In addition to identifying New York State model programs that have earned CTE Approved Program status, the CTE Technical Assistance Center of NY (CTE TAC) also recognizes as models other CTE programs that provide exceptional educational and career preparation opportunities to students. The New Visions: Scientific Research & World Health program at Questar III BOCES is one example.

PROGRAM OVERVIEW

The Questar III BOCES New Visions: Scientific Research & World Health program is a selective, college-level integrated educational experience offered to academically advanced high school seniors in the Capital District. The program involves hands-on laboratory research in the emerging biotechnologies, scientific literacy, and global health. Students in the program are interested in careers in the biological sciences, including medicine, healthcare, biotechnology, pharmacy, biomedical research, genetics, forensics, biomedical engineering, environmental science, toxicology, biophysics, infectious and chronic disease, and nanobiotechnology. The program is located at the University at Albany’s Health Sciences Campus in Rensselaer.

Students earn 15 college credits in the health and biological sciences, conduct self-directed laboratory investigations, and experience motivating conversations and lectures with renowned scientists and other professional. The students develop lasting habits of scientific thinking. They engage in creative use of concepts and technologies while modelling professionalism and excellent academic scholarship. They learn to ask questions and understand health problems at a depth beyond their years and gain an ability to connect to existing problems and seek solutions to these urgent issues. These lifelong skills are integral to maintaining a society that is innovative in finding solutions to pressing global issues.

The program incorporates problem-based learning at every level. Students consider what is important to them and what resonates with them personally. This drives their learning, and they gain a deep understanding of the scientific process. Higher-level thinking skills are developed throughout the curriculum, further consolidating habits of scientific thinking.
KEY PROJECTS
Multiple group projects help to sustain a positive classroom culture with mutual respect and support. Assignments include an epidemiology project with timeline, a written report on a visit to the Albany Medical Center’s Medical Students Investigations poster session, study guide to Darwin’s On the Origin of Species, a journal assignment on Camus’ The Plague, and an evaluation of the ACAS 100 class by University in the High School Program director Dr. Behr. Students demonstrate college-level work in their two 30-page written research papers, performance of laboratory techniques and experimental design, and oral presentation of their research at poster sessions.

The students engage in offsite work-based experiences during an assigned senior mentorship. This involves working or shadowing in a clinical or laboratory setting in the spring semester for a minimum of 20 hours.

BUSINESS/COMMUNITY PARTNERSHIPS:
Since its inception, this program has worked with dozens of researchers, professors, and businesses at the University at Albany’s Health Sciences Campus and throughout the Capital District including:

- Albany College of Pharmacy and Health Science
- Intidyne, Inc.
- Molecular Research, Inc.
- NYS Department of Environmental Conservation
- NYS Department of Health
- Regeneron Pharmaceuticals, Inc.
- SyntheZyme
- Taconic, Inc.
- Ultradian Labs
- Vascular Endothelial Cell Technologies, Inc.

The program also has national partnerships. These include the Society for Neuroscience’s Brain BRIDGE – Beginning Researchers Involved in Discovery and through Guidance and Exploration.

ARTICULATION AGREEMENTS:
The program has agreements with The Sage Colleges and University at Albany- SUNY. Students earn 15 college credits in the health and biological sciences through these agreements.

STUDENT/PROGRAM AWARDS:
Students work with multiple people and career and technical organizations throughout the year, including the National Honor Society, Brain Bee event, and professional mentors, as well as presenting with the BRIDGE program and attending the High School Scholars Day at Loyola University with Dr. Attul Laddu, Director of the Georgia Thrombosis Foundation. This program has been the Rensselaer Chapter of Society for Neuroscience’s Annual Brain Bee winner each year.