



- Revolutionizing the face of science
 - Bridging together science research & education
 - Building science community
 - Expanding science education
 - Creating the next generation of science leaders
-

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Teacher Professional Development – BioBridge has optimized a training program that mentors teachers to develop and implement state-of-the-art, high impact laboratory principals in their classrooms.




BioBridge's Science Leadership Society (SLS) –BioBridge has initiated a leadership society providing opportunities to engage students and their teachers, undergraduate, and graduate students with leading science professionals from the San Diego community.




Technology Centers – UCSD undergraduates, Castle Park High School Students and SciTech and Mira Mesa High School students produce laboratory activities for the BioBridge network.



Curriculum Development (Socrates) - BioBridge interfaces world-class scientists, leading technology companies, high school students and science educators to develop innovative laboratory activities based on current research.



Science and Tech (Cyberbridge) – BioBridge is working with high school students, teachers and undergraduates to infuse media into science classrooms to reflect the relevance of science in their lives.



San Diego Science Festival – The BioBridge team is pulling together strategic partners from around the San Diego community to showcase San Diego science in a annual Science Festival.

Original BioBridge Rainbow Protein Laboratory Activities

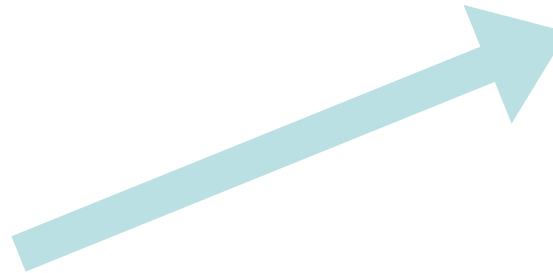
What's Causing
All This
Excitement

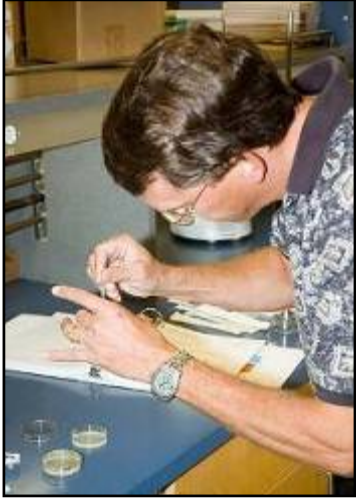
1. Transformation

Fluorescent protein gene
inserted into bacteria.

2. Protein Purification

Fluorescent Protein
is purified from bacteria





Phase 1 – teachers learn science content and pedagogy at UCSD



Phase 2 – teachers pilot activities with a small set of student leaders and discuss strategies class implementation at a chosen San Diego High School.



Phase 3 – teachers run laboratory activities in classrooms with assistance from their phase 2 student leaders UCSD undergraduate mentors



“The most powerful aspect of BioBridge is that we are bringing real-life, cutting-edge science into the classroom, and we are teaching students valuable techniques that they may be able to use in their careers and in the workforce once they leave high school – techniques that they would not be able to acquire without this program because of lack of school resources. “ – Robert Manroe, Castle Park HS



Biotech Centers Challenges

THE BIG CHALLENGE

Over 120 teachers with an average of 4 classes each.
How do we produce and sustain supplies at reasonable cost ???



Commercial Kit- ~\$60/class



In-house ~\$8/class

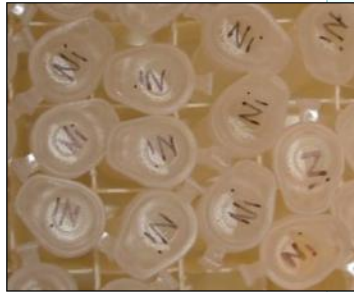
High School Student Biotech Class $N=5$



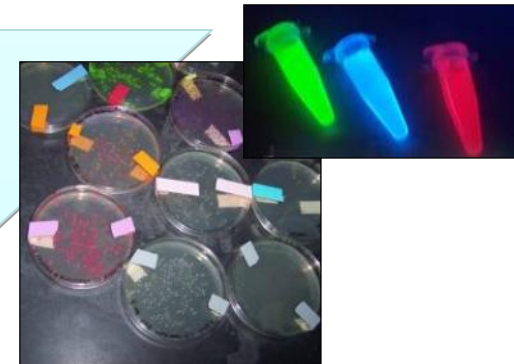
Biotech Centers LOGISTICS

<http://www.youtube.com/watch?v=VZEZ5dUCH9E>

*Assemble materials
for kit*



*Students in average
science classrooms utilize
kit materials*



**Biology or
Chemistry Course**
 $N=\sim 500$

In three years we have grown from 1 class of 8 students to 5 classes (3 schools) with ~160 students and a strong teacher community



Biotech Centers TIMELINE

2007-08

2008-09

2009-10

Stephanie Gaudreau
Castle Park High
Sweetwater Union

- One class – 8 students
- 25% one kit produced
- D level granted by UC

- One class – 25 students
- 50% 2 kits produced
- Academy grant accepted

- Two classes – 60 students
- 90% 3 kits produced
- Academy course sequence has biotech in 10th grade

Sara Dozier
SciTech High (SD High)
San Diego Unified

- Two classes – 50 students
- 25% 2 kits produced
- ROP curriculum

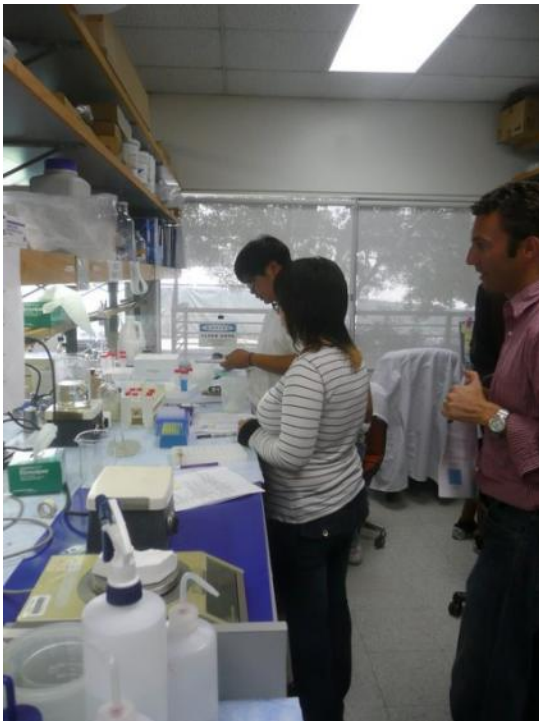
- Two classes – 50 students
- 90% 2 kits produced
- D level and ROP curriculum

Lisa Yoneda
Mira Mesa High
San Diego Unified

- One class – 50 students
- 50% 2 kits produced
- D level and ROP curriculum

- NSF GK12 – Each year 9 graduate students are funded 30K stipend to spend 10 hours/week partnered with high school class. Program PI – Maarten Chrispeels
- Teams work on the following
 - develop class activity based on their research
 - develop community SLS event
 - participate in San Diego Science Festival
 - write a grant

- Students drawn from Biological Sciences, Biomedical Sciences and SIO
 - Bees
 - Underwater pressure
 - Cell Division
 - Digestive system
 - Bird migration patterns
 - Global warming



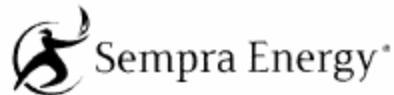
T = Teaser



K = Kisok



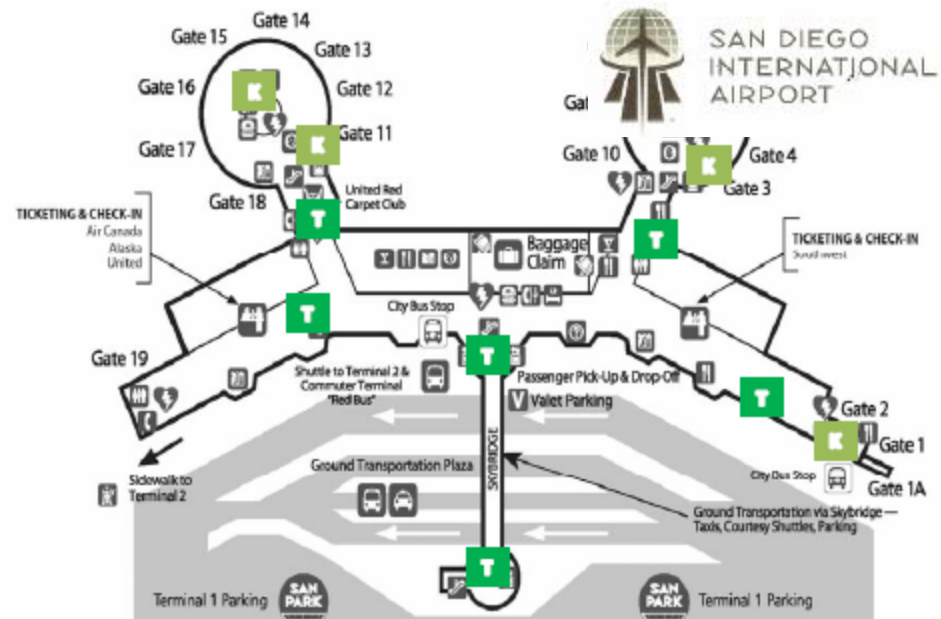
Fly Green San Diego

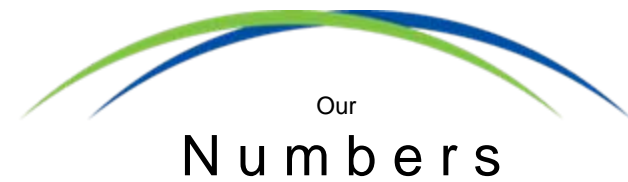


EQUINOX CENTER



The Zoological Society of San Diego





Over 20,000 high school students have performed BioBridge labs in their classes



Over 400 high school students have participated in BioBridge's Leadership Society



Over 200 teachers in San Diego, San Francisco and Phoenix have learned BioBridge labs



Over 100 university scientists have expressed interest in partnering with BioBridge



Over 100 undergraduates have participated in BioBridge mentorship activities



BioBridge has raised ~10.5 million in funding from HHMI, NSF & Department of Ed and San Diego Donors (private, foundation, corporation).



A Grassroots Collaboration

"It's amazing what you can accomplish if you don't care who gets the credit." -Harry Truman



How organizations participate

Host a booth



Visit a school



**Give a
Performance**



Give a tour



Hold an Event



**Hold a
Competition**



Expo Day
2009 in Balboa Park
2010 to be at Petco Park



50,000 Attendees





200+ Organizations With Hands-On Activities

















AR
ing for

LOCKHEED MARTIN
who we're working for

LOCKHEED MARTIN
for the world

San Diego
SCIENCE
Festival
2019



Festival Programs

OPERATION BALBOA

THE BRAIN

By: Jacob VanderGriend



The Brain



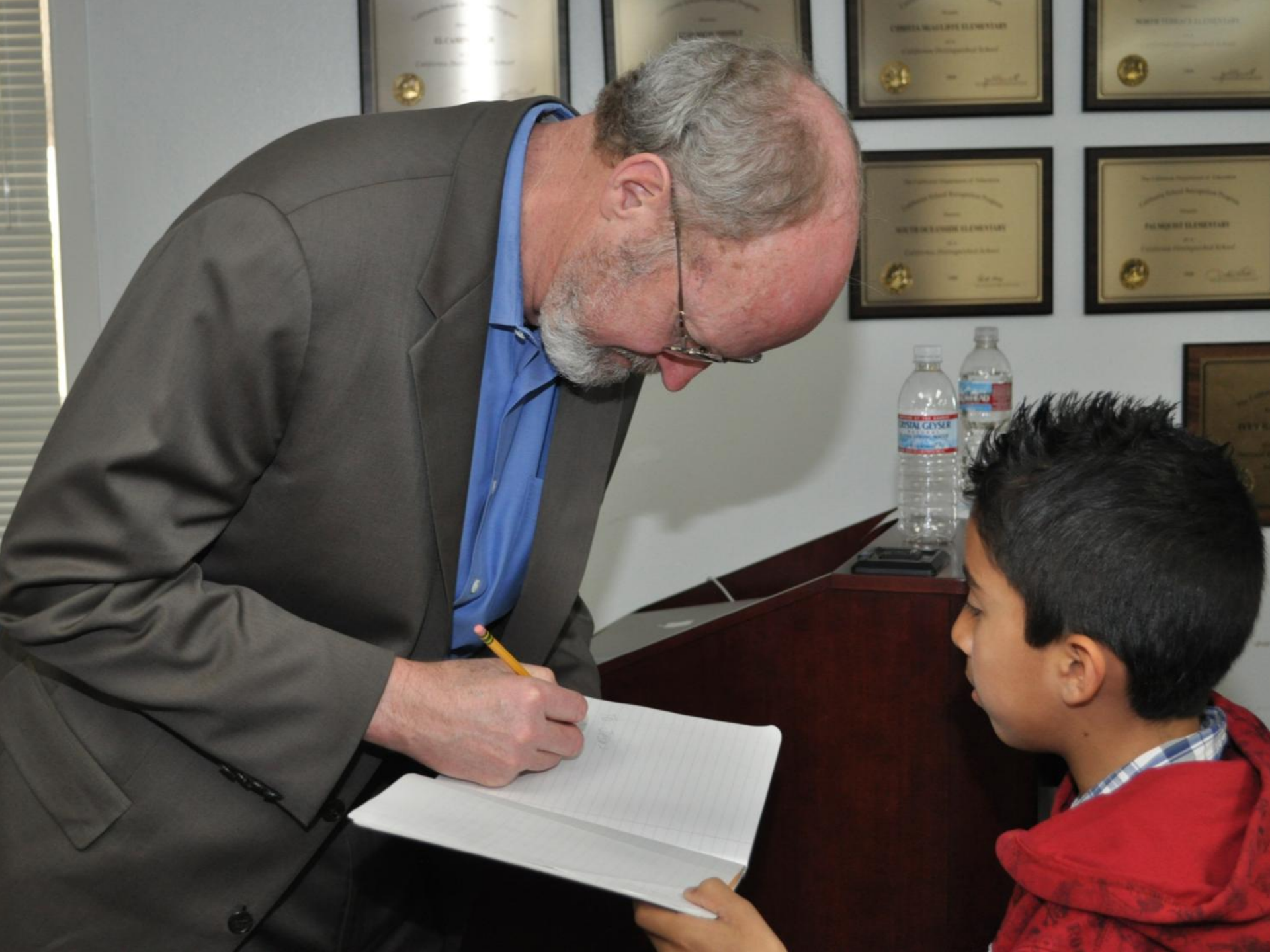












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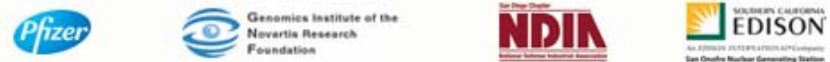
2010 Copper Sponsors



2010 Krypton Sponsors



2010 Titanium Sponsors



2010 Supporters



Exposure Secured in Virtually Every San Diego Media Outlet:

- ✓ **17** television segments
- ✓ **18** daily newspaper articles
- ✓ **49** weekly newspaper articles
- ✓ **13** monthly magazine articles
- ✓ **26+** online articles
- ✓ **15+** blog mentions
- ✓ **5+** radio mentions

A National Demand for Science Festivals is Born.



Massachusetts
Institute of
Technology



University of California
San Francisco



THE FRANKLIN INSTITUTE

Here Come the Science Festivals!

Friday, February 19, 2010: 1:30 PM-2:30 PM

Room 5B (San Diego Convention Center)

With the recent success of the Cambridge Science Festival, San Diego Science Festival, St. Louis Science Festival, and World Science Festival, it is clear that science festivals have truly arrived in the United States.

What makes a science festival successful?

How do you go about hosting one in your city?

Join this discussion about how science festivals can extend the reach of informal science communication in your community. National and international speakers from successful and emerging festivals will present their models for success and challenge you to join in this growing movement.

Learn how your organization can partner with science festivals, or how you can take the lead in organizing a festival. Find out how the new National Science Festival Network can help.

You

2010 AAAS Meeting
San Diego
Convention Center

Party

Science Festival Alliance party
This Friday: 6:00 – 8:00 pm
Lou & Mickey's (224 5th Ave.)

Festival

San Diego Science Festival
This March: 3/20 – 3/27
Festival Expo in Petco Park

