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SCITECH NEXUS

AUGUST 4, 2024

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WELCOME LETTER

Dear Parents and Students,

Welcome to the SciTech Nexus 2024: STEM and Start-up Festival!

We are thrilled to invite you to a day filled with innovation, exploration, and creativity. This festival is designed to inspire young minds like yours to explore the exciting worlds of Science, Technology, Engineering, Mathematics (STEM), and Entrepreneurship.

This year's event, themed "*Non scholae sed vitae*," translates to "*We do not learn for school, but for life.*" This powerful message encapsulates the essence of our mission: to promote intellectual collaboration among students and foster a vibrant community of mentorship and support.

Throughout the day, you will have the opportunity to engage in a variety of activities:

- **Interactive student exhibits:** Dive into cell biology, robotics, coding, biotechnology, and more through actual projects from your peers of different age groups.
- **Networking:** Engage with top industry professionals and learn from their insightful experience. These interactions will provide the latest trends and opportunities in science and technology, helping you to build a professional network that can support your career aspirations.
- **Mentorship:** Our robust mentorship network will guide, support, and inspire you on your educational journey. This invaluable mentorship will provide insights, encouragement, and practical advice, helping you navigate challenges and achieve your goals.

We believe that education extends far beyond the classroom. It is about equipping ourselves with the knowledge, skills, and networks to thrive in all aspects of life. Our event is designed to create an environment where students can collaborate, innovate, and learn.

We encourage you to take full advantage of the resources and opportunities available during SciTech Nexus. Ask questions, share your ideas, and build lasting relationships. Remember, this is not just about academic achievement; it's about preparing for the challenges and opportunities that life will present.

Thank you for being a part of this exciting journey. Together, we can create a community that celebrates learning for life and not just for school.

Regards,
Garima Rai
Founder & CEO onlinechalk



PROGRAM

10:00 AM - 11:00 AM: Registration and set up by participants

11:00 AM - 11:30 AM: Round 1 judging

11:30 AM - 12:00 PM: Welcome ceremony

- Welcome remarks by Garima Rai, Founder & CEO, onlinechalk
- Program overview by:
 - Sanika Devare (Sophomore, University of Maryland)
 - Aditya Mehra (Project Manager & Tutor for Immigrant Families)

12:00 PM - 1:30 PM: Student oral presentations (round 2 judging)

- Health
- Technology
- Environment
- Business

1:30 PM - 2:00 PM: Snack break

- Networking opportunity
- Visit startup booths and interact with exhibitors

2:00 PM - 2:30 PM: Young entrepreneurs invited presenters

- Shreya Papneja (Pre-med student, NIH intern, Founder & CEO CHAPS)
- Pragna Nidumolu (High school senior, Environment advocate, Founder & CEO at NetZeroBeauty)

2:30 PM - 3:20 PM: *From Passion to Profession: Stories of Growth & Learning*, Invited speakers

- Rupali Deshmukh, US Army veteran & panel moderator
- Divya Joshi, MIT alumni & retired Indian Airforce Fighter pilot
- Shashank Patel, Oxford, NIH & Georgetown alumni, Cell therapy expert
- Kristina Han, Harvard & Duke alumni, Founder Learnadu

3:20 PM - 4:00 PM: Closing ceremony

- Award distribution
- Closing remarks by Garima Rai, Anurag Gupta & Vijay Walia



STUDENT PRESENTERS

Name	School	Project
Myra Walia	Walkersville Elementary School	Solving Food Problems for Indian-American Pregnant Moms in US
Saanvi Singhal	Dunloggin Middle School	Slime entrepreneurship venture
Devesh Sai Damalacheruvu	Manor Woods Elementary School	Help robot for seniors/disabled people
Avyukth Kasukurthi	Marriotts Ridge High School	The Effect of Radiological Machines on Brain Cancer
Shaiv Patel	Green Valley Elementary School	AI driven Formulation of Organic Weedicides for Lawn-care
Chahel Muvva	Green Valley Elementary School	AI driven Formulation of Organic Weedicides for Lawn-care
Akshara Challa	Green Valley Elementary School	AI driven Formulation of Organic Weedicides for Lawn-care
Alekhya Hota	James Madison school	Autism/ASD research project
Varun Jayaprakash	Marriotts Ridge High School	Reusable cutlery



STUDENT PRESENTERS

Name	School	Project
Gloria Godji	Fairfax Christian School	YummyBites: Food and nutrition app
Emma Godji	Fairfax Christian School	YuummyBites: Food and nutrition app
Hansikadevi Vegesna	Mt. Hebron High School	Travel app : TravelGenieAI
Shiv Papneja	Langley High School	US Defense Project/Prototype
Vihaan Joon	Whittier Elementary School	Smart Heart Guardian: A Cool Gadget That Can Save Lives
Rafia Mohammed	Centennial High School	Bacterial Sepsis
Shreyas Cherekar	Marriotts Ridge High School	Moisture sensing hands free umbrella
Avani Wadadekar	Atholton High School	Psychological effects of secondary cancer
Arjav Gupta	Cabin Branch Elementary School	CB Events: Building a platform to celebrate community events
Riya Rajagopalan	Edison Magnet School	Life at Hand: Emergency App for Senior Citizens
Rudransh Singh Mehra	Mc Nair Upper elementary school	Bridging Gaps: Tech for all



OUR TEAM

- Chair
 - Garima Rai, Founder & CEO onlinechalk LLC
- Co-Chair:
 - Vijay Walia, PhD MBA, ex-FDA, Industry, Harvard Business School alumni
- Event Coordinator:
 - Anurag Gupta, Founder CB Events
- President
 - Sanika Devare, Sophomore B.S. Bioengineering, University of Maryland - College Park
- Judges and Mentors:
 - Ani Dutta, Founder & CEO, IT Industry & Executive Golf Coach
 - Tanmay Nath, PhD, Industry
 - Divya Joshi, MBA, Industry
 - Shikha Joon, PhD, Scientist
- Associate Mentors:
 - Gopal Abbineni, PhD, ex-FDA, Medical Devices, and Regulatory Science (Virtual Mentor)
 - Kuldeep Wadhwa, PhD - Chemistry Expert and Mentor (Virtual Mentor)
- Expert Speakers:
 - Divya Joshi, MBA, MIT alumni & ex-fighter pilot
 - Shashank Patel, Oxford, NIH & Georgetown alumni, Cell therapy expert
 - Kristina Han, Harvard & Duke alumni, Founder Lernadu
 - Rupali Deshmukh, Army Veteran, Mentor, Leadership coach



FOUNDER

Garima Rai, Founder & CEO onlinechalk



Garima Rai is the Founder & CEO of onlinechalk, where she envisions revolutionizing personalized coaching for students. With responsibility for strategic development, technology integration, and educational innovation, Garima has transformed onlinechalk into a trusted and invaluable resource for students, parents, and educators worldwide. Before founding onlinechalk, Garima built her expertise in the educational technology sector, working with various companies to hone her skills in strategic business development and digital learning solutions. Her profound understanding of the challenges and opportunities within the modern educational landscape has driven the success of countless students globally. Garima's strengths lie in her creativity, drive, and leadership. She thrives on tackling challenges that expand the company's reach and enhance its offerings. One of her most significant achievements includes the development and implementation of an AI-driven personalized tutoring system, which has resulted in a substantial improvement in student performance and engagement. Recognized for her outstanding achievements in the field of education technology, Garima is a frequent and highly-rated speaker at industry conferences, podcasts and is deeply committed to community service. She is dedicated to mentoring students, aspiring business professionals and actively engages in initiatives that inspire the next generation to explore STEM fields. Garima holds a master's degree in Microbiology. She lives in Maryland with her family. In her free time, Garima enjoys hiking and participating in local tech meetups.

LinkedIn Profile: <https://www.linkedin.com/in/garimarai1/>



PRESIDENT

Sanika Devare, Bioengineering Sophomore Student | University of Maryland |
Women in Engineering Mentor



Sanika Devare is a sophomore Bioengineering student at the University of Maryland, College Park, as a part of the University Honors program within the Honors College. She moved from India at age 8 and now calls Howard County home. Sanika's passion for STEM began early, leading her to receive the STEM Award from Johns Hopkins Applied Physics Lab in high school and the Girl Scouts Gold Award project, Memory Through Music, featured in the Baltimore Sun.

In High School, she was a section leader in the marching band, participated in First Tech Challenge robotics, and co-founded her high school's ukulele club to showcase her leadership and diverse interests. At the University of Maryland, she is active in the Society of Women Engineers and is a mentor for the Women in Engineering Program, guiding students as they navigate their freshman year.

Sanika's professional journey includes a year-long internship as a medical assistant at Dr. Ruth Agwuna's Pediatric and Adolescent Medicine, and she continued this role during her college breaks. Currently, as a STEM Initiatives Development Intern at onlinechalk, she organizes and markets STEM events for youth, combining her love for STEM with leadership and marketing skills to create impactful experiences.

Beyond academics, Sanika serves as a puppy sitter for FIDOS for Freedom at UMD, raising service dogs. Her ultimate goal is to specialize in prosthetics or tissue engineering, aiming to enhance lives through healthcare innovation.



EXPERT SPEAKER

Shashank J Patel, PhD | Biotechnology Executive | Immunology Expert | Cell Therapy Innovator | Mentor | Investor



Education: University of Oxford, Georgetown University & National Institutes of Health, The Wharton School

With over two decades of pioneering work in the Biotechnology industry, Shashank J Patel stands out as a leader in immunology and cell therapy. Currently at the forefront of cutting-edge research and development, Shashank's contributions have significantly advanced our understanding and application of immune system modulation and cellular treatments. Dr. Patel's expertise is underscored by his role in developing novel therapies that harness the body's own immune system to combat diseases. His innovative approach to cell therapy has paved the way for breakthroughs in treating various forms of cancer and autoimmune disorders, cementing his reputation as a visionary in the field. Beyond his professional accomplishments, Dr. Patel is deeply committed to giving back to his community. As a dedicated mentor for the Gujarati community, he provides guidance and support to young professionals, helping them navigate the complexities of the biotechnology sector. His passion for mentorship extends to his efforts in motivating the next generation of innovators. Dr. Patel actively promotes STEM education and entrepreneurship among youth, inspiring them to explore careers in science and technology and encouraging them to develop the skills necessary to launch their own startups. Through his work and community involvement, Dr. Patel exemplifies the fusion of scientific excellence and altruism, continually pushing the boundaries of biotechnology while fostering a culture of learning and innovation.

LinkedIn Profile: <https://www.linkedin.com/in/shashankjpatel-biotechexec>



EXPERT SPEAKER

Divya Joshi, MBA | Women Empowerment Advocate | STEM and Startup Mentor



Education: Massachusetts Institute of Technology

Divya is a seasoned global BD professional and data strategy expert. She leads data partnerships and strategy at ThoughtWorks. She also opened the US market for a Turkish Startup, led partnerships and negotiated with C-level executives of India's top companies and policy makers for Uber, and was part of the inaugural batch of women officers at Indian Air Force. She has presented papers and was published at International data conferences. She is part of the MIT CIO symposium organizing committee, and served as President of MIT Club, Delhi. At present she is the Board Member and VP of Programs at MIT Club of DC. She holds an MBA from MIT Sloan School of Management.

LinkedIn Profile: <https://www.linkedin.com/in/divya-joshi-2014>



EXPERT SPEAKER

Kristina Han | Harvard & Duke alumni | Founder Lernadu



Education: Harvard University, Duke University, Johns Hopkins School of Advanced International Studies

Kristina Han graduated from Harvard University with dual concentrations in East Asian Studies and Government. She began her career as an Investment Banker at JP Morgan before obtaining a joint degree from Duke Law School and Johns Hopkins School of Advanced International Studies (SAIS). Her specialization in conflict resolution and international policy led her to diverse roles, including corporate lawyer at Skadden Arps, private intelligence consultant at Kroll, and in-house counsel for TPG, one of the world's largest private equity firms. Most recently, Kristina founded Lernadu, an innovative daily check-in system that equips parents and educators with actionable insights into students' unique learning profiles and needs, while fostering essential self-management skills in students. Kristina's mission is to empower students to take control of their learning journeys, while providing impactful tools for educators and parents to support their development.



EXPERT SPEAKER

Rupali Deshmukh | Army Veteran | Mentor | Leadership coach



Rupali is an army veteran with three tours of duty to Afghanistan, Iraq, and Kuwait. After her career in armed forces, she transitioned into talent acquisition as a profession. With 17 years of military, recruiting, and leadership experience spanning various industries, including government, IT, pharmaceuticals, manufacturing, and consulting, Rupali brings a wealth of expertise to her role as a talent acquisition program manager. Her dedication to diversity and inclusion in recruiting is commendable. Born and raised in Uttar Pradesh, India, she now resides in Olney, MD with her husband and daughter, balancing her professional life with a passion for cooking and travel.



STUDENT SPEAKER

Pragna Nidumolu | High School Senior | Environment Advocate | CEO NetZero Beauty



Pragna has dedicated herself to promoting environmental awareness and sustainable practices since a young age. At 14, she founded EcoTeens, an organization empowering youth for a greener tomorrow. Through EcoTeens, Pragna showcases diverse voices globally via her podcast, "Green Stories," highlighting efforts and perspectives in environmental stewardship. Pragna leads the "Million Voices" campaign, advocating to keep plastic bottle caps on for better recycling. This campaign raises awareness about proper plastic waste management and encourages proactive steps towards sustainability. Her commitment and impact earned her the title of "America's Top 18 Under 18" by Congressman Danny Davis. Pragna has facilitated three global sustainability summits, featuring speakers from over 21 countries. As CEO of NetZero Beauty, a sustainable cosmetics line, Pragna merges her entrepreneurial drive with eco-conscious practices. Additionally, she is an accomplished Kuchipudi dancer, with over 12 years of training. A two-time TEDx speaker and performer, Pragna shares insights on corporate sustainability and youth empowerment. She serves on the board of Youth About Business and is President of the TEDx club at Freedom High School. Her influence extends to various conferences, including Agile 2023, where she was the youngest speaker. In May 2024, she will speak at the National Leadership Conference hosted by Business Professionals of America, highlighting her commitment to sustainable business practices.



STUDENT SPEAKER

Shreya Papneja | Pre-med candidate | NIH intern | CEO and Founder of CHAPS



Shreya Papneja is an undergraduate student at George Washington University (GW) with an intended major in Neuroscience and double minors in Psychological Brain Sciences and Philosophy. She serves as a National Director for the American Lung Cancer Screening Initiative (ALCSI) and the President of the GW Chapter of ALCSI. She is also the Founder and Chief Executive Officer of a non profit: Community Health Awareness Program in Schools (CHAPS). Ms. Papneja is a Clinical Research Assistant in the Division of Thoracic Surgery at Massachusetts General Hospital and in the Washington Congenital Heart Program, Department of Cardiology at Children's National Hospital. She strives to increase accessibility of preventative healthcare services in her community, especially among the most vulnerable populations.

Linkedin: <https://www.linkedin.com/in/shreya-papneja-633218168/>



MENTOR

Vijay Walia PhD, MBA | Medical Diagnostics Expert | Community Mentor | STEM and Startup Advocate



Education: Southern Illinois University, Reynold's Business School, Harvard Business School

Vijay Walia is a distinguished professional in the field of medical diagnostics, bringing over 25 years of expertise to his role in advancing healthcare technologies. His career is marked by significant contributions to the development and implementation of cutting-edge diagnostic tools that have transformed patient care and disease management. Vijay's work in medical diagnostics has been instrumental in improving the accuracy and efficiency of disease detection and monitoring. His leadership in the industry has led to the innovation of numerous diagnostic solutions that are now integral to modern healthcare. These advancements have not only enhanced patient outcomes but have also set new standards for diagnostic practices worldwide. In addition to his professional achievements, Vijay is a passionate mentor dedicated to supporting the Haryanvi communities. He actively engages with community members, offering guidance and encouragement to young professionals and students aspiring to enter the medical and scientific fields. His mentorship is characterized by a commitment to nurturing talent and helping individuals achieve their full potential. Vijay's dedication to fostering the next generation of innovators extends to his advocacy for STEM education and entrepreneurship. He is a fervent supporter of initiatives that inspire children and young adults to explore careers in science, technology, engineering, and mathematics. By promoting startup activities and entrepreneurial thinking, Vijay helps equip young minds with the skills and confidence needed to embark on their own ventures and contribute to future technological advancements. Through his exceptional work in medical diagnostics and his unwavering support for community and youth development, Vijay Walia exemplifies the ideal blend of professional excellence and societal contribution. His efforts continue to make a lasting impact on both the healthcare industry and the communities he serves.

LinkedIn Profile: <https://www.linkedin.com/in/waliavijay/>



MENTOR

Tanmay Nath, PhD - Scientist | Data Science Leader | Business Strategist



Tanmay Nath is a distinguished data science and machine learning leader, and startup advisor with a Ph.D. in computer science. A seasoned business strategist, Tanmay possesses a rich background in driving corporate growth and innovation across various industries, including healthcare, marketing, and technology. His extensive experience has endowed him with a keen understanding of market dynamics, operational efficiencies, and strategic planning. Tanmay's expertise lies in creating robust business models, optimizing performance, and leading transformative initiatives that deliver sustained value. His professional journey is marked by impactful roles in both established corporations and startups, where he is renowned for his analytical approach, strategic mindset, and unwavering commitment to excellence. Beyond his professional achievements, Tanmay is a dedicated mentor who actively engages with aspiring business professionals, offering guidance, support, and insights to help them excel in their careers. His mentorship has been instrumental in shaping the careers of many young professionals, providing them with the tools and confidence needed to succeed. Tanmay is also passionate about motivating the next generation to explore the field of data science. He frequently speaks at educational institutions and community events, inspiring children and young adults to develop an interest in data science. Through workshops, seminars, and hands-on activities, he encourages students to pursue careers in this rapidly evolving field, emphasizing the importance of data literacy in the modern world. With his exceptional work in business strategy, his commitment to mentoring, and his efforts to inspire young minds in data science, Tanmay Nath stands out as a leader and role model. His contributions continue to make a significant impact on both the business world and the community, fostering a culture of innovation and empowerment.

LinkedIn Profile: <https://www.linkedin.com/in/tanmaynath/>



MENTOR

Shikha Joon, PhD - Scientist | STEM Advocate | Science Ambassador



Dr. Shikha Joon is a dedicated and accomplished postdoctoral fellow at the National Cancer Institute, NIH, in Frederick, MD. She earned her Ph.D. in Biotechnology from the University of Delhi, India, in 2018. Dr. Joon has an impressive scientific portfolio, having authored and co-authored over 25 publications in areas such as microbial pathogenesis, diagnostics and therapeutics, and cancer biology.

Currently, Dr. Joon's research focuses on understanding the mechanisms of virus entry into cells and the strategies viruses use to evade the immune system. Her ultimate goal is to develop innovative oncolytic virus therapies for cancer treatment, leveraging her extensive knowledge and expertise to make significant strides in this cutting-edge field.

Beyond her professional achievements, Dr. Joon is deeply committed to mentoring and empowering women in the Haryana community. She actively supports and guides women in their academic and professional pursuits, helping them overcome challenges and achieve their goals. Additionally, she is passionate about motivating children to explore STEM (Science, Technology, Engineering, and Mathematics) and entrepreneurial activities, inspiring the next generation of innovators and leaders.

With a passion for advancing cancer research and a commitment to scientific excellence and community empowerment, Dr. Shikha Joon continues to contribute valuable insights and advancements to the medical and scientific communities while making a positive impact on society.



MENTOR

Ani Dutta Director Of Information Technology at Maryland State Department of Assessments and Taxation



With over 30 years of IT experience spanning financial, health, and telecommunications sectors, Ani is a renowned executive coach, Technical Architect, and Thought Leader. His impressive portfolio includes collaborations with prestigious clients like IRS, Freddie Mac, Capital One, NIH, Veterans Affairs, and FDA. Ani excels in accelerating clients' Digital Transformation with his expertise in Agile, Low Code Automation, API, RPA, and AI technologies. His versatility as a technology veteran is unmatched in the industry. Beyond his professional endeavors, Ani is a dedicated golfer and coach empowering students online and in the DMV area to achieve their golfing aspirations.



ASSOCIATE MENTORS

Gopal Abbineni, PhD - Expert in FDA, Medical Devices, and Regulatory Science (Virtual Mentor)

Education: University of Oklahoma, National Cancer Institute, Food & Drug Administration (former)
Gopal Abbineni is a distinguished professional in medical devices and regulatory science, making significant contributions to the industry. With a background in biomedical engineering and regulatory affairs, he ensures the safety and efficacy of medical devices, advancing public health through rigorous standards and innovative practices.

Throughout his career, Gopal has played a key role in evaluating and regulating various medical devices, shaping policies that protect patient health and foster innovation. He is also a dedicated mentor to the Vizag community, guiding aspiring professionals in the medical device industry. Gopal frequently speaks at educational institutions and community events, inspiring students to explore careers in regulatory science.

His past work at the FDA and current industry contributions, coupled with his commitment to mentoring and inspiring future leaders, highlight his leadership and innovation in regulatory science. His efforts significantly impact public health and the careers of those he mentors.

LinkedIn: <https://www.linkedin.com/in/gopal-abbineni-b2702ab/>

Kuldeep Wadhwa, PhD - Chemistry Expert and Mentor (Virtual Mentor)

Education: Iowa State University, Indian Institute of Technology - Delhi

Dr. Kuldeep Wadhwa is a distinguished chemist with profound expertise in chemical science. His career is marked by significant contributions through research, publications, and innovative work, impacting both academic and industrial spheres. Dr. Wadhwa has developed novel solutions and methodologies, advancing various chemical disciplines. His numerous publications and recognition from the scientific community reflect his dedication to excellence. Beyond his professional achievements, Dr. Wadhwa is a dedicated mentor to the Punjab community, providing invaluable guidance to aspiring chemists and young professionals. His mentorship has fostered a new generation of talented chemists making their mark in the field. He is passionate about inspiring the next generation to pursue careers in chemistry, engaging with children and young adults through workshops, talks, and hands-on activities. Dr. Wadhwa's exceptional work in chemistry, commitment to mentoring, and efforts to motivate young minds highlight his leadership in the field. His contributions continue to advance chemical science while inspiring future scientists to explore and innovate.

LinkedIn Profile: <https://www.linkedin.com/in/kuldeep-wadhwa-05610a30>



ASSOCIATE MENTORS

Hemank Walia, MD - Medical Doctor and Mentor (Virtual Mentor)

Dr. Hemank Walia is a highly respected medical doctor known for his dedication to patient care and medical education. With extensive clinical experience, Dr. Walia specializes in comprehensive medical care, using the latest advancements to improve patient outcomes. His commitment to excellence is evident in his thorough and compassionate approach.

Dr. Walia has made significant contributions to patient care and medical research, participating in numerous clinical studies and publishing articles in reputable medical journals. His work spans various medical disciplines, showcasing his broad and deep understanding of healthcare complexities. Beyond his clinical achievements, Dr. Walia is a passionate mentor for the Punjab community, guiding aspiring medical professionals and helping them succeed in their careers. He actively engages with students through workshops, seminars, and mentorship programs, encouraging them to pursue medicine and strive for excellence.

Dr. Walia's exceptional work in medicine, dedication to mentoring, and efforts to inspire future medical professionals highlight his qualities as a compassionate doctor and dedicated mentor. His contributions significantly impact his patients and the broader community, fostering a culture of excellence in healthcare.

LinkedIn: <https://www.linkedin.com/in/dr-hemank-walia-40b647140>



ASSOCIATE MENTORS

Mansa Saxena - PhD candidate, Economist and Mentor (Virtual Mentor)

Education: Yale University, Northwestern University

Mansa Saxena is a distinguished economist with deep expertise in economic theory, policy analysis, and financial modeling. Her career, marked by impactful research and strategic insights, has significantly contributed to both academic and professional communities. Mansa's work spans a broad range of economic issues, from macroeconomic trends to microeconomic behaviors, offering valuable perspectives that inform decision-making and policy development.

With advanced degrees in economics and extensive experience in teaching and research, Mansa has published numerous papers in esteemed journals and been involved in high-level projects addressing critical economic challenges. Her analytical skills and ability to interpret complex data make her a sought-after expert in her field. Beyond her professional accomplishments, Mansa is a passionate mentor for the Uttar Pradesh community, dedicating her time to guiding individuals through the complexities of economic studies and career paths. Her mentorship has empowered many young professionals to achieve their academic and professional goals. Mansa is also committed to motivating the next generation to explore economics and aspire to prestigious Ivy League programs. Through workshops, seminars, and mentorship programs, she actively engages with students, encouraging them to develop a keen interest in economics and pursue academic excellence. Her efforts inspire students to aim high and take advantage of opportunities at top-tier institutions. With her exceptional work in economics, dedication to mentoring the Uttar Pradesh community, and efforts to inspire students towards academic excellence, Mansa Saxena exemplifies the qualities of a leader and role model. Her contributions significantly impact the field of economics and the lives of those she mentors, fostering a culture of knowledge, ambition, and success.

LinkedIn: <https://www.linkedin.com/in/mansasaxena>



ASSOCIATE MENTORS

Aryendra Shrivastava, MD - Psychiatrist, Wilson Medical Center (Virtual Mentor)

Dr. Aryendra Shrivastava is a highly skilled psychiatrist practicing at Wilson Medical Center. With a deep commitment to mental health and well-being, he dedicates his career to diagnosing, treating, and supporting individuals with various psychiatric conditions. His compassionate approach ensures that each patient receives personalized and effective care. Dr. Shrivastava's journey in psychiatry includes extensive training and experience. At Wilson Medical Center, he collaborates with a multidisciplinary team to provide comprehensive mental health services, ranging from medication management to therapeutic interventions. His thoughtful and evidence-based approach to treatment highlights his dedication to his patients and the field of psychiatry. In addition to his clinical responsibilities, Dr. Shrivastava is a passionate mentor for the Uttar Pradesh community. He offers guidance and support to individuals pursuing careers in the medical field, helping many young professionals navigate the complexities of medical education and training. He frequently speaks to children and young adults about the importance of pursuing careers in medicine, particularly in psychiatry, aiming to cultivate future healthcare leaders. Through his work in psychiatry, mentorship, and community engagement, Dr. Aryendra Shrivastava exemplifies the qualities of a compassionate and committed healthcare professional, making a significant impact on both his patients and the broader community.



ASSOCIATE MENTORS

Divya Bhutiani, PhD, MBA - Business Advocate (Virtual Mentor)

Dr. Divya Bhutiani is a distinguished professional with expertise in both business and chemistry, making her a notable figure in her fields. With a PhD in Chemistry and an MBA, she seamlessly bridges the gap between scientific principles and business acumen. Her extensive experience spans academia, research, and corporate management, driving significant advancements and strategic initiatives. Dr. Bhutiani's career is marked by dedication to innovation and excellence, contributing to numerous research projects and publications. Her ability to translate complex scientific concepts into practical business strategies has been key to her success in both scientific and corporate settings. Beyond her professional achievements, Dr. Bhutiani is a passionate mentor for the Punjab community, providing guidance and support to help individuals succeed in their academic and professional endeavors. Her mentorship has empowered many young professionals to pursue their goals with confidence.

Dr. Bhutiani is also committed to inspiring the next generation of chemists. She engages with children and young adults, motivating them to explore chemistry through educational initiatives, workshops, and mentorship programs, encouraging students to consider it as a rewarding career path. With her exceptional work in business and chemistry, dedication to mentoring the Punjab community, and efforts to inspire young minds, Dr. Divya Bhutiani exemplifies the qualities of a leader and innovator. Her contributions significantly impact chemistry and business, while her mentorship and advocacy efforts inspire future generations to explore and excel.

LinkedIn Profile: <https://www.linkedin.com/in/divya-bhutiani-ph-d-mba-ccmp-2b078b16/>



PARTICIPANT AND PROJECT

Myra Walia

School: Walkersville Elementary School, 2nd Grade



Helping Indian-American Moms with Food: My "Framiles" App

This project is about helping Indian-American moms in America who are having babies. Sometimes, these moms find it hard to cook because they are busy with work, feel sick, or don't know how to make Indian food. They also travel a lot, which makes cooking difficult. Some moms ask their dads or grandparents for help, or use special apps to plan meals. But not everyone has someone to help right away or knows how to use these apps. To fix this problem, I thought of making a new app called "Framiles." This app will help moms get help from their friends and family. Everyone can plan meals together, share recipes, and even send food to the moms. This way, moms can eat healthy Indian food even when they are busy or feeling tired during pregnancy. The "Framiles" app will make it easier for Indian-American moms to meet other Indian families, make new friends, get the food they need, stay healthy, and take care of their babies.



PARTICIPANT AND PROJECT

Gloria Godji and Emma Godji

School: Fairfax Christian School, 3rd and 5th Grade



Meet YummyBite, a super cool app just for kids and teenagers like us! YummyBite is like a friendly robot that helps you pick the best foods to eat and makes sure you're getting all the good stuff your body needs.

Here's how it works: You tell YummyBite what you eat every day, and it shows you colorful charts and pictures to help you see if you're eating enough fruits, veggies, and other healthy foods. YummyBite also gives you fun tips and tasty recipe ideas to try. Plus, it can remind you to drink water and snack on something healthy instead of junk food.

With YummyBite, eating right is easy and fun. You can even earn badges and rewards for making good choices! So, let's get started on our yummy, healthy adventure together with YummyBite!



PARTICIPANT AND PROJECT

Avyukth Kasukarti

School: Marriotts Ridge High School, 9th Grade



The research is about how radiation from radiological machines like CT machines increase the risk factor of getting brain cancer. This is because these machines release ionized radiation, which can alter a cell's DNA and turn it into a cancer cell. Though CT scans do not release high levels of radiation, repeated use of these machines can lead to a high risk of cancer. Patients with hydrocephalus, pulmonary thromboembolic disease, renal colic, and cardiac disease, who are readily receiving these amounts of radiation are at risk for brain cancer. On the other hand, research done on the effects of age, gender, and race coupled with ionized radiation on the brain did not yield enough evidence to say that these factors played a role in increasing the chances of brain cancer. Other experiments done on the effects of ionized radiation on the human brain proved that ionized radiation is a confirmed environmental cause of brain cancer. Although radiation from these radiological machines has minimal chance of causing disabilities, they still have a chance of causing a patient to have lower intellectual levels in education and employment, and a bad physicality. This shows diagnostic imaging as the cause of cancer. Other options for scanning are available as MRI scans offer imaging without the use of radiation. But this scanners come with their own problems. MRI machines are dangerous if patients have metal in their body. Also the machine requires very minimal moving so people with claustrophobia would have problems with the machine. Another option would be the fUSI which uses ultrasound to image the neurological pathways within the brain. A problem with fUSI is that the frequency of tumor cells can be misinterpreted by the machine, making it not work sometimes. Researchers are still working in the machine though, so it may provide a safer alternative than CT and MRI scans.



PARTICIPANT AND PROJECT

Rafia Mohommed

School: Centennial High School

Bacterial sepsis is a life-threatening condition that arises when the body's response to an infection injures its tissues and organs, and it mainly affects newborns, pregnant women, and seniors. Despite advancements in sepsis management, the prognosis for patients surviving sepsis remains poor, with overall mortality rates remaining seemingly unaffected, because of the lack of adequate data on this topic and a long-term cure. Sepsis is a leading cause of death globally, with 48.9 million cases and 11 million sepsis-related deaths reported in 2020, but there are challenges in collecting reliable data at the population level. My research focuses on a new invention to aid in sepsis management by providing early recognition and intervention, potentially saving many people, especially seniors, and providing reliable data to support research. This new wearable band would monitor health indicators like heart rate, breathing rate, temperature, and urine output. It connects to a mobile app, which notifies the user or their caretaker about their health status. The app uses different colors to indicate the severity of symptoms, and in emergencies, the band illuminates red to alert the wearer. The device exclusively tracks bacterial sepsis and notifies hospitals when medical assistance is needed. I believe this invention will significantly impact sepsis management in seniors and contribute to a better understanding of the condition for the future. This invention has the potential to save lives through earlier recognition of symptoms, support research efforts on long-term prevention of this disease, and inform future policies for the protection of vulnerable groups.



PARTICIPANT AND PROJECT

Alekhya Hota

School: James Madison High School, 9th Grade



Understanding Autism Spectrum Disorder (ASD) through Neuroimaging and Phenotypical Analysis involves leveraging open-source datasets such as ABIDE to analyze resting-state functional magnetic resonance imaging (fMRI) data. This study aims to explore differences in functional connectivity networks between individuals with ASD and neurotypical controls.

This research is about analyzing the differences in functional connectivity between individuals with Autism Spectrum Disorder, and neurotypical controls through fMRI data. The methodology of this research is data acquisition, data preprocessing, functional connectivity analysis, statistical analysis, and correlation analysis. The data will be acquired from open-source databases and select data sets that include individuals with ASD and neurotypical controls that are the same age, gender, and share other relevant factors. The expected outcomes of this research are identifying specific brain regions showing altered functional connectivity, insights into the relationship between functional connectivity patterns and clinical features, and learning and contributing to the existing body of work on the neural correlates of ASD.



PARTICIPANT AND PROJECT

Avani Wadadekar

School: Atholton High School, 12th Grade



This research aims to investigate psychological effects of secondary cancer in patients, and to assist them with their everyday challenges and obstacles. As cancer is a very difficult process for one's physical well being, it is also a tough journey for one's mental health. The mental health of a cancer patient is often overlooked due to the mass amount of physical changes that one goes through as they undergo treatment. Anxiety, depression, post traumatic stress disorder, loneliness, and an overall fear of recurrence are all common mental health disorders that many cancer patients go through, and none of them should be left unnoticed. Mental health can be a very tricky problem to solve, yet it is very much possible. In order to assist and support cancer patients a portal or community can be created in order for patients to feel a sense of belonging. This is where something as simple as a *Facebook Group* can come in. With the simple "test round" of a Facebook group researchers are able to see how different cancer patients interact with this kind of platform. Once the *Facebook Group* gains more support, the platform can be switched to an app style application. Although some apps already contain a similar concept for a support system, a group support style platform is all that their app serves. With the idea of bettering the future of patient support in mind, the app Thrive to Survive allows patients to not only communicate with other patients and past cancer survivors but also, have readily accessible resources, a 24/7 AI "therapist", and virtual workshops led by experts.



PARTICIPANT AND PROJECT



Devesh Sai Damalacheruvu

School: Manor Woods Elementary School, 2nd Grade



Meet the "Help me Bot," your super cool robot buddy. This awesome robot can zoom around the house and bring you stuff, like your favorite snack or a cozy blanket. It's like having a robot helper all the time! But that's not all—it's also a superhero against bad guys. If someone tries to sneak in, the "Help me Bot" will scare them away. It knows how to do CPR, which is like giving super special hugs to help people breathe again! If something scary happens, it calls the hospital for help right away. This robot is perfect for grandparents who live by themselves or anyone who doesn't have their family nearby. It's like having a best friend who's always ready to help with chores or make sure you're safe. Imagine a robot that helps you and keeps you company—it's the coolest! "Help me Bot" is not just a robot; it's like a hero friend for your home.



PARTICIPANT AND PROJECT



Shiv Papneja

School: Langley High School, 10th Grade



Self-assessment checklists are used in the Air Force to evaluate the internal controls of each unit, ensuring they meet the required standards. However, Air Force regulations are often modified, and the manual creation of these checklists has been inefficient and time consuming. Air Force workers and regulators spend roughly hundreds of hours a month on going through these checklists and making sure that they are in question format. The objective of our research was to build a tool to address this inefficiency by going through an Air Force regulation document and extracting key sentences which contain keywords "shall", "will", and "must", and phrasing them in question format so they can be checked off. Going by the name of FlightList, our product aims to liberate Air Force workers who have to manually create these lists and allows them to put their time and energy on tasks which require more man power. We hope that this prototype can be integrated into the Air Force to make the process of turning regulations into checklists more efficient.



PARTICIPANT AND PROJECT



Hansika Vegesna

School: Mount Hebron High School, 9th Grade



Introducing Tour Genie AI, the ultimate travel companion for exploring the 50 states of the USA. Whether you're a family on vacation, a solo adventurer, or celebrating a special milestone, our app leverages advanced artificial intelligence to craft personalized itineraries that cater to your unique interests and preferences. Discover the breathtaking beauty of national parks, the vibrant culture of tourist cities, and the charm of hidden gems across the country with ease. Tour Genie AI simplifies the planning process, providing seamless and comprehensive travel solutions to ensure every trip is unforgettable. From suggesting must-visit landmarks to offering insider tips on local attractions, our app enhances your travel experience, making exploration effortless and enjoyable. With Tour Genie AI, embark on a journey tailored just for you, creating memories that last a lifetime. Explore the USA like never before, with a travel companion that understands your desires and turns your travel dreams into reality.



PARTICIPANT AND PROJECT



Riya Rajgopalan

School: Edison Magnet School, 9th Grade



As our population ages, it's essential to develop new technology to help people manage their health. Life At Hand is an app designed to assist with this, focusing on accessibility and simplicity, and modeled after the New Jersey COVID Tracker App. It emphasizes ease of use for senior citizens who may not be tech-savvy, making health checks more manageable with daily two-minute tests to monitor abnormalities and improve overall health. The app's main feature is a daily two-minute symptom tracker that offers an overview of one's health. If abnormalities like chest pains or trouble breathing are reported, the app connects users to certified health professionals and provides doctors with a historical symptom report. It includes resources, additional testing, and a logbook accessible to doctors. The app also features basic cognitive tests, such as the MiniCog dementia screening, and sends reminders for lab tests, medications, and sugar readings.

The expected outcome is increased adherence to testing and medication, leading to longer, healthier lives for users. The app is suitable for everyone from older teenagers (with parental assistance) to the elderly. Ultimately, Life At Hand aims to help doctors work more efficiently with senior patients, enhancing overall health and lifespan.



PARTICIPANT AND PROJECT



Shreyas Cherekar

School: Marriotts Ridge High School, 12th Grade



Hydrophobic Hat : Advancing Hands-Free All-Weather Protection

The complexities of modern life present diverse challenges, from physical disabilities to the demands of daily activities, often compromising mental and physical health. Innovations such as the umbrella, which originated 4,000 years ago, were originally used as parasols in ancient civilizations and later adapted for rain protection. However, traditional umbrellas are not universally suitable, particularly for individuals with physical impairments or those requiring hands-free solutions.

Introducing a revolutionary, hands-free approach to weather protection: the Hydrophobic hat. Equipped with a moisture sensor, it activates telescopic umbrella ribs upon detecting precipitation, deploying a protective canopy. This design is particularly advantageous for individuals with disabilities, such as Parkinson's Disease, brachial monoplegia, who may find conventional umbrellas challenging. It also offers practical benefits for everyday users, including busy parents, sports spectators, and professionals seeking convenience.

Currently in the developmental phase, the Hydrophobic Hat requires further refinement for commercial viability. Key improvements involve enhancing the durability and attachment of the canopy material, developing a robust yet aesthetically pleasing design to shield electronic components, and increasing the reliability of rib deployment. Future enhancements may include



PARTICIPANT AND PROJECT



Vihaan Joon

School: Whittier Elementary School, 4th Grade



Let me tell you about the Smart Heart Guardian. It's a really cool wristband that helps keep your heart healthy. It's like a super-smart watch that can tell if your heart is in trouble. The wristband has special sensors and smart computer stuff inside that checks your heartbeat all the time. If your heart starts acting funny, like it might have a problem, the Smart Heart Guardian lets you know right away by vibrating and showing a warning on its screen. But that's not all! It also sends a message for help to your family and doctors, telling them where you are and what's happening with your heart. This way, they can come help you super fast. This amazing gadget makes sure you're always safe by watching your heart closely. It can even save your life by getting help to you quickly if something goes wrong with your heart.



PARTICIPANT AND PROJECT



Chahel Sritej Muvva, Akshara Challa, Shaiv Patel

School: Green Valley Elementary School, 4th Grade



AI driven Formulation of Organic Weedicides for Lawn-care Imagine nice green plantations, blooming flowers, dense green grass turf, chirping birds and buzzing honeybees representing a perfect landscape! Everyone likes and enjoys a beautiful landscape around our homes. When we saw our parents putting weedicides in the lawn and the signs in the neighborhood that says: "Do not enter the lawn due to chemical treatments", we questioned "Are these weedicides safe for other plants, birds, animals and insects that make up the environment?"

When we researched this topic on the internet, we found that weedicides are indeed damaging. Environmental damage including dirtying the sources of water, messing up the ecological cycles and also human health problems can result from weedicide (herbicide) uses.

We came together as a trio-team to take the challenge to find the solution to this problem. With the help of artificial intelligence (AI) technology, we are developing a formulation derived from natural ingredients that would effectively remove weeds without harming precious nature. Our mission is to bring back the balance and harmony of nature and human activities by minimizing the harm to the ecosystem.



PARTICIPANT AND PROJECT



Varun Jayaprakash

School: Marriotts Ridge High School, 10th Grade



Plastic pollution is a big issue in the world because lots of plastic waste ends up in landfills and oceans every year. The purpose of my project is to reduce the amount of plastic items that we use which would decrease the amount of plastic waste we see in the environment. Banana peels can be turned into a biodegradable plastic that will remove plastic waste from the environment. The new plastic that we are adding will break down naturally which will help reduce plastic waste and its harmful effects on the environment. The plan to use banana peels as biodegradable plastic is first researching and picking out the best way to turn banana peels into bioplastic. Next, we can collect banana peels and process them to then test if they work as bioplastic. After that, we can change the bioplastic product to make it the most effective it can be. Finally, we can have a plan to add banana peels as bioplastic into industries and have it produced in multiple places. The outcome of banana peels as bioplastic is expected to result in a biodegradable item which gets rid of plastic. The outcome we hope for, using banana peels as bioplastic, is to reduce the plastic waste in oceans and landfills. By using banana peels, we hope to have a significant reduction in plastic waste in the environment which leads to pollution. Having the new idea of banana peels as bioplastic will provide a safe environment for everyone to live in and it will also be healthy for the environment. With the use of banana peels as bioplastic, we can also lower production costs and also create new income for banana farmers.



PARTICIPANT AND PROJECT



Saanvi Singhal

School: Dunloggin Middle School, 6th Grade



"Slime Till You Dye" is an innovative slime business that addresses common issues with traditional slime products by offering a mess-free experience. This business provides customizable birthday kits, themed slime packages, and unique features that set it apart from other slime products on the market. Our aim is to make slime fun and accessible for everyone, while minimizing the mess typically associated with it.

By creating a line of mess-free, customizable slime products and offering unique birthday kits and themed packages, "Slime Till You Dye" will appeal to a wide range of customers, from children to slime enthusiasts. This approach will increase customer satisfaction and brand loyalty. "Slime Till You Dye" will become a popular choice for parents and children looking for a fun, mess-free slime experience. The customizable options and themed packages will make our products ideal for parties and gifts. The business will see increased customer satisfaction, leading to higher sales and brand loyalty.

"Slime Till You Dye" benefits humanity by providing a fun, creative activity for children that minimizes mess and stress for parents, offering customizable products that cater to individual preferences and needs, promoting safe and non-toxic materials, ensuring the safety of children and the environment, creating a new niche in the slime market, setting a standard for mess-free, customizable slime products.

While there are many slime products available, "Slime Till You Dye" is unique due to its mess-free formula and wide range of customizable options. Unlike traditional slime, our product is designed to be easy to clean and safe for all ages. The customizable birthday kits and themed packages provide added value, making our slime a perfect choice for parties and special occasions. This comprehensive approach to slime products sets "Slime Till You Dye" apart from other businesses in the market.



PARTICIPANT AND PROJECT



Arjav Gupta

School: Cabin Branch Elementary School, 3rd Grade



CB Events LLC, located in Clarksburg, Maryland, is a distinguished non-profit community based events management organization committed to delivering exceptional experiences through a wide range of engaging events. Emphasizing community involvement and cultural celebrations, CB Events organizes a diverse array of activities, from vibrant festivals and holiday events to specialized STEM (Science, Technology, Engineering, and Mathematics) educational programs. Our events are designed to inspire and educate participants, particularly young learners, by providing immersive environments that showcase their talent, latest innovations and technologies. These events aim to ignite curiosity and foster a passion for STEAM among attendees of all ages. By promoting educational opportunities and cultural understanding, CB Events strives to make a positive impact within the community. With a dedicated team of professionals and volunteers, CB Events meticulously plans and executes every detail to ensure memorable and successful events. Their commitment to community enrichment and excellence in event management has established them as a trusted partner in the DMV region. The team at CB Events ensures that each event is tailored to match the community's specific needs and desires, resulting in unique and memorable experiences. They celebrate a wide range of cultural and festive occasions, from Diwali to Easter egg hunts, and have recently added unique events like cricket matches to their portfolio. This dedication to creating outstanding and memorable experiences makes CB Events a preferred choice for event planning.



PARTICIPANT AND PROJECT



Rudransh Singh Mehra

School: McNair Upper Elementary School, 4th Grade



The vision for our NGO: "bridging gaps: Tech for All" is to establish a nonprofit organization that will provide free coding classes to the younger generation in impoverished countries and refugees in the USA and make them job ready. This endeavor seeks to bridge the digital divide, offering opportunities for education and skill development to those who need it most.

We will be using low cost computing devices such as Raspberry Pi and BBC Microbit with python programming language for teaching coding and other computer science topics.



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CB Events is a non-profit organization specializing in diverse, engaging events with a focus on community involvement and cultural celebration. They organize festivals, holiday events, and STEM education initiatives to inspire and educate young learners, promoting curiosity and a love for science and technology.

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