



Vertex iTech Exploring

9am – 12pm (April 17th 2019)

RSVP to Erin.Gillette@Scouting.org

9:00 – 9:30am – Overview of Vertex and the Drug Discovery Process

9:30 – 10:30am – Tour the site

10:30 – 12:00pm – Learning Lab Activity – Discover a drug at Vertex

12:00 – 12:30pm – Wrap-up with lunch in the back yard

Learning Lab activity

- Discover a drug at Vertex!
- A common class of antibiotics works by inhibiting the cell wall synthesis of bacteria, which therefore stop multiplying and are cleared from the patient tissues. Bacteria have evolved defense mechanisms against these antibiotics.
- In this class experimenters will test an array of substances to discover a few that defeat the defense mechanism of the bacteria, and determine which of those are the most potent such agents.
- Activities involve:
 1. Multichannel pipetting. To a plate of compounds one adds the bacterial defense protein (an enzyme) and a color-changing reagent (substrate) to find agents that inhibit the color change by inhibiting or destroying the defense protein.
 2. Single channel pipetting. Preparing serial dilutions of active compounds, adding enzyme and substrate to identify the most potent substance.
 3. Use of an absorbance plate reader to quantify the signal and graph the results to determine the potency of compounds.
- Outcome – Learn about enzyme activity. Learn the concept of enzyme inhibition. Learn the process that the industry uses to uncover starting points for drug discovery.