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College of DuPage students participate in prestigious Biophysics Internships at IIT

College of DuPage

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College of DuPage students Olivia Barron and Robert Hickok will be spending their summer serving internships at the Illinois Institute of Technology (IIT) researching the intricacies of biophysics and gaining invaluable real-world experiences.

During the prestigious internship, the students will be working as a part of IIT Physics Professor Dr. Jeff Wereszczynski's research group.

"There's a famous quote from physicist Richard Feynman that says, 'Everything that living things do can be understood in terms of the jiggling and wiggling of atoms.' What he was saying is that at a basic level, biologic processes are a result of individual molecules, such as DNA and proteins, moving around the cell and interacting with one another," Wereszczynski said. "In our lab, we try to understand this 'wiggling and jiggling' of biomolecules by using computer simulations that are based on principles from modern physics. Olivia and Robert are working with us to help set up, run and analyze these simulations to give us better insights in how these molecules work."

A resident of Bolingbrook, Olivia Barron is studying mechanical engineering at COD and working toward earning her A.S. degree. She is a participant in the College's Engineering Pathways program which provides seamless transfer and guaranteed admission to the prestigious engineering program at the University of Illinois at Urbana-Champaign.

Barron said that during the internship, she is working directly with IIT Ph.D. student Amy Rice and she is tasked to create simulations of specific protein molecules in order to understand their structure, environment and functionality.

"I have learned how to use Visual Molecular Dynamics software, which is a modeling program used for visualizing different biological structures like protein molecules and lipid bilayers," she said. "I have also learned how to use NAMD and AMBER software to input data and run simulations of protein molecules and analysis the results."

Barron, who plans to transfer to UIUC in fall 2017 and eventually to pursue a career as a biomedical engineer, said the internship is providing her with a great opportunity to apply classroom theory to a real-world scientific research environment.

"Doing research at IIT is helping me to relate concepts I've learned in the classroom to real work in the field, which can further motivate me to look deeper into specific concepts I learn in class that I find interesting instead of merely studying what is required,' she said.

Barron noted that the internship provides many benefits, including the opportunity to discover her strengths and weaknesses outside the classroom.

"This internship is helping me explore my interest in biology, gain insight of how it feels to work as a researcher and subsequently gain a better understanding of what kind of career I will wish to

pursue in the future," she said. "It also provides a great addition to a resume or school transcript."

Barron, who chose COD as an affordable way to complete her general education requirements, said she is pleased with her experiences at COD.

"What stands out to me the most from attending COD is that I've had a lot of really supportive professors that work to see their students succeed," she said.

Robert Hickok, who just completed his A.S. degree at COD, said he is eager to take advantage of a variety of opportunities during the internship.

"I'm looking forward to developing better critical thinking skills and increasing my overall knowledge of proteins and the systems used to study them," Hickok said. "I'm also looking forward to working with the graduate students and professors -- something College of DuPage has taught me to appreciate."

During the internship, Hickok is working with IIT Ph.D. student Sam Bowerman and will be examining how the tertiary and quaternary structure of a protein changes under certain conditions, such as temperature and sample solution. He said the internship will provide a great experience to prepare for his career.

"Internships like this one teach students how to behave and conduct themselves in a safe professional environment," Hickok said. "Industry is very unforgiving, so internships like these give a helping hand in the transition from being a student to being a professional in industry."

Hickok is transferring to IIT this spring where he will pursue his B.S. in Computer Science and Applied Mathematics and plans to pursue a career as a software engineer. He said he's enjoyed his time at COD and would recommend the College to anyone.

"Whether you're a 36 or 21 ACT score student there is an avenue where you can be academically challenged at College of DuPage," he said. "Also, there is an amazing faculty base that will help you grow, as a student and person, if you seek it out. All of my professors have helped me put me in a place where I can really succeed."

According to College of DuPage Professor of Physics Tom Carter, COD students are obtaining opportunities they would not get anywhere else.

"This is a very prestigious internship and we're pleased Dr. Wereszczynski is providing this opportunity to our freshmen and sophomores," Carter said. "In many cases, at a four-year school, it's the juniors and seniors that get these opportunities."

Carter, who worked with Dr. Wereszczynski to develop the relationship between COD and IIT that resulted in these internships also pointed out that the internship at IIT is neither a fluke nor a rarity at COD.

"COD students are serving internships at a variety of institutions, including Hope College in Michigan and the Materials Research Science and Engineering Center at Northwestern University this summer," he said. "In the past, COD students have worked at both Argonne and Fermi national labs. The size and breadth of our science and engineering programs make us pretty unique in the two-year college world."

Visit www.cod.edu/programs/physics/index.aspx
(<http://www.cod.edu/programs/physics/index.aspx>) for more information about the Physics program at College of DuPage.

College of DuPage provides numerous opportunities and resources designed to facilitate student's successful entry into academic and professional internships. Click [here](#) for more information about internships for College of DuPage students.

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