CEE announces the award winners for oral and written presentations chosen from 92 participants by an eminent panel of judges at the 39th annual Research Science Institute (RSI) jointly sponsored at the Massachusetts Institute of Technology (MIT). Each of the award winners received $1,000 awards from Regeneron Pharmaceuticals, Inc. The top five written presentations were given by Shriya Bhat, Plano East Senior High School, Plano, Texas; Michelle Hua, Cranbrook Kingswood School, Bloomfield Hills, Michigan; Michael Huang, Phillips Academy (Andover, Massachusetts), Guangdong, China; Iliyas Noman, Sofia High School of Mathematics, Sofia, Bulgaria; and Patrick Wahlig, Falmouth High School, Falmouth, Maine. The top five oral presentations were given by Madeleine de Belloy de Saint Lienard, Lycee Francais de San Francisco, San Francisco, California; Shriya Bhat, Plano East Senior High School, Plano, Texas; AnAn Desimone, Windsor School, Boston, Massachusetts; Arvind Seshan, Fox Chapel Area High School, Pittsburgh, Pennsylvania; and Alex Wang, Syosset High School, Syosset, New York.

Applications are being accepted to CEE’s 2023 RSI. The deadline to apply is December 2, 2022. RSI is offered cost-free for students competitively chosen for excellence in science, technology, engineering, and mathematics (STEM). Students are selected based on high school records, personal essays, standardized test scores, teacher recommendations, research experience, potential for leadership, and honors and awards in math and science. To date, over 3,000 high school students - representing every U.S. state and 61 nations - have experienced RSI. Students may apply at www.cee.org/apply-rsi.

Manjot Nagyal is the new USABO Clubs Coordinator, who will work with Kathy Frame, Advisor & Consultant, USABO. Manjot graduated from Wellesley College with a BA in Biochemistry. She has worked on numerous data science and microbiology focused projects in both academia and the biotech industry. “I’m so excited to be part of this CEE endeavor, which will include a podcast focused on research by USABO alumni and others,” she noted.

CEE has launched USA Biolympiad (USABO) Clubs as a catalyst for students to engage in biology experiences outside of the classroom with a network of resources. The Center will serve a new important coordinating role, offering guidelines to organize a club, provide study resources, and assist with connections to alumni.

Save the Date! CEE’s Annual Holiday Party is on Saturday, Dec. 17, 2022, starting at 7 p.m. at Ms. D’s home in Oakton, Virginia. Alumni and friends of the Center typically fly in from all over the world and many stay overnight. RSVP online by Dec. 14, 2022. Contact Maite at (703) 448-9062 or maite@cee.org with any questions.
The 2022 CEE Index of Excellence in STEM Education is a measure of the effectiveness of educational preparation for the highest levels of academic competition. Individual rankings in each of five STEM related Olympiad competitions (Biology, Chemistry, Mathematics, Informatics and Physics) are analyzed to generate averages and rankings by participating country. These results are in turn analyzed to generate overall Olympiad performance by country. The data confirms the domination of these events by the People’s Republic of China for the last 30 years, and also show the performance of Team USA improving, as evidenced by a third place ranking in both 2022 and 2021 (and second in 2020). This year, the Republic of Korea appears in second place, with students from the Russian Federation in fourth place. Places 5 through 10 were captured by Romania, Vietnam, Taiwan, Japan, Iran and Singapore. Further analysis could shed light on the trends in performance, with European countries being less competitive than in years past, and Asian countries rising to dominate the proceedings over the last few decades. The size of the country seems to matter less than the preparation their students receive.

For example, Romania was able to place 5th with ¼ the population of Germany, who placed 12th. Notably, it was Germany’s best showing in 11 years, but a long cry from their performance in the 80s when they ranked number one in 1989, 1988 and 1982.

An analysis of Team USA’s performance from 1993 to the present shows a steady improvement in average ranking, from approximately 6th to 2nd or 3rd place behind China in recent years. An increasing focus on STEM education in the U.S. is partly responsible. Increased competition in the global marketplace has driven students to distinguish themselves through excellence in academic competition.

As the most prestigious biology education and testing program for high school students, the USA Biology Olympiad (USABO) enriches the life science education of 11,000 talented students annually with twenty finalists invited to a two-week residential training program. Ultimately, four students are competitively chosen to represent the U.S. at the International Biology Olympiad (IBO), a worldwide competition involving student teams from over 60 countries. Every member of USA Biolympiad Team has medaled at the IBO since first competing in 2003. All four members of the Team USA in years 2004, 2007, 2008, 2009, 2011, 2012, 2013, 2015, and 2017 were awarded gold medals at the IBO. The data shows that CEE’s involvement in the USABO has resulted in superior results in the International Olympiad relative to U.S. competitors in other International Academic Olympiads. Since 2004, U.S. rankings at the IBO have averaged over three places better than U.S. competitors at other Olympiads.

Methodology

Analysis was performed on data from each of the following International Olympiads, judged to be those most representative of STEM subjects: IBO – International Biology Olympiad (data from 1990-2021. Data from IBO was excluded from the rankings this year, as several countries chose not to send students due to COVID concerns.) ICHO – International Chemistry Olympiad (data from 1968-present) IMO – International Mathematics Olympiad (data from 1959-present) IOI – International Olympiad in Informatics (data from 1989-present) IPHO – International Physics Olympiad (data from 1967-present)

The results for each individual student competing for each country for each Olympiad were tabulated. CEE averaged the student ranks by country in each Olympiad to create country scores. This enabled CEE to rank the performance of national teams. The average ranking achieved by countries across Olympiads was generated by year, and then those results were ranked to create the final index.
CEE congratulates the high school biology scholars who earned medals at the 2022 USABO National Finals held at Marymount University on its Arlington, Virginia campus from May 28 to June 9, 2022. Gold Medalists are: Derek Chen, Belmont High School, Belmont, Massachusetts; Lawrence Long, BASIS Independent Silicon Valley, San Jose, California; Greycen Ren, Adlai E. Stevenson High School, Lincolnshire, Illinois; and Jason Wang, Marriotts Ridge High School, West Friendship, Maryland. Silver Medalists are: Sean Fei, Lexington High School, Lexington, Massachusetts; Amber Luo, Ward Melville High School, East Setauket, New York; Lawrence Ma, Ridge High School, Basking Ridge, New Jersey; and Julianne Wu, University High School, Irvine, California. Bronze Medalists are: Luke Z. Mo, duPont Manual High School, Louisville, Kentucky; Andrew Van Dusen, West Windsor-Plainsboro High School South, West Windsor, New Jersey; Richard Zhu, North Hollywood Senior High School, North Hollywood, California; and Richard Zhu, Peddie School, Hightstown, New Jersey. During the 10 days of the USABO National Finals, students participated cost-free in intensive theoretical and practical biology tutorials. All four 2022 gold medalists were invited to Capitol Hill for Team USA Recognition Day on July 26, 2022, where they met with U.S. Senator Jacky Rosen, Nevada, and lunched with U.S. Representative Neal Dunn, Florida, who are both CEE Honorary Trustees.

In September CEE partnered with the Claude Moore Charitable Foundation (CMCF) at an event in Richmond, Virginia focused on healthcare careers. Travis Williams, Teacher Enrichment Program (TEP) Manager, and Roxanna Stefanascu, PhD, STEM Lyceums Manager, conducted an informative breakout session on CEE’s resources for students and teachers.

TEP is hosting virtual events this fall for rural and urban teachers in seven states. TEP continues to provide unique STEM opportunities for high school teachers to take back to their classrooms. Recordings of presentations for teachers are catalogued on YouTube. All TEP resources and professional development events are cost-free to participants. To date, more than 4,000 teachers from over 1,400 schools have participated. The program has reached nearly 600,000 underserved rural and urban students for them to consider STEM careers. For more information, visit www.cee.org/programs/teacher-enrichment-program.

This fall students are exploring zoology, biomedical engineering, aerospace, and data science and cybersecurity as part of CEE’s new STEM Lyceums program which consists of monthly virtual meetings to engage high school students in discussion and exploration of STEM concepts and career pathways. The sessions are provided at no cost to schools or students. Meetings foster critical thinking skills, encourage excitement for science, and prepare students to enter careers. CEE’s STEM Lyceums partners include Virginia Bio, United Negro College Fund, and Urban League of Hampton Roads. For more, visit www.cee.org/programs/stem-lyceums.

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BIO HONORS USA BIOlympiadiD TEAM

The Biotechnology Innovation Organization (BIO) honored the 2021 USA BiolympiadiD Team at its June 2022 International BIO Convention in San Diego. The 2021 USABO National Finals gold medalists honored by BIO are: Derek Chen, Belmont High School, Belmont, Massachusetts; Judson Lam, Naperville North High School, Naperville, Illinois; Greycen Ren, Adlai E. Stevenson High School, Lincolnshire, Illinois, and Albert Zhang, North Hollywood Senior High School, North Hollywood, California. This is a most prestigious honor for CEE, USABO, and all teachers and students who participated in USABO. BIO is the world’s largest advocacy association representing member companies, state biotechnology groups, academic and research institutions, and related organizations across the United States and in 30+ countries.

2022 ANNUAL FUND CAMPAIGN

CEE’s 2022 Annual Fund campaign to support the Center’s vital STEM programs will conclude on December 31. The alumni and parent committees each seek to raise $325,000. Thank you to the 2022 Alumni and Parent Committees for volunteering time and expertise to advance CEE. Alumni Committee members are: Matthew Thrasher (RSI ’98) (Chair), Jason Koh (RSI ’85), Rich Simon (RSI ’86), John Quisel (RSI ’88), Jed Macosko (RSI ’89), Rageshree Ramachandran (RSI ’90), Evan M. Schwartz (RSI ’00), Nina Vasan (RSI ’01), Ryan Orley (RSI ’05), Caroline S. Lo (RSI ’07), and William Ellsworth (USABO ’17 & RSI ’18). CEE’s Parents Committee (CPC) is also leading the outreach campaign. CPC members are: Doug Himberger, PhD, CEE Trustee and CPC Chair (Chair), Jaime & Jerry Horowitz (RSI ’87), Tina and Howard Kesselheim (RSI ’91, ’94), Susan Wildstrom (RSI ’97), Roger and Marianne Pellegrini (RSI ’11), Marli Pasternak (RSI ’12), Sushovan Guha (USABO ’14, ’15), Angela Fu (RSI ’17), John Liu and Catherine Lu (RSI ’18), Yvonne Li (USABO ’18, ’19), Judy Rosman and Michael Vogelbaum, MD (RSI ’18), Peng Jiang, PhD and Julie Wang (RSI ’19), Sarah and Pete Meindl (RSI ’19), Dr. Fang Zhu (RSI ’19), Jin Cheng (RSI ’19), Doug Shell and Wendy Cheng-Shell (RSI ’21), Elizabeth Pan (USABO ’21), Vidya and Anand Iyer (USABO ’21), Jennifer and John Wahlig (RSI ’21, ’22), Steven Zhu, (USABO ’20, ’22), Annie Yan Chen (USABO ’21, ’22), and Nicholas and Chijui Liao Van Dusen (USABO ’22).

RICKOID AWARDED SIMONS FELLOWSHIP

Emily E. Riehl, PhD (RSI ’01)
Professor, Mathematics at The Johns Hopkins University, was named a 2022 Simons Fellow in Mathematics. She earned her AB in Mathematics from Harvard University, a Certificate in Advanced Study in Mathematics from the University of Cambridge, UK, and an MA and PhD in Mathematics from the University of Chicago. The Simons Fellows program provides funds for up to a semester-long research leave from classroom teaching.

As a 501(c)(3) charitable nonprofit organization, donations to CEE are tax-deductible. Make a gift to CEE by visiting www.cee.org/donate. Checks may be mailed to the Center’s address: Center for Excellence in Education, 7918 Jones Branch Drive, Suite 700, McLean, VA 22102. Every gift assists the Center to keep RSI, USABO, TEP, and STEM Lyceums cost-free to participants. The Center is a GuideStar Platinum charity and has the top rating from GreatNonprofits.
Deepak Ayyagari, PhD (RSI ’88) is Principal at PwC. He earned a B.E. at the National Institute of Engineering, Mysore, India, and an MS and PhD in Electrical Engineering at the University of Maryland.

Ava Chen (RSI ’12) is a PhD student at Columbia University working on robotic hands and stroke rehabilitation. She earned a BS from MIT and an MS from Columbia University, both in Mechanical Engineering.

Joline Fan, MD (RSI ’04) is Clinical Instructor in Epilepsy and Research Fellow at University of California, San Francisco. She earned a BSE in Chemical Engineering with a Certificate in Engineering Biology from Princeton University, an MS in Bioengineering from Stanford University, and an MD from the University of California.

Ben Jiahe Gu, MD (RSI ’11) is a Neurosurgery Resident at the University of Pennsylvania. He earned a BS and an MS in Biochemistry, Biophysics and Molecular Biology from Yale University. He earned an MD from Perelman School of Medicine at the University of Pennsylvania.

Annabel Imbrie-Moore, PhD (RSI ’11) is Associate / Patent Agent at Schox Patent Group. She earned an SB in Biomedical Engineering from Harvard University and a PhD in Mechanical Engineering – Biomechanics from Stanford University.

Mohamed Faisal Kassir (RSI ’12) is an MD/PhD student at Medical University of South Carolina. He earned a BS in Biology and studied pre-med at American University of Beirut.

Stefan Kathman, PhD (RSI ’04) is Scientist, Early Discovery at Vividion Therapeutics. He earned a bachelor’s degree at Harvard in Chemistry and a PhD in Chemistry at Northwestern University.

Jean Lee, PhD (RSI ’98) is a Senior Economist at The World Bank. She earned an AB in Physics, MS in Economics, and PhD in Economics, all from Harvard University.

Dennis Mendoza (RSI ’12) is AI Tech Lead at Doble Cinco. He earned a bachelor’s degree in Mechatronics Engineering from Universidad Nacional Autónoma de México and an MS in Computer Science from Instituto de Investigaciones en Matemáticas Aplicadas y en Sistemas.

Eric R. Nielsen, PhD (RSI ’02) is Principal Economist, Board of Governors of the Federal Reserve System. He earned an AB in Economics from Harvard and an MA and PhD in Economics from the University of Chicago.

Vivek Sahota, JD (RSI ’86) is Senior Project Manager, Electronic Trading at Wells Fargo Securities. He earned a BA in Mathematics from the University of Chicago, an MBA in Finance from The University of Chicago Booth School of Business, and a JD from Fordham University School of Law.

Jeremy Veenstra-VanderWeele, MD (RSI ’91) is Susanne Crosby Murphy Professor of Developmental Neuropsychiatry and Director of Child and Adolescent Psychiatry at Columbia University and New York State Psychiatric Institute. He earned a BA in Psychology at Harvard University and an MD at The University of Chicago Pritzker School of Medicine.

James Whittle, PhD, JD (RSI ’98) is of counsel at Mintz and an intellectual patent attorney. He earned an AB in Chemistry at Harvard University, a PhD in Biology at MIT, and a JD at The George Washington University Law School.

David K. Yang (USABO ’15) is Founding Investor and Head of Ops at 8VC NewCo. He earned an AB, Joint Concentration in Computer Science and Chemical & Physical Biology, from Harvard University.
CEE Annual Holiday Party

CEE’s Annual Rickoid Holiday Party is always a great fun evening to enjoy camaraderie of old and new friends, with lots and lots of turkey, ham, linguini, and Italian desserts. This year the party is on Saturday, Dec. 17, 2022, starting at 7 p.m. at Ms. D’s home located at 11740 Quay Road, Oakton, Virginia 22124. Alumni and friends of the Center typically fly in from all over the world and many stay overnight. RSVP online by Dec. 14, 2022. Contact Maite at (703) 448-9062 or maite@cee.org with any questions.

The Center for Excellence in Education, a tax-exempt 501(c)(3) charitable non-profit, was founded in 1983 by the late Admiral H.G. Rickover and Joann P. DiGennaro, President of the Center. The Center’s mission is to nurture high school and university scholars to careers of excellence and leadership in science, technology, engineering, and mathematics (STEM), and to encourage collaboration between and among scientific and technological leaders in the global community. CEE sponsors Research Science Institute (RSI), USA Biolympiad (USABO), Teacher Enrichment Program (TEP), and STEM Lyceums. CEE provides these programs cost-free to participants. Follow CEE on social media: