

**MANY THANKS TO ALL WHO SPONSORED  
THIS YEAR'S TEEN BIOTECH CHALLENGE!**



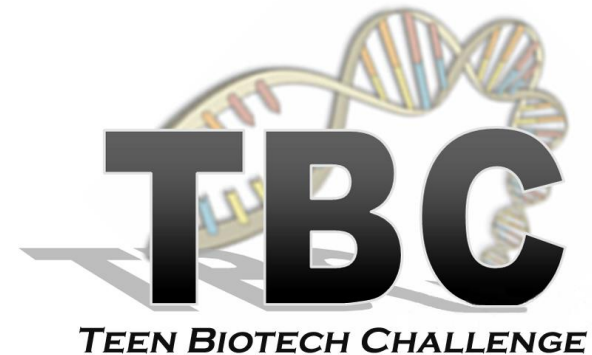
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**THANKS FOR ONGOING SUPPORT FROM THE FOLLOWING SPONSORS:**



# ***2015 Teen Biotech Challenge Awards Reception***



***University of California, Davis  
Conference Center  
May 22, 2015  
7:00 – 9:30 pm***

## 2015 Teen Biotech Challenge Awards Reception Program

**Registration & Booth Viewing:** 7:00 - 7:15pm

**Welcome & Student Presentations:** 7:15 – 8:00pm

**Personal Genomics Keynote & Activity:** 8:00 – 8:30pm

**TBC Awards:** 8:30 – 9:25pm

### **Agricultural Biotechnology**

**Presenter:** Dr. Jose Prado, Monsanto - Seminis, Woodland, CA

### **Computational & Systems Biology**

**Presenter:** Dr. Jamison-McClung, UC Davis Biotechnology Program

### **Drug Discovery & Biomanufacturing**

**Presenter:** Dr. Jim DeKloe, Solano Community College, Fairfield, CA

### **Environmental Biotechnology**

**Presenter:** Dr. Feng Xu, Director, Novozymes, Inc., Davis, CA

### **Nanobiotechnology**

**Presenter:** Dr. Judy Kjelstrom, UC Davis Biotechnology Program

### **Personal Genomics & Human Health**

**Presenter:** Dr. Jamison-McClung, UC Davis Biotechnology Program

### **Regenerative Medicine**

**Presenter:** Gerhard Bauer, UCDCM Institute for Regenerative Cures

### **CIRM Research Scholar Awards**

**Presenter:** Gerhard Bauer, UCDCM Institute for Regenerative Cures

### **Teacher Appreciation & Grand Prize Winner**

**Presenter:** Dr. Jamison-McClung, UC Davis Biotechnology Program

**Closing Remarks:** 9:25 – 9:30pm

**Photos & Congratulations (optional):** 9:30-9:45pm

## Which items in the supermarket contain GMOs?

It is easy to figure out which foods contain “GMOs” because only a handful of biotech crops are currently grown and sold in the US:

**Soybeans/Soybean oil**

**Corn (maize)**

**Canola oil**

*(derived from GM Canola this oil is chemically identical to oil derived from conventional canola plants)*

**Sugar**

*(derived from GM Sugar Beets, this sugar is chemically identical to sugar derived from other plant sources)*

**Papaya** *(virus resistant)*

**Squash** *(virus resistant yellow squash & zucchini)*

**Sweet Corn** *(Bt)*

**Arctic Apples** *(gene for browning when sliced “turned off”)*

**Innate Potatoes** *(less browning/bruising and lower acrylamide formation when fried)*

Other widely grown biotech crops are herbicide tolerant alfalfa and Bt cotton. The Bt gene allows crops to resist “hungry, hungry caterpillars” (herbivory). Research studies have confirmed that Bt crops improve insect biodiversity through reduction in field applications of insecticide.

The first biotech crop, the Flavr’Savr tomato, was invented right here in Davis, CA, at the Monsanto Calgene Campus in the early 1990’s. The Flavr’Savr was a biotech tomato with delayed ripening and sold well in town. But, due to price competition and market forces, this particular biotech crop is not currently on the market.

**What’s in the works?** Scientists are developing useful crops that grow well in drought conditions and saline soils, crops that need much less fertilizer, and biofortified crops that have been engineered to provide essential nutrients and minerals (like Golden Rice, which produces beta carotene).



## Myth-busting Agriculture!

Consumers are exposed to a ton of misinformation about GM crops, agricultural production systems and nutrition in the popular press. Here are two of the most common myths:

**Myth:** *GMOs are untested and unregulated.*

**Facts:** *GMOs are the most carefully studied and analyzed plants in the history of mankind, with regulatory oversight by the USDA, EPA and FDA. They have the same nutritional value and safety as similar conventional crop plants.*

**Myth:** *Organic farming is pesticide-free and better for the environment.*

**Facts:** *Like all farmers, those using organic systems must use pesticides to overcome pests. Organic farmers choose pesticides from an approved list, including some very toxic metals. Yields are lower with organic farming and we cannot feed global populations with this approach, nor preserve wild lands and forests (would need to plough all land for farming).*

For science-based answers to general questions about GMO's in food and agriculture, these sites provide the most accurate information for teachers, students and curious consumers:

- Best Food Facts – <http://www.bestfoodfacts.org>
- Biology Fortified – <http://www.biofortified.org>
- GMOAnswers – <http://gmoanswers.com>
- UCBiotech.org – <http://ucbiotech.org>

For information on humanitarian GM Crop Projects:

- Golden Rice - <http://www.goldenrice.org/>
- Water Efficient Maize for Africa (WEMA) - <http://wema.aatf-africa.org/about-wema-project>
- Banana 21 - <http://www.banana21.org/projects-biofortification.html>

## WELCOME TO TBC2015!

Thank you for joining us at the Teen Biotech Challenge Symposium and Awards Reception as we honor the academic excellence and dedication of your winning students. In 2015, **796 Northern California students** participated in building a TBC website. Of those forwarded after a preliminary round of school site judging, **113 websites** from 14 California high schools were entered in the final judging round, so your students faced tough competition and all should be proud of their efforts. We appreciate the support that teachers, parents and family members have shown to these exceptional young people and hope that we share a wonderful evening together, learning a little about biotechnology along the way.

### The Biotech Community Makes TBC Possible

We would like to offer warm thanks to our 2015 Industry Sponsors, Bayer CropScience, Novozymes and Element Realty, as well as acknowledging Genentech and Monsanto for on-going support and encouragement. Together with the UC Davis Biotechnology Program's PhD students, staff and faculty, we make the Teen Biotech Challenge possible through fundraising activity and volunteer service. Please share your personal thanks with the sponsors joining us this evening.

Sincere Congratulations,

Dr. Denneal Jamison-McClung  
Director, BioTech SYSTEM  
Associate Director, UC Davis Biotechnology Program  
Director, Institute for Food and Agricultural Literacy – World Food Center

*Teen Biotech Challenge is the primary outreach activity of the BioTech SYSTEM, a regional Northern California consortium for promoting education in science, technology, engineering and mathematics (STEM). The BioTech SYSTEM is administered by the UC Davis Biotechnology Program.*

## STEM CAREERS (Cont.)

**TBC2015 is 100% sponsor supported, including student prizes and this awards event, has been provided by the following generous sponsors:**

**Event Partners: \$3,000-\$10,000**

- UC Davis Biotechnology Program

**Platinum Sponsors: \$1,000 - \$2,999**

- Bayer CropScience
- Novozymes, Inc.

**Bronze Sponsors: \$50 - \$250**

- Element Realty

Special thanks to Genentech for long-term Event Partnership. We are also grateful to Bio-Rad, Monsanto and SARTA for significant past support, and to Novozymes and Bayer CropScience for funding TBC2015. Due to recent changes in campus policies for submitting sponsorship requests and accepting funds, TBC fundraising with corporate partners having a formal grant application process was delayed in 2015. However, we hope to iron out the somewhat tangled red tape for 2016!

We appreciate all TBC Sponsors' steadfast support of science education over the past ten years. For a list of recent contributors, please see our website:  
<http://teenbiotechchallenge.ucdavis.edu/Sponsors.html>

Thank you TBC Sponsors!!!

The majority of biotechnology jobs require a **Bachelor of Science (BS) college degree**. In addition to positions requiring a BS degree, there are a significant number of entry-level life science technician jobs in California with a minimum requirement of the **Associate of Science (AS) degree or Program Certificate**.

We have several excellent community college biotechnology programs in our region, some of whom are here this evening. Please visit the information booths for more information on 2-year and 4-year academic programs in biotechnology, related life sciences and engineering. Across the nation, the average salary for researchers or technical employees in biotechnology, whether working in healthcare, agriculture or the environment, is about \$65,000 per year.

### Online Resources

For a list of useful resources to find detailed information on careers and training in biotechnology, please see the **BioTech SYSTEM - Biotech Careers & Training** page at:

[http://biotechsystem.ucdavis.edu/biotech\\_training.html](http://biotechsystem.ucdavis.edu/biotech_training.html)



## STEM CAREERS

Careers in Science, Technology, Engineering and Math (STEM) will be thriving for years to come and educating students in these fields will allow us to tackle global challenges in healthcare, agriculture and the environment. In addition to helping humanity solve major problems, students choosing STEM career paths are entering a healthy job market. Science and technology are strong drivers of economic growth and we want your students to share in this region's prosperity. **Northern California is the birthplace of biotechnology, also called the life sciences**, and we have a special opportunity to participate in the biotechnology community centered in the San Francisco Bay Area. Look around at the informational booths here this evening and ask booth participants about their career journeys in biotechnology.

When people think of **biotechnology jobs**, most envision a scientist in a laboratory. However, specific jobs requiring biotechnology training may include teaching, sales, government policy analysis, project management, clinical work and practice of law.



Research



Administration



Teaching



Sales & Marketing



Patent Law



Government  
Regulatory Affairs



Technical Writing



Health Care

See the State of California Employment Development Department on Biotechnology jobs for the latest job market projections:

[http://www.labormarketinfo.edd.ca.gov/Biotechnology\\_in\\_California.html#OccData](http://www.labormarketinfo.edd.ca.gov/Biotechnology_in_California.html#OccData)

## TBC 2015 WINNERS

### Focus Area 1: Agricultural Biotechnology

**1<sup>st</sup>** – Navjot Hansra, “Crops for Change” (American Canyon HS)

**2<sup>nd</sup>** – Diana Pham, “Feeding the World Through Biotechnology” (Sheldon HS)

**3<sup>rd</sup>** – Rachel Wolff, “Animal Cloning” (Sheldon HS)

**Honorable Mention** – Bella Bagatelos, “Food of the Future: The Genetically Modified Organism” (Christian Bros HS)

**Honorable Mention** – Annie Do, “Genetically Modified Crops: Feeding the World, One Seed at a Time” (Sheldon HS)

**Honorable Mention** – Andrea Gil, “Genetically Modified Foods: Agricultural Biotechnology” (Christian Bros HS)

**Honorable Mention** – Thomas Payne, “GMO’s: Recombinant Survival” (Christian Bros HS)

### Focus Area 2: Computational & Systems Biology

**1<sup>st</sup>** – Thuy-Hang Le, “Antimicrobial Resistance: The Evolution of Microbes. The Development of Drugs.” (Sheldon HS)

**2<sup>nd</sup>** – Noa Mills and Davis Reina-Guerra, “Get Bioinformed: A Guide to the Science of Bioinformatics” (Davis HS)

**3<sup>rd</sup>** – Amanda Nguyen, Duc Nguyen and Cindy Truong, “Computational Genomics: The Analysis Revolution” (Sheldon HS)

**Honorable Mention** – Agnes Bautista, Joshua Pambid and Michelle Smith, “Comparative Genomics” (Vallejo HS)

**Honorable Mention** – Monica Nasser, “Biochemical Pathways and Their Application in Biotechnology” (Sheldon HS)

**Honorable Mention** – Vincent Truong, “Bioinformatics: The Key to U” (Sheldon HS)

## TBC 2015 WINNERS (Continued)

### Focus Area 3: Drug Discovery & Biomanufacturing

**1<sup>st</sup>** – Helene Levy, “Pharming the Fields” (Davis HS)

**2<sup>nd</sup>** – Erin Smith, Cheyenne Yang and Sarah Yang, “The Trainer of Our Immune System - Vaccines” (Sheldon HS)

**3<sup>rd</sup> TIE** – Leilani Abdon, Ciara Ayers and Nia Patrick, “Taking a Deadly Path....Drug Discovery & Biomanufacturing Against the World’s Deadliest Pathogens” (American Canyon HS)

**3<sup>rd</sup> TIE** – Cristina Polante and Sukhman Sidhu, “Medicinal Purification: The Case for Ebola” (Antelope HS)

**Honorable Mention** – Chaila Johnson, “Orphan Drugs: The Cure for Rare Diseases” (Christian Brothers HS)

**Honorable Mention** – Carly Mayer, “Combating Cancer: The Innovations in Cancer Treatment” (Christian Brothers HS)

**Honorable Mention** – Maria Molotilova and Kahlan Showen, “Biological Development of Cancer Treatments” (El Camino HS)

**Honorable Mention** – Connor Randolph, “Drug Discovery: Synthesizing an End to Cancer” (Sheldon HS)

**Honorable Mention** – Shreya Sahoo, “Cracking the Code: Biological Drugs” (Vista Del Lago HS)

**Honorable Mention** – Timothea Tram, “Neurological Diseases: Improving Lives” (Sheldon HS)

**Honorable Mention** – Andrew Warner, “HIV & AIDS Drug Discovery” (Christian Brothers HS)



## Biotechnology to Meet Global Challenges



Biotechnology is an applied field of science that uses our knowledge of living systems and engineering principles to create solutions for complex local and global challenges in agriculture, health care and the environment.

So... what are the biggest challenges for most global communities today? The United Nations has set Millennium Development Goals (MDG’s) in eight key areas to improve the everyday lives of millions of people in developing countries:

- End Poverty and Hunger
- Universal Education
- Gender Equality
- Child Health
- Maternal Health
- Combat HIV/AIDS
- Environmental Sustainability
- Global Partnership

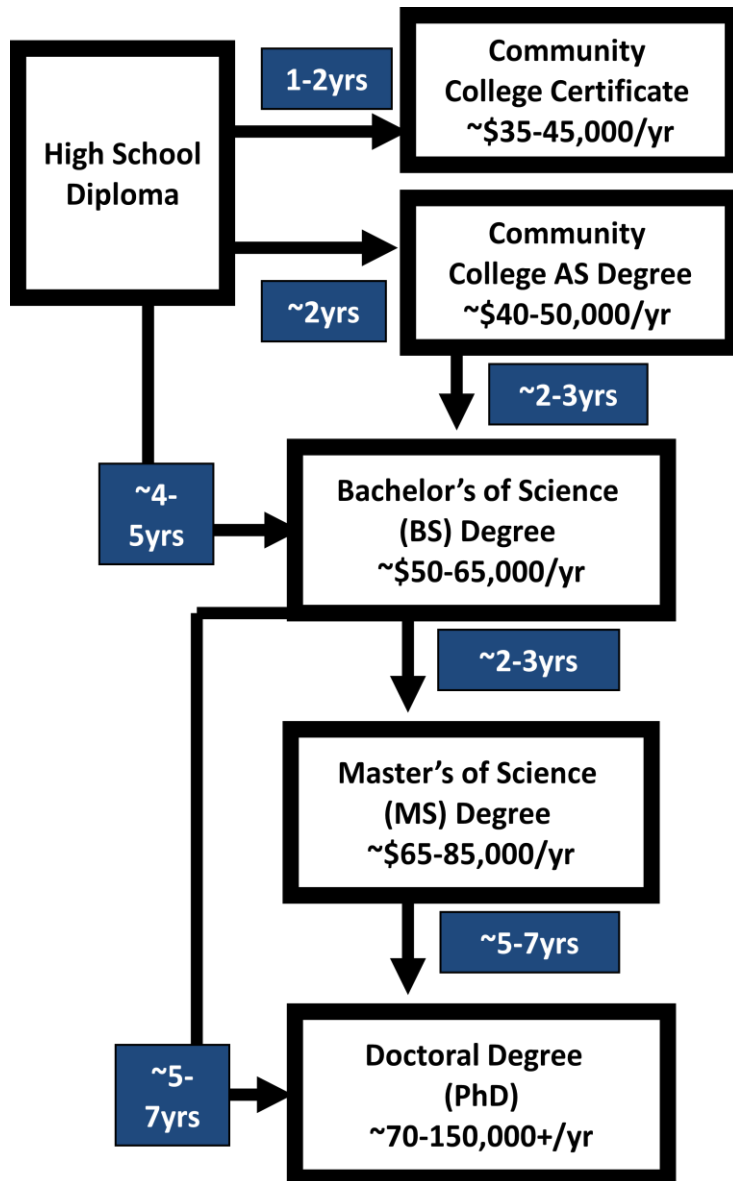
Locally, at the state and national levels, we see similar challenges in our “own backyard”. Biotechnology has a key role to play in meeting many of the UN Millennium Development Goals, especially those related to human health and food security.

The winning TBC websites are a great educational resource for learning about specific biotechnology research approaches that will help address the MDG’s, such as the development of cost-effective vaccines and drug treatments, the use of biotech crops to increase food security and emerging technologies to convert plant biomass into renewable liquid biofuels.

We hope that the Teen Biotech Challenge has opened your eyes to some of the amazing advances we are making through science and engineering!

<http://www.un.org/millenniumgoals/>

## Academic Paths & Approximate Salaries for Biotechnology Careers



## TBC 2015 WINNERS (Continued)

### Focus Area 4: Environmental Biotechnology

1<sup>st</sup> – Audrey Cheng, “Bioplastics” (Henry M Gunn HS)

2<sup>nd</sup> TIE – Kathrine Belt, Meranda Kautz and Emily Yescas, “Bioremediation” (Linden HS)

2<sup>nd</sup> TIE – Sean Ashley Calalang, Madeline Carpenter and Alexandra Maletsky, “The Perfect Remedy” (Rodriguez HS)

3<sup>rd</sup> TIE – Jem Doan and Dante Domingo, “Bioremediation: Microorganisms Cleaning the Environment” (Sheldon HS)

3<sup>rd</sup> TIE – Sarah Siruo Zhang, “All About Biofuels” (Davis HS)

**Honorable Mention** – Charleen Duong and Maithao Tran, “Bioremediation” (Sheldon HS)

**Honorable Mention** – Van Hsieh, “Fuel the World” (Davis HS)

**Honorable Mention** – Erica Tapia, “A New Era: Microalgae for Fuel” (El Camino HS)

**Honorable Mention** – Elanor Weber, “Trees Healing Trees” (Christian Brothers HS)

### Focus Area 5: Nanobiotechnology

1<sup>st</sup> – Preethi Bhat, “Biosensors: The Future of Detection” (Davis HS)

2<sup>nd</sup> – Jasleen Kaur, “Nanotechnology: Future of Medicine and Technology” (Sheldon)

3<sup>rd</sup> – Fiza Baloch, “Nanotechnology: A World Beyond Micro” (Sheldon HS)

**Honorable Mention** – Katie Brown, Noah Dean and Madeleine Jones “Biomimetics: Mimicking Nature’s Inventions” (El Camino HS)

**Honorable Mention** – Sean Fu, “Nanocarriers: Drug of the Future” (Christian Brothers HS)

**Honorable Mention** – Alyssa Gimenez, “Nanotechnology & Synthetic Biology: This is Gonna Be Big” (Davis HS)

**Honorable Mention** Adrian Legaspi, Hope Runas and Micela Simpliciano-Medina, “Molecular & Medical Imaging Systems” (American Canyon HS)

**Honorable Mention** Shreya Sudarshana, “Isothermal Amplification: Innovation in Microbial Detection” (Davis HS)

## TBC 2015 WINNERS (Continued)

### Focus Area 6: Personal Genomics & Human Health

**1<sup>st</sup>** – Jimmy (Cheng) Zhou, "Impact of the ENCODE Project on Human Health" (Davis HS)

**2<sup>nd</sup> TIE** – Sehyun Hwang, "Personalized Medicine: Adding the "Me" in "Medical Care" (Davis HS)

**2<sup>nd</sup> TIE** – Lyna Khuu and Nathan Lemus, "Gene Therapy" (Sheldon HS)

**3<sup>rd</sup> TIE** – Hongyi Huang, "Into the Wild: Magic of Epigenetics" (Christian Brothers HS)

**3<sup>rd</sup> TIE** – Erika Robles, "Understanding Genetics" (Christian Brothers HS)

**Honorable Mention** – Kaitlin Lagorio and Samantha Riley, "Designer Babies" (Linden HS)

**Honorable Mention** – Hailee Morgan, Kendall Morrow and Sophia Torrez, "Designer Babies" (El Camino HS)

**Honorable Mention** – Nadya Oliver and Esther Ozeruga, "Designing a New Generation" (Antelope HS)

**Honorable Mention** – Mikah Watts and Rani Whitefield, "Autism & Epigenetics" (Sheldon HS)



*TBC2014 Personal Genomics & Human Health Winners*

## Science and Social Media



Have you ever been curious about the latest discoveries in biotechnology? What's new with stem cells? Biofuels? GMOs? The human microbiome? What do the experts think about the latest controversies in biotech?

An excellent way to keep up is by using Twitter as a science newsfeed. Some of our winning TBC websites have incorporated a Twitter feed and it is quite a handy tool. My Twitter handle is @yggdrasil13751, and several of our past keynote speakers and awards presenters also use Twitter for science communication (@jeniklee, @theladybeck, @LucasArzolaPhD, @kmkubo).

One of the best things about Twitter, and other social media platforms, is the ability to connect with like-minded people from around the world. On Twitter, one can follow posts by the governmental bodies (National Science Foundation, CDC, WHO), philanthropists (Bill & Melinda Gates Foundation), well known scientific journals (PLOS, BMC Genomics, Nature), popular science magazines (National Geographic, Scientific American, Popular Science) and recognized experts in many science and engineering fields.



Check out Twitter, if you haven't already...The reward will be a treasure trove of great science information streaming to your mobile device!

-Dr. Jamison-McClung



## Awesome TBC Sponsor Teachers!

Each year, a few intrepid students enter the TBC as individual contestants, but the majority of our entries are facilitated by the extraordinary dedication and encouragement of TBC Sponsor Teachers through incorporation of TBC as a class project. We applaud the following California educators for their commitment to science education and for striving to keep their classrooms on the “cutting edge”, through activities like the TBC, and on-going professional development through BioTech SYSTEM membership:

- American Canyon High School - Elizabeth Hawkins
- Antelope High School – Angela Anderson, Annie Clegg & Kristen Williams
- Christian Brothers High School – Nicole Brousseau, Danny Delgado, Holly Keller & Chris Thayer
- Davis Sr. High School - Ann Moriarty, Wayne Raymond, Scott Richardson & David Van Muyden
- El Camino High School - Louis Diaz
- Henry Gun High School - Elana Zizmor
- Linden High School – Lori Steward
- Mira Loma High School - Colleen Kelly
- Mountain House High School – Kris Olson
- Presentation High School – Suzanne Colvin & Jordan Wang
- Rodriguez High School - Kevin Scully
- Sheldon High School - Jason Brennan, Justin Cecil, Bob Fendall, Kelli Kosney, Leeann O’Bear & Laura Ziegenhirt
- Vallejo High School – Diosa Bande
- Vista Del Lago High School – Suekyung Baker

## TBC 2015 WINNERS (Continued)

### **Focus Area 7: Regenerative Medicine**

**1<sup>st</sup> TIE** – QuynhAnh Dam, “Biofabrication: Revolution of Science” (Sheldon HS)

**1<sup>st</sup> TIE** – Annie Zheng and Penny Zheng, “Stem Cells: The Building Blocks of Life” (Davis HS)

**2<sup>nd</sup> TIE** – Ian Collis, Bailey Jones and Dayton Oldham, “Regenerative Medicine: Artificial Prosthetics” (Linden HS)

**2<sup>nd</sup> TIE** – Katherine Hu, “Stem Cell Therapy: A Revolution in Regenerative Medicine” (Davis HS)

**3<sup>rd</sup> TIE** – Kaitlyn Chen, “Stem Cells: The Future of Medicine” (Sheldon HS)

**3<sup>rd</sup> TIE** – Cheyeanne Santos, “Prosthetic Limbs: Recovery One Step at a Time” (Sheldon HS)

**Honorable Mention** – Joe Arizmendez, Jasdeep Bura and Vadim Voyku “The Future of Transplants: Artificial Limbs & Organs” (Antelope HS)

**Honorable Mention** – Nathan Beley, Rita Guzman and Haimeth Villa, “Regenerative Medicine: Engineering cells to restore normal human function” (American Canyon HS)

**Honorable Mention** – Aldrin Catap and Catherine Jovez, “Artificial Organs” (Vallejo HS)

**Honorable Mention** – Sofia Foondos, Sofia Watts and Ryan Kemp, “Synthetic Organs” (El Camino HS)

**Honorable Mention** – Saabhir Gill and Nimish Saxena, “Regenerative Medicine: The Cure of the Future” (Mira Loma HS)

**Honorable Mention** – Elora Paule, “Regenerative Medicine: Stem Cells” (Sheldon HS)

**Honorable Mention** – Omar Sultan, “Cochlear Implant: The Bionic Ear” (Christian Brothers HS)



## CIRM Research Scholar Awards

TBC Winners meeting minimum eligibility requirements for the UCDMC Volunteer Services program were invited to apply for a Research Scholar Award. Based on a competitive application process, the following students have been invited to participate as Summer Research Scholars under the tutelage of leading stem cell scientist, Gerhard Bauer, Director of the GMP Laboratory. Students will conduct research in laboratories affiliated with the UC Davis Institute for Regenerative Cures (Director, Dr. Jan Nolte).



- Fiza Baloch, Sheldon HS
- Preethi Bhat, Davis HS
- Jem Doan, Sheldon HS
- Dante Domingo, Sheldon HS
- Kathy Hu, Davis HS
- Yemi Lawrence, Antelope HS
- Elora Paule, Sheldon HS
- Jessica Sanchez, Antelope HS
- Navneet Sandhu, Antelope HS
- Maithao Tran, Sheldon HS

This summer research experience has been made possible by a Creativity Award (PI-Gerhard Bauer) from the California Institute for Regenerative Cures (CIRM). Research Scholars will present their research posters to members of CIRM at the Creativity Award Poster Symposium in early August 2015.

## BOOTHS

### (Booth A) Solano Community College

Solano Community College is home of a world-renowned biomanufacturing program headed by Dr. Jim DeKloe and Dr. Ed Re. Their program is aligned with industry standards and graduates are highly sought by local biotech companies. Check out the SCC booth to for more information on jump-starting a career in the biotechnology industry, in addition to regional STEM career opportunities in water management and technology sectors. <http://www.solano.edu/degrees/>

### (Booth B) Bayer Crop Science's "Making Science Make Sense" Program

Bayer has a strong stake in helping to improve science education and to ensure that all individuals are scientifically literate. Bayer demonstrates this commitment with its national award-winning Making Science Make Sense® program, a company-wide initiative that advances science literacy across the United States through hands-on, inquiry-based science learning, employee volunteerism and public education. For more visit their website at:

<http://www.bayercropscience.us/our-commitment/education/making-science-make-sense>

### (Booth C) Novozymes

Novozymes is a leader in the bioinnovation of industrial enzymes, with a strong focus on environmental sustainability. This global company is based in Denmark and has brought over 700 products to market in 130 countries. Check out the Novozymes booth to learn more about their corporate commitment to developing sustainable biosolutions for many industrial processes, including production of crops, food and beverages, pulp and paper, detergents and personal care products, textiles, biofuels and much more! Novozymes has an R&D facility in Davis, CA. <http://www.novozymes.com/en/Pages/default.aspx>

### (Booth D) UC Davis Plant Sciences & Biotechnology Majors

The Plant Sciences and Biotechnology undergraduate majors are housed in the College of Agricultural and Environmental Sciences. Biotech majors build a solid academic foundation in biology during their first two years on campus, including coursework in genetics, molecular biology, cell biology and recombinant DNA technology. As upper division students, biotech majors choose an option for more focused study: animal biotech, plant biotech, microbial biotech, or bioinformatics, with emphasis on acquiring related laboratory expertise. Research internships are required for all students in the program and allow students to hone problem-solving and technical skills necessary for success in industry and academic research settings. <http://biotechmajor.ucdavis.edu/> and [http://www.plantsciences.ucdavis.edu/plantsciences/undergrad\\_students/plant\\_sciences\\_major.htm](http://www.plantsciences.ucdavis.edu/plantsciences/undergrad_students/plant_sciences_major.htm)