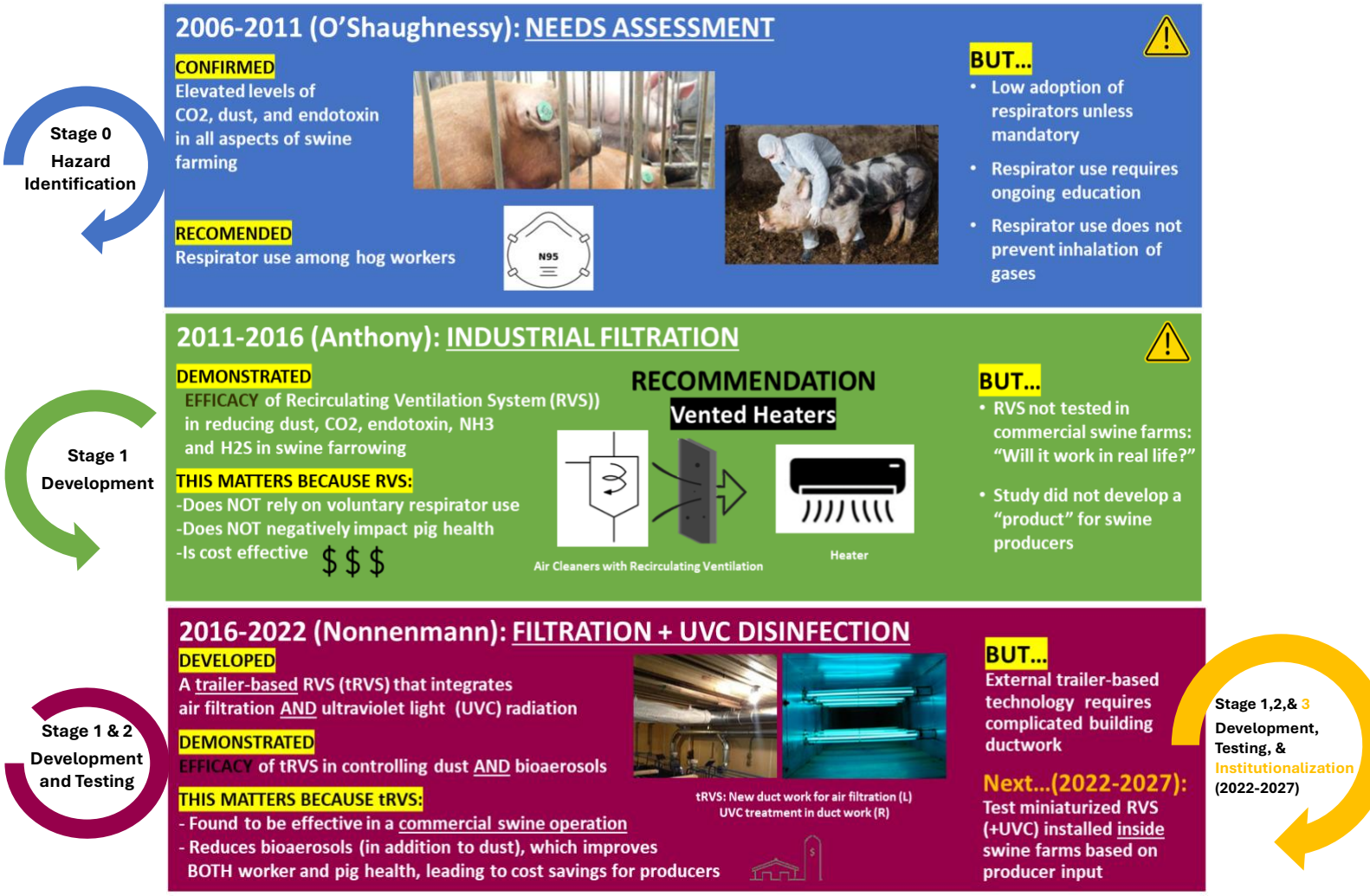
Research Core Evaluation: Air Quality Projects

The GPCAH is home to large animal feeding operations, which are associated with persistent respiratory symptoms that represent a lasting disease burden throughout the GPCAH nine-state region. Addressing *inhalation hazards in swine confinement* has been a priority topic for many cycles. In the 2016-22 cycle, researchers have developed and tested cost-effective devices to help reduce respiratory ailments among swine workers as well as reduce bioaerosol concentrations to lead to an improvement in both worker and pig health. This work built on previous study findings, as illustrated.



Evidence of research output adoption includes:

- **Training:** The project trained multiple health and safety professionals. For example, one postdoctoral researcher developed skills in industrial hygiene method development, equipment and sampling media preparation, field data collection, sample analyses, electronic data collection and analyses, and report writing.
- **Partnerships and Presentations:** The project strengthened collaborations with the National Pork Board and local swine producers. These relationships have facilitated input in new RVS designs and a focus on research questions most relevant to producers.
- **Education and Outreach:** The project findings were incorporated in the GPCAH Core Course curriculum for agricultural safety and health professionals. Workers were trained at the study site. Lessons learned to conduct this project included the development of new lab techniques for virus aerosolization, sampling, and infectivity assays, which were then used to informed hospital-based COVID research in 2020 and additional airborne virus studies now being conducted in other settings.