

Rutgers-Camden developing enzyme function database

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Since the advent of the Human Genome Project an explosion of data has sent the science world scrambling. There is a growing demand to fine-tune genomic codes, which list the "ingredients for life," but do not adequately explain how those ingredients function.

A Rutgers University—Camden biochemist is addressing this knowledge gap through the creation of a database for quick "background checks" on all known [enzyme](#) functions.

Thanks to a National Institute of Health grant, Peter Palenchar, an assistant professor of chemistry at Rutgers-Camden, will categorize decades-worth of scholarship on enzymes into a database, beginning with those that bind to molecules that contain adenosine.

The \$201,339 grant will allow Palenchar to track and simplify what has been written about some 130 enzymes, including energy-creators adenosine triphosphate (ATP) and adenosine diphosphate (ADP).

"There are 50-plus years of good data on how enzymes function, but it's a tedious process to understand the specialized language used in enzymology papers. Question is: how do you access that information quickly?" says Palenchar.

His goal is to create a standard vocabulary to describe how enzymes function for the biomedical community, especially those who work with [anticancer drugs](#) that target enzymes.

Palenchar, with assistance from Rutgers-Camden undergraduate Jason Cargill and graduate student Salvador Gomez, will not only establish this new vocabulary for an accessible database, but test its effectiveness in determining the accuracy of genomic codes.

To do this, the Rutgers-Camden research team will compare the genomic sequencing in two organisms that contain "functionally important" amino acids: *A. thaliana*, a plant commonly known as thale cress, and *P. falciparum*, the pathogen which causes malaria.

"There could be good evidence that these enzymes are doing something different," notes the biochemist, who has published his research in the journal [Genome Biology](#).

According to Gomez, who is soring primary publications through online databases like PubMed and Academic Search Premier, this research has been more than just a resume builder.

"This research has given me an opportunity to do meaningful work at a higher level," notes the Shamong, N.J. resident. "Knowing my work will be utilized by other scientists is a great feeling."

Source: Rutgers University ([news](#) : [web](#))

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