

Session 2: Virology/ Immunology session: “Immunological Assays to Detect Viral Infections”

- **Overview.**
 - [LINK](#) to event outline
 - [LINK](#) to event slides
 - In this session, the students learned about viruses, viral infections, and laboratory methods for detecting viruses, taking on the role of a doctor diagnosing the virus causing an infection in their patient.
 - In preparation:
 - In groups of 2-4, the students prepared a brief presentation on one of 8 viruses (1 slide/2-3 minutes) to be presented at the beginning of the session. They were encouraged to use HHMI Biointeractive’s ‘virus explorer’ to obtain information.
 - [LINK](#) to student preparatory handout
 - [LINK](#) to ‘virus explorer’
 - In this session:
 - Dr. Shannon, the teacher, showed a video about the general principles of viral composition and infection.
 - In groups of 2-4, the students presented briefly on one of 8 viruses (1 slide/2-3 minutes).
 - A case study of a patient with a viral infection was introduced briefly.
 - In 6 breakout rooms with 4 students each and 1-2 lab members, the students worked on identifying the virus infecting the patients by learning about mechanisms of viral detection assays (ELISA, qPCR, viral neutralization assay), ‘ordering’ assays to be performed based on critical thinking about the symptoms, and critically interpreting the results of the assays. A discussion about the advantages and with help by the mentor was encouraged.
 - [LINK](#) to mentor guidelines, incl. suggestions for critical discussion
 - [LINK](#) to ‘assay results’ to be presented by mentor when students ‘order’ an assay
 - [LINK](#) to student handout, incl. the case study and material explaining the assays
 - The results of the case study were discussed with the entire class, with the students sharing their experiences within the breakout rooms.
- **Our Conclusions.**
 - The student presentations included very little images, lots of text → a specific training session on scientific presentations might be useful in the future.
 - The students guessed the correct virus quickly in many cases, but were very willing to still double-check and learn about other assays as well.
 - Time in the breakout rooms was too short for some groups. Critical discussion of the assays was not always completed due to time constraints. Assays were often explained by the mentors, rather than the students reading and discussing the materials themselves for time reasons.