The ASR Times

"The World is Our Laboratory"

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ASR STUDENTS GET A SPECIAL INVITE TO THE INTERNATIONAL BRIDGE CONFERENCE

By: Asher Varghese

The International Cable Supported Bridge Operators Conference (ICSBOC) 2024 was the premier international forum for bridge owners, professionals, and stakeholders in the cable-supported bridge community. This three day conference brought together industry leaders, senior administrators, suppliers, and key decision-makers from around the globe to network, collaborate, and exchange insights on best practices. The event featured thought-provoking presentations by top engineers who shared their expertise on bridge design and maintenance. One of the highlights for me was engaging in one-on-one discussions with an engineer, where we explored questions like, "How much does it cost to maintain a bridge?" and "How do you approach designing a bridge for a specific location?" These interactions added a personal touch, offering invaluable insights into the complexities of bridge engineering. Interactive sessions allowed students like me to ask questions and learn from experts in a hands-on environment. The trip to the International Bridge Conference at West Point was equally unforgettable. The sprawling campus offered breathtaking views, and the vibrant atmosphere fostered meaningful connections with professionals from diverse backgrounds. Hearing personal stories from engineers about their career journeys was inspiring and encouraged me to reflect on my aspirations. The presentations, the people, and the picturesque surroundings made this experience truly magical. ICSBOC 2024 wasn't just an event—it was an opportunity to gain knowledge, build connections, and envision a future in engineering.

AN ASR INTERNSHIP LEADS TO AN UNFORGETTABLE EXPERIENCE AT YELLOWSTONE

By: Alexander Hall

This summer, I had the privilege of embarking on an extraordinary adventure through Groundwork Hudson Valley, an organization I've proudly worked with for two summers. I was selected for an incredible nine-day trip to Yellowstone National Park as part of the Youth Conservation Corps.

During my time in the park, I joined other volunteers in constructing bear boxes to enhance safety for campers while protecting the park's fragile ecosystem. The work was physically demanding but deeply fulfilling, knowing our efforts made a tangible impact. Living in the heart of Yellowstone was a dream come true. Each morning, I woke up to the serenity of nature, surrounded by wildlife like bison, elk, and deer roaming freely in their natural habitats. In my downtime, I explored some of Yellowstone's most iconic landmarks, including the awe-inspiring Old Faithful geyser and the vibrant Grand Prismatic Spring.

This unforgettable experience combined hard work with breathtaking scenery, offering moments of reflection and connection with both nature and the incredible people I met along the way. My time in Yellowstone wasn't just an adventure—it was a lesson in teamwork, conservation, and the power of preserving our natural world.

I'll always be grateful to Groundwork Hudson Valley for making this once-in-a-lifetime opportunity possible. It's an experience that will stay with me forever.

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Principal

Mrs. Sunitha Howard
Director/ Instructor

Mr. Jonathan Morano
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Microplastics

By: Niveshka Serbia-Zayas

MICROPLASTICS ARE TINY PLASTIC PARTICLES SMALLER THAN 5 MILLIMETERS, FORMED FROM THE BREAKDOWN OF LARGER PLASTICS OR INTENTIONALLY MADE FOR PRODUCTS LIKE COSMETICS AND CLEANING AGENTS. THESE PARTICLES ARE FOUND EVERYWHERE—IN OCEANS, RIVERS, SOIL, AIR, AND EVEN HUMAN BLOOD. THEIR SMALL SIZE ALLOWS THEM TO BE INGESTED BY WILDLIFE, ENTERING THE FOOD CHAIN AND POSING RISKS TO ECOSYSTEMS AND HUMAN HEALTH. THEIR WIDESPREAD AND PERSISTENT PRESENCE MAKES MICROPLASTICS A SIGNIFICANT ENVIRONMENTAL AND HEALTH CONCERN.

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Exploring Narcissism: A Personal Research Journey

By: Paul Ennin

Narcissism, often associated with traits like self-entitlement, lack of empathy, and selfishness, is commonly misunderstood. While anyone can exhibit narcissistic traits, this differs from narcissistic personality disorder (NPD), where these traits form a persistent, lifelong pattern, often leading to severe social and mental health challenges. Individuals with narcissistic traits, unlike those with NPD, can develop empathy and humility. Fascinated by the concept, I began researching narcissism in 10th grade, driven by the idea that environmental factors, including cultural influences, might shape narcissistic tendencies. Guided by my mentor, Dr. Perpetua Neo, I developed a research plan to explore the prevalence and causes of narcissistic traits within Ghanaian culture. This project aims to shed light on how cultural practices influence self-perception and highlight the risks of unchecked narcissistic traits. By raising awareness, I hope to contribute to understanding and mitigating the impact of narcissism on individuals and society.

SUPPORTING ENVIRONMENTAL SUSTAINABILITY WITH GROUNDWORK HUDSON VALLEY

By: Shennaiya Rose

In the summer of 2024, I worked with Groundwork Hudson Valley (GWHV), a non-profit organization dedicated to fostering sustainable environmental change in urban neighborhoods. Collaborating with peers from Yonkers high schools, we tackled green infrastructure projects to improve local communities.

One significant project at Lincoln High School involved digging and refilling a 3x8 ft hole with gravel, fertilizer, and dirt to prevent urban flooding. We also worked at sites like Frederick P. Rose Preserve, setting up deer fences to protect native plants, clearing trash, and planting trees along the Saw Mill River. This hands-on experience allowed me to connect with others passionate about environmental sustainability while contributing to meaningful projects. Engaging in community-based work and educational outreach was rewarding, and seeing the tangible impact of our efforts underscored the dedication and teamwork behind each initiative. It was an unforgettable summer of growth and environmental advocacy.

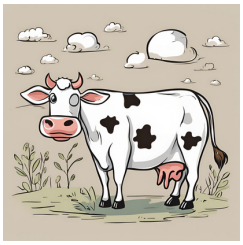
EXPLORING WATER TEMPERATURE AND PLANT GROWTH

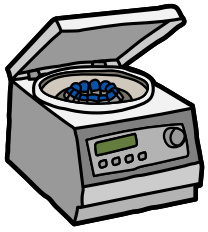
By: Jeidan Cruz

Hello, my name is Jeidan Cruz, a proud member of the Academy of Science and Research and President of the Asian Cultural Club. My ongoing research explores how water temperature impacts plant growth. Using a carefully designed setup with an aquatic water heater and aerator, I tested baby bok choy under varying water temperatures to observe the effects on growth and development. The results revealed that while higher temperatures spurred early growth, the plants eventually withered before reaching maturity, whereas cooler temperatures supported steady, thriving development throughout the experiment. These findings highlight the importance of temperature control in creating optimal conditions for hydroponic systems as well as the possible effects of Climate Change on plant growth. Building on this foundation, I' m expanding my research to test other plant species, each with unique growth patterns, to determine if similar trends persist. This work is not only a step toward understanding plant biology but also contributes to the advancement of sustainable agriculture and innovative growing techniques.

From Dairy to Discovery: The Evolution and Use of the Centrifuge

By: Jeovany Maldonado





Invented in 1864 by Antonin Prandtl to separate milk from cream, the centrifuge began as a simple tool for the dairy industry. Over time, it revolutionized other fields as scientists adapted it for their needs. For instance, Friedrich Miescher used a rudimentary centrifuge to isolate nucleic acids from white blood cells, a groundbreaking step in molecular biology. Today, modern centrifuges are indispensable in laboratories and industries alike. Operating one is straightforward: open the lid, place balanced tubes of solution into opposing holders, set the spin speed and timer using the knobs, and press start. The centrifuge locks automatically and spins, separating materials based on density. Once the cycle finishes, simply power off the machine, open the lid, and retrieve your samples. From research labs isolating DNA to oil and milk production, the centrifuge has proven to be a versatile and essential tool, driving innovation across countless fields.

ASR'S FACULTY FEUD DELIVERS THRILLS & SURPRISES

By: Geovany Grant & Jaesun Charles

The 2024 Faculty Feud at Lincoln High School drew an enthusiastic crowd to witness the staff's lively competition. The event featured the return of the only one Mr. Morano as the host, the 2023 champions and a new team, Century Honors, facing off against the 2023 runner-up, Credit Recovery. The opening match saw Century Honors fall to Credit Recovery after a promising start. Energized by their victory, Credit Recovery entered the finals as underdogs against Principal' s List. The final match was intense, with Credit Recovery dominating early on. However, a well-timed "steal" by Principal' s List shifted the momentum. From there, Principal' s List secured their win by relentlessly stacking up points and leaving Credit Recovery in the dust. The audience remained engaged throughout the evening, especially during the carefully curated movie by Mrs. Howard featuring Jason Perez and Michelle Villaronga. This exciting and collaborative event showcased Lincoln High' s spirited staff and left everyone eager for next year' s showdown.

VOLUNTEERING AT CURB TO SUPPORT MARINE LIFE RESEARCH

By: Logan Roman

During the summer of 2024, I volunteered at the CURB Bezack Center, contributing to seining and marine life research. From June 30 to August 23, I collected data every Tuesday through Thursday, catching various aquatic animals while wading in the river. I encountered fascinating creatures, including blue crabs, fiddler crabs, moon jellyfish, comb jellies, and even a baby striped bass. Highlights included catching two large yellow eels and caring for animals at the center, such as Chip, the diamondback terrapin, and Bruce, the snapping turtle. This hands-on experience allowed me to learn about local marine ecosystems and the importance of environmental conservation. Volunteering at CURB was a rewarding and educational way to spend my summer, offering unforgettable encounters with nature and the chance to contribute to meaningful research.

STARTING MY CANCER RESEARCH JOURNEY

By: Daniela Gonzalez

In November, I was accepted into the Memorial Sloan Kettering Science Enrichment Program, a valuable opportunity to explore cancer biology, pharmacology, and biomedical engineering. Through this program, I' m learning from top researchers, gaining hands-on experience, and developing a project with a mentor. I' m also enhancing my public speaking and presentation skills, while interacting with peers from various schools. This program has been incredibly informative, offering me a deeper understanding of cancer biology and research, and I look forward to learning even more throughout my experience.

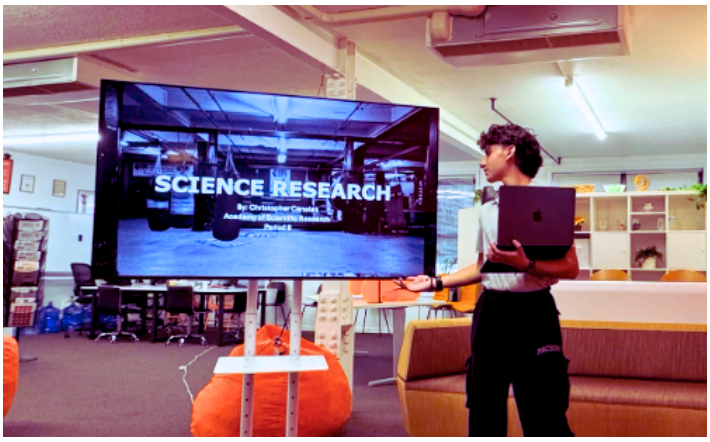
THE E.E.L.S. TEAM

By: Josue Carcamo

This past Fall I had the pleasure of being a part of the E.E.L.S team. Starting on the first of October until the middle of November, the internship taught me very valuable life skills that I will carry with me forever. Some of these skills include using Excel to sort out data efficiently, learning how to construct a resume, and being able to work in a team with new people. The E.E.L.S team spent many weeks seining in the Hudson River to gather data, as well as taking water samples and measuring the quality of the water in the river. The final few days of the Fall portion of the program we worked on coming up with our own projects as well as working with eDNA that we separated from water samples. We discussed how the various water parameters we measured could have affected the types of fish that we would see during our seining. Our best catch was a 20 cm eel (caught by me).

NETWORKING AND BUILDING CONNECTIONS

By: Christopher Canales



Over the past few months, I had the incredible opportunity to connect with Maria Alfaro, CEO and founder of One Paso. This inspiring experience marked the beginning of my journey into networking and public speaking. Through Maria, I also connected with the founders of WeArtOne1 and Brother2Brother, each offering unique insights into the power of networking. Maria is now mentoring me on my project about the effects of boxing on mental health, helping me refine key elements like consent forms and participant questions. This mentorship has opened countless doors and taught me the immense value of networking, especially in Yonkers. I'm grateful for the knowledge and experiences I've gained through these connections.

REGENERON PMPD

By: Anthony Peter

I had the opportunity to participate in Regeneron's two-week Preclinical Manufacturing Process and Development (PMPD) program, held at their Tarrytown facility. The program kicked off with an introduction to Regeneron's campus and panels featuring scientists who shared their career journeys. The focus of the program was on the crucial role of the PMPD division in drug manufacturing, covering everything from cell culturing to harvesting and purification. Through detailed talks and lab tours, we gained a hands-on understanding of the drug production process and the daily life of scientists. The experience was highly interactive, allowing us to ask questions and engage with experts. In addition to valuable learning, the program offered perks like free lunches and ice cream on Thursdays. On the final day, students presented a group project about the PMPD division. Overall, the Regeneron PMPD HS Rotational Talks program was an enriching summer experience, providing insight into the real-world application of science and a glimpse into a STEM career.

MY SUMMER OF CANCER RESEARCH

By: Samuel Rodriguez

This past summer, I had the incredible opportunity to participate in Memorial Sloan Kettering's Science Enrichment Program, a 10-month initiative aimed at inspiring underrepresented students to explore cancer research. Throughout my junior year, I attended oncology lectures, building knowledge that would support my summer research project. I worked in the Schultz Lab, focusing on computational biology and developing code to analyze genomics datasets from cBioPortal under the mentorship of bioinformatics engineer Ino de Bruijn. Presenting my results to scientists and interns was a highlight. Beyond research, I enjoyed fun events like the Ice Cream Social, which brought the MSK community together. The program not only helped me grow as a researcher but also introduced me to a lively, collaborative environment where my work felt impactful. This experience taught me that even seemingly small contributions, like bioinformatics data analysis, can make a big difference in healthcare, especially for underserved communities.

OVERCOMING DOUBTS: MY JOURNEY TO WESEF

By: Hector Sanchez

Entering my senior year, I believed science competitions were out of my league. I thought I wasn't ready for the challenge or stress. However, Ms. Howard, my teacher, always believed in me. Her encouragement sparked a drive I didn't know I had. When I began preparing for the Westchester Science & Engineering Fair (Wesef), I felt overwhelmed. College applications were piling up, and I didn't know where to start. Thankfully, my peers stepped in, offering advice and guidance that helped me navigate the process. With their support and Ms. Howard's continued encouragement, I completed my research paper, abstract, and all necessary forms. Though I wish I could have prepared more thoroughly, I'm proud to be participating in Wesef. Without the help of my peers and Ms. Howard, I would never have considered entering a science competition. This experience has been a valuable lesson in overcoming self-doubt and embracing new opportunities.

BEHIND THE SCENES: HOW TO PREPARE FOR ASR EVENTS

By: Nycole Popa

Preparing for events organized by the Academy of Scientific Research, such as Faculty Feud, selling candygrams, and the Student vs. Staff basketball game, requires a mix of creativity, teamwork, and organization. For events like Faculty Feud, it' s important to coordinate with other academy students and develop strategies to ensure the teachers have a fun and competitive experience. When selling candygrams, attention to detail is crucial. Promoting the event to students, ensuring all the money is accounted for, and delivering everything to the correct person are essential tasks.

For the Student vs. Staff basketball game, drafting teams, gathering suggestions from academy students, and preparing for a spirited and friendly competition are key to fostering team spirit and excitement.

In all cases, clear communication and planning weeks or even months in advance are essential. Ensuring everyone understands their roles contributes to the success of these fun and engaging events.

CODING FOR A CURE: MY SLOAN KETTERING EXPERIENCE

By: Abel Tom

This past summer, I had the incredible opportunity to participate in Memorial Sloan Kettering's HOPSEPP program, where I worked in the computational research sector focusing on colorectal cancer. Using data analysis and computational tools, I explored how gene mutations contribute to cancer growth, getting hands on experience in how technology drives breakthroughs in diagnosis and treatment. The supportive environment and passionate mentors made the experience even more rewarding, helping me develop skills like coding and data analysis while deepening my appreciation for STEM' s real world impact. This internship not only fueled my passion for science but also showed me how small contributions can lead to significant advancements in fields like cancer research. For anyone curious about science or technology, programs like HOPSEPP are a fantastic way to learn, grow, and make a difference in your community.

GROWING SOLUTIONS: A SUMMER FELLOWSHIP AT THE SCIENCE BARGE

By: Erick Hernandez

During my junior year, I received an incredible opportunity through the Science Barge Fellowship, a summer program at a floating urban farm and environmental education center in Yonkers. The fellowship allowed participants to design their own projects. I chose to focus on developing a method to grow russet potatoes (Solanum tuberosum) using widely available resources to address global food challenges. Under the guidance of my mentors, Joel and Zoe, I conducted two trials. My first attempt failed to yield results, but after researching, I switched to organic potatoes for a second trial, which proved successful. The process taught me the importance of persistence and problem-solving in scientific exploration.

At the end of the fellowship, I presented my findings alongside fellow participants, gaining valuable insights from their projects. This hands-on experience deepened my passion for agriculture and sustainability, sparking a desire to continue exploring solutions to global challenges.

TESTING THE WATERS: RESEARCHING ENTEROCOCCUS IN THE HUDSON RIVER

By: Liban Abeed

My fascination with Enterococcus faecalis began during my research internship with Sarah Lawrence CURB's Blue Team. Enterococcus is a fecal indicator bacterium used to assess the presence of harmful pathogens like E. coli and Legionella. In Yonkers, it plays a critical role in determining if the Hudson River is safe for human interaction.

After my internship, I conducted independent research to explore the relationship between Enterococcus levels and environmental factors such as rainfall, temperature, turbidity, and pH. My findings revealed that rainfall significantly increases Enterococcus counts, indicating a higher prevalence of harmful bacteria. This means it's best to avoid the Hudson River during and after rainfall—waiting at least two days is a safer choice.

This research not only deepened my interest in microbiology but also highlighted the importance of using science to inform community safety. I encourage readers to seize every research opportunity that comes their way. You might uncover a new passion or even make a meaningful impact in your community, just as I did through my work on the Hudson River.

PROTECTING THE HUDSON: A SUMMER WITH CURB'S BLUE TEAM

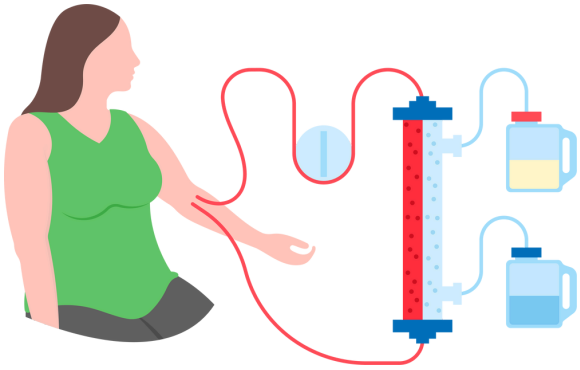
By: Dwayne Leslie

This summer, I had the privilege of participating in a 6-week paid internship with the Center for Urban River at Beczak (CURB) as part of their Blue Team. Our mission was to monitor the Hudson River's water quality, with a focus on measuring levels of enterococcus, a gut bacterium from warm-blooded animals that enters the river through sewage overflow. Three times a week, we collected and analyzed water samples, adding enteroalert powder to feed the bacteria and incubating the samples to detect enterococcus levels. Using UV light to analyze the byproducts, we determined whether the river was safe for activities like swimming and kayaking. At the end of the internship, we organized a community event featuring activities like tie-dying and seining to share our findings. We informed attendees that the river was generally safe unless heavy rainfall caused combined sewer overflow (CSO), significantly increasing bacterial levels. To combat this, we encouraged reducing water usage during storms and collecting rainwater.

This experience not only deepened my understanding of environmental science but also allowed me to contribute to raising awareness about protecting the Hudson River, making a meaningful impact on the community.

An Overview of Dialysis

By: Aanyaa Prakash



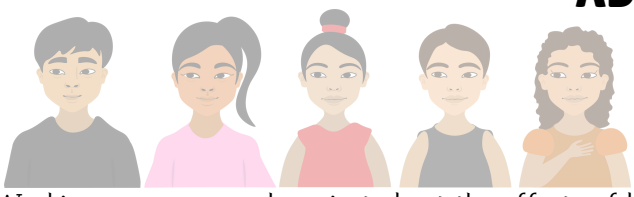
The kidneys, although one is enough to live, are a vital pair of organs that exist within the human body. The kidneys are essentially the filters of your body. They remove waste and extra fluid from the blood, keeping your body healthy and clean. When a person's kidneys don' t work, it can be extremely dangerous. A buildup of toxins in the blood can be massively toxic and lethal. Aside from a transplant, dialysis can be a very efficient way to remove toxins and waste from the blood. Dialysis is a process where blood is passed through a semi permeable tubing in a solution of electrolytes and a nonelectrolyte (dialysis fluid), where toxins are removed via diffusion and ions are diffused into the blood.

Some important facts:

- Over 93,000 Americans are on the kidney transplant waiting list
- More than 550,000 Americans are on dialysis
- Estimated 35.5 million Americans have kidney disease

DISCOVERING CONNECTIONS: BIRTH ORDER AND MENTAL HEALTH IN ADOLESCENTS

By: Angelic F. Baez

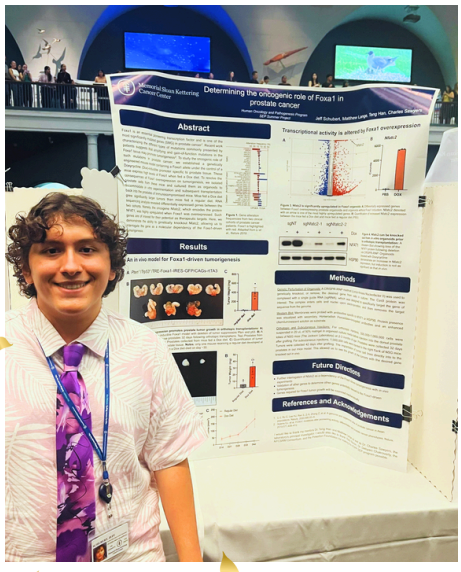


Working on my research project about the effects of birth order on mental health in adolescents was both challenging and rewarding. To explore this topic, I created an anonymous survey for college students aged 18-22, asking about their relationships with parents and siblings. Analyzing the data using ANOVA testing in Dataclassroom proved to be a steep learning curve. I initially struggled to interpret the results correctly. Fortunately, my mentor, Dr. Sneider from Harvard, provided invaluable guidance, helping me understand complex concepts and offering encouragement. Her support motivated me to persevere through the difficulties.

By the project' s end, I gained insights into family dynamics and mental health, while also learning important lessons about resilience and the importance of seeking help when needed. This experience not only expanded my knowledge but also strengthened my confidence as a researcher and a student.

FROM TEXTBOOK TO REAL- LIFE IMPACT

By: Jeff Schubert



This past summer, I had the incredible opportunity to intern at Memorial Sloan Kettering, a leading cancer research institute, where I worked in a wet lab conducting hands-on research. The experience brought my AP Biology coursework to life, transforming textbook topics like cell signaling into fascinating, real-world applications. My project focused on the role of the Foxa1 gene in cancer development, revealing how seemingly straightforward cellular processes can be disrupted by mutations, leading to uncontrolled cell division. It was inspiring to see how professional researchers tackle complex questions in oncology and to contribute to work that has real-world implications. This experience cemented my passion for research and the STEM field. Witnessing science transition from the pages of a textbook to active discovery motivates me to continue learning and strive to make a meaningful impact in the future.