

## Highlights of the 2022

### 65<sup>th</sup> Science & Engineering Fair of Metro Detroit, 28<sup>th</sup> Michigan Science and Engineering Fair, and Regeneron International Science and Engineering Fair

SEFMD and MSEF were both held virtually in March, 2022. Over the course of several months, teachers and students in grades 3-12 from seven counties across southeastern Michigan and from other communities in the state prepared projects for entry in the regional and state science fair competitions.

For additional information about this year's fair and the plans for 2023 visit <https://www.sefmd.org>



**ISEF Finalists:** Vikram Goddla, Annabelle Ye, Mikul Saravanan, Marggie Yang, Michelle Hua, Owen Dong, Glen Warren, Kush Parikh, Timothy Mathew, Donald Liveoak, and Kiera Washington

During the week of May 8-13, 2022, the Regeneron International Science and Engineering Fair took place in Atlanta, GA. Eleven students competed at the ISEF (ten in person and one virtually). The competition featured 1,700 young scientists representing 49 states and 63 countries across the world. In terms of the number of awards received, this was the best year ever for our Fairs. Out of the ten projects entered (nine individual projects and one team), **seven** of the projects received either a Grand Award in their category or a Special Organization Award (or both)!! Congratulations to each of these students!

### **SEFMD and MSEF Senior Grand Award Winners and ISEF Finalists**

#### **MSEF Grand Award Winners**

**Michelle Hua** (grade 11, Cranbrook Kingswood School): “Geometric Consistency-based Self-Supervised Neural Network: A Novel Deep Learning Framework for 3D Human Shape and Motion Reconstruction.” **ISEF Award:** 2<sup>nd</sup> place (\$2000) category award in Robotics and Intelligent Machines.

**Kush Parikh and Timothy Mathew** (grade 10, Troy H.S.): “COVision: A Novel Convolutional Neural Network for the Differentiation of COVID-19 from Common Pulmonary Conditions”. **ISEF Awards:** 3<sup>rd</sup> place (\$1000) category award in Robotics and Intelligent Machines and \$1200 from the Chinese Association for Science and Technology (CAST).

## SEFMD Grand Award Winners

**Donald Liveoak** (grade 12, Allen Park H.S.): “Schrodinger Bridges on Discrete Domains.” **ISEF Awards:** 3<sup>rd</sup> place (\$1000) category award in Mathematics, 2<sup>nd</sup> place award (\$1500) from the National Security Agency Research Directorate, and 3<sup>rd</sup> place award (\$500) from the American Mathematical Society.

**Margaret Yang** (grade 12, Cranbrook Kingswood School): “Engineering Biocatalyst for Biofuel”. **ISEF Award:** 3<sup>rd</sup> place (\$1000) category award in Energy: Sustainable Materials and Design.

**Vikram Goddla** (grade 10, Detroit Country Day School); “AI Solution for Brain-Tumor Patients”. **ISEF Award:** 4<sup>th</sup> place (\$500) category award in Computational Biology.

**Mikul Saravanan** (grade 11, Cranbrook Kingswood School): “Novel Multipurpose Air Handling Robot with AI-Based Anomaly Detection.” **ISEF Award:** Lawrence Technological University tuition scholarship of \$19,650 per year, renewable for up to four years.

**Kiera Washington** (grade 11, Davis Aerospace Technical H.S.): “Daphnia in Runoffs.” **ISEF Award:** Lawrence Technological University tuition scholarship of \$19,650 per year, renewable for up to four years.

**Glen Warren** (grade 12, Dearborn Center for Math, Science, and Technology): “Gesture-Based Computer Control.”

**Annabelle Ye** (grade 11, Huron H.S.): “Dietary Impact on Memory T-Cells.”

**Owen Dong** (grade 11, Rochester Adams H.S.): “Arsenic Metabolism in Mushrooms.”

## BROADCOM Masters International Delegates to ISEF

Three middle school students from Southeast Michigan were selected to attend the Regeneron ISEF as part of the BROADCOM Masters International Delegation. The SEFMD was the only Fair in the nation able to select students for this recognition! These students participated in a special program each day and also attended many events with the high school students. The students were **Marcellus McCaleb III** (grade 6, A.L. Holmes Elementary-Middle School), **Judy Bai** (grade 8, Clague Middle School) and **Josue Valencia** (grade 6, Clippert Academy Middle School).



BROADCOM finalists, in the front:  
Marcellus, Judy, and Josue

## SEFMD Elementary and Junior Grand Award Winners

**Congratulations** to these students: **Logan Johnson** (grade 3, DPSCD Virtual School), **Simran Belanger** (grade 6, Plymouth Scholars Middle School), **Rishi Chowdhury** (grade 8, Independent Student), **Ryan Lee and Taiwen Feng** (grade 6, Boulan Park M.S.), **Tanay Panja** (grade 8, Clague M.S.), **Rayhan Shah** (grade 8, Larson M.S.), and **Josue Valencia** (grade 6, Clippert Academy M.S.).