FAIR WINNERS

High School Grand Prize

Congratulations to the three Grand Prize winners for their outstanding achievement in this year's Synopsys Sacramento Regional STEM Fair!

Finishing first overall, Henry Low, a student of Western Sierra Collegiate Academy, hit it home with his project titled "Obsessive Compulsive Disorder: Developing an Intuitive Mobile App for Assessing the Effectiveness of Psychotherapy Treatments." His research investigated the efficacy of different types of psychotherapy in an effort to find the best method for treating OCD.

Teevyah Yuva Raju, a student from Mira Loma High School, placed second for her project titled "Drought Impact on Soilborne Fungal Pathogen of Tomato." She researched the effects of drought on pathogen growth in soils native to California to encourage the discussion of soil amendment in agriculture.

Completing the trio in third place is a team project by Dylan McLeod and Daniel Bolya, students from Folsom High School, with their project titled "Using Artificial Intelligence Systems for Autonomous Visual Comprehension and Handwriting Generation." Their research expanded on the novel scope of neural network research by investigating a pipeline that allows a machine to solve typed or handwritten math problems and generate a handwritten answers as well as a human can.

New This Year: Middle School Grand Prize!

In addition to the Grand Prize Award Winners, the 2016 Fair had one new, exciting addition, the three top scoring first place middle school projects were invited to attend and observe the upcoming Intel International Science & Engineering Fair in Phoenix, Arizona in May with the High School Grand Awards Winners!

Congratulations to our three youngest-ever Grand Awards winners at the Synopsys Sacramento Regional STEM Fair: Emily Valdez of E.V. Cain STEM Charter School, Rhitishah Yuva Raju of Winston Churchill Middle School, and Yahvin Gali of Lammersville Elementary School!

These three deserving students will travel with the competing high school students and attend the week-long event where they will meet new friends, learn new things, and experience all the sights and sounds that ISEF has to offer.

All Synopsys Sacramento Regional STEM Fair Winners

Congratulations to all of the winners of the 2016 Synopsys Sacramento Regional STEM Fair! If you'd like to view the winners' lists (both Category and Special Awards Winners), please visit our website at: www.sacSTEMfair.org/synopsys-sacramento-regional-stem-fair.html

SPECIAL THANK YOU TO OUR SPONSORS

We'd like to extend a special THANK YOU to all of our sponsors this year. We're extremely appreciative of all your organization does to help our Foundation. Without you we would not have had half of the Fair that we had.

SUPPORT THE FOUNDATION SIMPLY BY SHOPPING FOR GROCERIES

Do you shop at Raley's, Bel-Air, or Nob Hill? If so, please join the Extra Credit program for the Sacramento Regional Science and Engineering Fair Foundation. See instructions on how to sign up here. It's all online and just a few simple clicks to support the Foundation!

ARE YOU A STATE WORKER LOOKING TO DONATE THROUGH "OUR PROMISE" (formerly CSECC)?

The donation website for "Our Promise" has been taken offline, but state employees can still make their donations the old-fashioned way! The Sacramento Regional Science & Engineering Fair Foundation (dba NorCal STEM Education Foundation) hopes you will elect to donate to our organization. We've even prepared the form for you with our information to make it simple. Use the Our Promise form with our information here.

All seven 2016 Synopsys Sacramento Regional STEM Fair Grand Awards Winners with NorCal STEM Education Foundation Vice President Matt Hanson and President David Miller.

THANK YOU TO ALL!

Students, Parents, Teachers, Judges, Community Leaders, Partners and Sponsors:

THANK YOU for making the 2016 Synopsys Sacramento Regional STEM Fair a resounding success!

YOUR efforts have made a huge difference in the STEM growth of "our" kids! No matter your role: following the scientific method, implementing the engineering design process, guiding young inquisitive STEM students in their quest for knowledge, or in judging fairly and giving positive feedback. Without all of these contributions, this STEM Fair just wouldn't be possible.

To all of our students: **thank you** and **CONGRATULATIONS!** You have accomplished so much. Completing a STEM project outside of school is no simple task, and for that you should be commended.

To our Parents & Teachers: **thank you** and **CONGRATULATIONS!** Your efforts to inspire the next generation of STEM rockstars is paying off! We saw some of the **BEST PROJECTS** we've ever seen this year!

To our Judges: **thank you** and **CONGRATULATIONS!** Your time and the energy put forth to give honest, constructive feedback will help these students far beyond this year, and help to shape them into better clinicians, scientists, engineers, technologists, and mathematicians.

And finally to our Community Leaders, Sponsors and Partners: **thank you** and **CONGRATULATIONS!** Your contributions are what made this event possible.

You all deserve a warm pat on the back! We hope to see you all again next year!

AFTER THE FAIR

PICTURES OF THE FAIR

The STEM Fair was an exciting day, from set up and orientation, to judging and presentations, through the hands-on College & Career Expo and finishing with the Awards Ceremony, it was somewhat of a whirlwind. If you'd like to refresh your memory on some of the fun you had that day, visit our Flikr page to see all the pictures from the event!

SURVEYS: HOW WAS IT?

Did you attend the Fair this year? Help us keep improving it by taking our survey. We value your feedback!

Student Survey
Exhibitor Survey
Teacher & Parent Survey
General Attendee Survey
Judge & Volunteer Survey

SCIENCE SPOTLIGHT

LIFELIKE LAB-GROWN SKIN

Researchers at the RIKEN Center for Developmental Biology in Japan have successfully bioengineered and transplanted mouse skin into living mice. While similar accomplishments have already been successfully used in human patients, this new study generated tissue that was much more similar to natural living tissue than those previous studies. The new tissue has all three layers found in natural skin, and contains hair follicles and sebaceous glands (those glands that secrete sweat and "sebum" or skin oil).

The researchers began with cells gathered from mouse gums, then used chemicals to transform the cells into stem cell-like iPS cells. In culture, the cells developed into an "embryoid body (EB) - a three-dimensional clump of cells that partially resembles the developing embryo in an actual body." The researchers then implanted multiple EBs into immune-deficient mice (mice who were less likely to have an immune response and reject the growing tissue). When the EBs grew into differentiated tissue, the scientists transplanted them out of the mice and into the skin tissue of other mice, where the tissue developed normally, including sprouting hair - something many bioengineered skin replacements have lacked the ability to do.

To read more about the research, follow the link to the lab's press release here, or the Discovery News article here.

STOPLIGHTS, NO MORE!

Stoplights are a thing of the past! Or they will be, soon enough according to an international team of researchers. The researchers from the Massachusetts Institute of Technology (MIT) Senseable City Lab (which initiated the study), the Swiss Institute of Technology (ETHZ), and the Italian National Research Council (CNR) have developed a plan called "Light Traffic," similar to the way air traffic control systems work. The researchers believe that slot-based intersections would significantly reduce queues and delays "to almost zero." Results of the study were published in the journal PLoS ONE on March 16, 2016.

The idea imagines a scenario where sensor-loaded, self-driving vehicles (no human operators allowed!) would pass through intersections by communicating with other vehicles and remaining a safe distance apart. Removing the wait time caused by traffic lights would speed up traffic flow. It would also have the added effect of reducing pollutants and greenhouse gases caused by acceleration and deceleration cycles by eliminating "stop-and-go."
If you'd like to read more about Senseable City Lab's international development, click here.

OTHER COMPETITIONS & SCHOLARSHIPS

Featured Scholarship: UC Davis C-STEM Scholarship

NEW ADDITION TO THE TEAM - LYVIN TAT!

My name is Lyvin Tat, and I can't wait to begin my journey here with you all! I am the new intern for the NorCal STEM Education Foundation. Some of you may have seen me at the Fair this year. I'll be around for the duration of this fiscal year. A little about myself: I am currently finishing off my senior year at the University of California, Davis, with a major in Neurobiology, Physiology and Behavior and a minor in Professional Writing. My future career goals include pursuing higher education in graduate school and exploring the frontiers of molecular biology. More specifically, I would like to enhance the discussion on nutritionally beneficial probiotics as a way for treating health-related problems. Besides my career interests, I am an avid outdoorsman. Certain outdoor hobbies of mine include running, hiking and garden-work. Regarding my running, my goals this year include beating my personal record of 1 hour and 35 minutes in a half marathon (yes, I am quite proud of that!), and doing my first triathlon! I also wish to take part in urban agriculture in the future, as I believe it is our best chance to successfully feed the growing population. Many of my professional and personal goals have some connection to STEM, and I expect that many of you will say the same. I am happy to be a part of bringing STEM closer to you all, and excited to take part in the behind-the-scenes atmosphere here at the Foundation. I hope that you will all take a moment to say "hi" to me if you see me out and about at Foundation events!

C-STEM Awards and Scholarships are presented to K-12 students for their aspiration and excellent achievement on integrated learning of computing and STEM subjects in both formal and informal settings.

C-STEM awards the following annually:

C-STEM Award of Achievement - middle-school students
C-STEM Award of Excellence - high-school students
C-STEM Girl's Leadership Award - middle school girls who have attended the GIRL camp
C-STEM Scholarship - college-bound seniors

Applications for the 2016 Scholarships are due by**May 2, 2016**. Follow this link to apply.

Featured Competition: Operation Innovate Youth Hackathon at Sierra College

Operation Innovate in partnership with Sierra College and the City of Rocklin is hosting a STEAM-related youth hackathon for ages 12-17. The event is just $50 per child for two and a half days of educational fun!

Participants will get STEAMED and learn: Science, Technology, Engineering, Art, Math, Entrepeneurship and Design. Sign up early, because space is limited!

If you'd like more event information, or to register, please follow this link.