Newsletter: April/May, 2010 Volume 4, Issue 1

What is happening within the SFBAC

Changes with Board of Directors

Our board member, Jeff Harrison, has resigned in April. Jeff has been the member of SFBAC for a long time, we are sorry to see him leave. We thank Jeff for the many years of service and wish him the very best.

2010 Lockheed Martin Young Minds at Work (YMAW)

INCOSE is a co-sponsor for the YMAW at Lockheed Martin on April 22 from 9:00 am to 3:00 pm. We sincerely thank David Mason, Rollie Olson and Joseph lavender for participate this event, representing INCOSE. Special thanks to David Mason who cosponsor the event and summarized the event in the attached article.

2010 INTEL **International Science and Engineering Fair (ISEF)**

This year INCOSE has seven judges participated in the Intel ISEF, The INCOSE team lead by Dr. William Mackey, with co-judges Mr. John Walker, Judy Walker, student member Julie Walker , Dr. Cihan Dagli, Dr. Dorothy McKinney, Dr. Stan Weiss, and David Mason. Again, thanks to David Mason for a wonder write up on this event.

University of California Irvine (UCI) System Engineering

SFBAC INCOSE member, Carol Gutierrez, is teaching System Fundamental Class to Northrop Grumman in Sunnyvale for UCI.

San Jose State University Master of System Engineering (MSE) Program

SJSU is offering an MBA/MSE Dual-Degree Program <http://www.engr.sjsu.edu/ges/off-campus/rose/mba-mse>. INCOSE SFBAC President participated and provided inputs in May's SJSU MES Curriculum Committee meeting.

April and May Monthly Meetings

March monthly meeting was held on April 13th and May 11th in SCU. BoD discussions and presentation material is posted on our Website <http://www.incose.org/sfbac/schedule.html>.

System Engineering Class Survey

Annual SFBAC survey questioners are completed by Rollie Olson. In the coming weeks, you will be notified to take the survey. This year the survey questions are focused on SE Class. Please take a moment to the website and complete the survey when you receive the notice. The results of survey will be helping us in provide better service to our members. The results will also be published in our next month newsletter, following the survey.

Up Coming Events

Event Calendar – June, 2010

Date	Event	Location
6/2010	SE Class Survey	Website
6/08	SFBAC Monthly Meeting - A Systems Engineering Approach to Aviation Training by Kent Christensen	Santa Clara University

Welcome to Our New Members

First Name	Last Name	Company	Title
Joseph	Hughes	Electric Power Research Institute	Sr. Technical Manager
Matthew	Petty	PB Inc	Lead Engineer
Bhavani	Prasad	International Game Technology	Exec. Director Software Engineering
Ricardo	Rojas Oliva		
Bret	Rothenberg		
Philip	Shih	ITT Radar Reconnaissance and Acoustic System	Staff Systems Engineer

Membership Renewal:

All members should review their membership renewal dates to continue taking advantage of the benefits and information offered by INCOSE. You can renew your membership at: http://www.incose.org/

Other Business

2010 INCOSE International Symposium will be held from July 11th the July 15th in Chicago. For more information please visit < http://www.incose.org/symp2010>.

The 4th Asian Pacific Conference on Systems Engineering (APCOSE 2010) will be held on October 4-6. Abstract submission deadline is extended to May 30th, 2010. For more information, please visit the following link: <http://www.incose-taiwanchapter.org/APCOSE2010/>.

2010 Young Minds at Work Newsletter

The Air and Space Exhibit contributed to an exhilarating day on April 22 when Lockheed Martin hosted the annual Young Minds at Work (YMAW). The event included the Air and Space Exhibit sponsored by Lockheed Martin Central Engineering, the International Council on Systems Engineering, Airplane Owners and Pilot Association, and by Superior Aviation Training. The exhibit had something for all age groups; from building robotic arm 'End Effector', paper models of the AEHF Satellite and the NASA Space Shuttle, interactive computer simulation to shoot a cannon ball around the globe, and small airplanes to feel 'wind power'. The children with advanced math skills, and their parents, were challenged to calculate the number of earth rotations needed to align Moscow directly under the MIR space station, to understand satellite circular and elliptical orbital mechanics, and to calculate the flight time from above the San Francisco waterfront to a midpoint under the golden gate bridge.

For each challenge completed the students were awarded a handsome 'certificate' to signify their understanding of science, technology, engineering, and math (STEM) skills. These certificates we designed by the volunteer team and embellished by the Lockheed Martin business development team. But the highest reward was received by those students who calculated the time required to fly from a predefined location above San Francisco water front to midpoint under the golden gate bridge. Once the time was calculated, is was time to verify by test the estimated flight time in the flight simulator provided by Superior Aviation Training under the direction of the flight instructor, Mr. Kent Christensen and their younger observers . It was rewarding when students existed the flight simulator with their actual flight time mere seconds from their calculated time. Estimates placed the attendance at the Air and Space Exhibit at near 400 hundred family members enjoying the full day event.

INTEL International Science and Engineering Fair

Judging Results

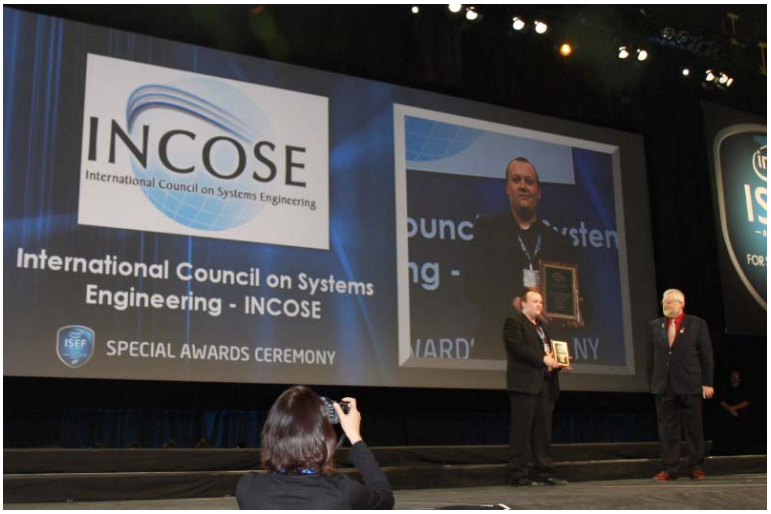
David Mason

I had the distinct privilege of being one of 7 represents from the International Council on Systems Engineering (INCOSE) as a Special Awards judge at the annual INTEL International Science and Engineering Fair (ISEF) at the San Jose Convention Center on May 12 -14th 2010. The event was attended by more than 1500 High School participants from 50 countries covering seventeen major areas

e INCOSE team lead by Dr. William Mackey, with co-judges
ber Julie Walker , Dr. Cihan Dagli, Dr. Dorothy McKinney,
r organized the judging teams into groups of two to review
es of Engineering: Electrical, Mechanical Engineering,
nd Transportation in one day. Each judge selected their top
the entire team the following day. Each selected
isciplinary project that produced technologically appropriate solutions to meet societal needs. The infectious enthusiasm, and technical knowledge, discovered from each participant during the interview process provided great insight into the motivation and knowledge of their selected project. Each judge then selected their top five candidates to determine the INCOSE overall winner. It was a challenging task to select the one participant from the selected finalist to receive the $1500.00 INCOSE award, and in the end the separation between projects held a small margin.

The INCOSE team selected Gary Stanley Kurek of Bonnyville, Canada for the INCOSE award at the INTEL ISEF 2010.

Gary's first invention was a module which can be retro-fitted to any walker to be used as a motorized wheelchair. He also developed a light weight wheelchair operable either manually or with power assist, which can ascend/descend a curb and recline to increase safety. His high-end



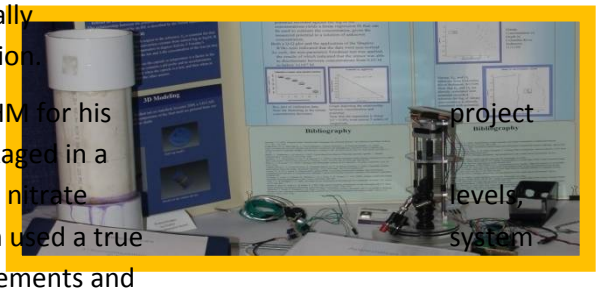
wheelchair climbs stairs and can raise the user to eye level with standing adults.

Honorable Mentions went to:

Alexander Kent Kendrick of Los Alamos, New Mexico who won the 2009 INCOSE award who designed, built and tested in actual caves a new two way digital Underground Radio demonstrating an operational goal of a 300m range through limestone. At ISEF 2010, Alexander designed, built, and field tested an underground imaging system that can induce currents in aquifers and detect the corresponding secondary field.

Carl Edward Lawhon's, of Kansas City, Missouri, 2009 HM project performed a study that analyzed whether autonomous robots can communicate and cooperate with each other in order to accomplish a "real world" task in an unstructured environment more efficiently and effectively than non-communicating robots.

James Lee Clark's, of Las Cruces, New Mexico 2009 HM project evaluated the available resource (wind) from a different perspective, enabling him to consider optimized solutions not traditionally considered but using good historical background as validation.

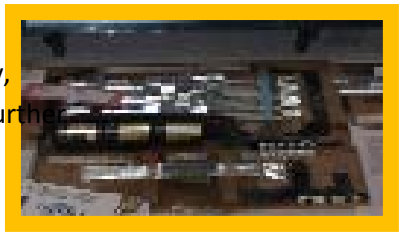


Avilash Kalpathy Cramer's, of West Linn, Oregon won an HM for his project in which he developed a novel ion-selective electrode packaged in a waterproof capsule which, submerged in a river bed, reads nitrate levels, either intrinsic or from pollutants, in the sediment. Avilash used a true system approach, including substantial research to develop requirements and effective functional block diagrams.

Gavin Grant Ovsak's, of Eden Prairie, Minnesota, 2010 HM unique project incorporates sensors and controls mounted in a cap to provide computer cursor control using only head movements and a bite switch. The system was designed for persons lacking hand/arm mobility. Impressive in Gavin's process were his research, thorough planning, customer testing and a system approach in his presentation

Andrew Garrett Amis', of Clinton, Mississippi, 2010 HM project developed four DC electric motors including: a Reed switch motor, a transistor-based motor, a Hall Effect motor, and an opto-coupler motor. In addition, he evaluated the best aspects of each motor and created a new motor incorporating all of the advantages of the 4 motors.

Scott Douglas Olson's, of Gilbert, Arizona, 2010 HM project used the unique properties of fiber optic cable to demonstrate the feasibility of a low power, flexible display system design. Three prototypes were developed and measures of viability were collected, including: flexibility, durability, efficiency, viewing angle and production. The design was shown to be viable for further engineering.



Karoline Elis Lopes Martins', of Belo Horizonte, SP, Brasil, 2010 HM project was a water and waste-water treatment system. Everyone who met this young lady was drawn to her because of her passion for her project. She noticed that her village had water with a high bacteria count and a sad childhood mortality rate. She set about conceiving a waste treatment system which uses polyethylene terphthalate (PET) plastic bottles that are usually thrown in the river. She has confirmed that her process works and hopes that she can build a complete plant for her village of 100 people.

Katherine Emily Bomkamp's, of Waldorf, Maryland, 2010 HM project responded to a need that is impacting an estimated 80% of the world's ten million amputees, who are suffering phantom limb pain. The system provides concentrated and controlled heat to stimulate nerve endings in the residual limb through a heated prosthetic socket. This effectively stops the brain signals down to the amputated limb.

Joseph Anthony Gerner's, of Falls Church, Virginia 2010 HM project captured nature's adaptation of dynamic wing tips onto airplanes to produce independent lift and forward thrust. Performance testing, along with detailed analysis, identified the optimum adaptive tip sails. Joseph tested multiple wing tips in his homemade wind tunnel.

Joel Jack Tinker's, of Huntsville, Alabama, 2010 HM project viewed carbon emissions and demand on foreign oil as a societal burden. Through trade studies of vehicle weight, cost, aerodynamics, battery selection, he transformed a gasoline fueled car into a working electric car. Unable to achieve all performance goals provides future direction in his next evolution.