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## Love of math sets path to Cambridge <sup>[1]</sup>

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Stephen Kissler spends a lot of time thinking about research problems such as an artificial pancreas that could determine exactly how much insulin to release in a diabetic person.

?Usually my thoughts are about what?s valuable, what hasn?t been done, what would be an important piece of information for either a patient or a doctor to have and what skills I have to address that,? said Kissler.

Kissler isn?t majoring in biology or biochemistry as one might guess. His skills come from applied mathematics studies, in which he?s completing concurrent B.S. and M.S. degrees this spring at CU-Boulder.

After graduation, he will pursue a doctorate at Cambridge University in the United Kingdom. He?s the recipient of a Gates Cambridge Scholarship, funded by a gift from the Bill & Melinda Gates Foundation to Cambridge.

One of Kissler's projects at CU-Boulder uses meteorological and other data to model the spread of meningitis in Nigeria, where the infection is prevalent.

At Cambridge, where his award will provide three years of full funding, Kissler plans to study the spread of influenza and complete a Ph.D. The outcome of his work could both give cities more notice before flu outbreaks hit, and change vaccination and prevention strategies.

"A lot of areas of science can benefit from having math applied to them," said Kissler. "We've seen this in physics over the past century. I think we'll start to see new forms of math applied to biology, which will help increase our understanding of the world."

Kissler says he realized he was passionate about applied mathematics while at CU-Boulder when he won an outstanding paper award at the COMAP Math Modeling Contest in 2012. The 50-page paper, which he worked on with two other students during the 96-hour challenge, examined optimizing the number of boats that can travel down the Grand Canyon in a season. It was selected from 3,500 entries from across the world.

When he's not working on math, Kissler plays the violin in the Boulder Symphony Orchestra.

"I love the creativity of music and how it allows people who are playing at the same time -- like in an orchestra -- to communicate with one another," said Kissler. "It's the highest form of community that I've ever experienced."

He sees parallels between music and math.

"Music is a non-verbal means of thinking and math is that way too," said Kissler. "I think having a background in music really helped me find a home in mathematics."

Kissler is the second CU-Boulder student to win the Gates Cambridge Scholarship. In 2006, alumnus Alejandro Ramirez won the award to complete a one-year master's program in biological sciences.

For more information about the Gates Cambridge Scholarship visit <http://www.gatescambridge.org> [2]. For more details about top scholarships at CU-Boulder visit <http://enrichment.colorado.edu/topscholarships/> [3].

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#### **Intro:**

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