Pitt native's research aids treatment of drug abuse

Scott Rawls is the lead investigator on three federally funded grants from the National Institute on Drug Abuse.

BY MICHAEL ABRAMOWITZ

A Bethel native and East Carolina University alumnus is making strides in pharmaceutical research that could have a widespread effect in drug abuse treatment.

Scott Rawls has been working in Philadelphia for 10 years, as an assistant professor of pharmacology in the Pharmaceutical Sciences department at Temple University's School of Pharmacy and a professor at the Center for Substance Abuse Research. He is the lead investigator on three federally funded grants from the National Institute on Drug Abuse — part of the National Institutes of Health — totaling approximately $1.5 million.

His latest grant is being used to study whether certain antibiotics might have anti-addictive properties for humans, particularly relating to cocaine and opiate abuse, as has been noted in animal models, Rawls said in a recent interview. No FDA-approved medication is available to treat cocaine or amphetamine addiction.

"For years we've known there are proteins located on brain cells that act as transporters and, if activated, can soak up a chemical compound called glutamate like a sponge," Rawls said. "This would be very useful in treating many disorders ranging from drug addiction to stroke, epilepsy, Tourette's syndrome and others."

The challenge was to find a drug or substance that could activate the transporters, Rawls said. About three years ago, a scientist at Johns Hop-
RAWLS

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kins University discovered that antibiotics containing a beta-lactam ring, such as penicillin, are able to activate the transporter and soak up the glutamate, Rawls said.

What excited him and his research colleagues was the fact that penicillin is a widely used and largely safe substance that can be effective for the population at large.

Other substances closely associated with beta-lactam antibiotics — known as beta-lactamase inhibitors — have demonstrated properties that can reproduce pharmacological functions in rat and mouse models that are important to their use as therapeutic drugs for treating addiction, Rawls said.

“This is important because it gets into the brain much faster and much more effectively with lower doses,” Rawls said. “Our studies at Temple have shown that this inhibitor, called clavulanic acid, is able to lessen resistance to antibiotics and lessen allergic reaction, especially important in the younger population.”

Clinical trials with humans have not begun yet, but Rawls is pleased that the research shows the trials will be easier to administer than usual because the medicine can be given orally on an outpatient basis, he said.

Rawls maintains an active research laboratory funded by the National Institutes of Health and the Pennsylvania Department of Health.

He has published more than 30 articles in peer-reviewed journals over the past five years and co-authored two medical books.

In addition, doctoral students in pharmacy conducting research under Rawls’ direction have received several research fellowships, including the Pfizer Undergraduate Summer Research Award and American Foundation of Pharmaceutical Education Award.

Rawls’ journey toward his breakthrough work as a chemist and research scientist began when he was a hard-working, dedicated student who followed the path of most enjoyment, he said.

“I always liked science and was a chemistry major at East Carolina University,” Rawls said. “I changed my mind about what I wanted to do a thousand times, like everybody else, but I always liked science.

“I remember being in sixth or seventh grade and being amazed when I put one chemical with another and it changed color. I always asked how that could occur,” he said.

When Rawls got his undergraduate degree in chemistry from ECU, he taught at J.H. Rose and at North Pitt high schools.

“It was a great experience for me, one that many research scientists don’t enjoy,” Rawls said.

“Any time you’re successful getting an abstract concept across to young people it makes you feel really good at the end of the day.”

He went back to the laboratory in the Anatomy and Cell Biology Department in the Brody School of Medicine.

Working under professor Jacqueline McGinty, Rawls was turned on to neuroscience and became interested in the chemistry of the brain.

Rawls received his doctorate in 1999, then did post-doctoral residency at the Temple University School of Medicine in Philadelphia, where he remains.

“The ‘mainline’ from my home in the Penn Valley to Philadelphia is a world away from Bethel, but there’s no place I’d rather be than Bethel,” Rawls said. “It’s still my favorite place to be.”

He described his family as blue-collar.

His mother, Valeria, was a secretary for many years at North Pitt, and his late father, Joe, was a car salesman.

“I credit my academic career to my parents,” Rawls said. “Neither had a college education and my father didn’t graduate from high school. But, as a kid, I had a lot of curiosity.”

A computer was not part of his home, but an encyclopedia set his father struggled to get for him stoked his curiosity and kept him focused on education, he said.

“My parents gave me every opportunity to learn and become what I am today,” he said.

Rawls takes the train home several times each year. He said he gets more research writing done in Bethel than he does in his office at Temple.

“If I could move Temple University to Bethel, I’d rather be home,” he said.

Rawls said he hopes his research and the information it provides on addiction will inspire young people to explore scientific careers and will encourage them to pursue a different relationship with drugs — examining their use as a cure rather than abusing them as an addict.

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GREENVILLE

ECU hosts med student summit

Leadership by women will be one of the topics Dec. 3 when the Brody School of Medicine at East Carolina University holds its second annual Medical Student Leadership Summit.

Dr. Barbara Ross-Lee will be the luncheon keynote speaker. In 1993, Ross-Lee became the first African-American woman dean of a U.S. medical school, leading the College of Osteopathic Medicine of Ohio University until 2001. Ross-Lee's talk will be from 1:30 to 2:15 p.m.

Health care providers are encouraged to attend. Registration begins at 12:30 p.m., and the event is from 1 to 4:50 p.m. at the Hilton Greenville and is funded in part by a grant from ECU's BB&T Center for Leadership Development. For more information, contact Jennifer Harris at harrisjen@ecu.edu or 328-0607.
NCCU aims for higher retention

BY ERIC FERRERI - Staff Writer

DURHAM To help students succeed, N.C. Central University expects to spend the next decade recruiting better students, adding technology to classrooms and holding professors to higher standards.

Those are just a few tidbits within a new strategic plan under development at NCCU, a public university that has long struggled with low retention and graduation rates.

NCCU and other public universities are particularly motivated now to better those low rates; the UNC system is moving toward linking funding for new enrollment with success in areas such as retention and graduation.

NCCU's new strategic plan lays out some specifics. A few examples:

By next August, the university would increase the number of students academically prepared for the rigors of college by 25 percent. Reaching that goal would ease the strain on resources that the university taps to provide remedial course work.

By August 2012, NCCU would retain 80 percent of its students from the freshman to the sophomore year, and half of all students would graduate within six years of starting college. NCCU’s current retention rate is about 75 percent, and its six-year graduation rate hovers around 48 percent.

By August 2011, the university will promote a culture of leadership and community service by incorporating the university motto "Truth and Service" into all public relations literature and activities such as graduation, speaker visits, research agendas and public service events.

And the university plans to put more pressure on its research faculty. By May 2012, it calls for a 25 percent increase in grant funding and a 10 percent increase in scholarly journal publications.
The plan, presented to campus trustees at a recent meeting, left some wondering whether a 50 percent goal for the six-year graduation rate was low. But Chancellor Charlie Nelms said the graduation benchmark is illustrative of the university's struggle as an institution serving a lot of students who may not be fully prepared for college.

"If we're going to serve the needs of students who are not as prepared as they need to be, there's a certain amount of risk-taking on the part of the university," Nelms said. "I think that's justified."

The strategic plan must still be formally adopted by campus trustees. Once that happens, it will give the university a roadmap for the next 10 years. It calls for annual reports on everything from faculty and staff service to community engagement exercises.

This plan will not be forgotten, said Johnnie Southerland, who is leading the effort.

"This is not a plan that someone will ask about six months from now and someone will have to get it off a shelf," he said. "It will be alive and working."

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