



# Authentic Science Research Program

Kinnelon High School & SUNY-Albany  
Collaborative Research Program



# Overview



The Authentic Science Research Program at Kinnelon High School is a three-year sequence of courses that begins with the 10th grade student.

- Science elective
- Courses meets the 21st century skill graduation requirement
- Supervised by Kinnelon high school teacher - Mrs. Kowalski
- Individual research is mentored by graduate scholars/researchers
- Students submit original research to local, state, and national competitions (Rutgers-JSHS, ISEF, STS, Nokia-Bell Labs, Genius Olympiad-may vary)
- Up to 12 college credits may be earned through SUNY-Albany



# Who should register for Authentic Science Research?

10th-11th grades students who have:

- A sincere interest in learning about research in some area of STEM.
- A willingness to be a self-starter and highly motivated independent researcher.
- A genuine desire to invest a great deal of time in exploring an area of interest.
- Academic success in core high school courses.

# Authentic Science Research Program Courses:

## **Course I: Introduction to Research Methods**

- Learn time management, sophistication in dealing with professional and bibliographic research using online services.
- Identify a topic and secure a research mentor with the possibility of participating in a summer research experience.
- Present their research topic and plan at the Science Research Symposium held at Kinnelon High School
- Attend local research competitions as an observer.

## **Course II: Intermediate Research Methods**

- Begin the year with an identified mentor and research topic
- Continue online bibliographic research and develop the research idea
- Work with the mentor on a weekly basis.
- Present their current research at the Science Research Symposium held at Kinnelon High School.
- Attend local research competitions as an presenter or observer.

## **Course III: Advanced Research Methods**

- Complete the science research project with the mentor.
- Submit research proposal for the Junior Honors Science and Humanities Symposium, Regeneron STS competition or other comparable competition.
- Present their research at the Science Research Symposium held at Kinnelon High School
- Attend local research competitions as a presenter or observer.

# Science Research Courses-college credit bearing:

Four separate science research courses have been approved to be offered through the UHS Program for college credit. The courses are:

CAS 109 - Intermediate Science Research (2 credits, July - August\*) - Juniors

CAS 110 - Intermediate Methods of Research (4 credits, September - June) - Juniors

CAS 209 - Advanced Science Research (2 credits, July - August\*) - Seniors

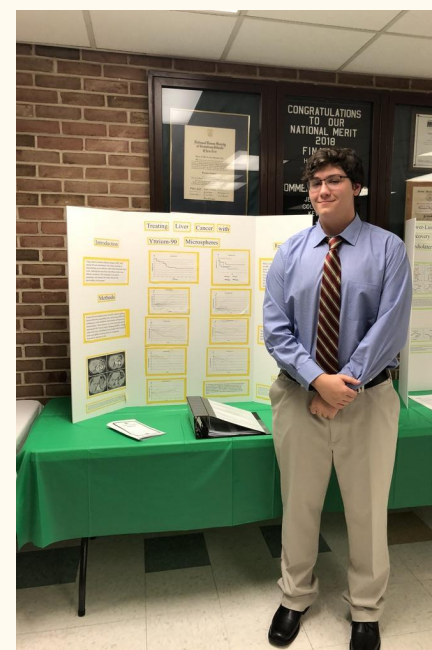
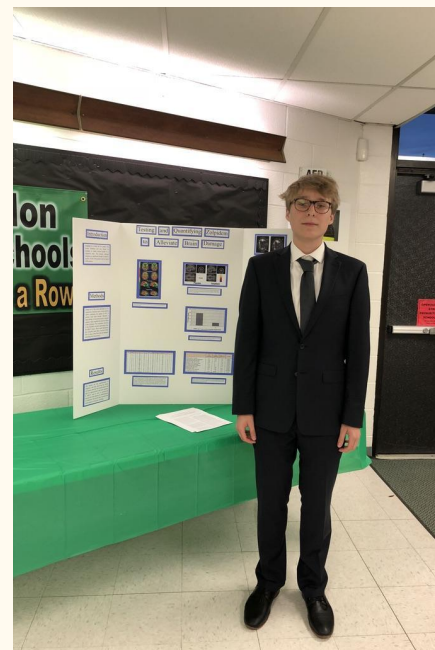
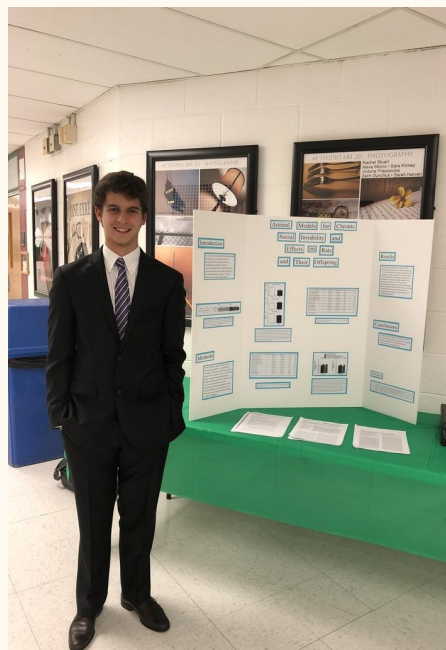
CAS 210 - Advanced Methods of Research (4 credits, September - June) - Seniors

\*Summer courses are independent and coordinate with SUNY-Albany UHS Program

Cost: SUNY does not charge tuition, they charge a UHS Program Fee of \$160 per course regardless of the amount of credits.

# KHS Authentic Science Research Poster Forum

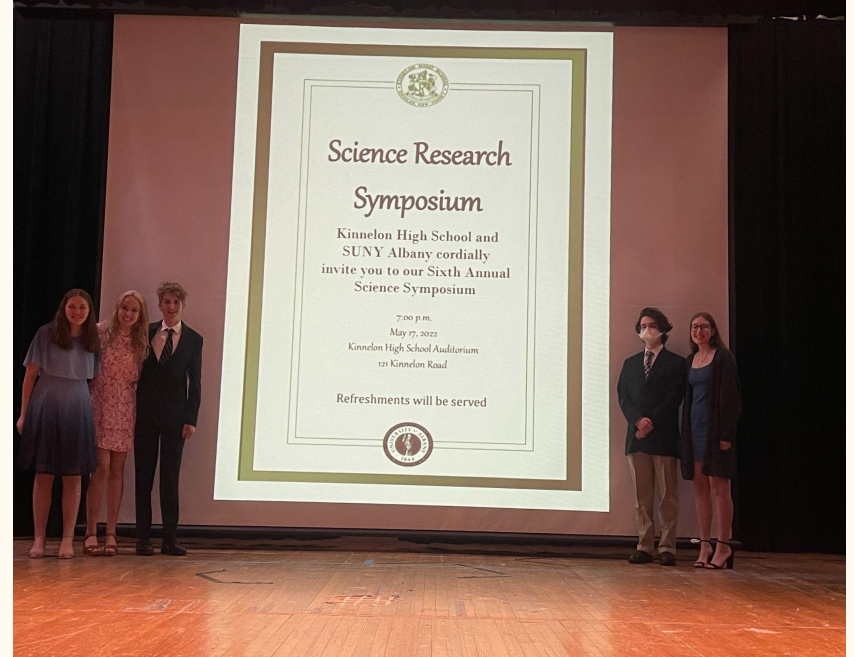
Students in the ASR program present a scientific research poster during the annual Poster Forum.



# **2021-2022 Projects**

- The Impacts of Salt Flooding on Juvenile Maritime Tree Species
- Analyzing Insect Activity on Native and Invasive Plant Counterparts
- Calculating the Educational Gini Coefficient for New Jersey Counties
- Reutilizing Food Waste for Sustainability in Kinnelon Township
- Trends in Overall Health Predict COVID-19 Vaccination Status

# 2021-22 Symposium



# **2022-2023 Projects**

- The Effect of Sea Level Rise in Estuaries on Coastal Invertebrates and Plants in New Jersey
- Calculating Educational Gini Coefficients for American States and Counties
- Native vs. Invasive Plants Effect on Insect Activity and Utilization
- Comprehensive vs. Abstinence Health Curriculum Education and Teen Pregnancy

# 2022-2023 Research Competitions



# **2023-2024 Topics**

- Proton Beam Therapy
- Medicinal Effects of Mushrooms
- Phosphorus extraction from Sludge
- Anemia
- Artificial Intelligence and Machine Learning
- The Impact of Climate Change on the Food Supply
- Understanding the Impact of the Gut Microbiome

# Research Class of 2026





# Online Resources



University in the High School

Regeneron STS

NJ Junior Science & Humanities Symposium

# How will this help my child in college?

- Extensive knowledge in science research prepares student to work in college science labs as early as their 2nd semester of freshman year.
- Presentation skills and scientific writing are refined.
- Working with mentors in academia exposes students to science at a much higher level.



# Any Questions?

For more information please contact:

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