

University physicist wins research grant

By Dan Eisler
Emerald Reporter

University physics professor Brian Matthews was appointed to a seven-year term as a Howard Hughes Medical Institute investigator Wednesday.

The \$4 million appointment is part of long-term collaborative research in structural biology at the University, between the University and the HHMI in Bethesda, Md.

Matthews, a physicist and crystallographer, will continue his positions at the University as physics professor and director of the University's Institute of Molecular Biology.

In addition, Matthews is an adjunct biochemistry professor at the Oregon Health Sciences University in Portland.

"Dr. Matthews' appointment as the first HHMI investigator in Oregon is part of the institute's expanded research program, which now emphasizes the support of individual scientists in a variety of academic and research institutions with scientific programs involving hospitals," said HHMI President Purnell W. Choppin.

"An important long-term goal of this collaboration will be to apply the scientific knowledge gained in the laboratory to the prevention and treatment of disease," Choppin

said.

Matthews has made significant contributions to the field of structural biology, including new knowledge of protein-DNA interactions and protein structure and stability.

Crystallography is a special technique where scientists determine the structure of biological substances too small to be seen with even the most powerful microscopes. Matthews said. The technique combines X-rays, crystals and computers to examine those substances, he said.

Matthews said his group has been using this technique for a number of years, adding that recently the technique has been

combined with genetic engineering.

"In this technique it is possible to change biological substance and be able to determine those parts of the molecule that are critical for its biological functions," Matthews said.

"If one understands the structure of a biological substance, it may be possible to tailor-make variants on the substance that would be optimal for use in industrial processes," Matthews said.

Matthews' research team has been investigating what happens to the thermal stability of proteins when their structure is altered. One series of experiments has resulted in a protein that is more stable and resistant to heat than the natural molecule, suggesting a technique for enhancing the stability of proteins used in medicine and industry.

Another area investigated by the team has been the protein that controls the actions of genes, or "switch molecules" that turn on or off the genes themselves, Matthews said.

"Understanding these switch molecules is critical in determining responses of living cells to changes in their environment," Matthews said.

HHMI will pay Matthews' salary while he is an investigator as well as the salaries of several members of his research team.

In addition, the University will make laboratory and office



Brian Mathews

space available to the institute, and HHMI will provide operating funds for Matthews' laboratory. In the first year, HHMI will assist with the purchase of state-of-the-art research equipment, including a new computer system, X-ray equipment and a robotic crystallization device.

This support will allow the team to expand its present research program and also study new fields, Matthews said.

Matthews' research program has been helped by the University's Molecular Biology Institute, which has "fostered a supportive environment that has been of critical importance to the success," he said.

Matthews has been at the University since 1969. He received his undergraduate and doctoral degrees from the University of Adelaide in Australia, and is a member of the National Academy of Sciences.

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Police Beat

The following is a list of campus area crimes taken from Office of Public Safety and Eugene Police Department reports between Dec. 8 and Jan. 5:

- EPD cited the Phi Kappa Psi fraternity, 729 E. 11th Ave., for a loud party and for furnishing alcohol to minors on Jan. 6.

EPD officers were dispatched to the house earlier that evening following a reported rape. After investigation, the report was determined to be unfounded.

During the investigation, an EPD officer observed many subjects who appeared to be under the legal drinking age. The president of the fraternity was questioned and did not deny minors were drinking at the party.

The president was told the incident would be reported to the Oregon Liquor Control Commission and the Student Conduct Committee.

- A wallet containing credit cards and \$110 cash was reported stolen from MacArthur Court during registration Jan. 5. The owner left the wallet in bag for a moment and returned to discover it gone.

- The robbery and assault of a University student at his residence was reported to EPD on Dec. 25.

The student had just returned home when the suspect knocked on his door. When the student opened the door, the suspect pushed his way into the apartment, pulled a knife and placed it at the student's throat.

A struggle ensued, during which the student was cut under his chin and on his finger. The suspect then grabbed a portable stereo, a television set and two tennis rackets, put them in a garbage bag he brought with him, and left the apartment.

The value of the stolen items is estimated at \$549.

The suspect is described as a dark-haired, 190-pound, 6-foot-1-inch, white male in his 20s. He was last seen wearing a black leather jacket, black pants, and white tennis shoes.

- A wallet containing \$150 cash and credit cards was reported stolen to EPD Dec. 24. The wallet was stolen during a wedding at Collier House Dec. 23.

- OPS received a report of criminal mischief at the University Inn Dec. 23. The passenger and driver windows of a Toyota Celica in the UI parking lot were smashed with rocks, causing approximately \$300 damage.

- Grade change forms were reported stolen from Oregon Hall to EPD Dec. 14.

- A cord of wood worth \$80 was reported stolen from Hamilton Complex to EPD Dec. 14. The unknown suspects entered the building and removed the wood from the room in which it was stored.

- A copy of a final exam for Accounting 221 was stolen from Gilbert Hall during a burglary reported to EPD Dec. 11. The unknown suspects kicked in two office doors in the hall, which were later discovered by a custodian.

- The theft of a wool jacket from the University Bookstore was reported to OPS Dec. 8.

- In addition, OPS reports 11 bikes stolen, one recovered.