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## IISME EXPANDS TO THE SAN DIEGO AREA!



Steve Post working in the lab at Life Technologies in Carlsbad.



After 25 years of providing San Francisco Bay Area teachers a unique opportunity to spend their summers in local corporations, universities and research labs, the IISME Summer Fellowship Program was successfully launched in Southern California. Three San Diego area companies hosted local teachers in IISME Fellowships – Life Technologies and Nordson ASYMTEK in Carlsbad, and Lockheed Martin Integrated Systems and Global Services in San Diego. Four science and math teachers from High Tech High, Oceanside High School and Mission Vista High School worked side-by-side with scientists and engineers and gained hands-on experience in the subjects they teach.

The Teacher Fellows and their Mentors reported that the summer was extremely successful. Mani Ahmadi, Engineering Manager at Nordson ASYMTEK, commented that “having Julia (Gordon) on my team has been a very positive experience. She is energetic, positive and very productive. She contributed very much. On a personal note, I think I have a new found confidence in our education system.”

Even though his 8-week Fellowship is over, Steve Post and his biology classes at Mission Vista High School will continue to benefit from his IISME Fellowship. He based his Education Transfer Plan on the same procedure he performed in the biotechnology lab this summer. Using materials donated from Life Technologies, his students will use modern lab equipment and chemical reagents to sequence their own DNA. In addition, Steve arranged with Life Technologies to have a network of scientists to serve as speakers and volunteers at his school.

Lockheed Martin Information Systems and Global Services provided Armand Amoranto and David Fogliatti, two physics teachers, exposure to the complexities of the defense industry. They were also given the opportunity to attend multiple events during their Fellowships including a ribbon cutting ceremony for the grand opening of Lockheed Martin Horizon Tech Center and a Maritime Alliance Event.

IISME hopes to continue Southern California expansion efforts in years to come.

# IISME FELLOWS CONNECT INDUSTRY TO EDUCATION



## IBM to Milpitas High School

Michael Bautista, first time IISME Fellow, had a fantastic time working at the IBM Almaden Research Center. "I enjoyed the challenge of enriching my mind with information about current problems and solutions in regards to green data centers (i.e. trying to make server rooms more energy-efficient and environmentally friendly). I really valued how I was challenged with various tasks while having plenty of freedom to approach assignments with creativity."

Michael will use his 8-week project at IBM as a base for his Education Transfer Plan (ETP) in his Algebra II classroom. His project at IBM involved collecting temperature data from server rooms, creating 3D thermal maps, making adjustments to room configurations, and recollecting data to improve the overall efficiency. His math students will perform similar procedures as they look at data from their own activities, analyze the results, and make adjustments to reduce their own carbon footprint. Students will then learn about their own carbon footprint through analysis of their driving habits. They will form mathematical models from the data collected to see the results of their own carbon impact in terms of pounds of CO<sub>2</sub>.

Michael plans to implement this lesson during the 2010-2011 school year and says he is "definitely looking forward to teaching the lessons and seeing how my students react when they realize that each individual's average CO<sub>2</sub> emission contribution is much larger than we'd expect!"



## Lockheed Martin Space Systems Company to Sheppard Middle School

Middle school math teacher Virginia Young worked on databases to track suppliers' performance and viability at her 2010 IISME Fellowship at Lockheed Martin Space Systems Company. "I worked with a wonderful team this summer who helped me see how important math, science, and critical thinking are in today's industry. I was able to strengthen my tech skills while contributing meaningful work to my team this summer."

Working on her Lockheed Martin project made Virginia realize how important Microsoft Excel was in the workplace and how crucial it is for her students to learn it at a young age. For her ETP, Virginia created "Algebra Battleship with Excel" which is an exercise to make learning more fun and engaging. Students will work in teams of two and create a Battleship board game on their computers in Excel. Instead of simple markers representing "ships," students will place algebra equations throughout their Excel spreadsheet as targets. The opposing student will need to guess the cell in which their opponent's algebra "ship" is located and answer the equation correctly in order to get a point.

Virginia is "looking forward to using what I learned this summer to show my students how relevant math and technology are in the workplace."



## Intel Corporation to Hercules Middle High School

Working in the Software Services Group on a project that examined Intel's mobile platforms was an ideal assignment for computer teacher Michael Taylor. Michael says IISME Fellowships are "great professional development for everyone involved. I always go back charged up for the school year." This school year he will have a new tool for his classroom. His Intel project, that explored handhelds and tablets/slates for MULTITOUCH based teaching aids and tools, inspired him to create an iPhone Application that teachers from any grade and subject can use. Michael based "The Randomizer" on a method that is very familiar to most teachers and students. Putting students' names on "Popsicle sticks" is a standard procedure among many teachers as a way to pick students at random in an unbiased manner while keeping students on their toes at all times. The Randomizer is an electronic form of the "Popsicle Sticks" tradition which extends these ideas to make it easier, trackable, and weightable.

The Apple Store approved his application in August and it is now free for all teachers to download!

<http://itunes.apple.com/app/the-randomizer/id384422321?mt=8>

Check out this video on YouTube to see what it looks like:

[http://www.youtube.com/watch?v=c7rM7EHcM1I&feature=youtube\\_gdata](http://www.youtube.com/watch?v=c7rM7EHcM1I&feature=youtube_gdata)



# REMEMBERING IISME FELLOW DR. MARTIN MCKENZIE

IISME and the educational community lost a wonderful teacher and colleague this summer with the sudden passing of Dr. Martin McKenzie. Marty spent the last three years teaching chemistry and coaching the speech and debate teams at Bellarmine College Preparatory. In 2009 he held his first IISME Fellowship at Stanford University and this summer he thrived in the Research & Development Department at Cordis Corporation.

In the summer of 2010 Marty was a member of IISME's Blogging Community and his passion for chemistry and his students did not go unnoticed by his Peer Coach Diane Main. "Marty shared with me some of the exciting things he was doing at his Fellowship, and how much he was looking forward to bringing those experiences back to his students. I was struck by his warmth and the genuine spark of friendliness in

his eyes. Throughout the summer, I enjoyed Marty's insights and the stories he shared in his blog."

Through his blog entries it is very clear that Marty had a strong desire to figure out how to help his students truly understand chemistry. He wrote "my approach to engaging this diverse student pool is to make chemistry real. I'm still working out the kinks in that approach I must admit. I give them problems that involve real scenarios such as the cost of heating a swimming pool or the statistical approach to designing the optimally delicious cookie."

"IISME has given me the opportunity to get some fresh perspective that I can use to make things more real. It also prods me to think about these issues rather than simply working out how to teach the state standards."

He will be deeply missed by colleagues and students alike.



## FROM FACTS TO FICTION

Jack West has many titles: 2009 and 2010 IISME Teacher Fellow at Stanford University, Physics Teacher and Program Director at Sequoia High School, former mountaineering instructor, and 2007 San Mateo County Teacher of the Year. Now Jack can add one more title, published author. Jack combines his vast science background with his love of technological thrillers in his first fiction novel.

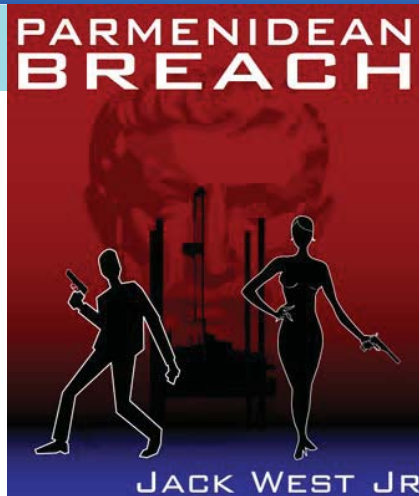
Jack wrote part of his book the summer he worked in Professor Alberto Salleo's Materials Science Lab at Stanford. "What I learned in the lab and from Stanford's Monday teacher sessions, organized by Kaye Storm, made it directly into my book - albeit in a touched up and fictionalized way. The book is, after all, a thriller."

The novel's introduction begins by

referencing a fictitious Fellowship at a major defense industry company which leads his character to write a book about the secrets that are discovered.

"I have been writing for newspapers ever since I was in college. I tried my hand at fiction after reading all of the most popular technothriller writers. I thought to myself, I may not know Soviet espionage techniques like Ludlum, I may not know the intricacies of submarine warfare like Clancy, but I know a lot about the current state of science. And for this I have IISME to thank."

Jack's novel, [Parmemidean Breach](http://www.parmenideanbreach.com), is available in e-reader format at Amazon.com. Learn more at [www.parmenideanbreach.com](http://www.parmenideanbreach.com).



## TEACHERS REFLECT ON THEIR 2010 FELLOWSHIPS

### 2010 Fellowship Feedback

#### Fellow Feedback:

99% would recommend the IISME Summer Fellowship Program to their peers.

99% reported their Mentor was committed to providing opportunities to learn and gain expertise in new areas.

98% said it stimulated their thinking on ways to improve their teaching.

98% gained a greater understanding of the applications of science, math or technology in everyday life.

97% said it elevated their enthusiasm for teaching.

97% increased their knowledge of careers that utilize science, math or technology.

#### Mentor Feedback:

97% were pleased with the quality of work their Fellow produced.

97% would recommend their teacher for another Fellowship.

95% felt the IISME Summer Fellowship Program was worthwhile for themselves as Mentors.

I go back to the classroom with new ideas to share with my students.

Fabulous! The best ever. The best opportunity for science/math teachers.

I just can't say enough about how wonderful this experience was and how much it helped me to develop as a professional.

Great experience. I am excited to get back to the classroom and share what I learned with my students.

My experience was fantastic. I learned so much about the field of engineering research and how collaboration couples with innovation. I will definitely encourage more teachers to apply and try it out. It was very organized and I felt totally supported by IISME.

Great experience that has helped me grow more than any other professional development experience.

Great! I am coming back to my classroom refreshed and excited.

It was a terrific experience allowing me to find out more about the corporate world to transfer knowledge to my students.

I had a great Fellowship experience. This was the best summer because I did a lot of work in the lab and was put on the line more to discuss the results.

[iisme.org/listserv.cfm](http://iisme.org/listserv.cfm)



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#### ABOUT IISME

Industry Initiatives for Science and Math Education (IISME) exists to address the critical need for a strong, highly skilled workforce in mathematics, science, and technological fields. This industry-education partnership focuses on teachers as the primary agents for effecting meaningful change in mathematics and science education.

IISME leverages the resources of the Bay Area's high performance corporate workplaces and research institutions – especially the expertise of their scientists, engineers and technologists – and involves them in the process of improving education, one teacher at a time.

IISME's Summer Fellowship Program provides paid, challenging summer work opportunities for teachers in Bay Area corporations, universities, and research labs. These Fellowships remove teachers for an extended period from the culture of education to immerse them in the culture of industry and research and to allow them to become contributors in these new environments. IISME Fellowships revitalize and equip teachers with new knowledge and strategies for preparing tomorrow's employees. This is key to the transformational nature of IISME's unique type of professional development.