**Name:** Jacob Voudren

**Year in Course**: 3rd (Senior)

**Topic**: Biomedical Sciences, Biotechnology, Genetics

**Mentor**: Dr. Mark A. Morrissey; Director of the Newborn Screening Lab for the New York State Department of Health’s Division of Genetics

**Title**: The Feasibility of Improving Positive Predictive Values for MCAD Deficiency through the Use of Additional Acetyl-carnitine Markers

**Bio:** Jacob Voudren is a senior at Pawling High School who has worked extraordinarily hard during the last year of his participation in the science research program. He has undertaken several challenging career oriented courses such as AP Biology and AP Chemistry this year in order to prepare him for his undergraduate work. These challenging courses including science research have provided Jacob with the essential skills required to make it through medical school and beyond into his career in trauma surgery. When he is not studying for an exam or conducting research Jacob is either playing a sport or performing. Jacob is a three varsity sport athlete playing a season of tennis in the fall and two seasons on the dance team (winter & spring). Aside from sports Jacob is also the President of the Drama Club and Co-President of the Peer Leadership. His love for science and caring for people is what drove Jacob to become interested not only in the science research program but also into a career in the medical field. Jacob will attend Ithaca College this fall, majoring in biochemistry with a minor in hospital management.

Jacob’s passion for the sciences developed when his second youngest brother Noah was diagnosed with a rare autosomal recessive genetic disorder known as MCADD. Medium-chain acetyl-CoA dehydrogenase deficiency (MCADD) is a type of metabolic disorder that prohibits the breakdown of fats in the human body and if left undiagnosed, can lead to infant mortality. MCADD is screened for by New York State’s newborn screening program in Albany through the Department of Health's Division of Genetics. Through his research with Dr. Mark Morrissey, he has discovered a novel biomarker that can be used to decrease infant mortality from MCADD.

Awards/Achievements/ Competitions

* Poster Presenter at the 60th Dutchess County Science Fair 2019
* Poster presenter at International Conference for Psychological Sciences in Paris, France 2019
* Poster presenter at Association for Psychological Sciences 2019
* Keynote Speaker at David Axelrod Institute for NYS Department of Health’s Newborn Screening Department 2019
* Poster presenter at Association for Psychological Sciences 2020