around downtown.

"Downtown Greenville is a gem, and our international visitors really are enjoying being here in Greenville," he said.

The lecture topics were fascinating — if you could understand what they were talking about.

Clemson professor Marek Urban was on the schedule to discuss "self-healing polymers" that change color and could be developed for use in self-healing cars, planes and bridges.

If that doesn't blow your synthetic socks off, check out Guiseppi-Elie's work, which could save your life if you are in a bad accident.

He's working with polymers — large molecules chained together — in developing a device the size of a grain of rice that can be implanted beneath the skin of accident victims that can figure out how badly you're hurt and relay information to the doctor while you're riding in the ambulance to the hospital.

"It's a little computerized chip, and it has the smarts for making measurements and then communicating those measurements to another computer or a base station outside of the body," Guiseppi-Elie said.

Frank Alexis, a Clemson professor of bioengineering, could save your life, too.

He's the one working on the microscopic computer-like objects — nanoparticles — that can be injected into the bloodstream to attack brain tumors.

Such technology already has been developed for prostate cancer and breast cancer, but Alexis is on the cutting edge of applying it to brain cancer.

"These particles find the tumor inside the brain and they find the cancer cells and they deliver the drug to the cancer cells," he said. "So it's a little bit like delivering the mail to the right place."

Guiseppi-Elie introduces each of his Clemson colleagues as "a genius."

Mark Roberts, a chemical engineering professor, is developing batteries made from a plant material called lignin that could eventually power automobiles, or, sooner, store power from solar panels.

"It's a renewable biopolymer, it's really abundant, it's dirt cheap," he said.

Clemson students are helping run in the conference. James Turner, a doctoral student in bioengineering, is enjoying the opportunity to rub elbows with some of the greatest scientists on the planet.

"Yesterday, I got to have lunch with Dr. Cato Lorencin. He has connections all the way to the White House," Turner said.

And as at all conferences, there were vendors, offering their wares.

Barbara McIntosh, vice president for global sales of BioDot, had a display set up outside the lecture rooms.

"Our forte is our dispensing," she said. "We have a range of different dispensing technology that's quantitative. It delivers non-contact quantitative reagents, proteins, liquids and it can deliver them to different substrates."

If you understand that, you may belong at this conference.