

USA
BIOlympiad
2023

National
Finals



MARYMOUNT
UNIVERSITY

Excellence

Center for Excellence in Education

ABOUT THE USA BIOLYMPIAD

The Center for Excellence in Education (CEE) developed and inaugurated the first USA Biolympiad (USABO) in 2002 to train future leaders in the biological sciences. In 2004, the USA Biolympiad Team was awarded an unprecedented four gold medals in Brisbane, Australia, a feat accomplished for the first time in Biology Olympiad history. The USA Biolympiad Team has continued this remarkable record of success by winning four gold medals in 2007, 2008, 2009, 2011, 2012, 2013, 2015, and 2017. Now in its twentieth year, the USABO continues to nurture young scholars to careers of excellence and leadership in science.

The USA Biolympiad concentrates on stimulating young scholars' intellectual curiosity and developing their critical thinking skills in biological reasoning. The rigorous USABO competition demands the best in practical and theoretical knowledge and includes four tiers: Open Exam, Semifinal Exam, National Finals, and the USA Biolympiad Team's participation in the International Biology Olympiad (IBO) Challenge.

2023 USABO STATISTICS

Open Exam: 9,700 students from 590 schools, 44 states and 20 International Schools registered for the Open Exam.

Semifinal Exam: 847 students representing 43 states and 308 schools were in the Semifinal Exam.

National Finals: 20 National Finalists representing 16 schools and 8 states.

2023 USABO STAFF

Administrators

Kathy Frame, USABO Director,
Center for Excellence in Education

Academic Staff

Instructors

Kevin Bao, PhD, University of
Wisconsin, Madison

Todd Brown, EdD, Operation
Outbreak

Eleanor Harris, PhD, The Clifton
Institute

Natalie Howe, PhD, George Mason
University

Jasper Lee, PhD, Harvard
University

Woojong Lee, PhD, Yale University

Andrew Lima, PhD, Environmental
Health Specialist III, Fairfax County
Health Department

Amir Mohammad, MSSB, MPH,
FACPM, University of Connecticut

Todd Rimkus, PhD, Marymount
University

Rebekah Rogers, PhD, University
of North Carolina at Charlotte

Frank Stearns, PhD, Stevenson
University

Chelsea Voss, OpenAI

Teaching Assistants

Kevin Bao, University of
Wisconsin, Madison

Greycen Ren, MIT

Lawrence Long, MIT

Derek Chen, MIT

Speakers

Joseph Dexter, PhD, Data
Science Fellow, Harvard
University

Joann DiGennaro,
CEE President

Vishal Nigam, M.D. Seattle
Childrens' Hospital/
University of Washington

Elizabeth Wood, PhD,
JURA Bio, Inc. Cofounder &
CEO, Broad Institute
Visiting Scientist

Closing Speaker:

Debra Van Egeren, PhD,
Stanford University School
of Medicine

CENTER FOR EXCELLENCE IN EDUCATION CLOSING CONVOCATION SPEAKER



Debra Van Egeren, PhD, Debra is currently a postdoc at Stanford University School of Medicine who studies cancer initiation from an evolutionary perspective using experimental and computational approaches. Before that, she was a USABO and RSI participant in 2010 and 2011, respectively. She subsequently graduated from MIT with a bachelors degree in Computer Science and Molecular Biology and earned a PhD from Harvard University in Systems Biology. While her favorite animal taxon in high school was the

polychaetes (particularly the Christmas tree worms), she is now thinking about adopting pet millipedes instead.

2023 USA BIOLYMPIAD NATIONAL FINALS CONVOCAATION

Tuesday, June 13, 2023

Marymount University
2807 North Glebe Road
Arlington, VA 22207
6-8 p.m.

Welcome and Introduction

Kathy Frame

USABO Director
Center for Excellence in Education

Dinner Keynote Speaker

Debra Van Egeren, PhD

Stanford University School of Medicine

Presentation of Medals and Announcement of USA Biology Team 2023

Kathy Frame

USABO Director
Center for Excellence in Education

Closing Remarks

2023 USA Biolympiad National Finalist

2023 USABO FINALIST BIOS



Aryan Bora | William P. Clements High School | Sugar Land, TX

Aryan is a junior at William P. Clements High School. He is fascinated by STEM, especially math, biology, and computer science. He is a USA Junior Mathematical Olympiad (USAJMO) winner, United States of America Computing Olympiad (USACO) Platinum Division competitor, U.S. National Chemistry Olympiad (USNCO) Honors awardee, United States Physics Olympiad (USAPhO) Bronze Medal recipient, and is currently conducting research in math at MIT PRIMES-USA. Aryan enjoys competing with his school team in the Science Bowl and Science Olympiad as well. Aryan is passionate about music – he is a two-time All-State Violinist and takes immense pride in performing as a piano soloist for senior homes. In his free time, he loves watching movies, playing tennis with friends, hiking national park trails, and wolfing down anything unhealthy.



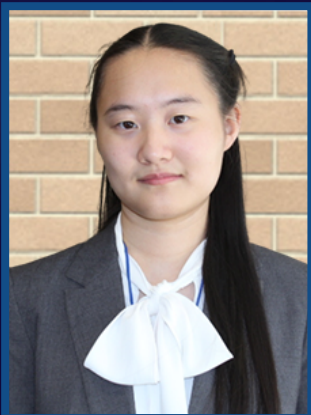
Jerry Cao-Xue | William G. Enloe High School | Raleigh, NC

Jerry Cao-Xue is a freshman attending William G. Enloe High School. Biology is his ultimate passion. Concepts in biology have fascinated and motivated him to learn all that he can about this captivating field. He is particularly interested in the intricacies of the human body, and enjoys reading *Vander's*. He aims to one day use his knowledge to make a difference in other people's lives. He has participated in numerous life science competitions, including earning a Gold Medal at the 2023 Arnold O. Beckman High School Biology Battle. He is also an American Invitational Mathematics Examination (AIME) qualifier. In his free time, he plays and studies chess, having won the Scholastic State Chess Championship 3 times. You can also spot him playing tennis for his school's varsity team, or playing the clarinet in the front row of the NC All-State Honors Band.



Ian Chang | Cranbrook Kingswood Upper School | Bloomfield Hills, MI

Ian Chang is a senior at Cranbrook Kingswood Upper School. In his free time, he enjoys listening to music, including the South Korean vocalists *TWICE* and the vocalist *Keshi*. An avid weaver, he can often be found in his school's weaving studio between classes. He also loves to take walks around campus and take silly selfies with his friends. In particular, he likes to dance the night away and look at the sky, be it the moonlight or sunrise. Ian may be no scientist, but likes studying biology, especially biochemistry. He likes to spend his time learning on Wikipedia and reading the *Proceedings of the National Academy of Sciences* (PNAS).



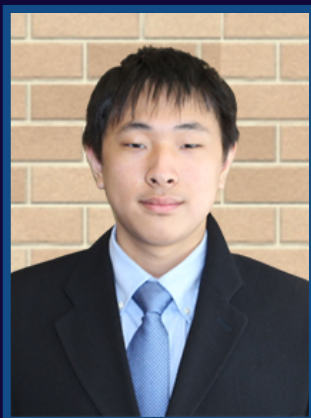
Sophia Chen | Sage Hill School | Newport Coast, CA

Sophia's interest in biology grew from a curiosity about the natural world to uncover the mysteries of human disease. As a two-time USABO finalist, U.S. National Chemistry Olympiad (USNCO) High Honors awardee, and United States Physics Olympiad (USAPhO) semifinalist, Sophia also delves into math—she is a Math Prize for Girls (MPfG) award winner, two-time USA Junior Mathematical Olympiad (USAJMO) qualifier, and six-time American Invitational Mathematics Examination (AIME) qualifier. She is also a Caroline D. Bradley Scholar, a Carson Scholar, and a Garcia Research Scholar. Hoping to give back to her community, Sophia organizes math tournaments and STEM activities as the founder of AGMOT, co-president of Orange County Math Circle, and co-president of STEAM for All. In her free time, Sophia enjoys golfing, drawing, and exploring new music.



Yufei Chen | University High School | Irvine CA

Yufei Chen is a sophomore attending University High School in Irvine, California. His interest in biology stems from his studies in biochemistry and computational biology. He pursues all fields of STEM, being first alternate for the International Chemistry Olympiad (IChO) USA team, qualifying for USA Junior Mathematical Olympiad (USAJMO), and obtaining a gold medal in International Olympics of Earth Sciences (IESO), a silver medal in United States Physics Olympiad (USAPhO), and a bronze medal in National Acrobat Competition (NAC). In addition to participating in a multitude of Olympiads, he was a team member of the second-place high school team of 2023 National Science Bowl (NSO), and is on his school's Science Olympiad team. In his free time, he plays Starcraft 2 and other games with his friends and enjoys visiting National Parks.



Allen Fei | PrepEdu Consulting LLC | Lexington, MA

Allen Fei is a freshman attending Lexington High School. His admiration for various parts of biology stems from his fondness for the variety of animals found in nature and his fascination with the interactions among the different systems that allow for a complex life. Allen has explored his interests by participating in his school's Science Bowl team. He can be found pursuing different topics related to biology or unrelated to biology as well as conversing with others about nuances surrounding philosophical ideas. His general lack of experience makes him excited to participate in new activities relating to STEM.



Damon Gurvich | PrepEdu Consulting LLC | Lexington, MA

Damon Gurvich is a Sophomore attending Lexington High School. His interest in all science in general, and biology, arises from a desire to learn how complex systems may be composed of simple components. Damon has twice, with his amazing team members, been a National Science Bowl (NSO) champion and enjoys visiting other host schools. When he is not spending his time “studying” for USABO or Science Bowl, he enjoys dabbling in microphotography, collecting old books and cool rocks, and engaging in the rat race of academic competition.



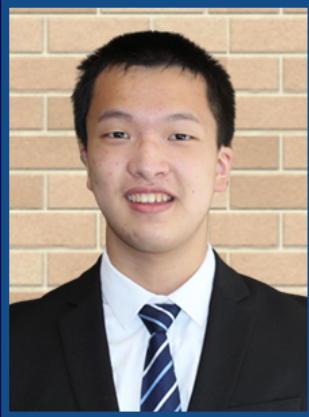
Carolina Kusumanegara | Seven Lakes High School | Katy, TX

Carolina Kusumanegara is a sophomore attending Seven Lakes High School and a 2022 USABO National Finalist. Her primary interests in biology are biochemistry and genetics. Likewise, her favorite textbooks are *Lehninger Principles of Biochemistry* and *Brooker Genetics*. She is an active member of her school’s Science Olympiad team and has medaled several times at nationals. In addition, she has written Science Olympiad tests for many competitions, including the highly regarded tournament BirdSO. Carolina, alongside another 2023 USABO National Finalist (Vishal Surya), co-founded and directed the Houston American Regional Biology Competition (ARBC). She is a part of her school’s biology bowl team, informally known as “Tux” after the Linux penguin. In her free time, she likes to listen to music, read webcomics, and hang out with her friends.



Fiona Li | Henry M. Gunn Senior High School | Palo Alto, CA

Fiona is a junior from California whose passion for biology stems from being curious about nature. Her favorite fields are plants, genetics, and marine biology, and she is interested in topics from human-microbe interactions to ecosystem resilience. At school, Fiona leads and competes on the Science Bowl and Science Olympiad teams. She also enjoys publishing issues of her school’s creative magazine and organizing service events. In her free time, she can be found ice skating at her local rink, experimenting in the kitchen (see the results on her food blog at scallionsandsesame.com), or exploring the outdoors.



Daniel Liu | Mission San Jose High School | Fremont, CA

Daniel is a junior attending Mission San Jose High School in Fremont, California. His passion for biology started with reading *Discover* magazines in elementary school; over time, the books he reads have become thicker, but his interest in life sciences has not changed. He has devoted his spare time to extracurricular activities related to science and biology. Last summer, he researched the applications of cryo-electron microscopy in biochemistry. Currently, he serves as the tournament director of Biology Bowl, creating question content and hosting annual competitions. Daniel is also engaged in his school's STEM clubs, being a co-founder of the school's USABO club. In addition, he tutors middle school and elementary school students in the Science Bowl and Science Olympiad. Daniel further contributes to various volunteer activities to support marginalized people in his local community. In his free time, he enjoys table tennis, piano, instrumental music, and hiking.



Sakura Nakanishi | Palos Verdes Peninsula High School | Rolling Hills Estates, CA

Sakura Nakanishi is a sophomore attending Palos Verdes Peninsula High School. She is passionate about biology, particularly animal anatomy, and physiology. Sakura received the USABO Top 50 Distinction Award in 2022, the Presidential Volunteer Service Gold Award in 2023, and is a 2023 British Biology Olympiad Gold Medalist. She is also the founder of her school's Animal Rescue Club, associate concertmaster in her school's orchestra, and an avid member of the Math Team. In her free time, she can be found playing the violin and piano, hanging out with her family friend's goats, and helping her friends with biology, chemistry, and math concepts.



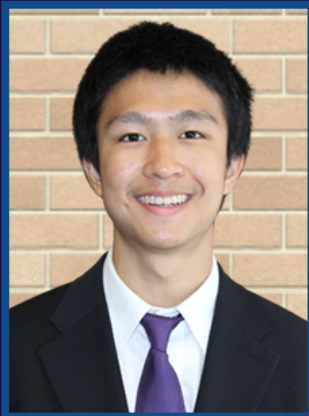
Surya Reddy | Jordan High School | Fulshear, TX

Surya Reddy is a sophomore at Jordan High School. He is an Event Leader of the Jordan Science Olympiad Team and has medaled multiple times at the national level. His favorite event at the Science Olympiad is Cell Biology which he will miss participating in next year. Surya is also a United States of America Computing Olympiad (USACO) Silver participant and won the 2021 Houston Regional Brain Bee at Rice University, going on to place 7th at the U.S National Brain Bee. He is the co-founder and co-president of the Jordan High School Biology Club which produced a record 5 USABO semifinalists this year. In his free time, Surya enjoys watching basketball and playing tennis.



Aditya Sivakumar | Mira Loma, High School | Sacramento, CA

Aditya Sivakumar beat the case (the academic comeback was crazy) and will be attending UC Berkeley in the fall. As a recent graduate from Mira Loma, Aditya's favorite part of biology is playing trivia in Mr. Porter's classroom, getting fish for his environmental studies class, or studying plant diversity by laying in the grass. Aditya is also a chemistry enthusiast who would have made U.S. National Chemistry Olympiad (USNCO) honors but he wanted money for his chipotle and kikis. In his free time, Aditya can be found benching his 7 copies of *Campbell*, playing retrobowl, destroying Dulles 78-12 or listening to J Cole (his favorite song is #3 on 2014). Aditya will not be dissecting a worm in his room at camp.



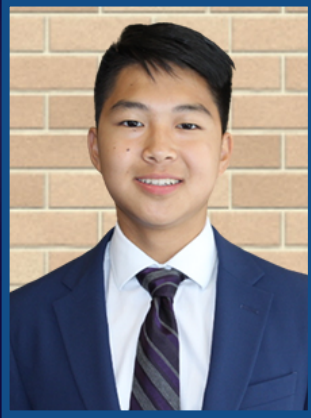
Bill Sun | Seven Lakes High School | Katy, TX

Bill Sun is a sophomore attending Seven Lakes High School in Katy, Texas. His interests lie in a multidisciplinary approach to biology; his most recent research project has been on utilizing computer algorithms to improve retinal wave measurement. Aside from biology, Bill is also passionate about music; he is a 2-time All-State Symphony cellist and has won competitions in solo piano. He is also an American Invitational Mathematics Examination (AIME) qualifier and is part of his school's SciOly team. In his free time, he enjoys biking with members of his Tux biology bowl team and playing Minecraft.



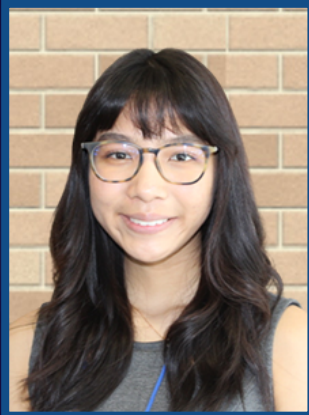
Vishal Surya | Seven Lakes High School | Katy, TX

Vishal Surya is a sophomore attending Seven Lakes High School. He discovered his passion for biology after learning about the nervous system in elementary school. He has continued pursuing Anatomy and Physiology by competing with his school's Science Olympiad team, where he has medaled multiple times at the state and national levels. Additionally, he has previously conducted computational biology research about Multiple Sclerosis and its connections with the Muramyl Dipeptide response pathway in T cells. He competes on his school's Lincoln Douglas debate team. Besides competing in tournaments, he enjoys tutoring students in biology and helps run the Houston American Regional Biology Competition. In his free time, you can catch him biking, listening to rap, missing 3-pointers, and reading *Systema Porifera*.



Kaiden Wu | Thomas Jefferson High School for Science and Technology | Alexandria, VA

Kaiden loves the world of nature and the secrets that it holds. He is a 3-time winner of the annual Thanksgiving pie competition between him and his cousin, winner of "biggest eater" award on his crew team, and his eggs have been rated "decent" by his little brother. He also scored 15 on USABO Open during his freshman year. When he is not competing, you can find him on the Occoquan Reservoir rowing with his crew team, or biking with his friends. He is also trying to pick up fishing, piano, and reading again this summer. Next fall he will be attending the University of Chicago, where he may be majoring in biology, physics, philosophy, economics, molecular engineering, statistics, or classics. He has not decided.



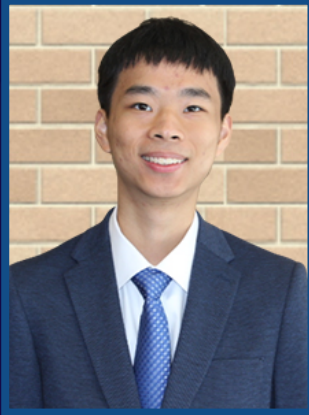
Sophie Wang | Fossil Ridge High School | Fort Collins, CO

Sophie Wang is a two-time USABO Finalist and an incoming freshman at MIT. Post-pandemic, she organized academic programs in her school, which have raised over \$20K to support her community. Her interest in biology propelled her to develop cell lines expressing single-molecule protein misfolding reporters at the Stasevich Lab. Additionally, she has captained her Science Bowl team to the Top 16 at nationals. While undergoing her own biology journey, she aims to create more opportunities for underrepresented students. In her free time, Sophie enjoys playing the guitar, watching true crime documentaries, and journaling on hills.



Yolanda Xie | duPont Manual High School | Louisville, KY

Yolanda Xie is a junior at duPont Manual High School in Louisville, Kentucky. She first became interested in biology as a dedicated competitor and officer of her school's Science Olympiad team. Aside from memorizing epidemiologists, she is fascinated by pathophysiology and evolution and enjoys competing in various Health Occupations Students of America (HOSA) events. Yolanda has a wide array of other interests including playing piano for senior citizens, writing free-form poetry, practicing archery (also known as accidentally shooting holes in walls), and developing a different video game obsession each month.



Jonah Xu | duPont Manual High School | Louisville, KY

Jonah Xu is a senior at duPont Manual High School. From viewing histology slides under the microscope to running a DNA extraction lab for his school's Biology Club, Jonah has always enjoyed hands-on biology. He applies his biology knowledge crafting crafts tough questions for the Science Olympiad invitationals and is a 2-time national champion in Anatomy and Physiology. With a strong interest in learning anatomy, he wishes to pursue a career in medicine. However, Jonah also enjoys learning about areas outside biology: he is a 5-time American Invitational Mathematics Examination (AIME) qualifier and 3-time U.S. National Chemistry Olympiad (USNCO) National Qualifier. When he is not telling stories using his stuffed clownfish, you can find him tinkering with Legos and running around in Minecraft. Jonah will attend MIT in the fall.



Richard Zhu | North Hollywood High School | North Hollywood, CA

Richard Zhu is a senior at North Hollywood High School, and a returning Finalist. His deep interest in biology stems from a love for living things and an eagerness to explore nature's innovation. From the cellular biochemistry that stabilizes our daily activities to the community interactions that characterize the environment around us, he finds the concept of biological systems to be a particularly promising approach. As the co-captain of his school's science bowl team, Richard has found shared interests with his peers to include being an American Invitational Mathematics Examination (AIME) qualifier and also a U.S. National Chemistry Olympiad (USNCO) qualifier. Richard also enjoys hitting drop shots with his tennis racquet and plummeting his bughouse rating on chess.com by accidentally playing the *bongcloud*. Richard will be attending MIT in the fall.



CEE BOARD OF TRUSTEES

Honorary Members

President Jimmy Carter

U.S. Senator Jacky Rosen (NV), U.S. Senator Todd Young (IN),

U.S. Rep. Neal Dunn (FL), U.S. Rep. Scott Peters (CA),

Her Excellency Bahia El Hariri, Member of Parliament, Lebanon; President, Hariri Foundation

Mr. Mel Chaskin, Chairman

President & CEO, Vanguard Research, Inc.

Steven P. Strong, Ph.D., Vice Chairman

Founder and Principal - Fenrir LLC

Mr. Pranav Adani

Director, Adani Enterprises Limited

Mr. Gilbert T. Bland

Founder and Chairman – The GilJoy Group

Dr. Frederick Y. Chen, M.D., Ph.D.

Chief, Division of Cardiac Surgery,

Cardio Vascular Center, Tufts Medical Center

Ms. Joann P. DiGennaro

President, Center for Excellence in Education

Mrs. Betty J. Dranow

President, The Dranow Family Foundation

Ross Grossman, PhD

Retired SVP, HR, Regeneron Pharmaceuticals, Inc.

Mr. Nadir M. Hariri

Chairman & CEO, Gateways Venture Holding

Ms. Josie Haspel

Senior Vice President - Customer Experience Leader

Wells Fargo

Dr. Douglas E. Himberger

President, DE Himberger Consulting, LLC

Mr. Songrong Hou

Chairman, Spruce Technology Group

Dr. Noreen Hynes

Director, Geographic Medicine Center,

Division of Infectious Diseases,

Johns Hopkins University School of Medicine

Mr. Mark Kantrowitz

President, Cerebly, Inc.

Dr. Wolfgang Ketterle

Nobel Laureate

John D. MacArthur Professor of Physics,

Research Laboratory for Electronics,

MIT-Harvard Center for Ultracold Atoms,

Department of Physics, MIT

Ms. Susan Lee Ko

Consultant

Mr. Raymond C. Kubacki

Chairman & CEO, Psychomedics Corp

Dr. Tom Leighton

Co-Founder & CEO, Akamai Technologies, Inc.

J. Michael McQuade, Ph.D.

Special Advisor to the President

Carnegie Mellon University

Admiral W.A. Owens, USN (Ret.)

Chairman and Co-Founder

Red Bison Advisory Group

Mr. Arvind Parthasarathi

Founder/Former CEO of Cyence

Mr. Roger Pellegrini

Managing Director, Securitization Finance

RBC Capital Markets

The Hon. Thomas R. Pickering

Vice Chairman, Hills & Company

International Consultants

Ms. Cynthia Pickett

Pickett Law Group, PLLC

The Hon. Clarine Nardi Riddle

Counsel, Kasowitz Benson Torres LLP

Mr. Rasheed Sabar

Co-Founder & Co-CEO, Correlation One

Ms. Kathy Sherman

Executive Director, State Government Affairs Amgen, Inc.

Mr. Ronald W. Simms

Chairman, Board of Directors, Petroleum Service Company Inc.

Dr. Michael Sipser

Donner Professor of Mathematics

Massachusetts Institute of Technology

Feng Zhang, Ph.D.

McGovern Investigator and Professor, MIT's Departments

of Brain and Cognitive Sciences and of Biological

Engineering, Core Member, Broad Institute of MIT and

Harvard

Mr. Robert Zou

Founder, Chairman and CEO, Arrail Group Ltd.

THANK YOU, SPONSORS



Building Futures
Foundation



Arnold and Kay
Clejan Charitable
Foundation



Kenneth & Myra
Monfort
Charitable
Foundation



Special thanks to our USABO host Marymount University

THE CENTER FOR EXCELLENCE IN EDUCATION

The Center for Excellence in Education (CEE) has contributed to the scientific leadership of this country since its founding in 1983 by the late Admiral H.G. Rickover, the father of the nuclear navy and civilian uses of nuclear power, and Joann DiGennaro, CEE's President. CEE is a nonprofit 501(c)(3) charitable organization that sponsors the Research Science Institute (RSI) in collaboration with Massachusetts Institute of Technology (MIT), USA Biolympiad (USABO), Teacher Enrichment Program (TEP), and STEM Lyceums through collaborations with educational institutions, private foundations, corporations, government agencies, and individuals who share a commitment to educational excellence and leadership.

The Center's mission is to nurture high school and university scholars to careers of excellence and leadership in science, technology, engineering and mathematics, and to encourage collaboration between and among scientific and technological leaders in the global community.

For additional information about CEE and its programs, visit www.cee.org.

Center for Excellence in Education
7918 Jones Branch Drive, Suite 700
McLean, VA 22102
O: 703.448.9062
F: 703.448.9068

