

The following is an official and final list of Division C events for the 2020 Regional Science Olympiad Competition at FAU to be held on February 29, 2020. However, an event may be cancelled at any time. It is our intention to notify all participants by January 1, 2020 of any cancelled events. If an event is not covered by an event supervisor, any event may be cancelled in the week leading up to the competition.

Blue = Lab based events Red = Pre-built events Black = Research based events

Events - Division C

Biology

1. Anatomy & Physiology – Teams will be tested on their knowledge of anatomy and health concepts including cardiovascular, lymphatic, and excretory systems.
2. Disease Detective – Students will use their investigative skills in the scientific study of disease, injury, health and disability in populations or groups of people.
3. Designer Genes – Participants will solve problems and analyze data or diagrams using their knowledge of the basic principles of genetics, molecular genetics, and biotechnology
4. Ornithology – This event will test knowledge of birds.
5. Water Quality – Participants will be assessed on their understanding and evaluation of aquatic environments.

Earth Science

1. Astronomy – Teams will demonstrate understanding of concepts related to stellar evolution in normal and starburst galaxies.
2. Dynamic Planet – Teams will use process skills to complete tasks related to glaciers, glaciation, and long-term climate change.
3. Fossils – Teams demonstrate their knowledge of ancient life by completing selected tasks at a series of stations.
4. Geologic Mapping – Requires students to demonstrate understanding of topographic maps, geologic maps, and cross sections, and their use in forming interpretations involving subsurface structure and geohazard risks

Physics

1. Circuit Lab – Participants will complete tasks and answer questions about electricity and magnetism.
2. Sounds of Music – Teams must construct and tune one device prior to the tournament based on a 12-tone equal tempered scale and complete a written test on the physics of sound.
3. Machines – Teams must construct a homemade device (it must be a first-class lever) to determine the ratios of unknown masses. Competitors will use their device and take a written test on **simple machines** such as levers, pulleys, wheels and axles, inclined planes, and wedge.

Chemistry

1. Chemistry Lab – Teams will demonstrate chemistry lab skills by completing one or more tasks and answering questions about physical properties and acids & bases.
2. Forensics – Given a scenario, a collection of evidence, and possible suspects, students will perform a series of tests. The test results along with other evidence will be used to solve a crime.
3. Protein Modeling – Prior to competition, students will use computer visualization and online resources to construct physical models of CRISPR Cas9 Protein. At the competition, students will answer a series of questions about the chemistry of protein folding and the interaction of structure and function or model proteins.

Technology/Building

1. Boomilever – Prior to the competition, teams will design and build a Boomilever meeting requirements specified in these rules to support a minimum load and achieve the highest structural efficiency.
2. Detector Building – Teams must design, build, program and test an instrument that will measure changes in temperature and display the measurements using the appropriate units.
3. Gravity Vehicle- Prior to competition, students will design, build, and test a vehicle and ramp that uses only gravitational potential energy to reach a target.
4. Wright Stuff – Students will design, build and test two elastic launched gliders capable of the highest time aloft.

Inquiry/Nature of Science

1. Experimental Design – Given a set of unknown objects, teams will design, conduct, analyze and write-up an experiment.
2. CodeBusters – Teams will cryptanalyze (decode) encrypted messages using cryptanalysis techniques and show skill with advanced ciphers by encrypting or decrypting a message.
3. Ping Pong Parachute – Teams must design and build a bottle rocket and a parachute for a ping pong ball. When the ball and parachute are launched off the top of a bottle rocket, the ping pong must stay in the air as long as possible.
4. Write It/Do It – A technical writing exercise where students write a description of a contraption and other students will attempt to recreate it using only the written description.

Trials (the decision as to whether or not to offer these trial events has not yet been made)

1. Code Analysis - Look for details soon.
2. Solar Power – Look for details soon.
3. WiFi Lab - Teams must build and use an antenna.