Bryce Rasmussen ’11

Among the many health risks that pregnant mothers face, acute changes in blood pressure are among the more serious complications. Abnormal blood pressure can exacerbate the level of bleeding that is a normal part of childbirth, putting the mother’s life in danger.

And Warner Pacific biology major Bryce Rasmussen ’11 is helping researchers at Oregon Health and Science University figure out why the reflex that is supposed to regulate blood pressure doesn’t always work as well as it should.

“My long term goal is to eventually teach at a university, but I also still want that research aspect,” said Rasmussen. “[My Murdock scholarship] is giving me that opportunity.”

For the next year, Rasmussen will be working in the lab of professor Virginia Brooks, Ph.D., through the Murdock Collaborative Undergraduate Research Program. Rasmussen is assisting the Brooks lab with a ground-breaking study examining how pregnancy and obesity alter the regulation of blood pressure. The study is searching for the specific neuropathways that influence the so-called “baroreceptor reflex,” which causes blood vessels to constrict or dilate according to need.

The Brooks lab knows that insulin in the brain triggers a neuron that communicates, via a neurotransmitter, with other neurons that eventually influence the baroreceptor reflex. However, with decreased brain insulin levels associated with pregnancy, the transmission appears to break down.

“In insulin starts the action and we know where the second neuron is, but we don’t know how the two neurons talk to each other,” said Brooks. “We’re trying to find the neurotransmitter.”

In the lab, Rasmussen incubates micro-thin slices of brains taken from test rats with a series of antibodies that cause neurotransmitters to glow under fluorescent light. Once the specific neurotransmitter is identified, Brooks and her team can better examine what might be going wrong when insulin levels drop.

The implications of the study are huge, as they point to the potential development of medications that will help control blood pressure in insulin-resistant patients.

“The work that Bryce is doing is really important,” said Brooks. “He’s sharp and a real quick study.”

Rasmussen transferred to Warner Pacific from Tacoma Community College last year because he liked the size and quality of the biology program. He appreciates how accessible and supportive his professors have been, especially in helping him pursue the opportunity at OHSU. He hopes the research experience will help him as he looks ahead to graduate school.

“You don’t really hear about a lot of Christians in the scientific field,” said Rasmussen. “That’s why I want to teach at a university.”
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Warner Pacific Biology major
Murdock Scholar at Oregon Health and Science University