Biomathematics

The Tandem Workings of Biology and Mathematics to Forward the Treatment of Type One Diabetes

What: **Bi-State Colloquium**
When: **Friday, November 2, 4:45pm**
Where: **Loras College, Hennessy 250**
Who: **Christian Knutsen**

Type One Diabetes is a disease that effects the body's ability to process glucose effectively. This is done by effectively destroying the body's protein responsible for controlling glucose levels, known as insulin. The Bergman minimal model is one of the most relevant models used in research on Type One Diabetes and forms of treatment used today including insulin pump therapy. In this talk we will look into the differential equations that make up the Frequently Sampled Intravenous Glucose Tolerance Test (FSIGTT) and the Intravenous Glucose Tolerance Test (IVGTT), two of the tests created using this model. After digging into these equations, we can uncover and model the relationship between the protein insulin and the simple sugar glucose within the body. This relationship is key to the treatment of Type One Diabetes today and the betterment of future treatments. In this talk, we show the worlds of mathematics and biology working in tandem to further the understanding and treatment of Type One Diabetes in modern medicine.

Christian Knutsen is a senior math and biology major at Loras. This presentation is in partial fulfillment of the Loras College mathematics major.