2023-2024
ASR Informational Resource

Instagram @ASR_LHS

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Mr. Ian Sherman, Principal

Mr. Sherman is celebrating his 11th year as Principal of Lincoln High School and is the recipient of the Leadership in Education Award through the Yonkers Public Schools. Every day he enters the building, he looks forward to working with young adults and helping them reach their full potential. He received a Bachelor of Science in Business from the University of Buffalo and two Masters degrees from Long Island University in Elementary & Special Education and from Mercy College in School Administration & Supervision. He understands what is necessary to produce positive academic and social-emotional outcomes for the students and personifies the spirit, dedication, and accomplishments of an outstanding instructional leader. As a result, he led Lincoln High School to its highest graduation rate in decades.

Mr. Jonathan Morano, Assistant Principal

Mr. Morano is currently in his third year as the assistant principal at Lincoln High School and his 13th year in administration. This is Mr. Morano's second year overseeing the Academy of Scientific Research. Mr. Morano holds a BA in History and Education, a Master of Professional Studies in Special Education and a Master's of Science in School Building Leadership. In addition to his work at Lincoln High School, Mr. Morano serves as an adjunct professor of education at CUNY. To Mr. Morano, there is no greater passion than allowing students to fall in love with their learning.

Mrs. Sunitha Howard, Director/ Instructor

Mrs. Howard is a product of the Yonkers Public School district and a NYS Master Teacher with a license in 7-12 General Science and Biology. She also received the distinction of Yonkers Teacher of the Year for the 2021-2022 school year. She received her B.S. from Lehman College in Anthropology- Biology- Chemistry and her M.P.H from Columbia University. She believes that all children should grow up in a supportive, safe and nurturing environment where they are respected and loved. An educated and empathetic child makes better decisions for themselves and others, growing up to be a well-informed and successful member of their community. She strives to look at the whole child and help remove obstacles that might impede learning so children can succeed. It is through their success that she succeeds!

Ms. Lauri-Anne Cameron, Science Department Chairperson

Ms. Cameron grew up in Jamaica, West Indes and migrated to the U.S. to further her education. She currently holds a Bachelors of Science degree in Biology from City University of NY, a Masters in Science Education from NYU, and is also a practicing Registered Nurse at Montefiore hospital. She currently teaches Advanced Placement Biology and Forensics. She is always looking for new and creative ways to present her subject matter. Ms. Cameron strives to make learning Science fun, engaging, and accessible for all her students.

ASR STUDENT OFFICERS

Samuel Rodriguez, President

Hello, I am Samuel Rodriguez, an 11th grade student in the Academy of Scientific Research. Some of my favorite Scientific Research events include the trips to places such as the Bear Mountain Bridge, Jacob Burns Film Center, St. Thomas Aquinas College, the Spring Eggstravaganza event, and even just the normal day-to-day presenting and interactions inside the classroom. I felt this academy was my calling because I love to question everything that goes on in my life, trying to get a deeper understanding of how the world works. Even more importantly, I have felt such a great connection with all my peers, and it has given me a place to work hard while also enjoying the freedom of being myself.

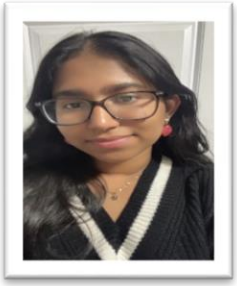
Jaesun Charles, Vice President

Hello, my name is Jaesun Charles and I am a junior in the Academy of Scientific Research. My research project this year deals with the effects of humans on water quality. This involves taking samples from places like the Hudson and Sawmill River. I've been in Science Research for 3 years now and have helped with events including the Student Basketball game and the Eggstravaganza. I also spent the summer participating in the EELs Ecology Course through Sarah Lawrence College. I'm looking forward to a great year and many more events to participate in.

Leila Simmons, Secretary

Hello, my name is Leila Simmons and I am a senior! As the secretary of ASR, I am tasked with taking efficient notes during our meetings, assisting in running activities for the academy, and representing the academy in local events. My current science research project involves collecting aquatic macroinvertebrates from different rivers around New York and finding how the species found in each stream correlates to the environmental water quality in New York. Being a part of this Academy has allowed me to have a better understanding of the scientific process and helped me work on efficiently communicating scientific data to individuals of varying backgrounds.

Aleesha Abraham, Treasurer



Hello! My name is Aleesha Abraham and I'm a senior in the Academy of Scientific Research. At the moment, I'm working on a project about physical therapy on knee osteoarthritis. I have been involved in a lot of ASR events and opportunities, including the Eggstravaganza, Senior Graduation, Winter Water Academy, Manhattan College chemical engineering program and the STEM program at St. Thomas Aquinas College. The Academy of Scientific Research provided me with many beneficial and fun programs that helped me gain a lot of experience for my future.

INSTITUTIONAL REVIEW BOARD

Mr. Jonathan Morano, Assistant Principal

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Mr. Roger Crawford, Social Worker

Roger Crawford is a Yonkers Public Schools Social Worker who splits his time between Lincoln High School and the Barack Obama School for Social Justice. He received his Bachelors degree in Psychology from Brooklyn College. He later went on to graduate from Yeshiva University with a degree in Clinical Social Work and then an advanced degree in Public School Administration from the City University of New York. Mr. Crawford has practiced Social Work for over 25 years in multiple capacities.

Ms. Kathleen Mancuso, Science Teacher

Kathleen Mancuso is a high school chemistry teacher at Lincoln High School. She completed her undergraduate degree in chemistry education at Manhattan College in Bronx, NY. She completed her graduate degree in Science education with a concentration in geology at CUNY Lehman in the Bronx, NY. During her time at Manhattan College, Kathleen collaborated with various faculty, teachers and students to publish research on STEM education. Through the support of various National Science Foundation grants, the papers were accepted by the American Society for Engineering Education (ASEE) and presented in 2016 and 2017. Kathleen is an advisor for My Sister's Keeper: Yonkers, a culturally responsive initiative to empower young women and the Lincoln High School chapter of Science National Honors Society.

ADVISORY BOARD

Kathryn Burke

Kathryn Burke, long time educator and author, is currently director of Historic Bridges of the Hudson Valley. She focuses her expertise and time on providing opportunities for educators to create project-based, authentic STEM opportunities for their students. Utilizing the history and maintenance of the five Hudson River bridge crossings of the NYS Bridge Authority, Kathryn encourages real-world STEM experiences that require research and examination of the science of past, current, and the possibilities for future infrastructure technologies.

Dr. Richard Carbonaro

Dr. Carbonaro is a Professor of Chemical Engineering at Manhattan College in Riverdale, NY. In his position at the College, he conducts research and teaches courses on environmental chemistry, chemical kinetics, and mathematical modeling of chemical processes. He has worked as an engineer for approximately twenty years, specializing in the fate and transport of contaminants in soil, groundwater and sediments. His research focuses on the fate and transformations of organic and inorganic chemicals in engineered and natural environments. In addition, he also consults for various clients on a range of environmental engineering topics, including remediation of organic and inorganics in soil and groundwater, water quality, contaminant fate and transport, groundwater geochemistry, and environmental forensics.

Monica Lopez

Monica Lopez is a lifelong resident of Yonkers and currently the Supervisor for the Revenue Cycle at Saint Joseph's Medical Center. In this position, she is responsible for ensuring surgery resources are accounted for, review and maintain daily surgical reports, make changes as needed per Department of Health, contracted plans, federal/state agencies/ and or vendor(s). She holds an associate and bachelor's degree in health service administration from The College of Westchester and is the mom of a Lincoln Lancer.

Dr. Jennifer Sneider

Dr. Jennifer Sneider is an Assistant Professor of Psychology in the Department of Psychiatry at Harvard Medical School and the Assistant Director of the Neurodevelopmental Laboratory on Addictions and Mental Health in the Imaging Center at McLean Hospital. Her work investigates the neurobiology of memory and learning, with a focus on the hippocampus, using non-invasive magnetic resonance techniques to examine brain structure, function, and neurochemistry. Neurobiological measures are examined relative to cognitive ability and clinical indicators of mood and anxiety. Dr. Sneider has engaged in a wide range of preclinical and clinical studies, including investigations of sex differences, hormones, spatial and other types of memory, brain development, alcohol, and other substance use addictions, and depression. Her current work is focusing on the use of virtual yoga as a treatment for mood and anxiety symptoms in youth, with a recent focus on racially and ethnically underrepresented youth to address mental health disparities

Dr. Laura Tropp

Dr. Laura Tropp is the Director of Academic Affairs and Associate Campus Director, University of Connecticut, Stamford Campus and Affiliated Professor of Digital Media and Design. Her research explores media environments, gender, and culture. Her first book, A Womb with a View: America's Growing Public Interest in Pregnancy explored the shift of pregnancy from a private experience to a public one. Her co-edited collection, Deconstructing Dads, explored the representation of fathers in popular culture. Her newest book Grandparenting in the Digital Age: The Third Act explores grandparenting and aging. Her writing on subjects such as technology and media, online learning, postpartum depression, and teen fathers regularly appear in popular media and edited collections. Dr. Tropp's contribution to scholarship often involves making visible topics that are less explored in academia.

Dr. Bianca Wentzell

Dr. Bianca Wentzell is Dean of the School of STEM and Associate Professor of Biology at St. Thomas Aquinas College. She specializes in studying human impact in wetland ecosystems, remediation of contaminated water using aquatic plants, and wetland restoration. Dr. Wentzell received her B.S. in Biology from Siena College in 2010 and her Ph.D. in Biology from Rensselaer Polytechnic Institute in 2014. She conducted postdoctoral work at Montclair State University and Kean University prior to arriving at St. Thomas Aquinas College in 2017. Dr. Wentzell became Interim Dean of the new School of STEM in 2021, and Dean in 2023.

Dr. Kimberly Wise White

Dr. Kimberly Wise White is the Vice President of the American Chemistry Council's (ACC) Regulatory and Scientific Affairs Division. In that position, she oversees the development of ACC's policy positions in response to regulatory and legislative proposals. She also leads a staff of experts to identify, analyze and create technical and policy materials to serve as the foundation for ACC's activities. Previously, she served as a Scientific Advisor for the oil and natural gas industry where she was responsible for regulatory efforts and research programs focused on environmental, health, and safety. Kimberly received Bachelor of Science and Master of Science degrees in biology and a Doctor of Philosophy degree in Environmental Toxicology from Texas Southern University.

Jean Zappia

Jean Zappia is a 38-year veteran of the chemicals industry, with extensive experience in sales, marketing, product management, and commercial leadership roles. After earning her BS in Biochemistry from Manhattan College Jean started her career at Ciba Specialty Chemicals in the Technical Service Laboratory. Later she worked for BASF, ISP and Ashland, and added an MS in Technology Management and an Executive Certificate in Marketing Management from Polytechnic University of NY (now NYU) and Columbia, respectively. Jean retired from Ashland LLC in 2020, and since then has been pursuing her passions in literacy, business management consulting and financial advising, and promotion of STEM careers for girls in a variety of board and volunteer roles.

The Academy of Scientific Research (ASR) Background Information

Who are we? The Academy of Scientific Research is an Academy for STEM (Science, Technology, Engineering, Math) professions, partnering with academic and business institutions in New York City and Westchester County. Students learn about, and prepare for, careers in STEM. Students are taught how to be leaders, how to communicate, how to evaluate their successes, and to concentrate on their personal goals. STEM research projects, taking STEM classes and seminars, participating in internships as well as regional and national STEM competitions, students acquire practical experience in the STEM world.

A little bit more about us:

The Lincoln High School Academy of Scientific Research (ASR) is a multidisciplinary STEM problem-based learning research academy in the Yonkers City School District. Since its inception in 2017, the program has given 1330 students (50%, female, 20%, black, 67% Hispanic, 11% ELL, 90% economically disadvantaged, 86% eligible for free lunch) opportunities to carry out authentic research projects. On average there are 80 students per year working on 50 to 60 independent research projects running simultaneously in the ASR lab. In addition to the work done in the ASR lab, a small percentage of students conduct original science research projects and hold internships at various institutions such as Memorial Sloan Kettering Cancer Center, Regeneron and the Center for the Urban River at Bezack that expose them to various STEM career pathways. Students have competed in local, national, and international science competitions such as the Westchester Rockland Junior Science and Humanities Symposium, Science Talent Search, Westchester Science and Engineering Fair, the Young Science Achievers Program, and Google World Science Fair.

The goal of the ASR is to increase the number of women, ELL, and underrepresented minorities being admitted to college for STEM and engineering professions. The LHS ASR bridges the gap between the classroom and the workplace. It provides students with 21st-century skills needed to function in today's workforce.

Course Descriptions

Science Research 1 (Freshman)

Science Research 1 is the first course in a 4-year sequence that introduces students to the research experience and is open to all interested 9th grade students. In small groups, students are engaged in scientific methods through a variety of short-term science experiments and projects. Students learn the necessary skills needed in the more advanced research courses such as working with research lab equipment, improving journal article comprehension, research paper writing skills, public speaking skills, and the peer-review process. They are also exposed to the different careers in STEM and produce a paper on a research topic of their choice by the end of the year. Additionally, students are expected to participate in the ASR Club in various roles to plan events for the Academy.

Science Research 2 (Sophomore)

Science Research 2 is a sophomore level research class designed to identify specific societal problems and use research and technology to find solutions. Students participate in a literature review to come up with a topic of interest. Based on their literature review, they identify and reach out to mentors for their project while simultaneously working on a Research Proposal. They synthesize their objective and hypothesis, identify their independent and dependent variables, and work on collecting and analyzing data from similar studies. At the end of the academic year, many students are matched up in a lab at a college, university, or medical center where they can do a research project with a scientist during the summer. Additionally, students are expected to participate and organize the annual Science Research Symposium at Lincoln High School and lead the ASR Club in various roles to plan events for the Academy.

Science Research 3 (Junior)

During their junior year, students spend the majority of their time collecting data and working on their research paper independently. Students learn how to function in an adult working environment and develop many academic and personal skills that will be of lifelong benefit. The project culminates in a completed research paper by the end of the year. At the end of the academic year, many students are matched up in a lab at a college, university, or medical center where they can do a research project with a scientist during the summer. Additionally, students are expected to participate and organize the annual Science Research Symposium at Lincoln High School and lead the ASR Club in various roles to plan events for the Academy.

Science Research 4 (Senior)

Their final year in the program comprises of time spent on finalizing their paper, creating Presentations and poster-boards to get ready to compete, Students are expected to compete in various competitions including WESEF, JSHS and STS. Additionally, students are expected to participate and organize the annual Science Research Symposium at Lincoln High School and lead the ASR Club in various roles to plan events for the Academy.

Internships & Affiliations

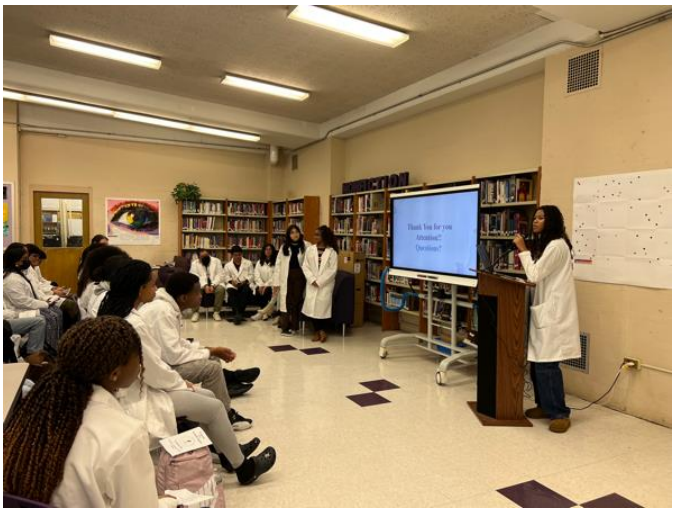
We are grateful to the following organizations for supporting our students:

ASR Oath

In the name of Lincoln High School and the Academy of Scientific Research, I sincerely pledge the following with humility and gratitude:

- I will continue to practice and support a scientific process that is based on logic, intellectual rigor, personal integrity, and an uncompromising respect for truth.
- I will strive to minimize the harm done to any living being and the environment in the course of my research.
- I will apply statistical rigor in designing my research and interpreting my findings and minimize bias.
- I will participate in teaching and mentoring others and disseminating scientific knowledge.
- I will respect the hard-won scientific gains of the researchers who contributed to my field of research by giving credit to others where it is due.
- And finally, I will take advantage of any and all opportunities outside of school that will help my community and/or I to flourish so that I can be a valuable member and role model to others in this Academy.

Expectations of Students*



LHS ASR students are expected to

- ✓ Punctually attend all classes and events.
- ✓ Adhere to district dress code
- ✓ Dress professionally for all in and out of school events
- ✓ Conform to the district wide attendance policy
- ✓ Work to the best of their ability when completing assignments
- ✓ Ask questions for clarification
- ✓ Be able to complete assignments independently and before deadlines
- ✓ Learn how to work outside their comfort zone so they can grow and challenge themselves
- ✓ Compete with themselves and not with others in the class
- ✓ Be involved
- ✓ Support all fundraising initiatives
- ✓ Attend ASR Club meetings after school
- ✓ Attend program sponsored field trips
- ✓ Participate in, and successfully complete, a summer science research internship
- ✓ Participate in regional and national science competitions
- ✓ Attend Academy Day Speaker events, Annual Science Symposium, LHS ASR Lab Coat Ceremony, and ASR Senior Graduation

***Students not meeting Academy Expectations will be removed from the program.**

ASR Calendar of Events 2023-2024*

October 12 @5:30 pm	Lab coat ceremony (sophomores/ juniors)
October 24	Climate Change Initiative Assembly with AOF (Period 2)
October 30th	Sophomore STEM Trip to Bear Mountain Bridge
November 8	Academy Day 1 – Seniors Presentation (Periods 2 &3)
December (TBD)	Candy Gram Fundraiser
January 10	Academy Day 2 (Period 2)
February 15	Joint Academy Fundraiser with AOF
March 13	Academy Day 3 (Period 7)
March 23 (Rain Date: March 30)	Eggstravaganza
April (TBD)	TBD (Picnic/ Academy Day)
May 22	Academy Day 4 (Period 7)
June 6th @ 5:30 pm	ASR Senior Graduation

*Trips will be added to this calendar throughout the year.

LHS Academy of Scientific Research
Important Competition Dates
2023-2024

October 13, 2023 (Friday)- WR-JSHS School Registration (Seniors):

Registration deadline for the Westchester-Rockland Junior Science and Humanities Symposium. Seniors may do PowerPoint or Google Slides only. Only winners in Regional will move to the state level.

November 8, 2023 (Wednesday)- STS Deadline @ 8 pm (Seniors):

Recommendations, Transcript, Application, and Final Paper submission date for Regeneron STS. Transcripts and recommendations must be received by Regeneron Science Talent Search. https://www.societyforscience.org/regeneron-sts/ https://sciencetalentsearch.fluidreview.com/

November 17, 2023 (Friday)- WR-JSHS Paper Submission (Seniors):

Deadline to submit papers to compete in JSHS with Powerpoint or Google Slides for competition day. https://www.albany.edu/uhs/science-research-program/upstate-ny-junior-science-humanities-symposium#tab-sub-regional-symposia

Mid-November 2023 – WESEF Registration (Seniors):

Online registration (in school) for the Westchester Science & Engineering Fair (WESEF). All WESEF/ISEF forms and the Research Plan will be submitted electronically via zFair.

Mid-December 2023- WESEF Regular Deadline (Seniors):

All WESEF forms, abstract, paper, entry fees due ($60 per student). All students with research results and a final paper may enter. The extended deadline typically costs another $100 so all students should strive to meet the regular deadline. www.wesef.org

January 20, 2024 (Saturday)- Westchester-Rockland JSHS Competition (Seniors):
8 am - 5 pm @ Yorktown High School. All participating students must stay for the ENTIRE TIME including the awards ceremony. Regional winners may qualify for the Upstate NY JSHS at SUNY Albany in March. Juniors and Sophomores can attend as observers.

March 15, 2024 (Friday)- WESEF Poster setup (Seniors):
@Somers High School. All students are required to set up their own posters in the evening.

March 16, 2024 (Saturday)- WESEF Competition (Seniors):
@Somers High School from 8-5 p.m. Full day for all students that are presenting their research. Freshman, Sophomores and Juniors are encouraged to come check it out during the public viewing time in the afternoon. Top winners go to the International Science and Engineering Fair (ISEF) in May OR Genius Olympiad in Rochester, NY in June.

March 21, 2024 (Thursday)- WESEF Awards ceremony (Seniors):
@ Somers High School at 7 p.m. Parents are invited.

2 days in March 2024- Upstate NY JSHS at SUNY Albany (Seniors): Seniors must win a spot at WR-JSHS to attend this fair at the state level and could qualify for National JSHS Spring 2024.

May 11th - 17th, 2024 – International Science and Engineering Fair
Weeklong poster competition for students who win a spot through WESEF
https://www.societyforscience.org/isef/

June 1, Saturday- Somers Science Fair (Sophomores/ Seniors (judges)):
@Somers High School 1-7 p.m. Sophomores must present a poster on their proposed research. All current sophomores must present their research via poster. All current Seniors must participate as a judge from 1pm-6pm.