

TBC 2023 WINNERS

Category 1: Agricultural Biotechnology – Intermediate (Grades 9-10)

1st – Alicia Castellon, Sheldon High School (Elk Grove), “Indoor Vertical Farming”

2nd – Arya Sule, Dougherty Valley High School (San Ramon), “Vertical Farming: The Upwards Evolution of Plants”

3rd – Nhat Ton, Sheldon High School (Elk Grove), “The Prospects of GMO's”

Honorable Mentions

- Brendan Arzaga, Sheldon High School (Elk Grove), “How GMO Corn is Made Step by Step: From the Lab to the Dirt to the Plate”
- Maeja Dahl, Sheldon High School (Elk Grove), “Genetic Engineering Foods”
- Ryan Dinh, Sheldon High School (Elk Grove), “If It Ain't Rice, It Ain't Nice: A Closer Look at Genetically Modified Rice”
- Aadesh Sahoo, Amador Valley High School (Pleasanton), “Epigenomic Analysis: The Creation of Spectacular Fruits”
- Don Yevloyev, Sheldon High School (Elk Grove), “Paving the Future of Agricultural Biotechnology”

Category 1: Agricultural Biotechnology – Senior (Grades 11-12)

1st (Tie) – Christopher Haddad, Christian Brothers High School (Sacramento), “Aquaponics: Are Fish the Future of Farming?”

1st (Tie) – Emma Lam, Pleasant Grove High School (Elk Grove), “Integrating Bees Back into Agricultural Methods”

2nd (Tie) – Bethany Jackson-Russo, Pleasant Grove High School (Elk Grove), “Aquaponics”

2nd (Tie) – Elijah Shabaaz, Christian Brothers High School (Sacramento), “Agricultural Biotechnology: Aquaponics”

3rd – Rocco Edralin, Pleasant Grove High School (Elk Grove), “Aquaponics”

Honorable Mentions

- Jo Jewell-Woodroffe, Christian Brothers High School (Sacramento), “Animal Breeding by Marker Assisted Selection (MAS)”
- Madelyn Lee, Pleasant Grove High School (Elk Grove), “Aquaponics as a Sustainable Agricultural Medium”

Category 2: Biomanufacturing / Subcategory in Cellular Agriculture – Intermediate (Grades 9-10)

1st – Kelly Nguyen, Sheldon High School (Elk Grove), “The Likelihood of Cultured Meat in Everyday Life”

2nd – Hoangan Nguyen, Sheldon High School (Elk Grove), “Cellular Fish to Save Fish”

Category 2: Biomanufacturing / Subcategory in Cellular Agriculture – Senior (Grades 11-12)

1st – Ashleigh Lecitona, Sheldon High School (Elk Grove), “Breast Believe: Using Modern Biotechnology to Eliminate the Shortage of Infant Formula”

2nd – Leticia Caban, Sheldon High School (Elk Grove), “‘Meat’ the Solution: The Beef with Beef”

3rd – Christy Thao, Pleasant Grove High School (Elk Grove), “The Future of Meat”

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Honorable Mentions

- Timothy Hawkins, Pleasant Grove High School (Elk Grove), "Lab Grown Meat"
- Ryan Tran, Pleasant Grove High School (Elk Grove), "Lab Grown Meat - Science Fiction to Just Science"
- Toby Trieu, Pleasant Grove High School (Elk Grove), "Nutritional Benefits and the Ecological and Economic Prospects of Insect Proteins"
- Abigail Wan, Pleasant Grove High School (Elk Grove), "The Future of Meat Starts in a Lab"
- Lisa Wang, Pleasant Grove High School (Elk Grove), "Using Cellular Agriculture to Create Cell-Based Food"

Category 2: Biomanufacturing / Subcategory in Biopharma – Intermediate (Grades 9-10)

1st – Dolly Ho, Sheldon High School (Elk Grove), "Vabysmo - To See the Future: A Real-Life Application of Biotechnology in the Eyes"

2nd – Kelly Loi, Sheldon High School (Elk Grove), "Biotechnology & The Endeavor For Human Prion Cures"

3rd – Sadhika Pendyala, The Quarry Lane School (Dublin), "Unraveling the New Future: RNA-Based Therapeutics"

Honorable Mentions

- Keira Farrar, Sheldon High School (Elk Grove), "The Super Cell"
- Allen Song, Sheldon High School (Elk Grove), "Vaccines: Things You Should Know"
- Linh Vo, Sheldon High School (Elk Grove), "The Promising Future of Monoclonal Antibodies"

Category 2: Biomanufacturing / Subcategory in Biopharma – Senior (Grades 11-12)

1st – Nishka Modi, Folsom High School (Folsom), "One Stroke at a Time Cure HIV with ART"

2nd – Michelle Lee, Henry M. Gunn High School (Palo Alto), "Cancer Vaccines: A Promising Step Forward to Curing Cancer"

3rd (Tie) – Arlene Fang, Pleasant Grove High School (Elk Grove), "Penicillin: The World's First Antibiotic and Its Impact Today"

3rd (Tie) – Mayukhi Katragadda, Dougherty Valley High School (San Ramon), "Expanding the Use of mRNA Vaccines to Combat More NTD's"

Honorable Mentions

- Erick Guzman, Grant Community High School (Fox Lake, IL), "The Ever-Lasting Battle Between Viruses and Vaccines"
- Mitchell Ho, Pleasant Grove High School (Elk Grove), "Vaccines 101"
- Trish Ho, Sheldon High School (Elk Grove), "Antibiotics: Battle Against Bacteria"
- Jolene Hoang, Pleasant Grove High School (Elk Grove), "Neglected Tropical Diseases: Battle from the Bottom"
- Sara Mehra, Ryan International School (Elk Grove), "Orphan Drugs: An Overview"
- Grace Nguyen, Pleasant Grove High School (Elk Grove), "Cancer Immunotherapy"
- Juliette Rangel, Grant Community High School (Fox Lake, IL), "Could Vitamin C Solve a Global Crisis?"
- Alicia Romani, Christian Brothers High School (Sacramento), "Biologics for Autoimmune Disease"
- Saachi Sethi, The Quarry Lane School (Dublin), "Botulinum Toxin: Serendipity and Boon"

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Category 3: Computational Biology & Genomics – Intermediate (Grades 9-10)

1st – Nouvel Virtusio, Sheldon High School (Elk Grove), “Reviving Our Woolly Friend Using the Power of Genome Sequencing”

2nd – Chigozie Monye, Sheldon High School (Elk Grove), “The ‘Perfect’ Child”

3rd – Sophia Tran, Sheldon High School (Elk Grove), “Genetic Maps”

Honorable Mentions

- Jed Andrade, Sheldon High School (Elk Grove), “Forensic Proteomes: The Use of Protein Sets to Identify the Unidentifiable”
- Solaris Chanthaboualy, Sheldon High School (Elk Grove), “Precision Medicine: The Blueprint To Recovery”
- Zexuan Guan, Sheldon High School (Elk Grove), “The Use of Biotechnology to Alter Gene Mutations Inside the Stomach”
- Timothy Hwang, Holmes Junior High School (Davis), “Mitochondrial Replacement Therapy for Mitochondrial Diseases”
- Gavin Knyff, Sheldon High School (Elk Grove), “Genetic Chimeras”
- Hannah Laurente, Sheldon High School (Elk Grove), “The Future of Healthcare With Artificial Intelligence”
- Yhali Revis-Wright, Sheldon High School (Elk Grove), “Gene Editing Designer Babies”
- Anaya Smith, Sheldon High School (Elk Grove), “Using AI to Generate Proteins”
- Kailyn Song, Marlborough School, “Diving Deep into Computational Biology and Genomics”
- Brielle Villareal, Sheldon High School (Elk Grove), “DNA Profiling; How DNA Helps Prove Criminals Innocent or Guilty”

Category 3: Computational Biology & Genomics – Senior (11-12)

1st (Tie) – Sanjana Bajaj, The Quarry Lane School (Dublin), “Predicting mRNA Degradation in Vaccines”

1st (Tie) – Sucheer Maddury, Polygence Research Academy, “A Signal Processing Procedure for Early Huntington’s Disease Prognosis”

2nd – Madeline Fong, Pleasant Grove High School (Elk Grove), “Epigenetics: Cancer, Cancelled”

3rd (Tie) – Mischa Mikami, Pleasant Grove High School (Elk Grove), “The Perfectly Imperfect Creation: Designer Babies”

3rd (Tie) – Alex Thai, Pleasant Grove High School (Elk Grove), “Designer Babies: Designing Your Own”

Honorable Mentions

- James Ho, Sheldon High School (Elk Grove), “Quantum Computers in Biology”
- Jayden Luong, Pleasant Grove High School (Elk Grove), “The Versatility of Epigenetics”
- Isabella Magdaleno, Pleasant Grove High School (Elk Grove), “DNA Methylation in Disease Identification”
- Jolin Su, Sheldon High School (Elk Grove), “Application of Genome Testing to the Home Environment”
- Allyssa Ton, Sheldon High School (Elk Grove), “New Era of Personalized Medicine: Targeting Drugs for Each Unique Genetic Profile”
- Rishi Upadhyay, Mira Loma High School (Sacramento), “Angelman Syndrome: In Search of a Cure for the Happy Puppet”
- Logan Vicochea, Pleasant Grove High School (Elk Grove), “DNA Methylation and Cancer Research”

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Focus Area 4: Environmental Biotechnology & Planetary Health – Intermediate (Grades 9-10)

1st (Tie) – Phuc Dang, Sheldon High School, “For a Greener Future: Genetically Modified Trees”

1st (Tie) – Matthew Yang, Sheldon High School Biotech Academy, “Cleaning Up Our Act: Bioremediation for a Cleaner, Healthier Planet”

2nd – Andisha Zahir, Sheldon High School Biotech Academy, “Biodegradable Plastics: The New Wave of Sustainability”

3rd (Tie) – Reiko Ujimori, Sheldon High School (Elk Grove), “Hydrogen Fuel Cell”

3rd (Tie) – Samar Yalda, Pleasant Grove High School (Elk Grove), “Bioplastics: Into the Future”

Honorable Mentions

- Jonathan Floresca, Sheldon High School (Elk Grove), “Seafuel!”
- Lauren Matias, Sheldon High School (Elk Grove), “Affordable, Abundant, Algae”
- Tristan Moua, Sheldon High School (Elk Grove), “Decompostable Degradable Bioplastics”
- Sean Wang, The Quarry Lane School (Dublin), “Cellulose Acetate - The Bioplastic of the Past”

Focus Area 4: Environmental Biotechnology & Planetary Health – Senior (Grades 11-12)

1st (Tie) – Caitlyn Hoang, Pleasant Grove High School (Elk Grove), “Phytoremediation: Engineering Plants to Clean the Environment”

1st (Tie) – Harmoni La, Pleasant Grove High School (Elk Grove), “Phytoremediation and Its Benefits”

2nd (Tie) – Mehvish Mavi, Pleasant Grove High School (Elk Grove), “Rooting for a Cleaner Environment”

2nd (Tie) – Mariam Rafiqzada, Pleasant Grove High School (Elk Grove), “An Overview on Bioplastics”

3rd (Tie) – Evan Lao-Ngo, Pleasant Grove High School (Elk Grove), “Phytoremediation to Remove Hazardous Wastes”

3rd (Tie) – An Nguyen, Pleasant Grove High School (Elk Grove), “Microbial Fuel Cells”

Honorable Mentions

- Mia Gutierrez, Christian Brothers High School (Sacramento), “Bioremediation”
- Rini Khandelwal, Del Norte High School (San Diego), “Got (Salty) Water? Microbial Desalination Cell: A Promising Future for Sustainable Water Desalination, Wastewater Treatment and Energy Production”
- Taylor Pham, Pleasant Grove High School (Elk Grove), “Microbial Fuel Cells”

Category 5: Molecular Tools: Nanobiotechnology, Synthetic Biology & Genetic Engineering – Intermediate (Grades 9-10)

1st (Tie) – Alana Le, Sheldon High School (Elk Grove), “An Allergen-Free Kitty”

1st (Tie) – Princeton Ly, Sheldon High School (Elk Grove), “What's Next with Microbots?”

2nd (Tie) – Ryan Chung, Sheldon High School (Elk Grove), “CRISPR: The Gene Screen”

2nd (Tie) – Lavanya Gnanakumar, Folsom High School (Folsom), “Party with CAR-T!”

3rd (Tie) – Marielle Maniulit, Sheldon High School (Elk Grove), “The Rapid Development of COVID-19 Rapid Antigen Tests”

3rd (Tie) – Dev Mehra, The Quarry Lane School (Dublin), “Lab-on-a-Chip Devices: The Future of Biotechnology Research”

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Honorable Mentions

- Logan Brennan, Sheldon High School (Elk Grove), “New Horizons For Drug Delivery”
- Taran Kaur, The Quarry Lane School (Dublin), “Breast MRI”
- James Nguyen, Sheldon High School (Elk Grove), “Nanobiotechnology and Peripheral Nerve Repair”
- Parisha Nigah, Sheldon High School (Elk Grove), “Nanorobotics: The End of Cancer”
- Anushri Srivastava, Vista Del Lago High School (Folsom), “Nanopharmaceuticals and Nanomedicine: Exploring ‘The Room at the Bottom’”
- Evelyn Truong, Sheldon High School (Elk Grove), “Using CRISPR to Cure Blindness”

Category 5: Molecular Tools: Nanobiotechnology, Synthetic Biology & Genetic Engineering – Senior (Grades 11-12)

1st (Tie) – Prajanya Kannan, The Quarry Lane School (Dublin), “Nanoparticles for Drug Delivery: The Tiny Wonders Transforming Medicine”

1st (Tie) – Finna Wang, The Quarry Lane School (Dublin), “CAR-T Cell Therapy”

1st (Tie) – Bahar Zahir, Sheldon High School (Elk Grove), “Liposomes: Versatile Drug Delivery Vehicles”

2nd – Madison Ferguson-Goodheart, Sheldon High School (Elk Grove), “Prenatal Gene Therapy: Diagnosing Unborn Babies”

3rd – Angela Le, Sheldon High School (Elk Grove), “The Synthetic Study of Life”

Honorable Mentions

- Savannah Doty, Pleasant Grove High School (Elk Grove), “How Gene Therapy Can Be Used to Treat Genetic Diseases”
- Leyna Le, Sheldon High School (Elk Grove), “Lab-on-a-Chip: a Scientist's Favorite Snack”
- Elaine Leon, Pleasant Grove High School (Elk Grove), “Liposomes: the Future of Nanomedicine”

Category 6: Regenerative Medicine & Biomedical Engineering – Intermediate (Grades 9-10)

1st – Lekha Anand, Amador Valley High School (Pleasanton), “Stem Cells: Repair, Restore, Regenerate”

2nd (Tie) – Jennifer Liu, Sheldon High School (Elk Grove), “Toucan Play at That Game! 3D Printed Prosthetic Bird Beaks”

2nd (Tie) – Angela Sin, Sheldon High School (Elk Grove), “Xenotransplantation: Genetically Modified Pigs Saving Humans

3rd (Tie) – Alana Farve, Sheldon High School (Elk Grove), “The Future of Cryogenics in Preserving Human Life”

3rd (Tie) – Aniket Maharaj, Sheldon High School (Elk Grove), “Brain Computer Interface, The Fix For Paralysis”

Honorable Mentions

- Ashwin Dinh, Sheldon High School (Elk Grove), “Heartificial Intelligence”
- Joedy Mazanilla, Sheldon High School (Elk Grove), “Xenotransplantation: The Future of Organ Transplants”
- Hana Schubert, Sheldon High School (Elk Grove), “Ageing and Vision: Looking to the Future”
- Gurshan Singh, Sheldon High School (Elk Grove), “Visual Neuroprosthetics and Computer Brain Interface”
- Zixuan Tian, Sheldon High School (Elk Grove), “Bioartificial & Synthetic Organs: The Future is in Our Hearts”

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Category 6: Regenerative Medicine & Biomedical Engineering – Senior (Grades 11-12)

1st (Tie) – Erika Young, Pleasant Grove High School (Elk Grove), “Technologizing Tissue”

1st (Tie) – Jia Li Zhou, Sheldon High School (Elk Grove), “Using Biotechnology to Restore Sight: Bionic Eye and Artificial Lenses”

2nd (Tie) – Jessica Cheng, Foothill High School (Sacramento), “The Development and Future of Artificial Organs”

2nd (Tie) – Srikar Pasala, Amador Valley High School (Pleasanton), “The Future of Medicine: Synthetic Organs”

3rd (Tie) – Brianna Pham, Sheldon High School (Elk Grove), “Stem Cell Therapy: A New Lease on Life”

3rd (Tie) – Emma Piccione, Christian Brothers High School (Sacramento), “Artificial Hearts: The Future of Organ Transplants?”

3rd (Tie) – Ava Schrank, Grant Community High School (Fox Lake, IL), (“Advancements in Biomedical Engineering: Implants and Grafts”

Honorable Mentions

- Christian Ho, Pleasant Grove High School (Elk Grove), “Biomedical Prosthetics: Thinking Action into Action”
- Calista Huang, Carlmont High School (Belmont), “Biocompatibility: Next-Generation Prostheses and Medical Implants”
- Gurleen Kaur, Pleasant Grove High School (Elk Grove), “Skin Regeneration: Skin Cells ↔ Stem Cells”
- Gurshan Singh, Sheldon High School (Elk Grove), “Visual Neuroprosthetics and Computer Brain Interface”
- Alexanderia Moya, Christian Brothers High School (Sacramento), “Mesenchymal Stem Cells with Spina Bifida”
- Audrey Ng, Pleasant Grove High School (Elk Grove), “Synthetic Organs: The Key to Ending Organ Shortage”
- Keilana Jazelle Nonan, Christian Brothers High School (Sacramento), “The Use of Artificial Limbs”
- Sonia Shaheen, Sheldon High School (Elk Grove), “Cord Blood Stem Cells”