**Descriptions of CONSERVE Educational Resources in Development**

**Animations (All ages)**

**Water, Food & Our World Animation**

Status: Complete

This 4-minute animation provides an overview of the sources, types, and uses of water. The animation also addresses the need to conserve and appropriately reuse water for food production due to increases in demand and shortages of clean water. Research efforts underway to address these current challenges are presented.

**Humans & Food Are Part of the Water Cycle Animation**

Status: Complete

This 2 min 38 sec animation provides an overview of historical and current water uses for irrigation of food crops. The animation addresses the water cycle, water sources, and water recycling for sustainable agriculture.

**Water Sampling & Testing Animation**

Status: In Development

This one- to two-minute animation provides context for the interactives and addresses why and when water is tested.

**Web-based Interactives (Middle and High School)**

**Water Sampling Interactive**

Status: In Development

The Water Sampling interactive will cover the Desert SW and Mid-Atlantic regions with an overview of how water is sampled and collected from various irrigation water sources, including ditches, streams, treatment plants, and ponds. The user will click on a map, a landscape, and a scene for each water source to learn about the sampling process and reasons behind it. They will click and swipe objects onscreen to mimic collecting water from each source. They will also "virtually" test water for pH, turbidity, and salinity using instruments.

**Water Testing Interactive**

Status: In Development

The Water Testing interactive will take the water collected in Water Sampling and put it through microbiological testing in a virtual laboratory. "Results" the user sees will be drawn from representative lab data from the CONSERVE project or elsewhere. This will focus on process and analysis and will not discuss regulations or judgements about the water.

**Glossary (All ages)**

Status: Complete

This 5-page glossary provides definitions for terms related to types of water and water treatment technologies, processes and products as related to agriculture.

**Coloring Pages (Elementary)**

Status: Complete

Ten coloring pages are accompanied by brief text to highlight water sources, the water cycle, water use, contamination, and importance for food crops. The roles of scientists to identify methods to conserve and clean water are presented.

**Infographics (All ages)**

Status: Drafts

Two infographics provide historical perspective on the topics of water reclamation and water treatment.

**Digital Narratives (All ages)**

Status: Drafts

Two 3- to 5- minute digital narratives feature student researchers who describe and demonstrate the purpose and approach for their research in which they collect and analyze water samples for microbiological safety.

**Presentation (All ages – by selection of educator)**

Status: In Development

This presentation will be prepared for educators to deliver to students. The presentation will provide foundational information on food microbiology, water use, and water reuse. Educators will be able to select slides appropriate for student age group.

**Informational Text and Question Bank (Elementary)**

Status: Incomplete Draft

This 2-page informational text describes the cycle of safe water reuse and importance to the production of food. A question bank to assess student understanding of the informational text is provided for application in various class subjects including English Language Arts, Mathematics, Science, Social Studies, and Health.

**Outbreak Investigation Case Study – Written and Interactive (Middle and High School)**

Status: Complete Draft

The case study presents a scenario in which food has been implicated as a vehicle for an illness outbreak of microbiological origin. Students assume various roles to investigate and solve the outbreak and to evaluate approaches to prevent recurrence. The case study can be used in written format that could be completed individually or in groups as a class or homework assignment. Interactive and hands-on elements are also available such that the investigation involves manipulatives, puzzles, and game features for the same educational content as presented in the written version. Students can be assigned to groups to address one phase of the investigation and then share findings with the class; a presentation on the case study is provided to support student discourse.

**Interactive Exercise (Elementary)**

Status: To be developed

Students work with an interactive model to understand the types and sources of water and movement of microorganisms in the environment. Alternatively, a movement exercise whereby students ‘become microorganisms’ and follow their fate in water through environmental flow and/or remediation treatment.

**Laboratory Exercise (Middle and High School)**

Status: To be developed

A lab exercise to treat and analyze water samples for decontamination efficacy is under consideration. The lab exercise would be designed to complement the case study.

**Assessment Questions (Elementary, Middle, and High School)**

Status: To be developed

Questions will be developed to assess the educational materials on student knowledge of content before and after implementation. These questions will be applicable in the classroom for student assessment after conclusion of our research study to assess the educational materials.