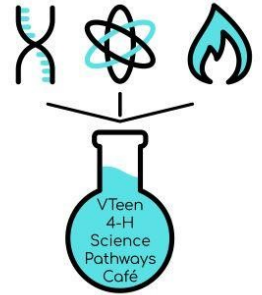




# VTeen 4-H Science Pathways Cafes



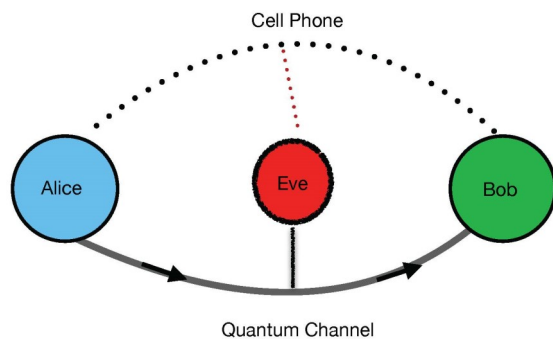
## What Can a Quantum Computer Do? Why Should You Care?

Tuesday, March 29, 2022, 7:00-8:00 pm

Open to all youth entering grades 7-12 in VT and across the country!

Register by 3/29 @ 6:00 pm to receive the Zoom link

@ [www.uvm.edu/extension/youth/announcements](http://www.uvm.edu/extension/youth/announcements)



Both computers and communication devices encode information in strings of 0 and 1. Cell phones now have more computer power than NASA did when it sent astronauts to the moon in 1969 or the supercomputers used in the 1980's. Nevertheless, there are limits to what classical computers can do. Moreover, the security of public key cryptography, used for things like sending a credit card number over the internet, depends on these limitations.

However, recent progress in the development of quantum computers will soon make current encryption insecure. Fortunately, quantum particles can also be used for new methods of cryptography which are not only secure, but can also detect eavesdroppers. Moreover, the basic principles of quantum cryptography can be explained without using any advanced mathematics. Come to this café to learn all about quantum computing and cryptography!

### ABOUT OUR SPEAKER

**Mary Beth Ruskai** is a retired mathematical physicist who worked in quantum information theory. Her research has been supported by the National Security Agency and the National Science Foundation. From 2011-2016 she was an Associate Member of the Institute for Quantum Computing in Waterloo, Canada.

**What is a Virtual Teen Science Café?** It is a free, fun way for teens to explore science, engineering and technology with local scientists, engineers and technology experts. Teens will “meet a scientist”, learn about their work, and be able to participate in informal discussions.

**Questions?** Contact [lauren.traister@uvm.edu](mailto:lauren.traister@uvm.edu)

*Closed captioning will be provided for this program.*

*To request additional disability-related accommodation to participate in this program, please contact the 4-H Office at 802-888-4972 or [lauren.traister@uvm.edu](mailto:lauren.traister@uvm.edu) by March 8, 2022 so we may assist you.*