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2014 SIEMENS COMPETITION IN MATH, SCIENCE & TECHNOLOGY

RUCHI PANDYA
Lynbrook High School, San Jose, California
HOMETOWN: Saratoga, California
PROJECT: Development of a Carbon Nanofiber Electrode Based Biosensor for Cardiac Health Diagnostics
FIELD: Biotechnology/Chemistry
MENTORS: Dr. Jessica Koehne, NASA Ames Center for Nanotechnology (Mountain View, California); Mrs. Amanda Alonzo, STEM Research Coordinator, Lynbrook High School (San Jose, California)

"I am fascinated by the interdisciplinary and collaborative nature of STEM. Scientists and engineers in labs frequently collaborate with researchers from multiple disciplines to develop useful and innovative products for society."

Combining nanotechnology, biology and electrochemistry, Ruchi's research has the potential to improve cardiac health diagnostics by requiring small biological samples – only a single drop of blood – to test for specific cardiac biomarkers. The device, a one-square centimeter carbon nanofiber electrode based biosensor, has the potential to transform cardiac diagnostics for patients around the world, just as the insulin test has done for diabetes patients.

Ruchi, a senior at Lynbrook High School in San Jose, California, takes her passion for STEM education beyond the lab by mentoring 9th and 10th grade students on research and engineering as a teaching assistant for her school's STEM class. She has competed at the California State Science Fair every year, and has won 18 category and special awards for scientific research. Ruchi has served as an officer on her school's student government and as a Youth Board Member for the Santa Clara County Water District. She has also served on the City of Saratoga's Youth Commission, representing the youth community. In addition to playing the piano and basketball, she enjoys participating in a competitive folk dance team that performs at charity events. After graduation, Ruchi intends to major in materials science and engineering, and hopes to pursue a career as a technology entrepreneur.

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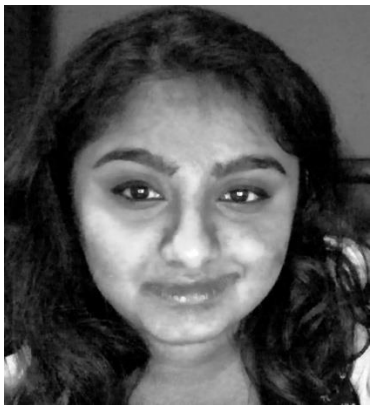
2014 SIEMENS COMPETITION IN MATH, SCIENCE & TECHNOLOGY

SHAKTHI SHRIMA, Homeschooled, Austin, Texas
JACOB GUREV, Mira Loma High School, Sacramento, California
ADAM FORSYTH, Georgetown Day School, Washington, D.C.
PROJECT: Metacommutation of the Hurwitz Integers and the Projective Line Over F_p
FIELD: Mathematics
MENTOR: Dr. Henry Cohn, Massachusetts Institute of Technology (Cambridge, Massachusetts)

For their project, Jacob, Shakthi and Adam characterized unique factorization in the Hurwitz integers by using methods taken from projective geometry. Their results have possible applications in cryptography, and in quantum field theory. Ultimately, their research showed that a problem about factorizing certain kinds of numbers was equivalent to a problem in geometry.

SHAKTHI SHRIMA

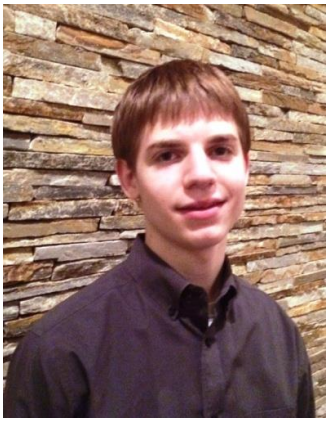


HOMETOWN: Austin, Texas

"There is no language without an alphabet; in a way, doing pure mathematics is a bit like working with the alphabet. The possibilities for applications are endless."

Shakthi is a senior in her home school program in Austin, Texas. Her favorite subject is mathematics, citing that it is rewarding in this discipline to find old concepts 'almost winking at me from new places.' She is an alumnus of the PROMYS program and of the Iowa Young Writer's Studio. Additionally Shakthi will be a presenter at the 2015 Joint Mathematics Meetings. She is a 2015 YoungArts Finalist in Poetry, was awarded a National Latin Exam Gold Medal and is an avid Carnatic vocalist. Following her college education, she would like to pursue number theory, and to have a career in academia someday.

JACOB GUREV
HOMETOWN: Sacramento, California



"My interest in STEM began with math contests, which later developed into devouring math textbooks and seeking research ideas. For that reason, I will be a lifelong competition supporter, because they are a great way to inspire future mathematicians."

As a junior at Mira Loma High school in Sacramento California, Jacob enjoys solving problems, particularly those that involve math, as it gives him the chance to think of his own techniques and also requires insight and creativity. Jacob received an invitation to the Math Olympiad Summer Program (MOP) where he made the Selection Team of candidates for the upcoming 2015 U.S. International Math Olympiad team. He is a two-time winner of the U.S. Department of Energy National Science Bowl, and a member of an American Regions Mathematics League (ARML) team that has placed 1st and 2nd nationally. He helps run several mathematics competitions for middle and elementary school students throughout northern California. He is an avid skier, and the President of his school's math club. He hopes to work as a mathematician some day in the future.

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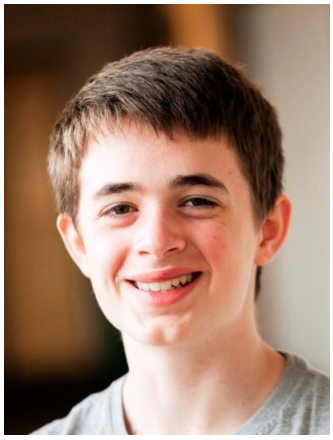
ADAM FORSYTH



HOMETOWN: Washington, D.C.

"I do mathematics because I enjoy the process of picking it apart and figuring out how it fits together—and, more importantly, because I enjoy the thrill I get when I discover the beauty in its structure."

As a senior at Georgetown Day School in Washington, D.C., Adam enjoys mathematics 'not simply because it is useful, but because it is beautiful in its own right.' In addition to studying mathematics on his own and participating in the Program in Mathematics for Young Scientists (PROMYS) he is heavily involved with his school's student theater program, as well as its philosophy club. Adam also helps co-teach a computer science course after school at his high school and will be presenting at the Joint Mathematics Meetings in 2015. As a middle-child, Adam first uncovered his interest in science from his father who is a biologist. He hopes to work as a professor one day in the future.

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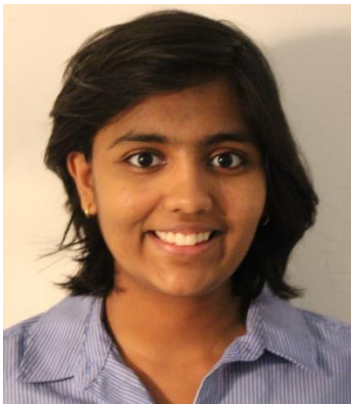

ANVITA GUPTA
BASIS Scottsdale, Scottsdale, AZ
HOMETOWN: Scottsdale, AZ
PROJECT: A Novel Method of Targeting Intrinsically Disordered Proteins for Drug Discovery: Application to Cancer and Tuberculosis
FIELD: Biochemistry
MENTOR: Dr. Gil Alterovitz, Assistant Professor of Pediatrics, Harvard Medical School and MIT (Boston, Massachusetts)

"My interest in math and science was piqued by playing with and learning to program LEGO Mindstorms robots that I received for my birthday. It led me down a path to learning visual programming in middle school and then teaching myself eight more languages after."

Anvita's computational project used machine learning algorithms to find promising drugs for diseases such as cancer and tuberculosis. She developed a way to rank these possible leads for certain molecular targets, chosen for diseases with intrinsically disordered proteins. These proteins make up 70 percent of all cancer proteins and are implicated in Alzheimer's, tuberculosis, and Ebola. A timely discovery, considering this research can be applied to find potential antivirals to combat the recent Ebola outbreak. The computer science and bioinformatics behind Anvita's project could lead the way to new potential drugs that treat various diseases.

A senior in high school, Anvita's favorite subject is organic chemistry because she is fascinated by how the reactions and atomic mechanisms of these tiny molecules can support the variety and diversity of life in the universe. She is founder and leader of a computer science program for middle school girls (LITAS),sponsored by the National Center for Women and Information Technology (NCWIT), as well as founder for Rang De international youth chapter, a microfinance nonprofit. When not hitting the books, she interns at Phoenix Computer Academy to help unemployed individuals re-enter the workforce. Her recent accolades include: National Merit Semifinalist National Center for Women and Information Technology Aspirations in Computing National Award Winner, AZ State Science Fair Grand Prize Winner, and Governor's Future Innovator of the Year Award Winner. She is a Gazette Journalist & Published writer in Bloom, Arizona's book of Best Teen Writing, recipient of the Scholastic Art and Writing Gold Key Award. Anvita plays basketball and volleyball, in addition to being a competitive diver and swimmer. She also plays the guitar and piano. She aspires to be an entrepreneur, working at the frontier of biology and computer science. Ultimately, Anvita aims to establish a pharmaceutical company to make drugs more affordable and effective for those affected by fatal diseases all around the globe.

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2014 SIEMENS COMPETITION IN MATH, SCIENCE & TECHNOLOGY

ELI ECHT-WILSON, La Cueva High School, Albuquerque, NM
ALBERT ZUO, La Cueva High School, Albuquerque, NM
PROJECT: A Detailed Computational Model of Tree Growth
FIELD: Biology
MENTOR: Dr. Sean Hammond, University of New Mexico (Albuquerque, New Mexico)

Eli and Albert created a computer model that simulates how a tree will grow in varying conditions, which can replace long planting experiments. It can be used to optimize tree plantations, a common way of reducing our carbon footprint. Maximizing the efficiency of tree plantations will be one step among many to slow down and stop the increasingly urgent problem of climate change that the whole world faces today. The duo first approached this project from a computer science standpoint because trees are interesting to model. Later, after they had taken a few weeks of AP Biology, they decided to extend this model to have biological accuracy.

ELI ECHT-WILSON
HOMETOWN: Albuquerque, NM

"I strive to find applications of machine learning for not only scientific problems but also everyday challenges that affect the entire world."

As a senior in high school, Eli admires Rafael Nadal for his hard work, dedication and ethics in both victory and defeat. Channeling this drive, Eli's research in biology is interesting and innovative because it combines the biological and physical principles of trees with computer modeling. Eli serves as spokesman for the New Mexico Supercomputing Challenge. He is also an AP computer science mentor and volunteer website designer. He has been awarded the Botanical Society of America's "Best Student Physiological Paper" and has completed ten AP classes. In his spare time, Eli plays the ukulele and guitar, performs magic, and plays both tennis and soccer.

ALBERT ZUO HOMETOWN: Albuquerque, NM

"I like making the world a more interesting place. Stuff that we used to see only in science fiction can now become a reality"

As a senior in high school, Albert has developed a passion for mathematics. He uses his passion to help coach Mathcounts for middle school children in Albuquerque, New Mexico. He keeps an open mind, explaining that inspiration can come from anywhere, at anytime, from anyone. When he is not conducting award-winning research, Albert is playing tennis or chess. He is fluent in two languages. He placed third at the Intel Science and Engineering Fair and has previously been awarded the Botanical Society of America's "Best Physiological Research Presentation." He's pondering his options when it comes to his future career path, but for now, he's excited that innovations previously relegated to the realms of science fiction are increasingly becoming our reality.

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2014 SIEMENS COMPETITION IN MATH, SCIENCE & TECHNOLOGY

PETER TIAN
The Wellington School, Columbus, OH
HOMETOWN: Hilliard, OH
PROJECT: Extremal Functions of Forbidden Multidimensional Matrices
FIELD: Mathematics
MENTOR: Jesse Geneson, Ph.D. Candidate, Massachusetts Institute of Technology (Cambridge, Massachusetts)

"I am most passionate about mathematics and its applications to science and engineering. It is inspiring to see that something as intricate as math can both explain and be applied to our natural world."

Peter's project makes significant advancements in the theory of pattern avoidance for higher dimensional matrices. His project may have applications to computing the shortest rectilinear path among obstacles in space. This in turn has potential applications to motion planning in space or circuit design. His work also extends a number of known results, and advances areas of pure mathematics. Within mathematics, his project has a direct application to hypergraphs and it also has potential applications to other areas of combinatorics and computational geometry.

From tessellations to the Fibonacci Numbers, Peter, a senior in high school, has demonstrated commitment to advancing knowledge about patterns and pure math concepts by co-founding his school's math club. Apart from his research, Peter runs for the cross-country team, plays alto saxophone, and volunteers at the Center of Science and Industry. Recent accolades include making it into Cum Laude Society and the Harvard Prize Book. Additionally, he is a Research Science Institute scholar and Mathematical Olympiad Summer Program attendee. Peter intends to become a professor of mathematics, his favorite subject.

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2014 SIEMENS COMPETITION IN MATH, SCIENCE & TECHNOLOGY

DAVID WU, Troy High School, Troy, MI
XINCHU TIAN, Troy High School, Troy, MI
PROJECT: Exosomes Derived from Mesenchymal Stromal Cells Promote Axonal Growth
FIELD: Biology
MENTOR: Dr. Michael Chopp and Dr. Yi Zhang, Henry Ford Hospital (Detroit, Michigan)

David Wu and Xinchu Tian led research into the delivery of therapeutics via extracellular vesicles known as exosomes. They found that by engineering exosomes to deliver treatments they could improve axonal growth, which can help with the recovery of many neurological diseases and disorders, such as stroke and traumatic brain injury.

DAVID WU
HOMETOWN: Troy, MI

"I was inspired to do work in this field because of the potential impact our work could have. Many neurological diseases and disorders have severe detrimental effects and impact a large portion of the population."

David loves biology and learning about how life works. Inspired by the severe, detrimental effects that neurological diseases have on a large portion of the population, David investigated extracellular vesicles called exosomes in collaboration with his fellow student, Xinchu Tian. As a junior, David's research uncovered how these structures could be exploited as potential therapeutics for neurodegenerative diseases or injuries. David found that by engineering these structures to carry specific cargo for delivery to nerve cells, this cargo could trigger re-growth in these cells. Apart from his research, David spends his time playing piano and the violin. He plans on becoming a doctor one day, specializing in cardiothoracic surgery.

XINCHU TIAN
HOMETOWN: Troy, MI

"I remember the first time I 'met' neurons. The room was dark, only the neurons were shining in bright fluorescent color under the microscope. The mystery cells that hold the key to human brain functions were right there in front of me. They held a breathtaking beauty. To me, it looked like I was looking down on New York City's lights. The feeling that I can help the recovery of these cells is amazing."

Xinchu has been drawn to STEM since an early age. Her passion helped fuel her scholarship-winning research on extracellular vesicles called exosomes in collaboration with her fellow student, David Wu. As a junior in high school, Xinchu's findings uncovered potential therapeutics for neurodegenerative diseases or injuries – discovering a way to engineer structures to carry cargo to nerve cells to trigger re-growth in cells. When Xinchu is not conducting research on biological sciences, she is also actively participating in her school's Biology Competitions Club and Science Olympiad teams. She also plays the viola in her school's symphony orchestra, is fluent in French, helps run a quiz bowl at a local middle school and plays tennis. In the footstep of her family members, Xinchu plans to pursue a career in medicine.

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2014 SIEMENS COMPETITION IN MATH, SCIENCE & TECHNOLOGY

JAY ZUSSMAN
Great Neck South High School, Great Neck, New York
HOMETOWN: Great Neck, New York
PROJECT: Zip1 C-Terminal Phosphorylation Promotes Zip1-Sgs1 Interaction in Meiotic Cells
FIELD: Biochemistry
MENTOR: Dr. Nancy Hollingsworth

"I'm fascinated by the concept that detailed scientific research can yield discoveries that improve human quality of life. Successful communication of these groundbreaking developments is integral to improving healthcare."

Jay has always been fascinated by the way existing complex life gives rise to new life. Wanting to both improve his understanding of meiosis as well as the proper gamete formation, or sex cells, to assist with the eradication of karyotypic diseases in humans, he worked on a project in which he discovered a novel protein-protein interaction in meiosis that could help circumvent errors in human gamete formation. By studying the formation of sex cells in a yeast model, he discovered a failsafe mechanism that could go so far as to prevent human infertility and genetic disorders. Understanding molecular interactions in human meiosis is key to developing prophylactic treatments to help prevent severe human genetic disorders including Down Syndrome, Patau Syndrome, Edward's Syndrome, and others.

Jay is a senior at Great Neck South High School in Great Neck, New York, and cites biology as his favorite subject in school. He's taken college level courses at Columbia University already as part of the Science Honors Program. He is inspired by the idea of protecting human life and providing for a better future. He is a two-time semifinalist in the United States Biology Olympiad, two-time 2nd place winner at the WAC Invitational Science Fair, and captain of his school's National Science Bowl team. Beyond that, he's the Barber Coordinator of his school's annual St. Baldrick's Head Shaving Fundraiser for childhood cancer research. A former swimmer and athlete in lacrosse, Jay balances out his athletic skills with musical talent. He plays the saxophone, ukulele, guitar, bass and drums. An accomplished clarinetist, he has performed at New York's Carnegie Hall three times. He would like to work as a Physician one day in the future.

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2014 SIEMENS COMPETITION IN MATH, SCIENCE & TECHNOLOGY

WILLIAM CRUGNOLA, Jericho Senior High School, Jericho, New York
EKATERINA (KATIE) MAZALKOVA, Valley Stream Central High School, Valley Stream, New York
PROJECT: Aortic-Derived Mesenchymal Stem Cells: A Novel Target for Atherosclerosis Treatment
FIELD: Biology
MENTOR: Dr. Jodi Evans, Associate Professor of Biology at Molloy College (Long Island, New York)

For their project, William and Katie studied a strain of aortic stem cells and their role in the immune response that causes atherosclerosis. They discovered a fundamental mechanism of aortic-derived mesenchymal stem cells that could be blocked to inhibit the progression of atherosclerosis. Ultimately, their research, along with their follow-up studies, could develop new ways of treating heart disease.

WILLIAM CRUGNOLA
HOMETOWN: Jericho, New York

"I have been pleasantly surprised at how much my public speaking and presentation skills have improved as a result of presenting my project numerous times in my research class."

A senior in high school, William cites biology as his favorite subject because he is intrigued by the nuances and complex interdependencies of the human body, particularly with stem cells. His ongoing exploration of the sciences has shown him how truly collaborative the field is, with many people working towards a common goal instead of just one person arriving at an independent groundbreaking discovery. William has received a National Merit Commendation. An avid swimmer, he competes in his school's varsity swimming team and recently made county finals. He is a member of the Jericho Engineering Club and enjoys playing tennis. He hopes to one day become a doctor.

EKATERINA (KATIE) MAZALKOVA
HOMETOWN: Valley Stream, New York

"Many people in my family have been doctors, and I have always been connected to medicine. This research relates directly to what will hopefully be a future in cardiology."

Katie is a senior in high school, and is interested in science because it has always posed a challenge for her. She is a Public Speaking state chamption for the Future Business Leaders of America (FBLA), in addition to being a member of the school FBLA chapter. In the classroom, she is an AP Scholar with honors. She tutors her classmates in physics and math. Katie enjoys competing in volleyball and playing lacrosse. She hopes to work as a cardiologist one day in the future. While her sights are set on the medical field, she hopes a part of her job will always be contributing to research that revolutionizes both disease diagnosis and treatment.

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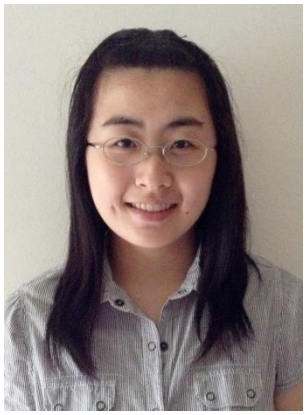

MOLLY ZHANG
Richard Montgomery High School, Rockville, Maryland
HOMETOWN: Rockville, Maryland
PROJECT: Temporal-Spatially Transformed Synthesis of Novel Gold Bellflowers with Ultrahigh Photo-Thermal Conversion Efficiency for Cancer Theranostics
FIELD: Biochemistry
MENTORS: Dr. Xiaoyuan Chen, Senior Investigator, National Institutes of Health (Bethesda, Maryland)

"I believe that students must be encouraged to pursue math and science at a young age. Interesting demonstrations and classes should be provided so young children are motivated to learn the subjects."

For her project, Molly observed how a novel triphasic method of gold nanomaterial fabrication resulted in the formation of gold bellflowers, a new gold nanostructure. Upon laser irradiation, these tiny bellflower-shaped structures transform light into heat, and then use the heat to destroy surrounding tumorous growth, essentially "cooking" cancer cells. The particular structure that Molly succeeded in synthesizing shows tremendous promise given its ultrahigh photothermal conversion efficiency, or how well absorbed light is converted to localized heat, as well as its high photostability and light-sensitivity, allowing for a more safe and reliable application.

Molly is a senior at Richard Montgomery High School in Rockville, Maryland and cites biology as her favorite subject at school, as it serves as a necessary foundation for her pursuits in the biomedical sciences. Molly's interest in science took root long before high school, propelled by her attendance of the school science fair in first grade. As a child, her favorite books to read were mystery novels, and Molly credits them as yet another basis for her love of science. Doing science is similar to solving a mystery – it is a journey composed of problem solving, speculation, interpretation, and constant trial and error, ultimately leading up to an optimal solution. Fast forward to present day, Molly already has scientific publications under her belt. She is an AP Scholar with Distinction, a veteran of seven advanced STEM courses and a National Merit Semifinalist. She plays volleyball, guitar, and piano, and is the re-founder of Codi's Hats, a club dedicated towards donating painted hats to children in hospitals around the area. She is member of the National Honor Society, as well as of Science National Honor Society, Math Honor Society, and National English Honor Society. Molly hopes to pursue a career in the biomedical sciences, as it will allow her to utilize her scientific knowledge for practical purposes.

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2014 SIEMENS COMPETITION IN MATH, SCIENCE & TECHNOLOGY

JONATHAN CHAN, Bergen County Academies, Hackensack, New Jersey
MICHAEL SEAMAN, Home School, Short Hills, New Jersey
PROJECT: On the Distribution of Discriminants Over a Finite Field
FIELD: Mathematics
MENTOR: Dr. Keith Conrad, Math Department, University of Connecticut (Storrs, Connecticut)

For their project, Jonathan and Michael proved a theorem about the distribution of discriminants of monic polynomials in finite fields. Many digital communication devices rely on finite fields, such as cell phones, CD players and even space probes. Beyond applications in technology, the mathematical patterns the students identified could have applications in cryptology, or coding messages for secure communications.

JONATHAN CHAN
HOMETOWN: Closter, New Jersey

"I believe many bright young math students are daunted by math research because they believe it might be out of the scope of their abilities. It takes success stories like that of my group to motivate younger students to solve open problems."

Jonathan is a senior at Bergen County Academies. He won a bronze medal at the World Math Team competition in Beijing, as well as placing 4th in the team contest at the same event. He founded a club at his school dedicated to teaching number theory. He is an avid lacrosse enthusiast, playing since the 9th grade and currently a starting defenseman on his school's varsity team. He also participates in Relay for Life, a cancer fundraising event. In his free time, he plays piano recreationally - which he learned as a young child. Beyond this, he also teaches Sunday school. He hopes to one day work as a Mathematics Professor or a mathematics researcher at institutions such as the Institute for Advanced Study or MSRI.

MICHAEL SEAMAN
HOMETOWN: Short Hills, New Jersey

"I love the beauty of math: the deep connections between different and seemingly unrelated areas of math."

Michael is a senior who is homeschooled in Short Hills, New Jersey. Michael is a 2014 AP National Scholar, a 2013-14 Mathematical Olympiad Summer Program attendee, a 2013-14 Program in Mathematics for Young Scientists attendee and a Team Selection Test Participant for the 2015 USA IMO team. He is an avid runner for whom logging five miles a day is the norm. In his spare time, he enjoys learning obscure words. He hopes to work as a mathematician one day.

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2014 SIEMENS COMPETITION IN MATH, SCIENCE & TECHNOLOGY

JOSEPH ZURIER
Classical High School, Providence, RI
HOMETOWN: Providence, RI
PROJECT: Generalizations of the Joints Problem
FIELD: Mathematics
MENTOR: Ben Yang, Massachusetts Institute of Technology (Cambridge, Massachusetts)

"I like science because of its ability to improve the human condition - we've advanced tremendously in just centuries, decades even, on the back of technology."

Joseph's research contributed to work on an open problem in geometry. His project concerns the intersections of line and planes in three and four dimensions. Improving on previous results, one of Joseph's main findings shows that, in a mathematically precise sense, a certain number of lines cannot create too many intersection points. Joseph feels that although real-world applications can be very hard to come by in mathematics, his problem could conceivably have specific applications for computer graphics algorithms. In addition, some of the techniques he has adapted and employed have greater relevance within the field of mathematics.

As a child, Joseph's father helped to foster his love in mathematics by teaching him arithmetical tricks and giving him math problems to solve. From there, Joseph's passion for mathematics has fed off his creativity, and has been fueled by philosophical considerations, since "math lies at the heart of the universe". Now a high school senior with a knack for visualizing life in patterns and structures, he leads his school's math team and is captain of the state American Regions Mathematics League (ARML) team. He also participates in Math Olympiads, runs and plays tennis, and has already completed nine advanced STEM courses. In addition, Joseph has applied his talents to tutor local students in mathematics and science. Down the road, he aspires to work in either academia or end up in computer science. For now, Joseph has most recently been named a junior counselor at the Program in Mathematics for Young Scientists (PROMYS) and looks forward to giving back to that community this upcoming summer.

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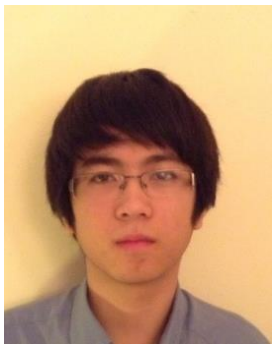
2014 SIEMENS COMPETITION IN MATH, SCIENCE & TECHNOLOGY

JASON LEE, Millburn High School, Millburn, NJ
ALLEN LEE, Millburn High School, Millburn, NJ
DAVID LU, Mills E. Godwin High School, Henrico, VA
PROJECT: Identification of Compounds to Overcome Carbapenemase-Related Multidrug Resistance in Enterobacteriaceae
FIELD: Biochemistry
MENTOR: Dave Durrant, Ph.D. candidate, Virginia Commonwealth University (Richmond, Virginia)

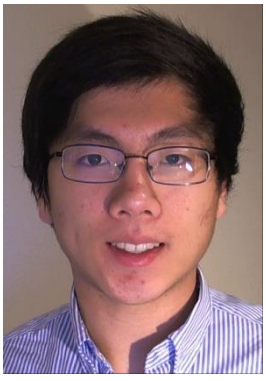
In recent years, there has been a global call for a response to the looming threat of superbugs that are becoming more and more resistant, almost invincible, and pose a serious threat to millions of lives. Jason, Allen and David used computer virtual screening to identify potential compounds and tested these compounds with imipenem to reverse the antibiotic resistance in bacteria. These findings could make untreatable bacterial infections, treatable once again.



JASON LEE
HOMETOWN: Short Hills, NJ

"It amazes me how fast STEM subjects are developing right now. Every day, there are new exciting innovations such as stem cells and promising materials such as graphene."

Jason is a returning Siemens National Finalist from 2013. Last year he identified a compound for prostate cancer treatment. Now a junior in high school, Jason's interest in science was first piqued in elementary school when he first visited his father's laboratory. He has taken seven advanced STEM courses, enjoys computer science and is fluent in Chinese. Outside the classroom, he enjoys playing tennis and participates in the chess club. Over the summer, he is a tutor for both math and science. He is passionate about helping those in need and making contributions to better people's lives through science inspires him. Jason has a twin brother named Allen.



ALLEN LEE
HOMETOWN: Short Hills, NJ

"Math, science and technology have no limits. They are constantly evolving as we learn more about them."

Allen is a returning Siemens National Finalist from 2013 where his project highlighted a new way to treat prostate cancer. When he was young, Allen stumbled upon an old biology textbook in the library and was immediately fascinated by the pictures of cells and biological processes that he saw. Now a junior in high school, Allen has taken eight advanced STEM courses. He plays tennis, golf and piano and is also fluent in Chinese. Allen tutors in both math and science and participates in his school's Public Forum Debate. He has a twin brother named Jason.

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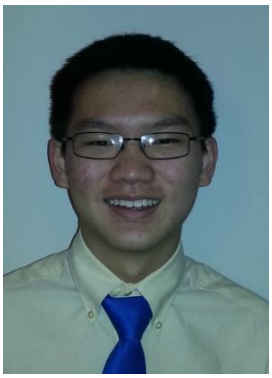

DAVID LU
HOMETOWN: Henrico, VA

"Whether it is using computer science to solve biology problems or physics concepts to answer environmental questions, inter-disciplinary research is taking the world by storm and I'm excited to see what scientific discoveries will come of it."

David is a returning Siemens National Finalist from 2013, where his project identified a potential treatment for prostate cancer. As a junior in high school, David has a passion for genetics and biotechnology because they enable the discovery of how diseases work and how we can better fight them. His interest was first piqued in middle school when he was assigned his first scientific research project. He speaks three languages, plays the piano and acts as the Community Outreach lead in his school's robotics team. Outside of science, David enjoys immersing himself in the world of Ancient Greek and Roman history. David is also founder and president of the Kid-Motion Foundation, organizing groups of teenagers to visit and inspire those at developmental centers to eat healthier and exercise. In the future, he hopes to be either a biochemistry or microbiology professor; teaching students by day and conducting research by night.