President’s Message

As I begin writing this article, Michael Cohen is publically testifying before Congress and the American people. By the time you read this, we will all know far more about the outcome and ramifications of that testimony. This is just one more episode in the reality show that has become our daily nightmare. I don’t want this message to be about politics, this is not the right forum or venue, so my message is simply about hope and change.

Yes, I know, I stole that phrase, but that is how I feel. I am struck by the change in the number and type of people who ran for Congress in 2018. Whether they won or lost, their demographics better represented America than ever before. This Congress is being pushed into the reality of what and who America is, and away from the persistent conception of what America was. The America of the Eisenhower years has changed. Two television shows that tap into that nostalgic view of America were *Happy Days* and *The Wonder Years*. Do you remember any students of color or ethnic diversity in them? There were hardly any females even represented in a leading character role. That certainly didn’t accurately represent America then and even less so now.

The names on today’s graduation lists are very different from the 1950s. Today, immigrant families feel far less pressure to Americanize their names than those that came through Ellis Island in yesterday’s America. As a result, our student lists don’t have as many Marys, or Sues, Johns or Bills as they used to. Having to read out student names is not as easy as it used to be. I look at the names of the students who will be participating in the Physics Olympics and am struck by the diversity of whom we teach. It’s not a matter of better or worse, it is just what it is. In our nation, we have a good number of people who see this change as a threat to them, to their rights and their perceived privileges. I only have to go back two generations for my own family’s immigration to America. They, like so many immigrants before and after them, came with a dream. It was not a desire for handouts or an easy life, but the certainty that education and hard work would be rewarded. Were they discriminated against? Certainly!

<table>
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<tr>
<th>Important Dates</th>
<th>Fri Mar 22</th>
<th>Sat April 6</th>
<th>Wed May 22</th>
<th>Tues June 25</th>
<th>Thurs June 27</th>
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<td>Physics Olympics</td>
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<td>Spring Conference</td>
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<td>Regents Physics Exam</td>
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<td>End of year BBQ</td>
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Visit www.lipta.org for more information

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The executive board meets monthly. All LIPTA members are welcome to attend the meetings.

Fall Conference 2018
by Tania Entwistle

On October 13, twenty Lipta members came together in S240 in the Physics building at SUNY Stony Brook for our annual Fall Conference. After catching up with each other over breakfast, President Ed McDaniels warmly welcomed everyone to the first presentation on the day's agenda - Teaching Students to Argue from Evidence with CER (Claim, Evidence, Reasoning). Justin King from Commack High School and Joe Hanley from Bayshore High School presented compelling techniques for implementing NGSS standards in the classroom. What should students learn? What should they do? What should they think? How do we use cross-cutting concepts to encourage perception of patterns and cause and effect? What kinds of things can we do in class and in lab to encourage students to construct explanations and to be able to argue from evidence?

The next session, Construction of a Resistor Board for Electrical Measurements and Calculations, was conducted by LIPTA Vice President Bill Leacock from Mepham High School. Now the audience needed to step up to make the boards with the material prepared by Bill. The opportunity to order the materials for a class set of 20 boards was made available for $200.

The day wrapped up around noon. Thanks to our presenters and the organizational efforts of Ed McDaniels, Gillian Winters, Bill Lynch,
Winter, 2019

Teslamania 2018

About thirty teachers and students gathered at the 11th annual Teslamania Demo Derby held at Stony Brook University on Saturday, October 20th. This annual event is sponsored by the Tesla Science Center, NYS Master Teacher Program and ISTEM at Stony Brook University. Sachem HS physics teacher, Richard Gearns, is the main coordinator of Teslamania, which pays homage to Nikola Tesla, the “father” of the electric age. Presenters sign up in advance to show off a device or demonstration that illustrates a physics concept. At the end of the day, a vote is taken and the best demonstration is awarded the highly coveted Omega Prize.

This year, about fifteen participants took part in the demo derby. Each person or group was granted about a 10 minute time slot to exhibit a demonstration or device of their own making. Spectators voted to award the Omega Prize to Pavithra Sundar from Manhasset HS for her Ball through a Wall device. It is the second time Pavi has won best honors and she is the first repeat winner. She previously took the Omega Prize in 2012 with her Projectile Droplets demonstration. This year her demonstration highlighted concepts involving light polarization. Her winning device consisted of a tube with two linear polarizing filters attached to each other in opposite directions. This makes the tube look like there is a wall in its center. When a ball rolls through the tube, it gives the illusion that the ball is going through a wall to reach the other side. A very cool effect!

Teslamania is not only a wonderful opportunity to see some great physics demonstrations and equipment, but it is also a great way to share ideas and collaborate with colleagues. Start thinking about a physics demonstration and/or concept you would like to share and plan to attend this year’s Teslamania Demo Derby on Saturday, October 19, 2019.

Syosset students show their monkey and Omega Prize winner, Pavi Sundar, demonstrates polarization.

Tony Mangiacapre from St. Mary’s demonstrates his resonance tubes.

Do you have any comments, information, or tips to share for future newsletters? Send it via email to:
keogh@lipta.org
Modeling Instruction is designated as an Exemplary K-12 science program and a Promising Educational Technology program by the U.S. Department of Education. Modeling Workshops™ are peer-led. Content is reorganized around basic models to increase its structural coherence. Participants are supplied with a complete set of course materials and work through activities alternately in roles of student or teacher, as they practice techniques of guided inquiry and cooperative learning. Models and theories are the purpose and the outcomes of scientific practices. They are tools for engineering design and problem solving. Thus, modeling guides all other practices. A short video introduces Modeling Instruction: https://www.youtube.com/watch?v=nG7SOc0Rnks

Each MODELING WORKSHOP has these features:

- Aligned with National Science Education Standards
- Focuses on all 8 scientific practices of NRC Framework for K-12 Science Education.
- Addresses multiple learning styles.
- Addresses student naive conceptions.
- Collaboration, creativity, communication, and critical thinking.
- Systems, models, modeling.
- Coherent curriculum framework, but not a curriculum; thus flexible.
- Compatible with Socratic methods, project-based instruction, etc.
- Science & math literacy.
- Authentic assessments.
- High-tech and low-tech options for labs

This summer, Modeling Workshops™ are hosted in physics, chemistry, biology, physical science, middle school science, a few one-week long Intro to Modeling sessions and the inaugural Astronomy Modeling Workshop.

Physics Modeling Workshops™: Alabama, Arizona, California, Illinois, Iowa, Maine, Massachusetts, New York, North Carolina, Ohio, Texas and Virginia

Middle school/Physical Science Modeling Workshops™: Arizona, Illinois, Indiana, Massachusetts and Ohio

Astronomy: Kentucky

For workshop details, please visit the website https://modelinginstruction.org/professional-development/upcoming-workshops/summer-2019/
The winter break is over and it is time to start making summer plans including summer professional development plans! Modeling Workshops are hosted each summer all over the country and we are still trying to get to other nations as well. Workshops are typically 2 or 3 weeks long to learn how to use the Modeling pedagogy in the different disciplines. You as teacher, will take on the role of your students, to experience what they will do with this different learning (and teaching) style and after activities, in teacher-mode you will debrief with the leaders who are also classroom teachers and know what works (and does not work) in their own classrooms.

For more information on Modeling Instruction, please visit our website: https://modelinginstruction.org/ or https://www.phystec.org/pd/?set=Modeling

Nearby workshops are in Massachusetts and New York, but check the website for offerings in other states.

- **Massachusetts**
  - July 15-25 -- Mechanics at Merrimack College, New Andover
  - July 29- August 9 -- E&M at Merrimack College
  - [https://www.merrimack.edu/admission/professional-studies/professional-development/modeling.php](https://www.merrimack.edu/admission/professional-studies/professional-development/modeling.php)
  - Contact Darren Broder dbroder@siena.edu

- **New York**
  - July 8-11 -- Intro to Light at Siena College, Loudonville

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If you are a newcomer to the teaching profession, you are probably aware that you need to complete 175 hours of professional development to maintain your professional certification in New York state. If you have been teaching for decades, your school district may require professional hour credits in a contractual agreement. So how can you earn those credits?

LIPTA is the answer. LIPTA provides several ways to accumulate those professional hours:

- Attend the Fall and Spring Conferences (3 to 4 credit hours available)
- Attend the AP Physics Exam Analysis (2 credit hours available)

Professional Hour Certificates are available. So become an active member of LIPTA and watch
LIPTA SPRING CONFERENCE
SATURDAY, APRIL 6
BAY SHORE HIGH SCHOOL
155 Third Avenue, Bay Shore, NY
8:30 - NOON

8:30 - 9:00  Registration and Continental Breakfast

9:00 - 9:10  Opening Remarks

9:10 - 9:40  But I’m a Physics Teacher?
Do you ever think about what you’ll do after you retire? Tania Entwistle will offer some possibilities and discuss her experiences in the Peace Corps.

9:45 - 10:15  NYSSLS - Putting it All Together: A Roadmap to Success
We’ve learned about phenomenon-based learning, question formulation techniques, modeling and argumentation, among other ways to incorporate the Science and Engineering Practices of the New York State Science Learning Standards, but how can we put them together to form a cohesive unit of instruction? Justin King will share an example of a NYSSLS-aligned Regents physics unit.

10:15 - 10:30  Break

10:30 - 11:00  NYSSLS Road mapping
Participants will break into groups and develop other physics units aligned with NYSSLS that can be brought back to the classroom.

11:00 - Noon  Paper Rollercoasters
Looking for something to do at the end of the year or on a “down” day? Need a STEAM project? Collaborate with your colleagues by putting together a paper rollercoaster. Materials will be provided.