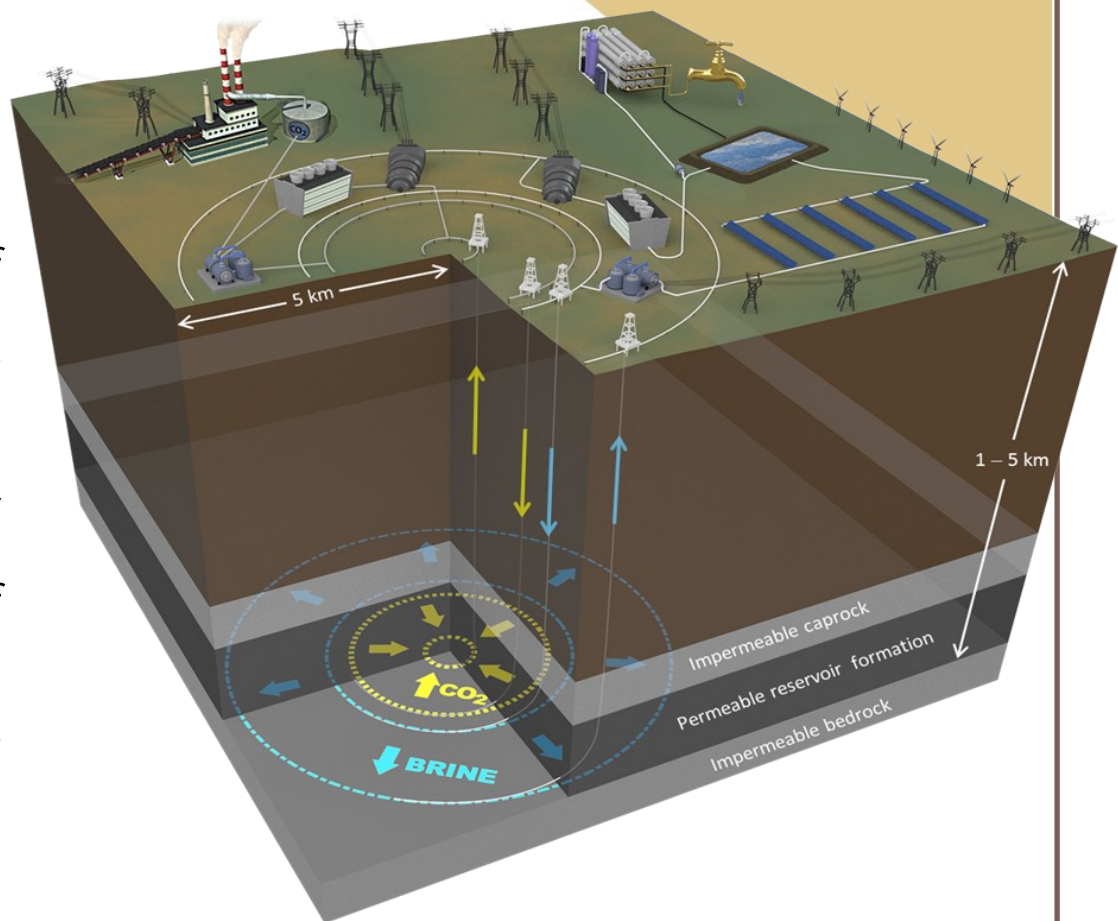


Physicist as Entrepreneur: Renewable Energy, Climate Change, and Working to Solve Big Challenges

Meeting the Paris Climate Agreement goal of limiting the increase in the global average temperature to below 1.5 °C, compared to pre-industrial levels, requires aggressive, large-scale implementation of a range of measures, including increased use of renewable and low-carbon energy, reducing the CO₂ intensity of fossil energy use near term, and addressing emissions associated with building heating and cooling. Unfortunately, each of these measures faces major technical and economic deployment barriers, and no existing renewable energy technologies can meet all environmental requirements while delivering the consistent, reliable energy that we as a society demand. Innovation is needed.

TerraCOH Inc. and Darcy Solutions were formed to help address the challenges of providing 24/7 renewable electricity and grid-scale energy storage, and efficient renewable building heating and cooling, respectively. These companies are built on innovative technologies, developed originally at the University of Minnesota by Dr. Randolph and collaborators, which at their core rely on basic rules of physics.

Here, Dr. Randolph will discuss some of the big energy and climate challenges of our time, and work through how creative application of physical principles can help address them.



Wednesday, March 20
3:15-4:15 p.m. | RNS 210



Jimmy Randolph 'o6, Ph.D.

Dr. Jimmy Randolph is the Founder and Chief Technical Officer of two renewable energy companies, TerraCOH and Darcy Solutions, based in Minnesota. Jimmy has a Ph.D. in geophysics with an emphasis on geothermal systems, hydrogeology, CO₂ sequestration, and coupled geologic fluid and heat flow, from the University of Minnesota, as well as a B.A. in physics and mathematics from St. Olaf College. He has 12 years of experience in geothermal and hydrologic academic research, resulting in 22 patents, as well as over seven years of experience as CTO and senior scientist with geothermal technology companies.