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UVM chemist wins Cottrell award

Free Press Staff Report

Rory Waterman, assistant professor of chemistry at the University of Vermont, has been selected as a 2009 Cottrell Scholar.

Waterman will receive a \$100,000 research award in recognition of his leadership in both teaching and scholarship, to be presented by the Research Corporation for Science Advancement.

His research focuses on finding new, efficient ways to build chemical bonds in the so-called "main-group" elements, especially phosphorous. Many of these elements can form molecules with unique properties, useful in medical or industrial applications. For example, some polymers that contain phosphorus are used to create highly efficient LED lights.

"The problem is that with our current knowledge you have to build the key chemical bonds individually," Waterman says, and that "usually generates a great deal of waste."

His team is searching for better ways create these bonds using certain metals as catalysts.

Catalysts are like "chemical pixie dust" he says, "You sprinkle a catalyst in and it makes a reaction that was slow or difficult a lot easier." But even better, "we can get it back out of the reaction when it is done and use the catalyst again," he says.

"Our goal is to cut down on that waste and make the synthesis of these molecules much more efficient," he says.

Cottrell award winners are chosen both for their dedication to teaching and promising scholarship, reflecting a "conviction that top early career research scientists can be the most effective leaders for teaching innovation at the nation's research universities," the Research Corporation wrote in a press release.

Waterman's award praised his plan to establish a computerized network of research opportunities for Vermont high school and University of Vermont undergraduate students and his development of a research-based course for first-year students.

Cottrell Awards are made each year to ten beginning faculty members at leading US universities in astronomy, biochemistry, biophysics, chemistry, or physics.

The awards are named for Frederick Gardner Cottrell whose invention of the electrostatic precipitator helped reduce pollution from smokestacks.
