

TEP Bite of Science & Teacher Roundtables

The Teacher Enrichment Program (TEP) is now in its third year of providing online and in-person resources for middle and high school STEM teachers. To date, TEP has served 765 teachers, impacting 104,800 students in **California, Florida, Indiana, Illinois, Maryland, South Carolina, Texas, and Virginia**. Multiple sessions in each state highlight the need for this type of programming across the country, particularly in underserved rural and urban areas.

"I wanted someone to educate and enlighten my brain. They did! Treating me as a scientist is the best way to refresh my own classroom teaching," stated Mary Jo Bolster, Ronald Reagan High School, San Antonio, TX.

The mission of the Teacher Enrichment Program (TEP) is to assure a future talented and diverse U.S. workforce in science, technology, engineering and mathematics (STEM). TEP provides opportunities for high school teachers to connect with experts from industry and academia to explore cutting edge research and make meaningful professional links with direct benefits for their students. All TEP professional development events are cost-free



TEP Bite of Science in Baltimore, Maryland.

to participants. Three to four sessions are held in each TEP state. Each session hosts approximately 25 high school teachers, in turn impacting more than 3,400 students in the community. Teacher interest in attending a TEP Bite of Science has been reflected by having waiting lists of teachers for each session.

2014

TEP SPONSORS

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The Apollo Education Group
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BITE OF SCIENCE & ROUNDTABLE LOCATIONS

Baltimore, MD
Clemson, SC
College Park, MD
Columbia, SC
Fort Myers, FL
Fairfax, VA
Houston, TX
Los Angeles, CA
Manassas, VA
Melbourne, FL
Norfolk, VA
Orlando, FL
Richmond, VA
Roanoke, VA
San Antonio, TX
San Diego, CA
Sumter, SC

TEP SPEAKERS ARE FROM PARTICIPATING COMPANIES AND UNIVERSITIES:

Aurora Flight Sciences Corporation
Chevron Corporation
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Duke Energy Corporation
Florida Gulf Coast University
George Mason University
Houston Methodist Research Institute
Luna Innovations, Inc.
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SpaceX
Towson University
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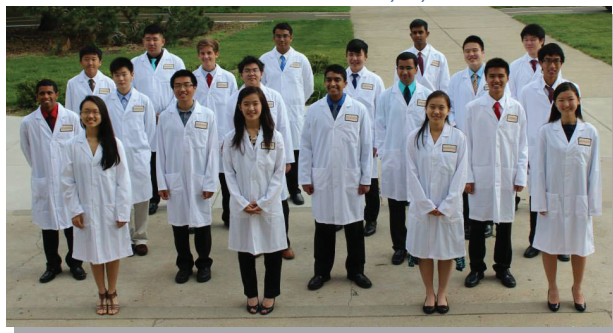
USA Biology Olympiad
Registration Opens - October 15, 2014
Registration Closes - January 16, 2015

Research Science Institute
Application Available - November 15, 2015

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USABO National Finalists in lab coats donated by Psychemedics.



USA Biology Olympiad

Over 10,500 U.S. high school students registered to compete in the 2014 USA Biology Olympiad (USABO). The open and semifinal exams took place in February–March and culminated with 20 students chosen to attend National Finals at Purdue University, sponsor of the USABO with CEE.

Finalists from 10 states participated in lectures, study sessions, and laboratory exercises led by biology experts in fields that include cellular & molecular biology, plant anatomy & physiology, animal anatomy & physiology, ethology, genetics & evolution, ecology, ethology, and biosystematics.

During the Finals at Purdue, the students took two exams - a practical and a theoretical. **William Long** of Thomas Jefferson High School for Science & Technology in Alexandria, Virginia; **Yilun Du** of Pullman High School in Pullman, Washington; **Varun Mangalick** of Mounds View High School in Arden Hills, Minnesota; and **Abhijit Mudigonda** of Westview High

School in Portland, Oregon scored the highest on those exams, were awarded gold medals at the Finals, and earned spots on the 2014 Team USA to compete at the International Biology Olympiad (IBO) from July 6-13 in Bali, Indonesia. Team USA's medal accomplishments at the 2014 IBO were 3 Gold Medals and 1 Silver Medal. All Team USA Members have medaled since the United States first competed at the 2003 IBO. Team USA achieved the coveted **"Number 1 Position in the World"** in 2011 and 2013.

Kathy Frame, Director of the USABO and Special Projects for CEE, and Clark Gedney, Director of the BioMedia Center for Instructional Design at Purdue, accompanied Team USA to the worldwide event. Air travel was provided by Korean Air, the official airline of the USA Biology Olympiad.

Ms. Frame was elected by her fellow jurors to serve as a member of Indonesia's Host Committee for the 2014 IBO in Bali. The subgroup worked in cooperation with Indonesia to review the practical and the theoretical examinations that had been developed. She was elected to serve on the 2015 IBO Host Committee in Aarhus, Denmark. ♦



Team USA at the International Biology Olympiad from left to right: Varun Mangalick, Yilun Du, Abhijit Mudigonda, and William Long

Research Science Institute

CEE's 2014 Research Science Institute (RSI) welcomed eighty-three top achieving U.S. and international scholars from June 22-August 2. RSI is jointly sponsored with the Massachusetts Institute of Technology (MIT).

The Institute is offered cost-free to competitively selected top achieving students in science, technology, engineering, and mathematics (STEM). CEE is one of the only U.S. non-profit organizations to offer an outstanding educational opportunity to high scholars at no cost to them for six weeks. RSI scholars participate in college-level research under the mentorship of leading scientists, engineers, and researchers in the Boston area.

RSI is an annual, summer program consisting of one week of theoretical classroom work, followed by four-and-a-half weeks of research with a professor or scientist in the students' respective areas of interest. In the final week, students demonstrate their work through written academic papers and present oral findings to their peers and a panel of eminent judges.

RSI 2014 Engineering Class with Dr. Steven Leeb



RSI 2014 Alumni Top Oral Presentations

- **Anvita Gupta** Computational Drug Discovery for Targeting Intrinsically Disordered Proteins - Mentored by **Dr. Gil Alterovitz, Harvard Medical School.**
- **Andrew Jin** A Machine Learning Framework to Identify Selected Variants in Regions of Recent Adaptation - Mentored by **Mr. Joseph Vitti, a Ph.D. Candidate in the Sabeti Lab, Harvard Department of Organismic & Evolutionary Biology, Broad Institute of MIT and Harvard.**
- **Dhaivat Pandya** Optimal Linear Network Coding for General Connections - Mentored by **Dr. Ying Cui, Network Coding and Reliable Communications**

Group, Massachusetts Institute of Technology (MIT).

- **Ruchir Rastogi** Hyaluronic Acid-Polyethylenimine Gene Therapy System for Treatment of Inflammatory Diseases - Mentored by **Professor Mansoor Amiji, Department of Pharmaceutical Sciences, Northeastern University.**
- **Kelvin Wang** Homomesy in Minuscule Posets - Mentored by **Mr. David B. Rush, Graduate Student, Mathematics Department, Massachusetts Institute of Technology (MIT).**

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2014 RSI Closing Keynote Address

Presented by Dr. Laura Stubbs, Director, Science and Technology Initiatives and STEM Development, Office of the Secretary of Defense for Research & Engineering, Research Directorate, Department of Defense



To the RSI participants, mentors, parents, Center for Excellence in Education host - MIT, and fellow sponsor, I am indeed honored to speak to you here at this 31st Closing

Ceremony. I am so impressed with both the variety and level of research and competition that you experience here at RSI. You, the participants, are to be congratulated on your accomplishments.

I admire you, your competitive drive and I share many of your same interests, specifically, your desire to answer the hard questions, to improve the world, to win and your willingness to put in hard work to do it. In fact, when I reviewed the history of RSI, your purpose and reason for being, I realized that I AM YOU! I am you because I am a life-long learner willing to take chances and a competitor but, at the very least, I am a WANNABE RSI participant.

Allow me if you will to share some of my life lessons that I have learned in the hopes that it will help you as you prepare for your future. Specifically two defining moments come to mind.

A key defining moment for me occurred when I was 16 years old and in 11th grade. I could not decide what I wanted to do when I grew up—be a model (this was well before America's Next Top Model), a lawyer, or a concert pianist. Notice that I did not have a technical career on my list. I was always good at math and science but I was not confident that I could compete technically. However, the key moment to which I refer came when my math teacher mentioned an 8-week, summer program called "Women in Engineering" to be held at the University of Notre Dame in South Bend, IN during the coming summer. I lived in Philadelphia, PA. I raised my hand and took home the brochure. My mother immediately said, "Great! You are going!" I attended the summer program, was exposed to various engineering discipline as well as classes in physics, math and laboratories much like you exposed to various disciplines and classes in this RSI program. I was hooked. After that

summer, I returned to my senior year in high school and announced that I would become an engineer. That exposure to the summer program gave me enough confidence to know that I could become an engineer.

I attended the University of Pennsylvania on scholarship and was one of only two women in the mechanical engineering class, and the first African-American woman. I completed both my bachelor and master's degrees while there. I also took all of the nuclear engineering classes taught at the University of Pennsylvania, two classes. I started looking for a job in the nuclear field shortly after the Three Mile Island nuclear accident near Harrisburg, PA.

This leads me to my second "defining moment," my interview with Navy Admiral. Hyman G. Rickover, the Father of the nuclear Navy. This interview led to the start of my naval career. As you just saw in the 60 Minutes interview, the Admiral was tough yet fair and, more importantly, a visionary.

I wrote a letter to a Navy recruiter and stated that I wanted to join the nuclear propulsion program. The recruiter called and laughed. He said, "Go for the interview. It will be an experience." I did not know why he was laughing. The recruiter then told me that I could not enter the nuclear propulsion program, noting there were no women in it. But he added that the Navy was beginning to bring in women to teach at the nuclear power school. I said, "Fine. Put me in for that. Just get me an interview with that Rickover guy.

I was accepted for interviews. One must complete three technical interviews, each of which is similar to an intelligence test. At the end of the technical interviews, you are then sent to meet Admiral Rickover. He was a very tough interviewer and he put you through your paces. I just had no context for what I was getting into. He puts you under pres-

sure and starts yelling and screaming for no apparent reason to see how you will react. I sat in the forward-slanting chair, Admiral Rickover shouted questions at me, asking how long had I been interested in nuclear power engineering and when did I become interested in it. He asked "Did you get these grades because you're black?" I looked out the window and refused to answer. He angrily screamed, banged on the table, saying, "Answer me, damn it, answer me." Finally, I responded, "That's not the criteria on which my grades were based." I thought the Admiral's technique had to be a test because nobody conducts an interview like that. He asked me other questions, and we went back and forth, but I looked him in the eye and answered his questions truthfully and patiently. Eventually, he dismissed me from the room.

The Admiral called me back to his office and we had another, more fatherly, exchange. He told me that he wanted to see how I would react as some people may not want to salute me.

I got the job, even though I was not so sure I wanted it after my encounter with the Admiral. I took the position as an instructor at the school.

I am glad that I took the position. Admiral Rickover was a visionary who put a program together from scratch, not just for the benefit of our Navy, but for the civilian nuclear industry also. I am honored to have served in his program. You too will have defining moments along your journey, learn from every one and share what you have learned with others.

Know that RSI is preparing you for your future. Keys to your continued success are:

1. **Exposure** – no one can go it alone. Take every opportunity to gain new experiences. My summer program

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The language difficulty of textbooks has dropped by about twenty percent during the past couple of generations. Having sampled 788 texts used between 1860 and 1992, retired Cornell professor Donald Hayes stated, 'Honors high school texts are no more difficult than an eighth grader reader was before World War II.'

William A. Henry, *In Defense of Elitism*

CEE Congressional Luncheon 2014

CEE hosted its annual Congressional Luncheon on May 1 with sponsorship from Capital One Bank. The event was held in the Dirksen Senate Office Building in Washington, D.C.

The luncheon celebrated the success of the Center's Research Science Institute (RSI) offered in partnership with the Massachusetts Institute of Technology (MIT); the USA Biology Olympiad (USABO), collaboratively sponsored with Purdue University; and CEE's Teacher Enrichment Program (TEP).



Judson Bowman, RSI '98, Founder and CEO, Appia, Inc., providing highlights of his RSI experience.

Congressman Mike Honda of California reflected on his more than thirty years of experience as an educator and administrator. He emphasized the need to keep our nation competitive in the global economy through science, technology, and advanced manufacturing. Congressman Honda closed by congratulating the Center on its programs and stated he is proud to be an Honorary CEE Board Member.

USA Biology Olympiad (USABO) Alum and two-time Gold Medalist at the International Biology Olympiad (IBO) 2012 and 2013, Nikhil Buduma, provided an overview on his USA Biology Olympiad (USABO) and International Biology Olympiad (IBO) journey. He elaborated on how the experiences made a significant impact on his educational path to the Massachusetts Institute of Technology (MIT).



Congressman Mike Honda, Nikhil Buduma, USABO '11, '12 and '13, and Mel Chaskin, Chairman of CEE's Board of Trustees, at the Congressional Luncheon.

RSI '98, Dr. Nancy Hsia Akerman, AAAS Science & Technology Policy Fellow in the Stratospheric Protection Division of the Environmental Protection Agency (EPA), also provided remarks. She discussed how instrumental her experience at RSI had been in her professional achievements. With a big smile, she reflected on her time at the Research Science Institute and about her RSI family members. Nancy also highlighted her very exciting experience on Jeopardy! ♦



Dr. Nancy Hsia Akerman, RSI '98, addressing attendees.

Congressional Luncheon Remarks

by Nikhil Buduma, USABO '11, '12 and '13

Almost precisely 3 years ago, I opened up an email that would completely change my life. That email was an invitation to participate in the 2011 USA Biology Olympiad National Finals, a 2 week long camp where the top 20 high school students in the nation come together to explore the life sciences on an unbelievably deep level and compete for a spot on the 4-person Team USA at the International Olympiad. Now, if someone had told me back then that this would be the single most important email I would open during my high school career, my younger self probably would have dismissed them in disbelief. But in retrospect, being invited to the National Finals for the first time my sophomore year opened so many doors that it's impossible for me to imagine what the past three years of my life would've been like otherwise.

I think one of the most valuable aspects of the biology Olympiad is the community built around it. Learning is never a purely individual pursuit; it's highly cooperative, dynamic, and inter-disciplinary. At the national level, the Olympiad brings together people who are deeply passionate about biology, but at the same time come from vastly different cultural and academic backgrounds.

Surrounded by a team of world class peers, researchers, and mentors, I've learned more over the cumulative 6 weeks I spent at the National Finals than I learned in 4 years of school. I can confidently say that the rigor of the Olympiad is unmatched by any other high school program in the country. And the fact that the U.S. team has brought home 4 gold medals not one, not two, but three years in a row is a testament to that fact.

But, in addition to just helping me build a strong knowledge base, the program has also taught me to ask insightful ques-

tions and empowered me with the toolset necessary to design my own experiments and discover the answers. In fact, using everything I've learned through the Olympiad, I've been able to conduct independent research projects on topics ranging from low cost screening techniques for pharmaceutical products to improving the composition of the whooping cough vaccine. And the beneficial effects of the Olympiad don't just stop at the highest level of competition. Through my personal experiences, I've found that the community spirit trickles all the way down to the school level. After bringing the biology Olympiad to my high school, more and more people interested in biology began to study together, and as a result, the science program at my high school has strengthened significantly.

On an even broader level, participating at the International level gave me an eye-opening glimpse of the world beyond my

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Congressional Luncheon Remarks (from page 4)

immediate community. I will never forget learning some basic Arabic from a boy representing the United Arab Emirates, discussing the issues of segregation and racial discrimination with the team from South Africa, and hearing the life story of a budding biologist from Iran, who had kept her love of science a secret from her family in fear that they would not accept her. I will never forget the nights we spent in the common area, passing around a Tupperware container of exotic plant specimen most of us had never seen before. And of course, I will never forget standing in front a huge crowd to announce my teammate's birthday the night after the practical exam and hearing the room burst into a surprisingly harmonious ensemble of the song "Happy Birthday" sung simultaneously in at least twenty different languages.

You see, for me, and for tens of thousands of students all over the nation, the U.S.A Biology Olympiad has been a life-changing experience. It's programs like these that inspire students to take their education to the next level, tackle some of the society's most important problems, and engage the world as citizens of a global community. None of this would be possible without the Center for Excellence and Education, who have organized such an amazing program, Ms. Kathy Frame and Dr. Clark Gedney, who have made the USA Biology Olympiad the spectacular success it is today, and all of you whose support is crucial to the success of the Olympiad and its ability to foster the education of future generations of students. Thank you. ♦

"As far back as 1993, the report, National Excellence: A Case for Developing America's Talent, acknowledged that schools were failing to properly educate the brightest students. More recently, a 2010 report from the National Science Board said advanced students were among those most poorly served by school programs."

Scott J. Peters, Scott Barry Kaufman, Michael S. Matthews, Matthew T. McBee, D. Betsy McCoach, "Gifted Ed. Is Crucial, But the Label Isn't." Education Week

CEE Alumni Accolades

- Accolades to the following **RSI'13 and USABO'13 Alumni** for being named **2014 U.S. Presidential Scholars**:
 - **Leigh M. Braswell** of Phillips Exeter Academy in Cullman, Alabama
 - **Rajet Vatsa** of Brophy College Preparatory in Scottsdale, Arizona
 - **Luke Z. Tang** of Benjamin Franklin Senior High School in Louisiana, New Orleans
 - **Eric H. Li** of Albuquerque Academy located in New Mexico, Albuquerque
- CEE extends congratulations to **RSI '91, Josh Brody, M.D., Director of the Lymphoma Immunotherapy Program**, Icahn School of Medicine at Mount Sinai in New York, for his research and preliminary results in three clinical trials involving 60 patients who had two types of lymphoma.
- Congrats to **Valerie Ding, RSI'14**, named a **2014 Davidson Fellow** and awarded a \$25,000 scholarship for her work on how to improve the efficiency of quantum dot solar cells.
- Accolades to **RSI '05, Shiv Gaglani**, for publishing his first book: *Standing Out on the SAT and ACT: Perfect Scorers' Uniquely Effective Strategies for Testing and Admissions Success* with a foreword by CEE's President, Joann P. DiGennaro.
- CEE commends **Axel Hansen, RSI'08**, Co-Founder of Newsle, for the successful acquisition of Newsle by LinkedIn.
- CEE proudly congratulates **Brad Hargreaves, USABO '03 & '04**, Co-Founder of General Assembly, for raising \$35 Million with his team in Series C Round. He was also profiled in *The Information*.
- Congratulations to **Dr. Jenny Hoffman, RSI'94**, for receiving a \$1.8 Million Award from the *Gordon & Betty Moore Foundation* to pursue physics research on "Quantum 3D Printing." Cheers also to Jenny on accepting a full professorship at the **University of British Columbia in Vancouver, Canada**.
- Congratulations to **Ravi Jagadeesan, RSI'13**, named a **2014 Davidson Fellow Laureate** and awarded a \$50,000 scholarship for his work *A New Galois Invariant of Dessins d'Enfants* that studies the symmetries and the solutions of polynomial equations with rational coefficients.
- Compliments to **Jonas Ketterle, RSI'03**, for launching *Firefly Chocolate*. The mission of the company is to inspire awe and wonder through nature and community.
- Cheers to **Seungsoo Kim, USABO '08 and '09**, for receiving the 2014 National Science Foundation Graduate Research Fellowship. Another round of applause for Seungsoo on publishing his first paper in the Proceedings of the National Academy of Sciences.
- Kudos to **Dr. Lauren Ancel Myers, RSI'90**, featured in *The Huffington Post*, "What Next for The Ebola Outbreak? Here's What The Math Says."
- Congratulations to **Ben Silbermann, RSI'98**, featured on the cover of *Forbes*: "Move Over, Zuck. Pinterest has a \$5 Billion Valuation and a Revenue Model That Puts Facebook and Twitter to Shame."
- Praise to **Dr. Terry Tao, RSI '89**, for receiving **The Yuri Milner - Mark Zuckerberg 2014 Breakthrough Prize for Mathematics**.
- Congrats to **Lauren Williams, RSI'94**, for being named a **2014 Simons Fellow in Mathematics** by the Simons Foundation.
- Applause to CEO **Karl Wirth, RSI '88, Co-Founder of Evergage**, for his company being named a winner in the PwC Promise Award at the 18th Annual 2014 MITX What's Next Awards. This honor distinguishes the leaders of the Massachusetts Innovation Economy whose solutions show promise to make a significant business impact.
- Commendations to **William Yang, RSI '85**, for a recent study about Huntington's disease that was the cover story for *Nature Medicine*. Congratulations also to William Yang and his team at UCLA for receiving nearly \$2 Million in funding through the BRAIN Initiative at the National Institute of Health.
- Join CEE in congratulating **Dr. Feng Zhang, RSI'99**, for receiving the prestigious **National Science Foundation (NSF) Waterman Award**, NSF's highest honor that recognizes an outstanding researcher under the age of 35. ♦

Honors Bestowed to Joann DiGennaro



Major General William E. Rapp, 50th Commandant, United States Army War College, presenting Joann DiGennaro with her Outstanding Civilian Service Medal.

Joann DiGennaro, CEE's President, received *The Outstanding Civilian Service Medal* from the Department of the Army in September, 2014. She is 1 of only 5 civilian women to be given this recognition for her extraordinary service as an expert Consultant and Chairwoman of the U.S. Army War College Board of Visitors from 2005-2009.

"Ms. DiGennaro added immeasurably to the success of the Board through

her untiring contributions to both its deliberations and its resulting guidance to the Institution. In addition to her valuable advisory role, Ms. DiGennaro chaired the Board's Working Group for Nomination and Membership Issues. Serving as the Board Chair, she applied the full breadth of her expertise and knowledge to deftly lead the board to relevant and substantive resolutions that have already made a lasting impact. Ms. DiGennaro's influence on the Board will undoubtedly continue to generate benefits for the Army War College, its



Dr. Lance Betros, Provost of the Army War College, presenting Joann DiGennaro with her Honorary Degree.

faculty, and graduates for decades to come," stated Anthony A. Cucolo, III, Major General U.S. Army, formerly Commanding General of U.S. Army War College.

That same day, Joann received an Honorary Degree *Master of Letters, Strategic Studies, Honoris Causa*, the sixth female recipient of this recognition. Major General William E. Rapp, Commandant of the U.S. Army War College, stated, "Thank you Joann, for all of your years of support to the U.S. Army War College. It was an honor to help bestow these long-overdue and well-earned honors on you."

The College provides graduate level instruction to senior military officers and civilians to prepare them for senior leadership assignments and responsibilities. Students engage in education on research, leadership, strategy and joint-service/international operations.

The Center for Excellence in Education is proud to have its President honored for her selfless service to the U.S. Army, the Joint Professional Military Education, and the Nation. ♦



CEE Thank You

THANK YOU to Greg Gunn, RS'86 and CEE Trustee, and his wife, Lisette Nieves, for hosting a Rickoid dinner at their home in New York on Friday, September 19, 2014.

It was an evening of great food, Rickoid camaraderie, and lots of fun!

CEE Employee Awarded Fellowship



Charles Farmer, CEE's Development Officer, has been named a 2014-2015 Nonprofit Roundtable Future Executive Director Fellow. This prestigious fellowship is awarded to 25 emerging leaders in the Greater Washington area.

The Fellows participate in an intensive program designed to prepare them for executive directorships, to include fundraising, communications, human resources, financial management, negotiating effectively, building partnerships, and achieving work/life balance.

In early September, Charles began the 9-month program that combines six key elements to strengthen emerging leadership in the nonprofit community. ♦

2014 RSI/CEE Closing Ceremony
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“exposed” me to the chemical, civil, electrical, mechanical and industrial engineering exercises and experiments. I was hooked. I gained the self-confidence to go after that technical career and I have never looked back.

2. Preparation - It is often said, “luck is where opportunity meets preparation”. Success is sometimes viewed as luck because there are elements of timing, being in the right place at right time, etc. Preparation involves study to focus on what you would like to do when you grow up, and what steps, i.e. courses, schools, practice and on-the-job training programs can best prepare you for your dream job. Such experiences give you the opportunity to try out a career for a period of time. Preparation always plays a large part in any success.
3. Excel - Do you best! Sometimes it takes a lifetime to discover what you truly love. You are here at RSI because you have not only discovered your interests, you excel at them. You are already ahead of many students who are your age.

4. Find your passion and have fun – life is too short! Participate in everything, you are here at RSI because you are curious and want to learn.
5. Finally, Ask for help from your mentors and sponsors collaborating with your network – Do not be afraid to ask for help, bounce ideas off each other, discuss, debate (but not to a fault). Talk to your family, friends and teachers. Be a perpetual learner. Then, help and teach someone else. You are not too young and it is never too early to help someone else. The rewards for helpful action far exceed anything that you can imagine. Give a helping hand.

I would be remiss if I did not mention the Department of Defense (DoD). The Department is a large organization, a large team, of ~800,000 civilian employees and it is responsible for providing National Security to our nation and its citizens. We need you, young people, to come and work with and for us. We can help with your education through the Science, Mathematics, and Research for Transformation Scholarship (SMART) Scholarship for Service. Scholarship for Service, means that we pay for the cost of

your education in one of our 19 disciplines/majors at a university of your choice: Tuition, fees, stipend, etc. In return, you are required to do an internship in an area of your interest at one of the Department of Defense laboratories or agencies. After completion of your degree, you have a job waiting for you at the facility where you performed your internship. Please visit our website for eligibility criteria and requirements, disciplines and to explore the work our facilities do.

RSI is an excellent practice ground for everything that I have just mentioned – personal development, leadership, latest technical developments, and opportunities to meet new people. While you are the “elite 83” in this 31st RSI class, I like to think that I am RSI also, albeit 30+ years ago. It has been a pleasure to speak to you. Thank you, continue the Rickover legacy and continued success in all that you do. ♦

Spotlight on CEE Board of Trustees



Dr. Robert Curry is **General Partner at Latterell Venture Partners (LVP)**. He has 28 years of healthcare venture capital investing experience with involvement of 38 start-up or early stage companies, of which 32 achieved an Initial Public Offering (IPO) or successful merger.

Prior to joining LVP, Dr. Curry was a Partner at Alliance Technology Ventures (ATV) where he invested exclusively in healthcare ventures. Before ATV, he was the original healthcare partner at the Sprout Group (the venture affiliate of Donaldson, Lufkin & Jenrette), and prior to Sprout he was the President of Merrill Lynch Venture Capital and Merrill Lynch R&D Management, Inc.

Dr. Curry held an academic professorship at the University of Delaware, as well as being the Director of Technology at Becton Dickinson.

Bob holds a Ph.D. and an M.S. in chemistry from Purdue University where he was a Smith Kline Fellow, and he received his B.S. in physics from the University of Illinois at Urbana where he was a James Scholar. He also serves as Board Chair of the Keck Graduate Institute of Applied Life Sciences at the Claremont Colleges.

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Center for Excellence in Education

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Your gift to the Center for Excellence in Education will provide lasting support for future generations of high school and university scholars who are **aspiring scientists, researchers, innovators and leaders in STEM**. Please contact Charles Farmer, Director of Development, at 703-448-9062 or by email cfarmer@cee.org

For over 30 years the Center has sponsored world-renowned programs that support academic achievement and address the challenges of health, nutrition, environment, national security and energy. CEE is the first premier organization to provide cost-free programs to its students and assist them on a long-term basis to become creators, inventors, scientists and leaders of the 21st Century.

Thank you kindly for your support. ♦

**TEP Bite of Science & Teacher Roundtables
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Bite of Science in Los Angeles, California.



More than 64 teachers participated in the STEM Teacher Roundtables in Virginia in 2013-2014, impacting more than 8,700 students across the state. The meetings featured exemplar educators who shared their STEM teaching strategies and provided attendees with a variety of professional development resources available at national and international levels. For 2014-2015, Teacher Roundtables focus on connecting industry representatives with teachers to create awareness of STEM career fields, the job skills required for the 21st century STEM worker, and opportunities for their students to explore STEM subjects and career paths. Teacher Roundtables launched in South Carolina in Fall 2014.

Dr. Natasha Schuh-Nuhfer serves as Director of the Teacher Enrichment Program. She has overseen the development and roll-out of the program to teachers in California, Florida, Illinois, Indiana, Maryland, South Carolina,

I knew I would be exposed to good science; however, the personal matter of fact nature made my experience much better," said George Powell, Huguenot High School, Richmond, VA.

Texas, and Virginia. She is responsible for outreach with STEM and teacher organizations to create awareness of TEP and CEE's other programs, facilitates public/private education partnerships in TEP-targeted states, and manages the virtual components of TEP.

The *CEE Blog* is managed by Jennifer Midgley, Program Analyst. She formerly was a school principal and brings eight years of teaching experience to CEE's Teacher Enrichment Program. The *CEE Blog* serves to encourage discussion about education issues among STEM stakeholders in the U.S. and global communities. The blog features international STEM news, guest posts by education and industry experts, and summaries of recent education news and research. Jennifer also shares outreach responsibilities. ♦

TEP Teacher Roundtable in Hampton, Virginia.



**Research Science Institute
(from page 2)**

RSI 2014 Alumni Top Written Presentations

- **Lochie Ferrier** *Development of an Optical Autonomous Satellite Identification System* - Mentored by **Dr. Alvar Saenz-Otero, Massachusetts Institute of Technology (MIT) Space Systems Laboratory.**
- **Kavish Gandhi** *Minimal Saturated Subgraphs of the Hypercube* - Mentored by **Mr. Chiheon Kim, Ph.D. Candidate in the Math Department, Massachusetts Institute of Technology (MIT).**
- **Andrew Jin** *A Machine Learning Framework to Identify Selected Variants in Regions of Recent Adaptation* - Mentored by **Mr. Joseph Vitti, a Ph.D. Candidate in the Sabeti Lab, Harvard Department of Organismic & Evolutionary Biology, Broad Institute of MIT and Harvard.**
- **Hristo Stoyanov** *Cryptographically Secure Detection of Mirror Worlds* - Mentored by **Dr. Sharon Goldberg, Department of Computer Science, Boston University.**
- **Jessica Wu** *Claudin-18 as a Tumor Suppressor for Gastric Cancer in Mice* - Mentored by **Dr. Susan Hagen, Harvard Medical School, Beth Israel Deaconess Medical Center.**

RICKOID of the Year

Award given by peers at RSI in honor of Admiral H.G. Rickover, Father of the Nuclear Navy and Civilian Uses of Nuclear Power.

- **Kavish Gandhi** of **Newton North High School** in **Newton, MA.**

(continued on page 9)



CEE is a recipient of the prestigious Charity Navigator "Four Star" rating signifying that it exceeds industry standards in financial health, accountability, and transparency.

Research Science Institute
(from page 8)

The RSI Selection Committee of professional educators and RSI alumni convened at the Center for Excellence in Education (CEE) in February 2014 to select high school students to attend the nationally acclaimed program. Student selection is based on the following criteria: high school records, personal essays, standardized test scores, teacher recommendations, research experience, potential for leadership, and honors and awards in math and science.

RSI 2014 was directed by Dr. Andrew Charman, RSI '86 and lecturer of physics at University of California, Berkeley.

The RSI Academic Professors included:

- Dr. Steven Byrnes, RSI'02, Harvard University – Physics
- Dr. Matthew S. Cain, RSI'97, U.S. Army Natick Soldier Research, Development, and Engineering Center, MIT - Biology
- Dr. Steven Leeb, Massachusetts Institute of Technology – Engineering
- Dr. Forrest Michael, RSI'90, University of Washington - Chemistry
- Dr. Sean Mulholland, Stonehill College - Economics
- Mr. Lance Rhoades, University of Washington - Humanities
- Dr. Christopher Skinner, RSI'88, Princeton University - Mathematics

The RSI scholars learned about the careers, achievements, and challenges in STEM during the *RSI Distinguished Guest Lecture Series*. Speakers included:

- Dr. Carlos Aquilar, Technical Staff Member, Lincoln Laboratories
- Ms. Joann DiGennaro, President of CEE
- Dr. Noam Elkies, Professor of Mathematics, Harvard University
- Ms. Kathy Frost, Marine Biologist and retired Alaskan Dog Sled Medalist
- Brett Harrison, RSI'05, Software Developer, Jane Street Capital

- Dr. Wolfgang Ketterle, Nobel Laureate, John D. MacArthur Professor of Physics at MIT and Associate Director of the Research Laboratory of Electronics at MIT, Director, MIT-Harvard Center for Ultracold Atoms
- Dr. Jonathan Kaplan, Vice President, Quantitative Analyst, DE Shaw
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- Ms. Carmela Mascio, Senior Research Associate, Cubist
- Dr. Pardis Sabeti, Associate Professor of Organismic and Evolutionary Biology, Harvard University
- Dr. Phillip Sharp, Nobel Laureate, Institute Professor, Koch Institute for Integrative Cancer Research, MIT
- Dr. Jeremy Wolfe, Department of Neurology, Harvard University Medical School

This year's scholars met and socialized with alumni from years past. A presentation on the application of economics to online dating was made by Dr. Scott Kominers, RSI'04, a Junior Fellow at the Harvard Society of Fellows, a Research Scientist at the Harvard Program for Evolutionary Dynamics, and an Associate of the Harvard Center for Research on Computation and Society. Zach Abel, RSI'05, discussed art and math and showed his unique math sculptures. Sara Volz, RSI'12, discussed her research of algae biofuels that earned her the \$100,000 First Place Award at the Intel Science Talent Search Competition.

Thirty-four international students from Australia, Bulgaria, Canada, China, Israel, Italy, Lebanon, Poland, Russia, Saudi Arabia, Singapore, South Korea, Spain, Sweden, Switzerland, and Turkey, joined the U.S. students at RSI 2014.

Another successful RSI at MIT -- 31 years of excellence! ♦

Spotlight on CEE Board of Trustees
(from page 7)



Mr. Gregory Gunn, RSI'86, is an **Entrepreneur in Residence at City Light Capital**, where he focuses on early stage investments in

educational software and services companies.

In 2000, he co-founded Wireless Generation, a leading educational software company now serving more than 3 million children with groundbreaking assessment and instruction products. As President, Greg created and led the product development team, shipping the award-winning mCLASS® handheld formative assessment platform. He took over and revamped the company's sales division, landing key state and district sales and tripling the company's revenue in 18 months. As Chief Scientist, he designed highly effective professional development techniques and created the company's analytics and data mining division, turning raw data into new insights about student learning progressions. The company was sold to News Corporation in December 2010.

Greg holds a bachelor's degree in physics from the University of Chicago, an MBA and Master's in Computer Science from the Massachusetts Institute of Technology, and was a Rhodes Scholar. He currently is a trustee of the Nellie Mae Education Foundation, and he was named one of Fast Company magazine's "100 Most Creative People in Business" in 2012. He serves as an expert-in-residence at Harvard University's Innovation Lab and coaches entrepreneurial students at the Harvard Graduate School of Education. ♦

"The ridiculous bias against gifted kids in our nation's schools emanates from so-called educational visionaries whose sight is hampered by the gauzy lens of professional ignorance. By paying scant attention to the needs of gifted kids, we are squandering a resource that will make our nation less competitive, less meaningful, less respectful."

Dr. Jim Delisle, interview on his book, *Dumbing Down America*



Congratulations to the Research Science Institute (RSI) 2014 scholars.

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