# *Pre-College Outreach: Section Options, Region Goals*

**Lee Colby, Bill DeHope, Mahbub Khan, Ramesh Nair,**
**Region 6 Pre-college Outreach Chairs**

January 24, 2015

*Wyndham San Diego Bayside Hotel*
*San Diego, CA*

IEEE REGION 6

# *Precollege Outreach Talk Agenda*

- **Why?**
  - **Why does IEEE care about pre-college outreach?**
  - **Why should I care about pre-college outreach?**
- **What?**
  - **What are my options for individual involvement ?**
  - **What are my section's options?**
- **How?**
  - **How does our Region coordinate & communicate?**
  - **How can we be successful?**

IEEE REGION 6

# *Why should IEEE care about pre-college outreach?*

- Woo-hoo!  Future membership dues!
  - Aging membership
  - Middle-age leadership
  - Death is bad
- Maintain Our Strength
  - Yes, our IEEE overall size, but that's covered above
  - Patriotism!  IEEE was originally, and is still primarily, a US org.  STEM outreach maintains technical leadership here!
  - Besides, USA dues are higher.
- Corporate goodwill
  - Outreach goes in and out of vogue
- It's the right thing to do.

# *Why should I care about pre-college outreach? What's in it for me?*

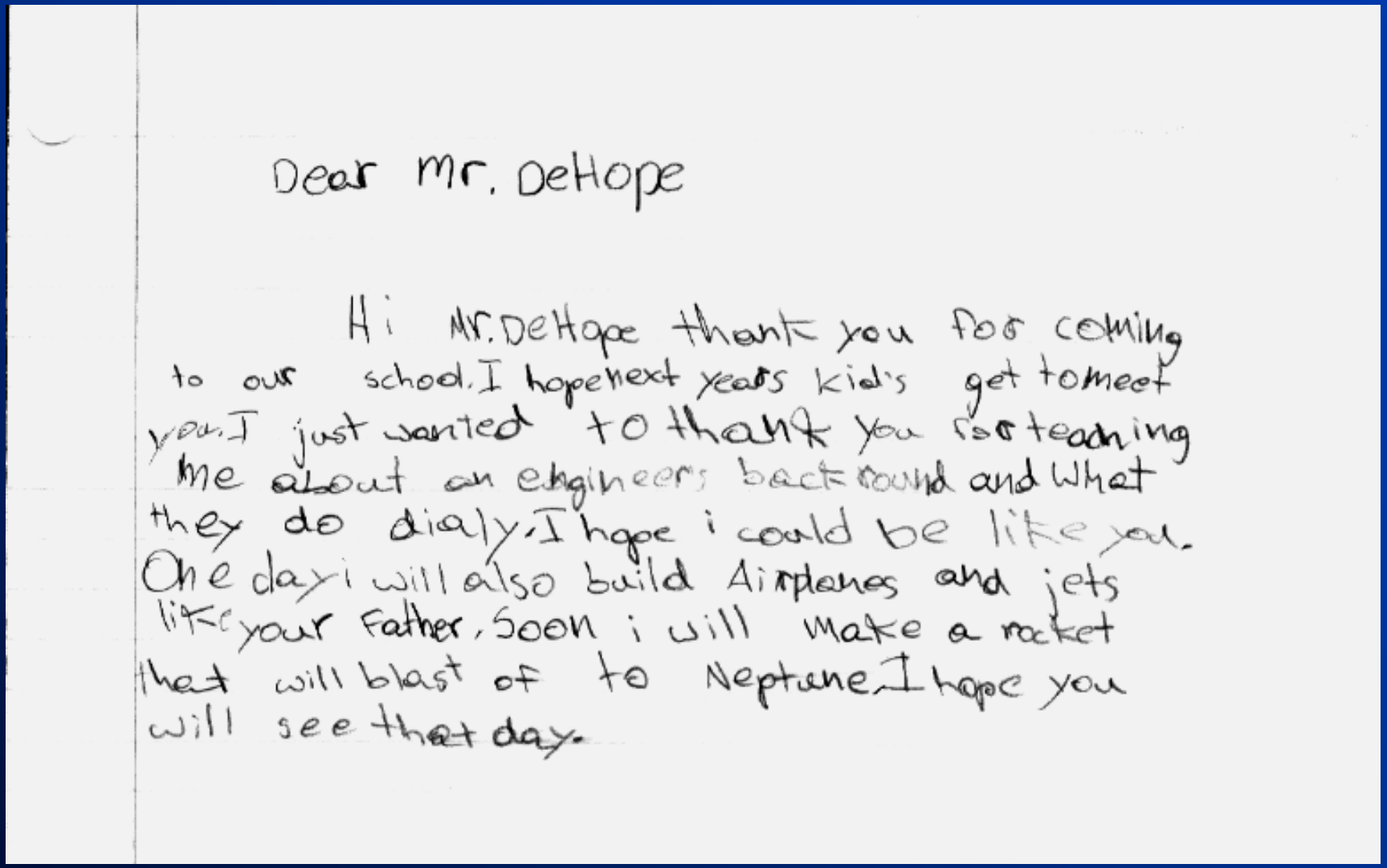
- **Satisfaction**
- **Fun—in multiple ways**
- **It really is the right thing to do**
  - **You enrich a child's life**
  - **You enrich society**
- **Pride in leaving a legacy**
- **For some, retirement leaves time on their hands and this sure beats gardening**

IEEE REGION 6

# *Why should my Section and Region care? All of the Above!*

- Satisfaction, pride, and interest for the individual.
- Section Morale, membership retention
- We play a role in strengthening the profession, the IEEE, our nation and our nation's economy, AND our local Section and Region
- We promote our Region, Section, and membership therein
- It's the Right Thing To Do!

IEEE REGION 6



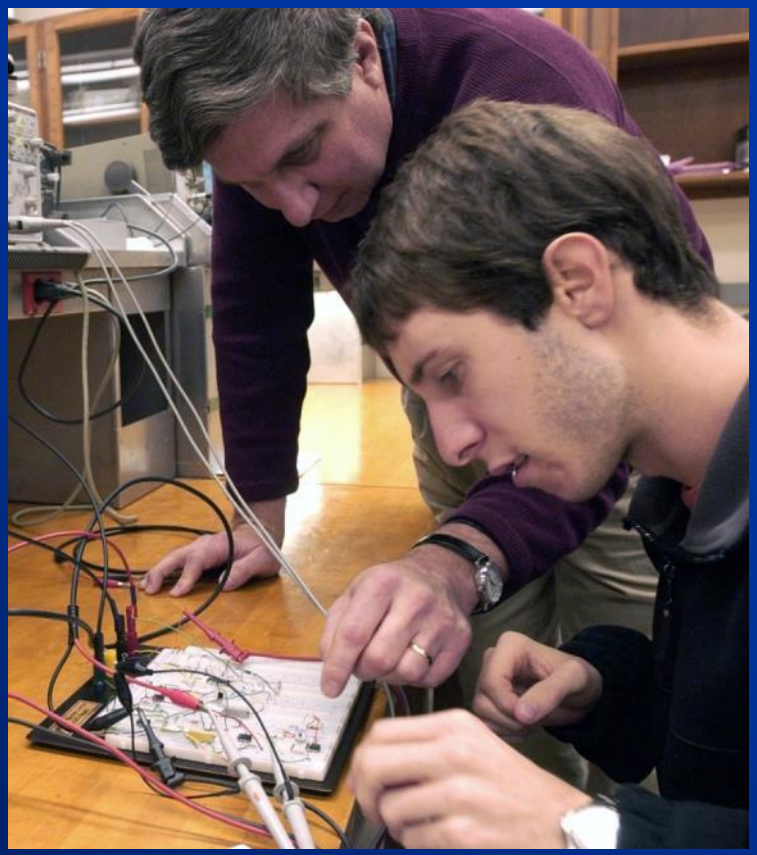
Dear Mr. DeHope

Hi Mr. DeHope thank you for coming to our school. I hope next years kid's get to meet you. I just wanted to thank you for teaching me about an engineers background and what they do dialy. I hope i could be like you. One day i will also build Airplanes and jets like your Father. Soon i will make a racket that will blast of to Neptune. I hope you will see that day.

***Everyone needs letters like this!***

# *So What Are the Options?*

- **DIY**
- **IEEE-TISP**
- **OSP's**
  **Other science programs**
- **OIP's**
  **Other IEEE programs**



IEEE REGION 6


# Do-It-Yourself

IEEE REGION 6

# *DIY: Do-It-Yourself Classroom Visits*

- **You make the contacts**
- **You make the curriculum**
- **You keep their attention—**
  **i.e. You make it work**
- **You get invited back next year** *or*
  **You make a new contact**

IEEE REGION 6

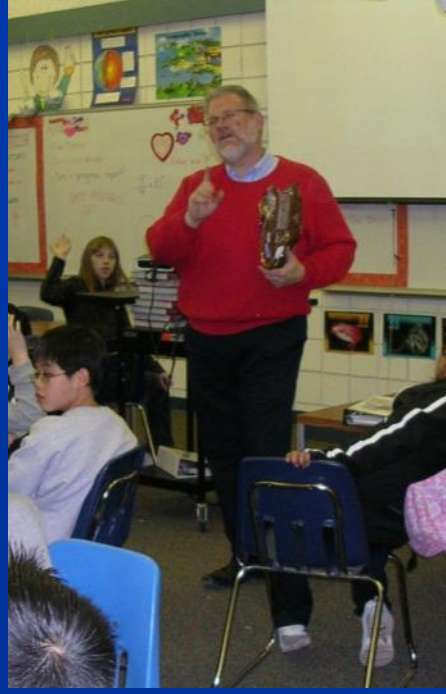
# *DIY: Making the contacts*

- Corporate sponsors / corporate match-making
  - Gets you hot prospects, motivated teachers
  - E-Week sponsors, e.g. Lockheed-Martin, LLNL
  - Frequently includes training, help
  - Won't happen every year; work the long-term relations
- Cold Calls…with IEEE name-dropping
  - Under auspices of your section: eWeek letters, brochures
  - See your PACE Chair
  - Getting school addresses
- Teacher contacts: friends, through your own kids
- Truly cold letters—eWeek.org's suggestion
  - You won't even get finger-printed!

IEEE REGION 6

***http://www.svec.org/discover-e.html***

# *DIY: The Big Picture*



+ Brief, 1-day-per-year interactions
  - If you want more, there are other programs
  - But don't doubt you'll have an impact!
+ Big bang for your temporal (& literal) $ buck
+ No commitment; no need to come back
+ Science teachers have multiple classes
  - Get into production mode…teachers do this daily
  - Devote a solid day every year! Small investment; big payback.
– Brief interactions! (No real relationships, just Hero status.)
– You really need to plan, hold their attention, keep things moving, use PowerPoint!
– Experiments/projects aren't primary
+ Kids love to ask blue-sky questions

IEEE REGION 6

ENGINEERS WEEK®

# *The basic prescription:*


- Engineering has been fun for me
- Engineering is important to others
- You can be an engineer
  - And have fun
  - And help others
  - And have understanding (Q&A)
- Activity/demonstration
- Farewell gift

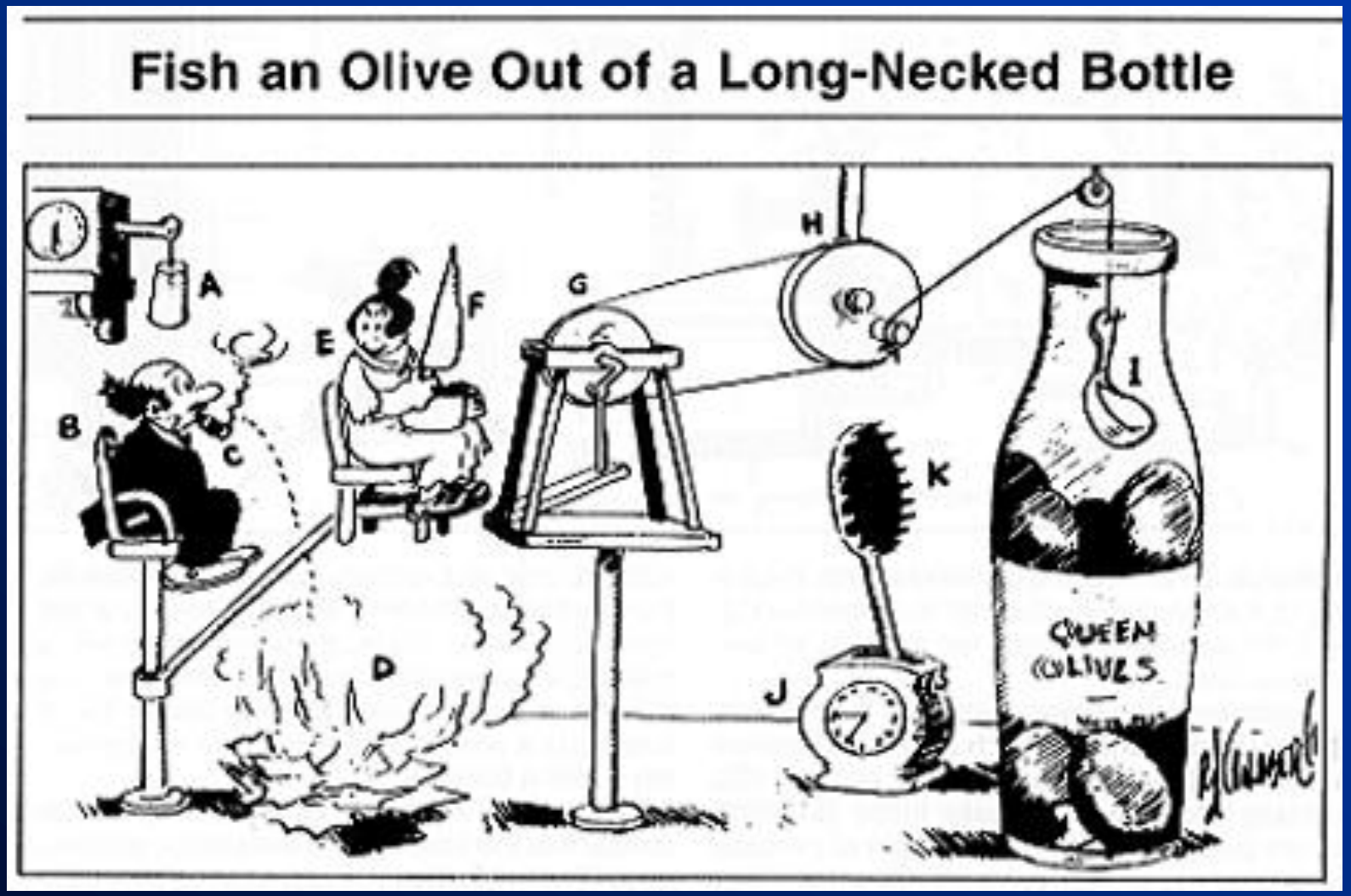
IEEE REGION 6

# *A DIY Typical Program:*

- Who am I; why am I here (ref. eWeek, your employer…)
  - Dilbert…engineers not cool? Or…Agent Bristo!
  - "Can I tell you about myself?" I ❤ family…hobbies… engineering
- "You too can be an engineer and ❤ your job. Here's my story"
  - Family pics back 3 generations
  - My childhood, my kids and their hobbies
  - My career (pass around goodies)
- Is engineering important? (cameras, music, CD in detail)
  - Engineering brings advancement & good things
  - Fields and specialties
  - Quick projects, demonstrations (fountain pens, bottle rockets, etc)
- You can be an engineer, target girls & minorities, emphasize math & science
- Science/engineering/technology spectrum…test
- Stump the engineer! Q&A
- Leave a souvenir, leave a class project (e.g. a TISP project)

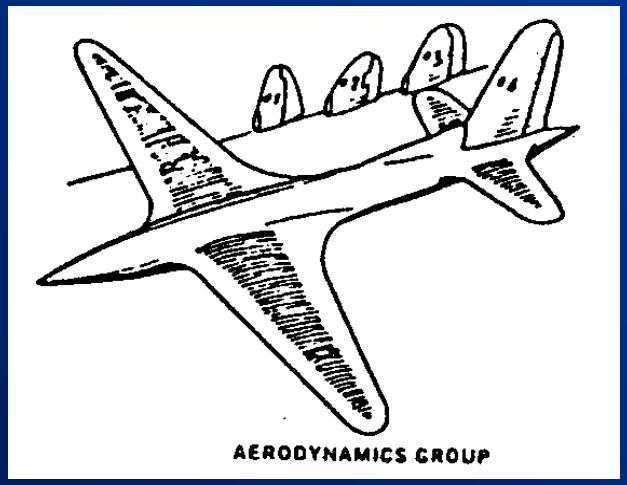
IEEE REGION 6

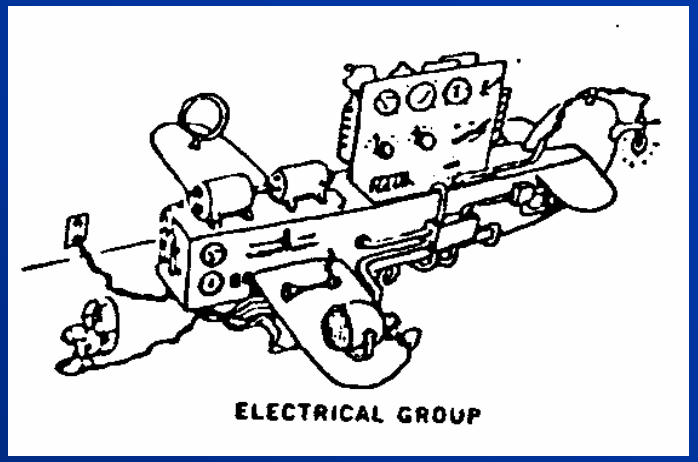
# *Everyone likes jokes…*

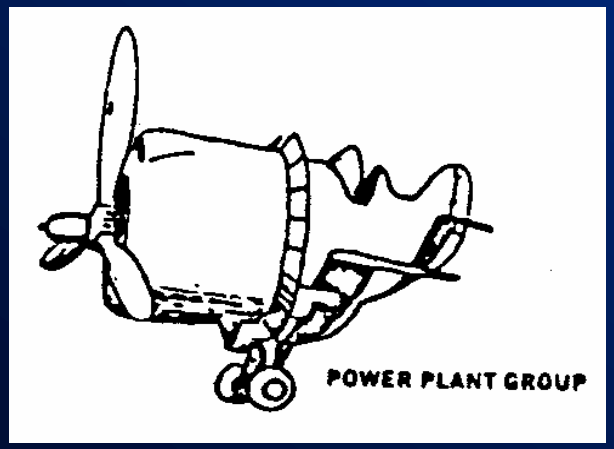


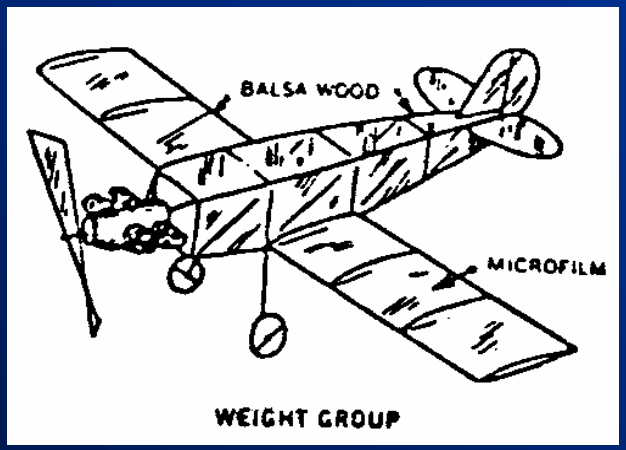

- Honda, etc. has video “Rube Goldbergs”

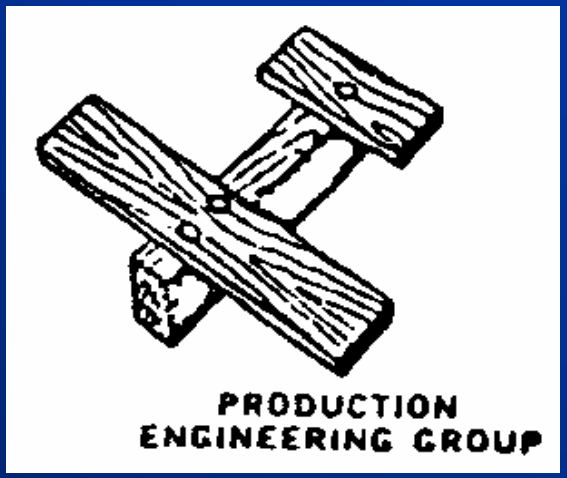
# *Jokes for all ages—intersperse them in your slides*




***An airplane, according to 5 different engineers***

IEEE REGION 6

# *What's wrong with this picture???*
# *Segue to Women &Minorities in STEM*


IEEE REGION 6

# *Who saved the farm animals? Were Mac & Ginger Engineers?*


- Chicken Run was a fantastic movie
- Unfortunately it's probably past the pull date for today's kids

IEEE REGION 6

A. Here's what I think about science classes:

1. I take all the science classes that my school offers and love them to death
2. I take all the science classes that my school offers and really enjoy them
3. I take almost all the science classes that my school offers and like them
4. I hate science classes and take as few as I can

B. My math grades are:

1. Always A+
2. Mostly A's & B's
3. Mostly B's & C's
4. Less than a C, if you know what I mean

# Sample In-class Activity

***Leave single sheets with teacher if time is tight.***

IEEE REGION 6

C. The first time I used a copy machine:

1. It jammed, so I asked Bob to copy the paper for me
2. I was dying to know how the thing worked
3. I was dying to take it apart
4. What's a copy machine?

D. If I have a quadratic equation to solve:

1. I complete the square and take both positive and minus square roots
2. I put it in good ol' standard form, then I use the quadratic formula
3. I talk to Bob.  He's a whiz at math and always helps me out
4. I take a nice stroll in the park and ponder the meaning of life

## E. It would give me great satisfaction in life:

1. To win the Nobel Prize in Physics or Chemistry
2. To invent something that cures cancer or aids its diagnosis
3. To maintain high-tech equipment so it doesn't leak, squeak, or give bad data
4. To experience the injustices in being a public welfare recipient

**Add up your answers...**

**Score of 0-6: You're a natural-born scientist**

**Score of 7-13: You're a natural-born engineer**

**Score of 14-17: You're a natural-born technician**

**Score of 18-20: You're a natural-born poet**

IEEE REGION 6

# *Further DIY Details*

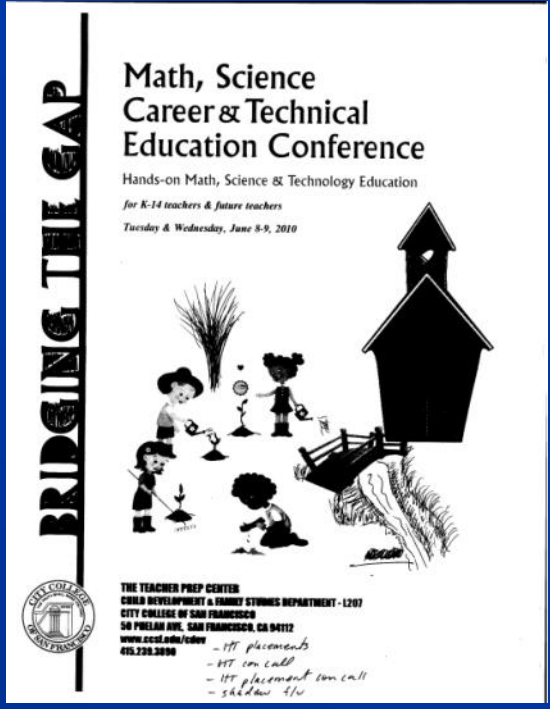

- Preparation: Bring stories of your life as an engineer, your hardest project, your best day, etc.
- Encourage the kids to take all available math and science classes, even when they seem hard.
- Point out that there are also interesting jobs in allied fields such as theoretical science or technological (technician) work
- Be prepared to answer questions from the kids on just about any career or science question.
  - Answers like “Let’s think about that…” and then solving problems in real-time are especially valuable in demonstrating the scientific method and engineering approach to problem-solving.
- Extrapolate where technology is going and emphasize the importance of today’s kids becoming engineers so they’ll “design tomorrow”.
- A white board (or chalk board) should be provided—ask!
- A screen and VGA projector may be provided for showing prepared slides. I suggest bringing your own laptop (and a backup projector) even if they insist they have good equipment.

IEEE REGION 6

# *Your Section is made up of Individuals*


- By their nature, DIY's are individual outreach opportunities
- Your section probably has many individuals who can, or would like to try to, do this.
- Find someone good at it and have them coordinate others
- Brag about it in your publications
- Provide projectors, ANYTHING requested
- Send the bashful out with a mentor
- Your Region can help you get started
- Your Region can give you ideas

IEEE REGION 6




# TISP

## IEEE's unique program

IEEE REGION 6

# General TISP Benefits

IEEE TISP Teacher In-Service Program

- **Leveraged, multiplicative effects**
  - Traditional outreach: 1 engineer → *m* students
  - TISP model: 1 engineer → *n* teachers → 5x30n students/yr
  - Even for large *m* and small *n*, TISP can be highly efficient!
  - "Give a man a fish…*Teach* a man to fish…"
- **IEEE has done the homework** of identifying and satisfying Fed and State curriculum standards
  - This is incredibly boring stuff to engineers
  - But it shows relevancy to teachers. And there's just not time for enrichment "extras" any more.
  - There's still a choice of projects with content varying from design/drafting to pure math
    - Build-a-better Goody Bag…Sail-away…Motors…Cryptography
    - However, remember you're handing this over to teachers…

IEEE REGION 6

# More TISP Highlights

IEEE TISP
Teacher In-Service Program

- Work with teachers, not students
  - No fingerprinting, no background checks
  - No childish behavior issues to deal with
  - This is also seen by some as a *disadvantage*
- Trick is that teachers are motivated to participate:
  - Continuing Ed units
  - Satisfies State & Federal curriculum standards
  - Teachers are presently a bit disheartened & overwhealmed
  - Motivates, builds relationships
- Kit cost per project  $2-20 per student
  - Section support required for follow-on
  - Region and HQ funding available
  - “No punishment for success!”

IEEE REGION 6

# *Our TISP History*

- Region 6 took an active role in promoting TISP
  - Region 6's Loretta Arellano had coordinated SoCal's TISP Training at the Manhattan Beach Marriott, Apr 4-5, 2008
- Planning for a NorCal event began in February with bi-weekly telecons among committee members:
  - SCV Section: Ram Sivaraman, Paul Wesling
  - OEB Section: Bill DeHope, Rosanna Lerma
  - SF Section: Emery Fabri, Tim Ryan, James Jones
  - Region 6: Suresh Vadhva, Loretta Arrellano
  - HQ: Doug Gorham, Carole Levy, J. Callow
  - ~100 man-hours of planning
- SFBAC's Training event was held 11/7-8/08 at the SF Marriott Marquis Downtown

IEEE REGION 6

# *NorCal's TISP Training*
## *November 7-8, 2008*

- Publicity was key to turnout
- Attendance of 100 member volunteers, 16 educators, & 16 HQ staff for a total of 125, exactly on target!
- Talks emphasized curriculum requirements, teacher challenges & needs, TISP benefits, and panel discussions
- "Recess" included *Robot Arm* and *Sail Away* acitivities
- "Perks" included fantastic meals and a beautiful venue

# *Planning our local SFBAC TISP Event*


- Our committee:
  - Of the 100 TISP training event volunteers, ~50 were local
  - 30 expressed further interest; 10 others “came out of the woodwork”
  - As planning progressed, interest flagged to 24
  - SFBAC budgeted $1000 for 50-100 sample (teacher) kits
- Problems with our “Stand-Alone” TISP event local planning:
  - Many different districts are represented in our sections
  - Different SIP/PD days (school improvement programs, professional development) makes scheduling difficult
  - There’s no unified mailing list of teachers to develop an invitation list – no SAMIEEE for teachers ☹
  - Planning is not trivial and was proving daunting
- Instead, we “piggy-backed” on a local teacher conference
  - Large audience, although we compete with parallel workshops
  - Publicity gets done by organizers
  - Venue (even snacks!) provided by organizers & sponsors
    - We provide sample kits and expertise—our specialty

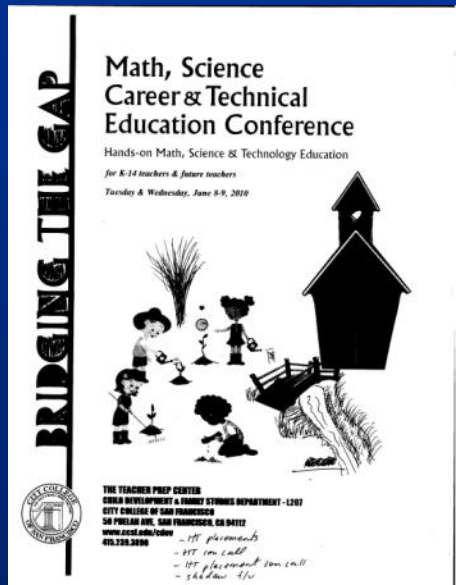

IEEE REGION 6

# *The City College of SF's Math, Science & CTE Conference*

- Yearly conference, CE units available
  - widely publicized, via relevant means, 400 attendees
  - 4 half-day sessions, 8-10 parallel workshops
  - Mid-week (Tuesday and Wednesday)
- This simplified things immensely, planning became manageable
  - I still believe it was the right decision
- Setting the date
  - We discovered the CCSF conference too late for 2009
  - Committed ourselves to the June 8-9, 2010 Conference
  - Publicized at January 2010 Officer Training Event
  - The midweek date was a show-stopper for most of the committee to attend/assist—I was the lone participant

# *Our ISP Workshop at CCSF's MS&CTE Conf.*

- Opened with a slide presentation
  - Importance and breadth of engineering profession
  - Importance of STEM education to a modern economy, our health, welfare, and quality of life
    - Kids seem to respond better to this than (jaded?) teachers
  - Intro to IEEE & TISP; it's goals and relevance to req'd standards
  - Pledge of future support, both funding or volunteers
- The wind power project was featured
  - Teachers self-organized into teams
  - Pencils, washers, post-its, & tape were distributed
  - For structure, support, axels, hubs, and airfoils!
  - A tea bag was the test load to lift via its string
  - And a hair dryer on low at 1 meter for wind
  - Finally the teachers got engaged.


IEEE REGION 6

# *Initial Observations*

- **The teachers seemed to have a ball**
  - I would start out by awkwardly saying, "And you can tell your students…"
  - Soon our roles clearly became teacher & student, not engineer and professional teacher
  - I introduced auxiliary concepts of friction, force & pressure, etc. to what I found were weak science backgrounds—just like I do with classroom visits.
  - The more I treated them like students, the more they enjoyed the activity. They saw engineering in action and loved it.
  - At last I was convincing them that engineering is great
  - But was I also convincing them that they couldn't do this?
- **I also had fun…and I guess I wasn't expecting that**
  - It really was like teaching kids directly—major surprise!
  - Which is a major complaint I hear about TISP
    - But what was the long-term effect?

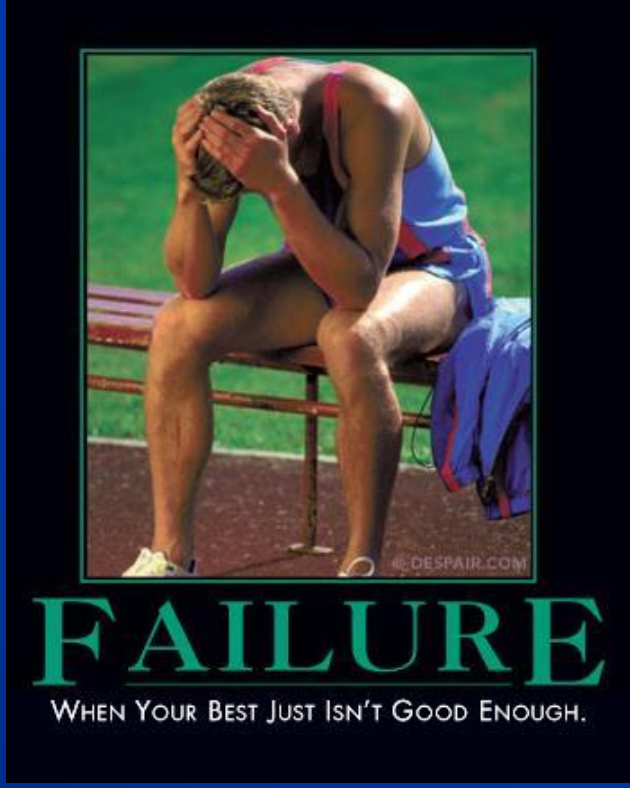
# *Metrics of success?*


- We were expecting 40 attendees; had 16
  - I brought material for 25 teams, we formed 5
  - And only half were credentialed, others were student teachers or in undergraduate studies
  - Granted, we were competing against a free lunch
- Aftermath
  - Only 7 submitted the TISP feedback form
  - No requests for further funding or assistance
  - Only 5 provided email addresses on the form
  - No response to email follow-up after 6 & 18 months
- What was transferred?
  - Enthusiasm  for science, but not science itself?
  - Perhaps the Spirit was Willing but the Flesh was Weak?
  - Even if teachers followed through with activities, was the "thinking like an engineer" lost in translation?

IEEE REGION 6

# *Workin' the numbers:*

- TISP Training
  - 100's of volunteer hours,
  - 10's k$ of expense
  - 125 trained
- Three sections, unified in a Council, took up the cause for half of Reg 6
  - 24 volunteers floundering
  - Piggy-backed on a single teacher conference
  - 1 event, 1 engineer
- 16 "teachers"; only 5 contacts
- *No* requests for kits
- Assumed student involvement = 0





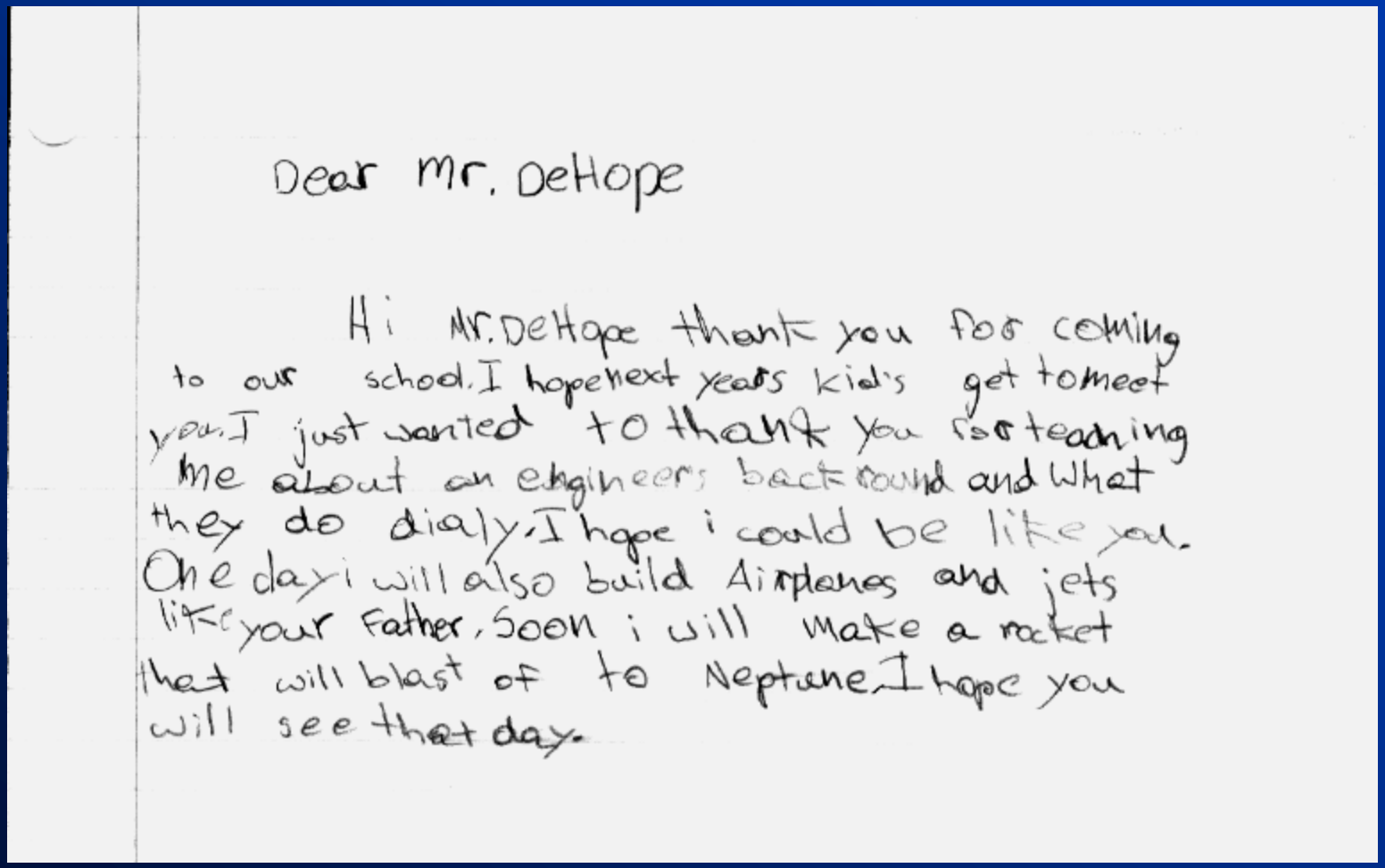

IEEE REGION 6

# SFBAC's TISP Lessons Learned


- I think the Ride-Along approach to an established local teacher's conference/workshop has merit
  - But expect your "take" to be proportional to the number of parallel sessions—you're not the only game in town
  - Schedule early and often for the best time slots
  - Repeat yearly; we pretty much gave up after 2010
- I think the average teacher needs individual support and encouragement beyond the TISP event
  - You might need several hand-holding sessions before they can fly solo
  - Or you might need to show up for a class or 2. Or 3.
- It is critical to get reliable contact information
  - Make this the first thing at an event—TISP feedback forms can be saved to the end as the crowd dwindles
  - Get snail-mail addresses as well--our 5 email addresses could all be bad
- Don't give up too soon…I think we did
  - Time for a resurrection? How about you!
    - CSTA Conference more appropriate?
    - https://www.cascience.org/csta/conferences.asp

IEEE REGION 6

# *Everyone likes letters like these…*



Dear Mr. DeHope

Hi Mr. DeHope thank you for coming to our school. I hope next years kid's get to meet you. I just wanted to thank you for teaching me about an engineers background and what they do dialy. I hope i could be like you. One day i will also build Airplanes and jets like your Father. Soon i will make a racket that will blast of to Neptune. I hope you will see that day.

***…but it's more important to do good than feel good***

# TISP Going Forward


- **Don't lose heart**
  - The TISP model: 1 engineer → *n* teachers → 5x30n students/yr is still valid for *n* a positive fraction less than 1
  - And fractional science and enthusiasm transfer is still success!
  - The IEEE glitz of "Training" probably sets unrealistic expectations
  - A single teacher session is probably not enough
- **It <u>is</u> more important to do good than feel good**
  - 1 on 1 involvement with individual students is limited, but not necessarily 0.
  - TISP offers good leverage and ultimate time efficiency
  - It teaches the teacher. The key will be to make them feel confident.
  - This is never perfect; this is never complete.
- **ROI !:** IEEE has invested in applying teaching standards & requirements to credible projects and experiments (and some high-dollar training events too)
  - Nothing says we can't tweak TISP a bit…emphasize volunteers not free kits.
  - Use what's good; improvise the rest
  - Collaborate with CSTA ??
- Yet, there's always room for multiple approaches like TOPS
  - I think IEEE at all levels recognizes this

IEEE REGION 6

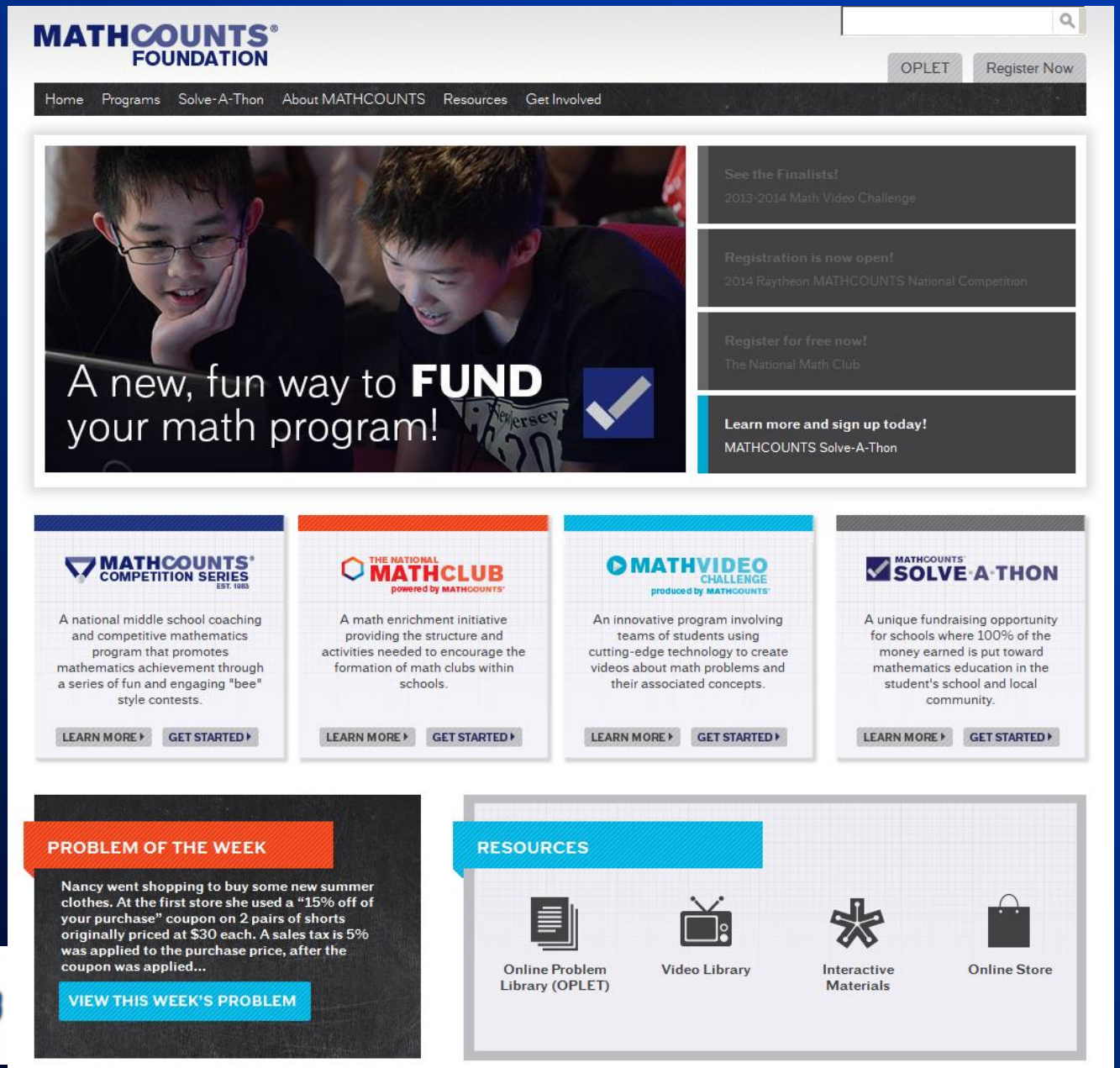
# *OSPs*
# *Other science programs*

## *for STEM outreach to pre-college youth*

- These are still individual-based
- But feature a large org structure behind them
- Better for the acutely bashful
- But one's time may not be optimally spent

IEEE REGION 6

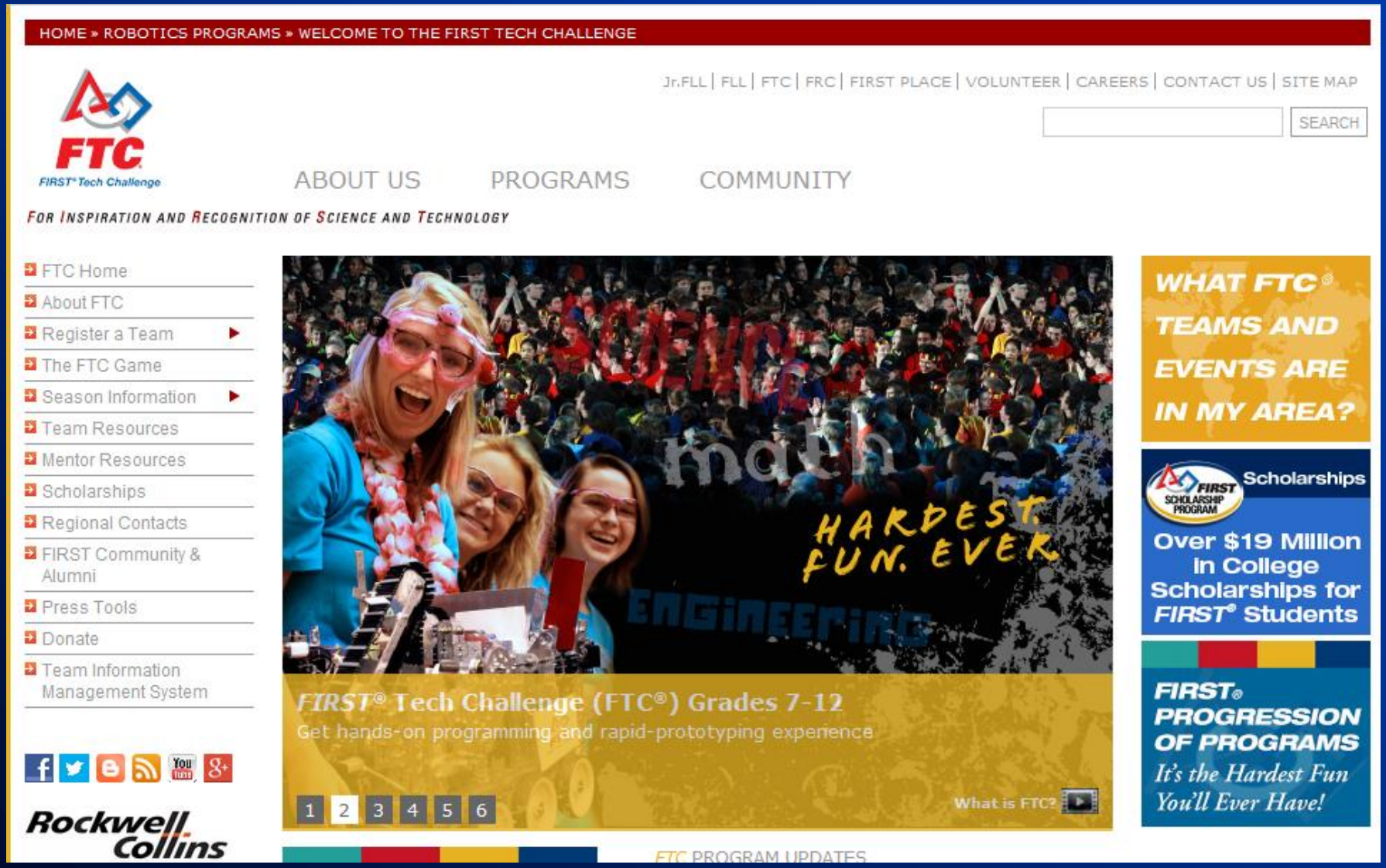
# Mathcounts.org




IEEE REGION 6

# Future Cities (futurecity.org)

# First Tech Challenge




- http://www.norcalftc.org/

# Robotics competitions


IEEE REGIO

# LEGO Leagues: www.firstlegoleague.org

FLL
FIRST® LEGO® League

Jr.FLL | FLL | FTC | FRC | FIRST PLACE | VOLUNTEER | CAREERS | CONTACT US | SITE MAP

SEARCH

ABOUT US PROGRAMS COMMUNITY

FOR INSPIRATION AND RECOGNITION OF SCIENCE AND TECHNOLOGY

- FLL Global Website
- Support Our Mission
- Start A Team
- Challenge: Overview and History
- 2014 Challenge and Season Info
- Coach/Team Resources
- Global Innovation
- Judging and Awards
- Events: Overview and Types
- Host An Unofficial Event
- For Parents
- TeamUp
- Marketing Tools
- US and CAN Contacts
- Donate


FIRST® LEGO® League (FLL®)
Grades 4-8 (ages 9-16; 9-14 in U.S./CAN/MEX)
Create innovative solutions to challenges facing today's scientists

1 2 3 4 5 6 7

WHAT FLL® TEAMS AND EVENTS ARE IN MY AREA?

FIRST SCHOLARSHIP PROGRAM Scholarships
Over $19 Million in College Scholarships for FIRST® Students

FIRST® PROGRESSION OF PROGRAMS
It's the Hardest Fun You'll Ever Have!

FLL GLOBAL SPONSORS

FLL PROGRAM UPDATES

- FLL WORLD CLASS℠ Registration (U.S. & Canada) Opens May 5th, 12:00PM EST
- FLL WORLD CLASS℠ Logo, Teaser, and Poster

QUICKLINKS:
- Registration - 2014 FLL WORLD CLASS
- Edit Team Profile
- Search Events

# Nor Cal Jr FLL

Search this site

- Home
- What is Jr FIRST LEGO League
- Starting a Team
- Challenge
- Events
- Coaching Resources
- About Playing @ Learning
- Calendar
- Sitemap

NorCal Jr FLL Yahoo Group

## Home

**Welcome to the Northern California Junior FIRST LEGO League webpage.**


Registrations for the 2013-2014 Season is Open!

### April 5, 2014 Jr FLL Expo Registration Information

**Where:** Intel, Folsom - 1900 Prairie City Rd, Folsom, Ca
**When:** Saturday April 5, 2014
**Times:**
**Morning Expo: 10:00am - 12:30pm**
**Afternoon Expo: 2:00pm - 4:00pm**
**Fee:** $30

Register at
EventBrite

### April 12 & 13, 2014 Jr FLL Expo Registration Information

**Where:**The Play Space, 2215 Oakland Rd, San Jose, Ca
**When:** Saturday April 12, 2014 and Sunday April 13, 2014
**Times:**
**Morning Expo: 10:00am - 12:30pm**
**Afternoon Expos: 2:00pm - 4:00pm**
**Fee:** $30

Register at
EventBrite

### May 4th 2014 Jr FLL Expo Registration Information

http://www.playingatlearning.org/docs/FIRSTStandardsofConduct.pdf

IEEE REGION 6

# http://www.playingatlearning.org/

## Playing@Learning


Home

Mission

Programs

Calendar of Events

Get Involved

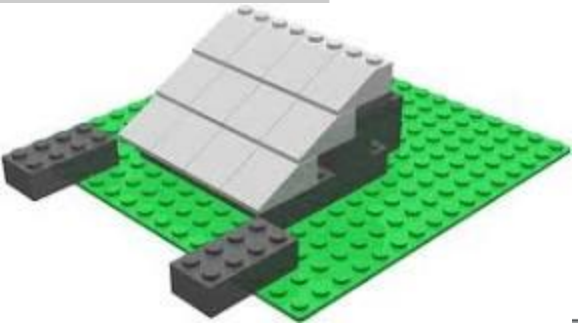
Resources

About Us

Contact Us

Sponsors

Donate

### Welcome!

**Playing At Learning serves Northern California through fun, hands-on projects that encourages science, technology, math or engineering exploration.**

Sparking an interest in math and science is a key to providing economic life choices for our youth. We focus on affordable and sustainable activities related to science, technology, engineering and math (STEM) skills. Playing At Learning is a 501(c)(3) not for profit corporation - Summary One Pager

We are committed to increasing the number of under-served and under-represented students pursuing STEM degrees.

Playing At Learning is accomplishing amazing things - with 3 part-time, volunteer staff - We need help with raising funds and adding staff to continue to manage these high impact, high growth programs!

**Donate** **Be An Advocate!** **Sponsors** Learn more

The Play Space

All FIRST events are free & open to the public
Come out and watch the robot action and talk to the teams.
2013-2014 FIRST Activities **Volunteer**

**NEW**: Learn more about inaugural FTC West Super Regional Championship
Coming to NorCal - Sacramento in March 2014

# Science for fun and profit

MSG Corporate

Your location: UNITED STATES Change
Closest location: Unknown

Sparking Imaginative Learning

The Mad Science Experience | Franchise Opportunities | About Us

Home > The Mad Science Experience > Birthday Parties >

Follow us on:

Sign up for our newsletter!

Your Email Subscribe!

- After-School Programs
- Summer Camps
- In-Class Workshops
- Birthday Parties
- Special Events
- Preschool Programs

Visit Mad Science near you

Unknown
Change

## Birthday Parties

### Give your Child the Best Birthday Party EVER!

A science themed birthday is a great party idea that is sure to entertain! Mad Science birthday parties offer children a chance to participate in cool science experiments with a certified Mad Scientist!

Tsaweb.org

Home | Email Us | Privacy Policy

# TECHNOLOGY STUDENT ASSOCIATION

Search this site: Search

WHAT IS TSA? | JOIN TSA | COMPETITIONS | LEADERSHIP | EVENTS & CONFERENCES | TSA DIRECTORY | FOR STUDENTS | FOR ADULTS

OUR STORY
OUR MISSION
TSA FACTS
MOTTO & CREED

## Our Story

150,000 middle and high school students nationwide aspire to be future engineers, scientists and technologists through the Technology Student Association.

LEARN MORE

### WHAT'S NEW

1. Two $3,500 TSA Student Scholarships
2. Verizon App Challenge Best in Nation
3. Community Outreach Toolkit

### NATIONAL TSA CONFERENCE

Washington DC
June 27 - July 1, 2014

54 days until the 2014 National TSA Conference

**JOIN**
*TSA membership offers exciting opportunities for competition and leadership.*
LEARN MORE >

**COMPETE**
*Compete in animatronics, dragster design, video gaming, flight challenge, and more.*
HIGH SCHOOL > MIDDLE SCHOOL >

**LEAD**
*Learn a variety of leadership skills like critical thinking and problem solving.*
LEARN MORE >

## STEM Competitions and Programs

TSA High School | TSA Middle School | TEAMS | VEX Robotics Competition | Solar Sprint Jr. | uNITE

READ MORE

### National TSA Officer Blog

**May, 2014**

TSA members are gearing up for competing at the national TSA conference...

READ MORE

### Featured Member

Need some ideas to "rev" up your fundraising? Check out what some chapter members are doing in Pennsylvania to raise funds for the American Cancer Society

READ MORE

View Past Featured Members

### TSA Partners with the Verizon Foundation

VERIZON INNOVATIVE APP CHALLENGE

### TSA & the American Cancer Society

MANAGE MY TSA
State & Local

TEAMS
Information and Registration

NATIONAL TSA CONFERENCE

SHOP
TSA Store

SUPPORT
Champion Fund


**Technology Student Association**
1914 Association Drive
Reston, VA 20191-1540
Phone: 703.860.9000
Toll Free: 888.860.9010
Fax: 703.758.4852
EMAIL US


IEEE REGION 6

# *Just a few Scouting merit badges…*


- http://www.scouting.org/ http://www.girlscouts.org

IEEE REGION 6

# More Merit Badges…Heck, replace IEEE's society structure with these!


- http://www.scouting.org/ http://www.girlscouts.org

IEEE REGION 6

# *Other options:*

- Volunteer to judge science fairs
  - Synopsis, Intel, Tri-Valley, local school
- Churches & community centers
  - After-school programs, comfort level, curriculum
  - May be individual (DIY) or small group
  - Could be organized, could be yours to structure
- Volunteer to help on science club projects
  Volunteer to help as science bowl mentor
  Volunteer to help as math club/team mentor
- See your local IEEE section for ideas
  - Especially PACE, college student branches
- Get involved!

IEEE REGION 6

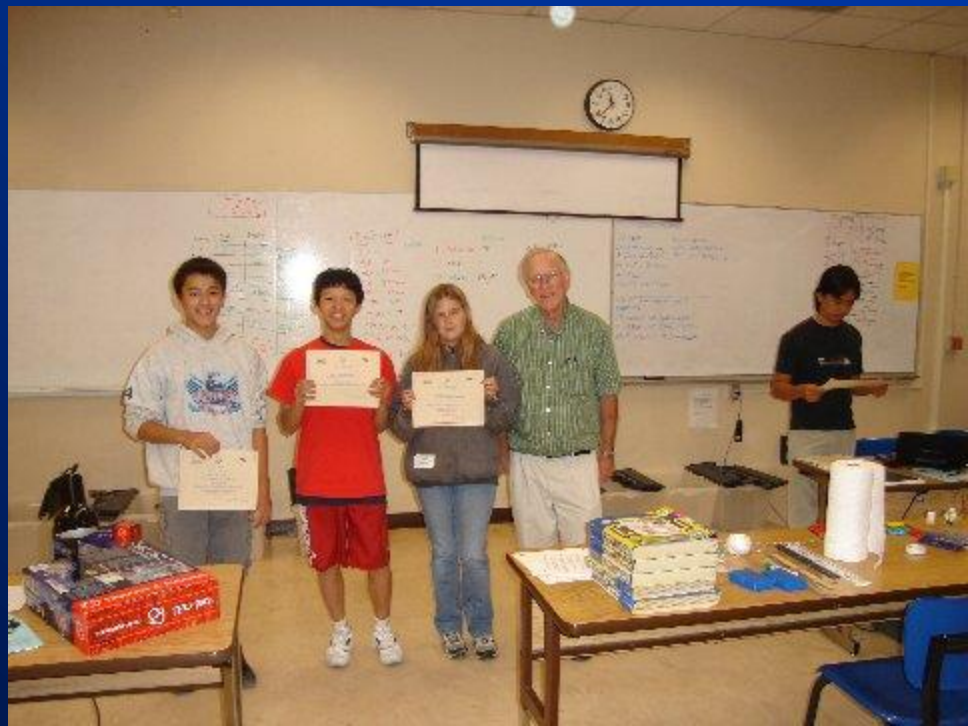
# *Other existing IEEE-sponsored programs*

- These are typically local to a county, section
- Don’t overlook other engineering or physical science disciplines
- Can your section sponsor one?
- These frequently start up as DIYs
- These can offer 40 hour/week “jobs”

IEEE REGION 6

# *RAFT*

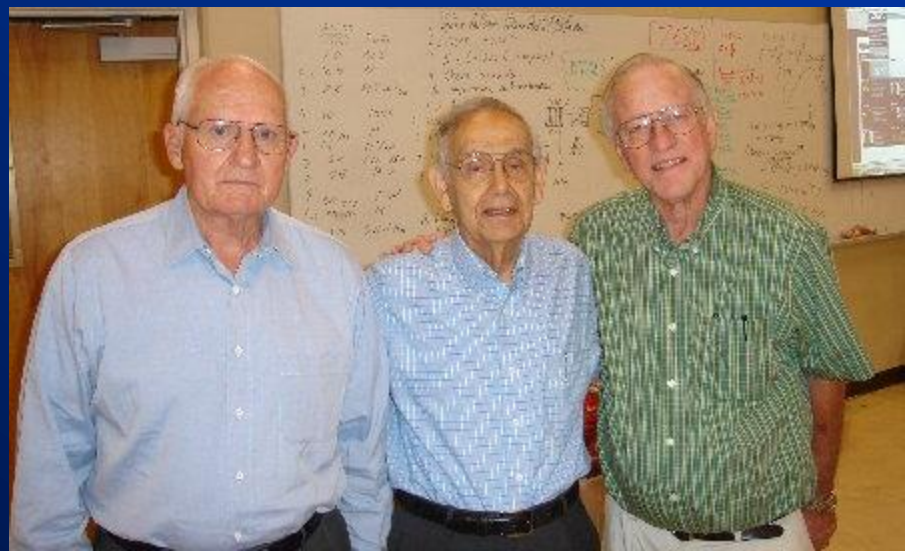
- Resource Area For Teaching
- Received grant from Applied Materials
- Fuel Cells and Solar Cells projects
- $10k donation from SCV Section
- Project-oriented, hands-on
- 3-4 hour time periods
- Motivated kids
- Dedicated engineers
- See http://www.raft.net
- And Lee Colby lee.colby@att.net



IEEE REGION 6

# *RESEED is TOPS!*

- http://www.reseed-sv.org/
- Retirees Enhancing Science Education through Experiments & Demonstrations
- Hands-on
- Dedicated students
- lee.colby@att.net
- Now is TOPS !!!!



IEEE REGION 6

# *A Region 6 Plan for Success*

*…why you're here*

# *STEM outreach <u>is</u> part of IEEE*

- It is NOT everyone's cup of tea
  - For some, it is juvenile and unprofessional
  - For some, it is the best part of IEEE
  - It's a Section's Chair job to identify who is who
- It's a Section's Chair job to devote some fraction of time, effort, publicity, and funding to STEM outreach
  - It can be 3% or 33%...but not 0!
  - Even if it's not YOUR cup of tea
  - Delegate! *Frequently* a PACE Chair function
- Sections need to provide and communicate options to members, encourage involvement, publicize successes

IEEE REGION 6

# *What must Region do?*

- Region 6 must assemble a mail list of Section Pre-College Outreach Chairs
  - The default for a section will be its section Chair and PACE Chair. Add Pre-College Outreach Chair contacts as sections appoint them.
  - This must be periodically refreshed
- Region 6 must provide webspace for pre-college resources (such as these viewgraphs!) and section entries.
  - We need a webmaster!
- The R6 Pre-college Chair(s) will:
  - Remind the sections of options
  - Offer help, suggestions
  - Nag the sections to provide info on events, visits

**Recognize the sections that excel in this arena!**

IEEE REGION 6

# *Our Section Commitment*

- My section will do at least ONE STEM outreach event or function this year.
- We will document it with at least photograph and one paragraph
- We will post it on our section webpage or newsletter with a contact
- We will forward it to Region 6
  - dehope1@llnl.gov

IEEE REGION 6

# *Timeline*

- January: Commit my section to SOME outreach
- February: Identify a PreCollege Outreach Chair
- March: Region's first mailing / mail list needed!
- April: Have a plan for a visit, an event, an effort
- May: Post each Section's plan to Region website
- June: Execute the visit, event, effort.  Take pictures!
- July: Provide at least one picture to Region
- September: Post pictures to Region Website
- October: Encourage further events
- December: Recognize the Pt, Au, and Ag sections!

IEEE REGION 6

## *Summary:*

- Pre-college outreach is vital to our profession and our nation.  IEEE is on board. You must be too.
- There's lots of approaches to Pre-College Outreach
- Not everyone wants, or can, do it.  Find the people who will.
- Give them the tools
- Promote a plan, communicate it to Region
- Execute the plan, share the documentation
- Repeat until you're the Platinum Section in Pre-college Outreach!

IEEE REGION 6