National Finals

Closing Convocation
June 2, 2021
The Center for Excellence in Education 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 nineteenth 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.

Ultimately, four students earn the honor to represent the USA as the USA Biolympiad Team in the 2021 International Biology Olympiad IBO Challenge II July 18-23. The IBO for 2021 in Lisbon, Portugal was cancelled due to the COVID-19 pandemic.

**2021 USABO STATISTICS**

Open Exam: 8,908 students from 464 schools, 42 states and 8 International Schools registered for the Open Exam.

Semifinal Exam: 408 students representing 38 states and 2 International School were in the Semifinal Exam.

National Finals: 20 National Finalists representing 17 schools and 8 states.

**2021 USABO National Finalists**
Administrators

Center for Excellence in Education

Michelle King, PhD, Manager, USABO
Kathy Frame, USABO Advisor & Consultant

Academic Staff

Instructors
Rasha Al-Ali, PhD, Marymount University
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Woong Lee, PhD, Yale University
Rahul Nagvekar, PhD, Yale University
Todd Rimkus, PhD, Marymount University
Frank Stearns, PhD, George Washington University

Teaching Assistants

Atharv Oak, Massachusetts Institute of Technology
Henry Shen, Stanford University
Lakshay Sood, Johns Hopkins
Chris Wang, University of Washington, St. Louis
Jason Yang, Massachusetts Institute of Technology
Jason Zhang, University of Michigan Medical School
Lucy Zhao, Massachusetts Institute of Technology
Bhav Jain, Massachusetts Institute of Technology

Speakers

Simon James Archibald, Ph.D. Chief Scientist, VP Scientific Affairs, President of The Integra Foundation
Frederick Y. Chen, MD, Ph.D., Chief, Cardiac Surgery; Professor of Surgery, Tufts University School of Medicine
Joann DiGennaro, President Center for Excellence in Education
Chetan Goudar, Ph.D., VP of Attribute Sciences at Amgen
Jamie L. Wells, MD, FAAP, an RSI ‘91 alumna, President and Founder of the Yale Alumni Health Network
Robert J. Lefkowitz, MD, Professor of Medicine, James B. Duke Distinguished Professor of Medicine, Professor of Biochemistry, Professor of Pathology, Professor of Chemistry, Duke University
David Patrick, Ph.D., Art of Problem Solving (AoPS)
Dr. Robert Lefkowitz is a Howard Hughes Medical Institute investigator who has spent 48 of his 53 year research career at the Duke University Medical Center. He and Brian Kobilka, a post-doctoral fellow in Lefkowitz’s lab in the 1980s, were awarded the Nobel Prize in Chemistry in 2012 for their research on G-protein coupled receptors. Lefkowitz is a Professor of Biochemistry and Chemistry and a James B. Duke Professor of Medicine. He is also a basic research cardiologist at the Duke Heart Center. He has been an Investigator at the Howard Hughes Medical Institute since 1976, and is a member of the USA National Academies of Sciences, Medicine and Inventors, and the American Academy of Arts and Sciences. Other awards include the National Medal of Science, the Shaw Prize in Life Science and Medicine, and the Canada Gairdner International Award amongst many others.

Joann DiGennaro has devoted her career to advancing STEM education both at home and abroad. She established the Center for Excellence in Education (CEE) with the late Admiral H.G. Rickover in 1983. Ms. DiGennaro has represented the interests of U.S. education as a member of the delegation to the first U.S.-China Civil Strategic and Economic Dialogue in Beijing, China. She served on Purdue University’s Global Affairs Strategic Advisory Council, where she also served on the Dean’s Advisory Board for the College of Liberal Arts. She has also served on the Boards of Visitors at George Mason University, Shimer College, and the National Intelligence University. She serves on the Houston Methodist DeBakey Heart & Vascular Center Council and on the Advisory Board for the USA Science & Engineering Festival. Ms. DiGennaro is also proud to have served on the Board of Trustees at the Keck Graduate Institute of Life Sciences and the Advisory Board of Cyence, Inc. In 2014, Ms. DiGennaro became one of only five civilian women to receive the Department of the Army’s Outstanding Civilian Service Medal for her service as both an expert consultant and Chair of the U.S. Army War College Board of Visitors. Ms. DiGennaro’s exemplary service to the Advisory Council of the National Aeronautics and Space Administration (NASA) was recognized in 2008, when she received NASA’s Public Service Medal for her contributions to the organization’s mission and educational programs. Ms. DiGennaro received her Bachelor of Science at Purdue University and her Master of Science at the University of Maryland. She read the law at Oxford University and received her Juris Doctor at George Mason University. She also served as a Research Affiliate at Harvard University’s Program for Information Resources Policy, where she authored *Science Literacy: Essentials for Decision Making*. She also co-authored *Scholarships and Fellowships for Math and Science Students*. 
Virtual Closing Ceremony

June 2, 2021
Friday 6:00 p.m.– 7:30 p.m.

Welcome and Introductions

Joann DiGennaro
President, Center for Excellence in Education

Keynote Speaker

Dr. Robert Lefkowitz
Professor of Medicine, James B. Duke Distinguished Professor of Medicine, Professor of Biochemistry, Professor of Pathology, Professor of Chemistry, Member of the Duke Cancer Institute.
Duke University

Presentation of Certificates to the 2021 USA Biolympiad Team

Michelle King, PhD
Manager, USA Biolympiad, Center for Excellence in Education

Presentation of National Finals Medalists:

Kathy Frame
Consultant/Advisor, USA Biolympiad & Special Projects, Center for Excellence in Education

Acknowledgement of TAs and USABO Alums

Michael Zhao, Lynbrook High School
USABO Student Remarks
Akshay Attaluri | Junior | Cupertino High School | Cupertino, CA

In addition to receiving the USA Biolympiad Top 50 Distinction Award Biolympiad in his sophomore year, he also is a three-time American Invitational Mathematics Examination qualifier and a Gold participant in the USA Computing Olympiad. His avid interest in tumor biology has led to his extensive computational research in tumorigenesis and tumor treatment. In his free time, Akshay enjoys art, learning about ancient cultures, reading fantasy novels, listening to music, cooking, and playing D&D.

Sophia Chen | Freshman | Sage Hill School | Newport Coast, CA

She has been interested in biology since she was a child, but her foray into competitions started in middle school. She won 6 medals in two years at the regional Science Olympiad (favorite event: Heredity). Sophia also loves the challenge that math offers and has captained her school’s MATHCOUNTS team for 3 years and qualified for the American Invitational Mathematics Examination since sixth grade. In her free time, Sophia can be found singing along to early 2000’s pop hits, doodling fanart of Neko Atsume, practicing Chinese folk dance, and watching YouTube videos on topics ranging from cooking to domino toppling.

Derek Chen | Junior | Belmont High School | Belmont, MA

Derek is fascinated with biology and the other STEM areas. He is a five-time American Invitational Mathematics Examination qualifier, USA Computing Olympiad Gold competitor, and USA Physics Team Honorable Mention recipient. At school, Derek is an avid participant in the Math, Science Olympiad, and Mock Trial teams. He has attended the Program in Mathematics for Young Scientists, MIT Program for Research in Mathematics, Engineering, and Science, and conducted research in machine learning. During the COVID-19 pandemic, Derek served as an instructor and a member of the management team for the initiative Belmont Free Lessons. In his free time, he enjoys running, playing tennis, chatting with friends, singing along to musicals, and browsing Wikipedia.
Arthur Hu | Junior | Lexington High School | Lexington, MA

In addition to the USA Biolympiad, he has qualified for the USA Physics Team twice, earned an Honors in the U.S. National Chemistry Olympiad, participated in the American Invitational Mathematics Examination five times, and was selected as an International Earth Science Olympiad alternate. Recently, he is completing his research conducted through MIT’s Program for Research in Mathematics, Engineering, and Science, and is making attempts to master the fine art of Minecraft PvP. In the 2020 USABO Finals, he earned a silver medal and looks forward to making new friends at Finals this year.

Jonathan Huang | Senior | Lynbrook High School | San Jose, CA

After reading about induced pluripotent stem cells in seventh grade, Jonathan decided to participate in the USA Biolympiad. This year marks his sixth and final endeavor to achieve a medal in the USABO. Taxonomy, especially the classification of obscure marine organisms such as Janthina janthina, the common violet snail, is especially intriguing to him. Jonathan has also competed in a variety of science competitions, but his primary passions consist of lengthy linguistical lectures, crazy crossword competitions, and attempts to answer the meaning of life.

Rohan Iyer | Junior | Tesla STEM High School | Redmond, WA

His dual passion for biology and computer science is the result of his fascination with complex systems and how modern solutions can be found to serve individuals and communities. Rohan has worked on a plethora of developmental and research projects about technological solutions for COVID-19-related problems, as well as leading a research effort on spatial privacy and presenting his findings at the 7th International Geographical Information Systems Theory, Applications, and Management Conference. Rohan is the president of his school’s biology and science bowl clubs. Between the busy moments of his day-to-day life, Rohan enjoys birdwatching around the nature trails and lakes near his house.
**Judson Lam | Senior | Naperville North High School | Naperville, IL**

Is a returning Finalist. He is the co-captain of his school’s Science Bowl and Science Olympiad teams where his focus is biology. Over the summer, he will be researching lung surfactant with the Air Force Research Laboratory in Dayton, Ohio. In the fall he will be attending MIT and majoring in either computer science or biology. He enjoys missing 3-pointers, playing board games, and staring at his computer for abhorrently large periods of time.

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**Lawrence Long | Junior | BASIS Independent Silicon Valley | San Jose, CA**

He is especially interested in the ways biology can create solutions to better human lives. This is his second year participating in the USA Biolympiad; he received the Top 50 Distinction award in his sophomore year. Lawrence is a member of his school’s Science Bowl team which placed fourth at the Student Learning Assistance Center National Accelerator Laboratory this year. He enjoys playing table tennis and looks forward to competing more at his local club after quarantine. In his free time, he enjoys solving chess puzzles, playing piano, watching movies, and working on his wacky programming ideas.

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**Peter Pu | Junior | University of Chicago Laboratory Schools| Chicago, IL**

He earned the USA Biolympiad Top 50 Distinction Award last year and is excited to attend National Finals. Peter’s favorite biology textbook is *Lehninger Principles of Biochemistry*. Peter has qualified for the American Invitational Mathematics Examination and earned Distinguished Honor Roll on the American Mathematics Competition 10 and 12. Peter enjoys listening to classical music on WFMT. His favorite composer is Dvorak, and he blasts Saint Saens’ Organ Symphony before biology tests. When he is not studying, Peter likes playing tennis with friends and watching Hikaru Nakamura on YouTube.
Greycen Ren | Junior | Adlai E. Stevenson High School | Lincolnshire, IL

Greycen’s passion for biology started in 6th grade when he joined his middle school’s Science Olympiad Team. Primarily participating in biology-related events, Greycen has explored various topics such as anatomy and physiology, microbiology, and genetics. His favorite biology topic is animal physiology and the mechanisms behind how the human body works. He is a strong advocate for a balanced lifestyle, enjoying spending his free time with his friends (both in person and calling through Discord), playing with his dog, cooking (not baking — he is bad at baking), and supporting Manchester United.

Albert Tam | Junior | Lynbrook High School | San Jose, CA

Enjoys biology, math, computer science, and everything in between. He qualified for the American Invitational Mathematics Examination four times, competes with his school’s Science Olympiad team, and researches error correction algorithms for DNA nanopore sequencing. As an officer of Meducate, a nonprofit that bridges gaps in health education in underserved communities, Albert oversees partnerships with special needs organizations, schools in the Bay Area, and with 40+ schools in Liberia. In his free time, Albert enjoys hiking in the Santa Cruz Mountains, playing the double bass, and hosting nighttime karaoke sessions with his friends.

Alexander Tang | Junior | Lexington High School | Lexington, MA

In addition to the USA Biolympiad, he has been conducting research on the role of G-protein coupled receptors in treating opioid addiction and metabolic diseases. He is a four-time American Invitational Mathematics Examination qualifier. Alex is an accomplished violinist, plays with the Massachusetts All-State Symphony Orchestra, serves as concertmaster for his school orchestra, and performs as a soloist for senior citizens. An avid reader, Alex is a writer and editor for his school newspaper. He also swims competitively. In his free time, he enjoys playing football with his younger brother.
Lynn Tao | Sophomore | Thomas Jefferson School for Science and Technology | Alexandria, VA

She is fascinated by the expansive field of biology and its potential integration with technology. She is a two-time American Invitational Mathematics Examination qualifier, a USA Computing Olympiad Gold tier competitor, and a national awarded debater. Her research on stream health led her to become a Junior Science and Humanities Symposia National Delegate and place 3rd in the Virginia State Science and Engineering Fair. Lynn has received the Presidential Volunteer Service Award and the Congressional Award Silver Medal. In addition, she has won several Gold Keys in the Scholastic Writing Awards and performed at Carnegie Hall. In her free time, she likes playing with her two mini poodles.

Jason Wang | Freshman | Marriotts Ridge High School | Marriottsville, Maryland

He enjoys biology, especially ecology and environmental biology. Jason is a member of his school’s Science Olympiad team and has medaled several times at states and various invitationals. He is also a three-time American Invitational Mathematics Examination qualifier and a British Biology Olympiad gold medalist. Besides biology, he is also an avid Public Forum debater and has competed at several invitational tournaments. Outside school, he plays soccer for a travel team with the Soccer Association of Columbia. Jason enjoys the outdoors, playing violin, and hanging out with his friends.

Nicholas Wei | Sophomore | The Harker School | San Jose, CA

He first became interested in biology through the field of botany and is to this day intrigued with all things plants. His fascination with orchids since he was nine has led to his discovery of several California-native orchid populations, and he provided identifications for over 22,000 orchid records. Currently, his volunteer and research work focuses on native orchid conservation. Nicholas is drawn to the classics and has attended multiple Latin conventions at the state and national levels, earning multiple first-place distinctions. In his free time, he can be found hiking, playing water polo, or helping his sister bake pastries.
Julianne Wu | Freshman | University High School | Irvine, CA

She is a recipient of the William and Dorothy C. Bevan Scholarship, an AIME qualifier with a Certificate of Achievement, and an International History Olympiad invitee. As a science aficionado, Julianne is a member of her school’s Science Bowl, Ocean Science Bowl, and Science Olympiad teams, where she is a gold medalist at the national MySO and state level. Her philanthropic passion involves being the co-founder of Making Lives Better with Alorica’s NextGen program, empowering youth to give back to local underserved communities. In her free time, Julianne enjoys playing the piano, scuba diving, and traveling. This summer, she will conduct research on the use of enzyme-responsive nanoparticles to target chemotherapeutics to tumor cells.

Andrew Wu | Freshman | Marquette High School | Chesterfield, MO

He is interested in animal/plant anatomy & physiology as well as biosystematics. Andrew also enjoys chemistry and materials science. During middle school, his team placed First in State in the “You Be the Chemist Challenge”. Andrew is also passionate about aerospace engineering and is a Lead Engineer in his school’s Rocketry Club. His team placed second nationally at The American Rocketry Competition’s virtual competition last year. In his free time, Andrew enjoys playing the piano, launching medium power rockets, as well as playing online games with his friends.

Albert Zhang | Senior | North Hollywood High School | North Hollywood, CA

Albert Zhang is a senior at North Hollywood High School, and a returning Finalist. He is captain of his school’s Science Bowl team and scored among the top 50 in this year’s USA Physics Team. Albert likes to eat oranges. He ate more than 1000 of the 2166 oranges produced by his orange trees last season. This resulted in his writing and recording “Oranges”, which is now a hit pop song in his school. When not studying, Albert likes to think about systems biology, play jazz on his trumpet, and play Chopin’s Etude Op. 10 No. 3 on his piano. Albert will be attending Stanford University in the Fall.
Michael Zhao | Senior | Lynbrook High School | San Jose, CA

He is a returning USA Biolympiad Finalist and 2020 USABO Finals Silver Medalist. He is a two-time American Invitational Mathematics Examination qualifier and USA Computing Olympiad Gold competitor. This past summer, Michael conducted glycobiology research at Boston University. As founder and president of his school’s Science Olympiad Club, his team qualified for the state competition for the first time in nine years. Michael serves as his school’s Student Body President and was named a 2021 U.S. Presidential Scholar and Coca-Cola Scholar. In his free time, he enjoys playing the French horn. Michael will be attending Harvard University in the fall.

Caleb Zhao | Sophomore | Montgomery Blair High School | San Jose, CA

Ever since an upperclassman told him to read Campbell, he has been intrigued with the complexity and beauty in biology. He enjoys “bowling”, not just the physical activity but also history bowling, quiz bowling, and science bowling. He is also an American Invitational Mathematics Examination qualifier and a chemistry enthusiast, having earned an Honors distinction in the U.S. National Chemistry Olympiad. Aside from his academic endeavors, Caleb enjoys listening to music and playing piano and cello. When not perusing Klein's Organic Chemistry for the USABO, he can be found scrolling through Wikipedia or marathoning symphonies, one composer at a time.
2021 USABO National Finalists in pictured in lab coats donated by Psychemedics Corporation.

CONGRATULATIONS TO THE 2021 FINALISTS!

Mollie Joe Wells - the official unofficial mascot of the 2021 RSI and USABO - is especially elated for you.

Yes, it is a gratuitous dog picture. Laughter is often the best medicine. Best of luck!

2021 USABO offered students many exciting learning opportunities.
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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.