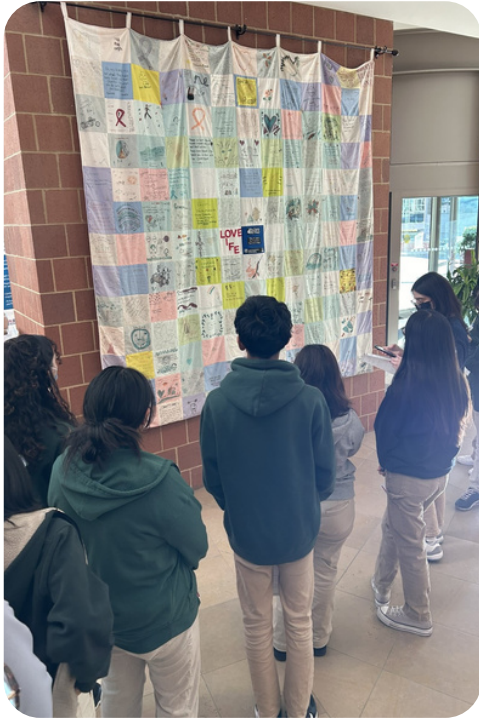


WINTER 2024

# RUTGERS YOUTH ENJOY SCIENCE

## *RUYES WATCH*



### IN THIS ISSUE:

- \* Application Information
- \* RUYES Events
- \* Cancer Awareness
- \* Teacher & Student Highlights
- \* Linden Youth Enjoy Science Club Presentation/Activity
- \* School Field Trips



### ABOUT RUYES

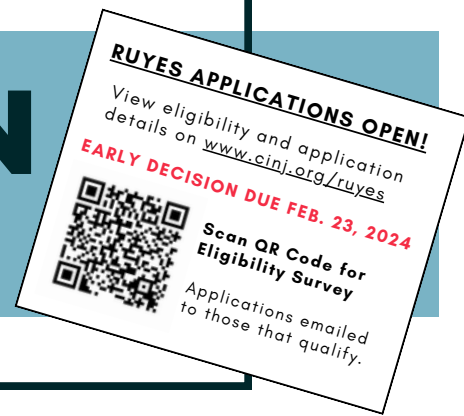
The Rutgers Youth Enjoy Science (RUYES) program seeks to encourage youth from groups that are underrepresented in the biomedical sciences to pursue cancer research and healthcare careers.



### APPLICATION

Applications are open through February 23, 2024 for Early Decision!  
Visit: [www.cinj.org/ruyes](http://www.cinj.org/ruyes) to apply. Email us at [RUYES@cinj.rutgers.edu](mailto:RUYES@cinj.rutgers.edu)

# APPLICATION PROCESS



## Becoming a RUYES Participant

You must submit an application to be considered for the RUYES research experience. Once your application has been submitted, it will be reviewed by RUYES program staff, application review committee, and Rutgers Cancer Institute of New Jersey Principal Investigators (PI) who are interested in being mentors.

You will complete an interview during our match process, attend a mandatory human resources seminar, and prepare the necessary paperwork to begin onboarding.

## TEACHERS

Science teachers from high schools with significant proportions of students from underrepresented backgrounds will have the opportunity to engage in mentored cancer research and curriculum development through RUYES.

## STUDENTS

Students from low socio-economic or underrepresented backgrounds in STEM or first generation college students will have the opportunity to engage in mentored cancer research, professional development, and cancer-focused community outreach through RUYES.

## Application Timeline



**February 23**

Early Decision



**February 25**

Application Review



**March 8**

First Round Decisions



**Week of March 18**

Zoom Panel Interviews



**March 25**

Human Resources  
Presentation



**April 13**

Required In-person  
Professional  
Development



**June 19**

Undergraduate RUYES  
Orientation Start Date



# PAST EVENTS

## DECEMBER 2023

### **Topic**

Passiac Academy of Science & Engineering (PASE) Field Trip to Rutgers Cancer Institute of New Jersey

### **Activity**

- Presentation by Ashley Purper, Community Cancer Control Specialist, *Hereditary and Lifestyle Risk Factors for Cancer*
- Research Panel Discussion in collaboration with Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)
- Hand-on Research Activity

### **Hosted by**

Casandra Gabriele, Program Coordinator, Scott Ryan, RUYES, and Rutgers Cancer Institute of New Jersey

- Special Thanks to Rutgers Foundation Staff, Jinnie Kim, for hosting tours
- Special Thanks to Hu Labs and Montagna Labs for offering lab tours.

## JANUARY 2024

### **Topic**

Bayonne High School Field Trip to Rutgers Cancer Institute of New Jersey

### **Activity**

- Presentation by Brianna Jeffreys, MMSc, CGC, Licensed, Certified Genetic Counselor
- Meet the Scientist in collaboration with Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)

### **Hosted by**

Casandra Gabriele, Program Coordinator, Georgeanne Osanya, RUYES, and Rutgers Cancer Institute of New Jersey

- Special Thanks to Rutgers Foundation Staff, Jinnie Kim, for hosting tours
- Special Thanks to Hu Labs and Montagna Labs for offering lab tours.

## UPCOMING EVENT

## FEBRUARY 2024

### **Topic**

Woodbridge High School and Jose Martii STEM Academy Field Trips to Rutgers Cancer Institute of New Jersey

### **Activity**

- Sun Safety Presentation by Anna Mitarotondo, Heckman Lab & Ileana Gonzalez, RUYES
- Meet the Scientist in collaboration with Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)

### **Hosted by**

Casandra Gabriele, Program Coordinator, Maria Tolentino (RUYES), and Rutgers Cancer Institute of New Jersey

- Special Thanks to Rutgers Foundation Staff, Jinnie Kim, for hosting tours
- Special Thanks to Hu Labs and Montagna Labs for offering lab tours.

## MARCH 2024

### **RUYES TEACHERS Cancer-focused Lessons Round Table**

Showcase of classroom-implemented activities created during RUYES training in collaboration with Center for Mathematics, Science, and Computer Education (CMSCE)

If interested in attending contact  
Casandra Gabriele  
[casigabe@cinj.rutgers.edu](mailto:casigabe@cinj.rutgers.edu)

**March 12, 2024  
4pm-5:30pm  
Virtual Presentation**





# UPCOMING EVENTS



MARCH 2024

**RUYES TEACHERS  
2024 NJ STEM Conference for K-12 RUYES  
Teachers Presenting:**

*Problem-Based Learning Pedagogy -  
Highlighting Cancer-focused samples with  
Chris Anderson of Center for Mathematics,  
Science, and Computer Education  
(CMSCE) & Maria Tolentino, RUYES  
Teacher of Woodbridge High School*

If interested in attending contact  
Casandra Gabriele  
[casigabe@cinj.rutgers.edu](mailto:casigabe@cinj.rutgers.edu)

**March 8, 2024  
Caldwell University**

APRIL 2024

**RUYES Near-Peer Mentoring  
Workshop &  
WELCOME Cohort 4**

A focus on effectively mentoring  
with Emonie Hall, Oak Ridge  
Institute for Science and  
Education (ORISE) Fellow of  
Walter Reed Army Institute  
of Research

If interested in attending contact  
RUYES Program Coordinators  
[ruyes@cinj.rutgers.edu](mailto:ruyes@cinj.rutgers.edu)

**April 13, 2024**

AUGUST 2024

**SAVE THE DATE  
RUYES  
RESEARCH POSTER SYMPOSIUM**

RUYES Trainees  
from Cohorts 3 & 4 present  
research projects and findings  
through posters and presentations.

If interested in attending contact  
RUYES Program Coordinators  
[ruyes@cinj.rutgers.edu](mailto:ruyes@cinj.rutgers.edu)

**August 22, 2024**





# **Cancer Awareness:**

## **LGBTQ+ Cancer Disparities**

### **How is the LGBTQ+ community affected?**

The amount of information about cancer in cisgender, heterosexual people is far more accessible than those who identify as LGBTQ. LGBTQ+ individuals have higher rates of unemployment, insurance discrimination, lack of availability of medical treatment, and postponement of necessary medical care, including cancer screening and prevention. LGBTQ+ people face obstacles that it difficult for them to seek help. These challenges may include societal stigma and restricted access to any type of insurance. Additionally, there continues to be a lack of medical professionals who have health with LGBTQ+ patients.

### **What needs to be done:**

From various studies, multiple oncologists have stated that they should understand more about treating members of the LGBTQ+ population. Creating an inclusive environment for LGBTQ+ patients will allow individuals to feel more comfortable and allow oncologists to provide their patients with excellent care. Many studies are potentially viewing a new training style for medical providers that will provide them with care for all different types of patients.

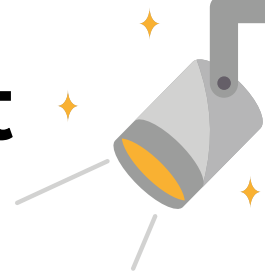
Not only it is important to be aware of the disparities, but, it's important to be able to treat patients. According to a 2022 study published in the Journal of Clinical Oncology, people who identified as LGBTQ and have breast cancer are most likely to encounter delays in detection and treatment, and their likelihood of recurrence is around 31% compared to 14% for individuals who do not identify as LGBTQ+ (cisgender, heterosexual).

### **Risk Reduction:**

When it comes to risk reduction in terms of the LGBTQ+ community, it has more to do with researching rather than any physical task you need to do. Being an LGBTQ+ person and accessing the healthcare system may be difficult and stressful, but knowing your cancer risks and taking the right steps to find the best care for you could ultimately save your life. When trying to prevent cancer, the same thing goes for both LGBTQ+ and non LGBTQ+ patients. Whether that includes doing exercise on the daily, getting enough sleep, eating healthy, etc.



# RUYES Teacher Highlight



## ADDRESSING DATA MISCONCEPTIONS

SCOTT RYAN

TEACHER AT PASSAIC ACADEMY FOR SCIENCE AND ENGINEERING

Scott Ryan, Rutgers Youth Enjoy Science (RUYES) trainee and Biotechnology Pathways Teacher at Passaic Academy for Science and Engineering (PASE) in Passaic, NJ developed his first iteration of statistical cancer-focused curriculum during the summer of 2023. “We Made Too Many Wrong Mistakes: Curriculum to Address Data Misconceptions” was developed to improve statistical literacy and awareness of cancer and cancer prevention.

Mr. Ryan piloted the middle school portion of his curriculum in late September 2023. The lessons spanned two class periods for 6th, 7th, and 8th graders, 53 students in all.

Mr. Ryan reflected, “They enjoyed the lessons, with some looking forward to me coming back and giving more! All classes showed an improvement in statistics literacy, ... and they learned a little bit more about cancer and cancer prevention.”



# RUYES Student Highlight

## TIA HART

SOPHOMORE AT  
RUTGERS  
UNIVERSITY, NEW  
BRUNSWICK

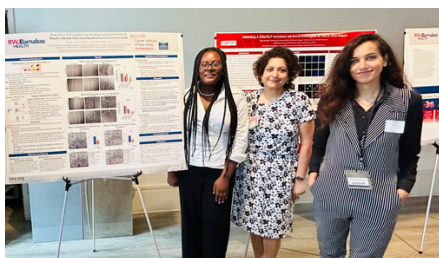
**The Lab:** Bhattacharya Labs

**Principal Investigator:** [Dr. Moshmi Bhattacharya, PhD](#)

**Post-Doctorate Mentor:** Dr. Shams Shams, PhD

**Name of the research project completed:** Evaluation of Kisspeptin on the Migration and Growth of Hepatic Stellate Cells and Hepatocellular Carcinoma Cells

**The experience:** My experience in Dr. Bhattacharya’s lab has been very informative and enlightening. I have learned a lot of new information about lab skills, procedures, and cancer. Within the lab, I have been working with regular and cancerous liver cells, to examine their migration and colony formation behavior. Before my time here, I did not consider cancer to be a specialty that I would be interested in pursuing. However, as I learned how to propagate cells, care for them, and perform assays, I found that I have developed a greater interest in the work behind treating cancer. I have always had a very deep and profound interest and appreciation for science, and through this program my perceptions, knowledge, and understanding have all expanded. I can confidently say my time here has further encouraged my enthusiasm and drive to continue to explore research as a career.



# Is Cancer in my Genes?

## **BREAST CANCER MISCONCEPTIONS WITH LINDEN YOUTH ENJOY SCIENCE CLUB**

JAINA MCKOY

*STUDENT AT UNION COUNTY VOCATIONAL TECHNICAL HIGH SCHOOL*

During October, which is breast cancer awareness month, I visited Linden High School on January 26 alongside Program Coordinator, Casandra Gabriele, to perform an activity involving breast cancer at the school's YES (Youth Enjoys Science) Club. The activity was held after school with about 18 students, one of whom is a fellow Rutgers Youth Enjoy Science (RUYES) participant, Diego Sanabriga. The main purpose of this activity was to spread awareness about Breast Cancer and the possible role that genetics can play in someone's chance of developing cancer.



Casandra and I opened the meeting with a discussion of cancer to gauge everyone's understanding of the topic before starting the activity. Afterward, the participants completed a survey about breast cancer risk factors to show how both genetics and living environment affect someone's risk level. Many of the students attending were freshmen, and as a result, they were surprised by much of the information provided since they had not learned it in Biology yet. Working with these students was a learning experience for both of us since this was the first time they had heard some of the terminology surrounding cancer. At the same time, I had to find a way to simplify the information, so that I could teach them in a way they could understand.

To further explain the impact of genetics on Breast Cancer, the participants formed groups to complete a hands-on activity that demonstrated how Breast Cancer may appear within a single family. Together, the students tested for the gene mutation called BRCA1, which can potentially lead to cancer. The experiment used a DNA stain to see which members in a family had the mutation, and by referring to the family's pedigree (a chart of their genetic history), the students learned that testing positive for the mutation does not automatically result in a cancer diagnosis like they previously thought. This test displayed how people can have a gene mutation without developing cancer.

I am so appreciative that I had the opportunity to teach fellow young people about breast cancer. It was a fun experience with Linden's YES Club participants, and I am glad they were able to learn some facts about Breast Cancer to disprove the misinformation that is spread.





# FIELD TRIPS

## DECEMBER 2023 PASSAIC ACADEMY FOR SCIENCE AND ENGINEERING



Passaic Academy for Science and Engineering, under the supervision of Scott Ryan, Teacher and RUYES trainee, visited Rutgers Cancer Institute of New Jersey with students and teachers. They learned about the effects of vaping and tobacco use on the lungs and explored careers in STEM through a Speed Mingling, Meet the Scientist, event.



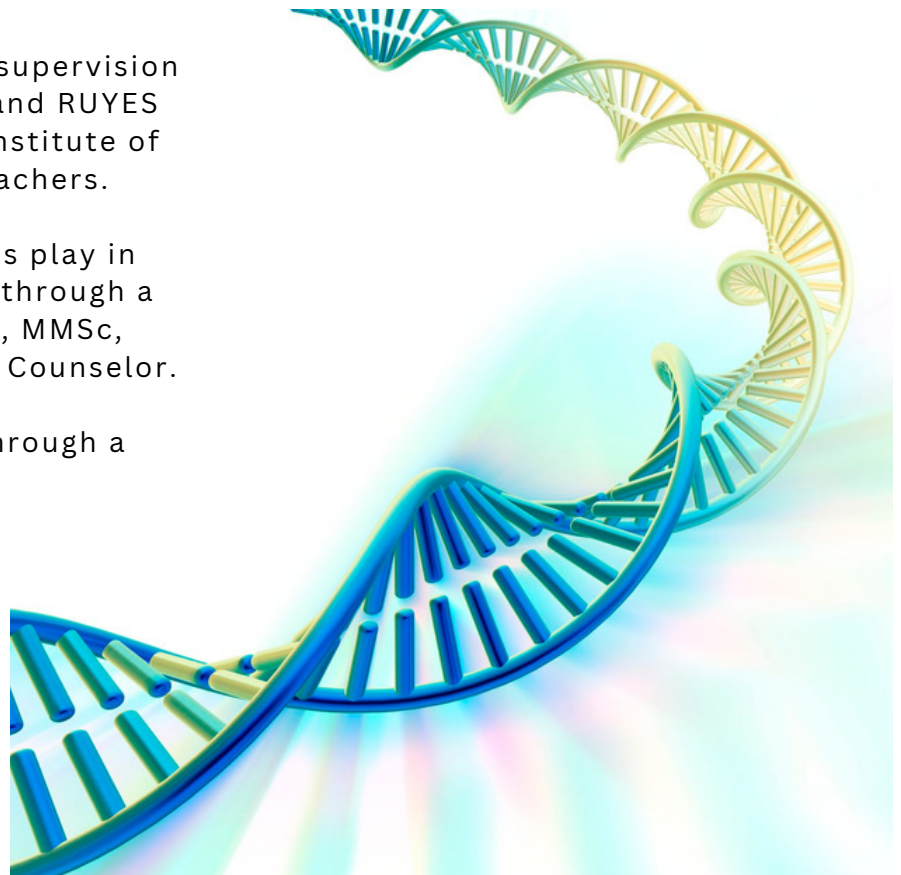
**JANUARY 2024**  
BAYONNE HIGH SCHOOL



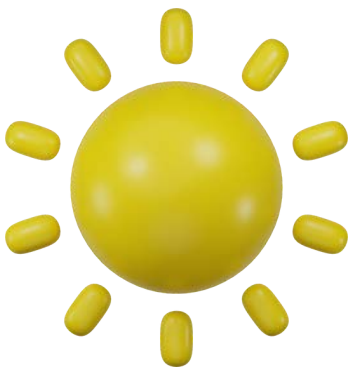
Bayonne High School, under the supervision of Georgeanne Osanya, Teacher and RUYES trainee, visited Rutgers Cancer Institute of New Jersey with students and teachers.

They learned about the role genes play in determining outcomes of cancer through a presentation by Brianna Jeffreys, MMSc, CGC, Licensed, Certified Genetic Counselor.

They explored careers in STEM through a panel discussion of scientists.







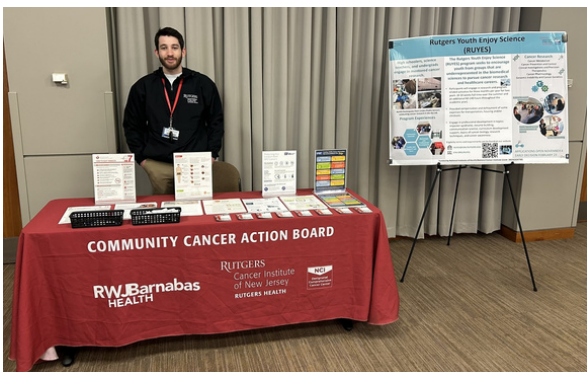
**FEBRUARY 2024**  
WOODBRIDGE HIGH SCHOOL &  
JOSE MARTI STEM ACADEMY, UNION CITY



Woodbridge High School students, under the supervision of Maria Tolentino Teacher and RUYES trainee, and Jose Marti STEM Academy students, under the supervision of Natalia Coleman, Teacher, visited Rutgers Cancer Institute of New Jersey.



They learned about the cancerous effects of sun exposure through a presentation and activities delivered by Ileana Gonzalez, RUYES trainee, and Anna Mitarotondo from Dr. Carolyn Heckman's lab. Students then explored careers in STEM through a Speed Mingling, Meet the Scientist, event.



Ryan Moulton, of Community Outreach & Engagement, attended to offer additional resources to students and teachers.