

## ISPP REMINDER

### Happy February!

**Our next meeting** is Thursday, February 20<sup>th</sup> at Northeastern Illinois University (NEIU). The address is 5500 N. St. Louis, Chicago, IL 60625. See below for directions.

### Future Meetings:

|       |                         |               |
|-------|-------------------------|---------------|
| March | Lane Tech               | Thursday 3/20 |
| April | Lake Forest College     | Wednesday 4/9 |
| May   | Northwestern University | Monday 5/5    |
| June  | ???                     | ???           |

**Brian Wilhite** welcomed us to the 30<sup>th</sup> annual Tri-Physics meeting. After feeding us delicious pizza and beverages, he showed us a video about the physics of folding pizza, as any New Yorker will tell you is the only way to eat a pizza. The video demonstrated how a thin sheet is easy to fold and yet hard to stretch. [http://www.youtube.com/watch?v=HG13\\_92KW7I](http://www.youtube.com/watch?v=HG13_92KW7I)

### Announcements

PNW Tuesday Feb 11<sup>th</sup> at Glenbrook South.  
PW Tuesday Feb 11<sup>th</sup> at Naperville Central  
ISPP Thursday Feb 20<sup>th</sup> at NEIU

**Nick Szarzak** – Glenbard West High School – Nick shared a several videos with us that he uses to amuse his students and show physics in “real life.” He had a video about a manatee demonstrating inertia and another related to gymnastics. He showed us a color changing pillow that uses embedded color LEDs and a phosphorescent T-shirt that glowed when it was illuminated by a UV laser pointer. It is available at ThinkGeek.com – <http://www.thinkgeek.com/product/ebb6/?srp=15>. He also showed us a remote control helicopter. He uses it for FBDs and elevator problems. It is available at thinkgeek.com. He also showed us a Tetris desk light that uses stackable lights like the Tetris game. <http://www.thinkgeek.com/product/f034/?srp=2>.

**Pati Sievert** – Northern Illinois University – Pati informed us about STEM Outreach at NIU. STEM Fest- October 18, 2014. Designed for kids of all ages. Information is available at <http://stemfest.niu.edu/stemfest/>.

**Andy Fitz** (Lindblom HS) – Andy presented several ideas about giving students feedback on their lab reports. For written feedback, which is hand delivered to students. Hand writing the comments means they are (due to time constraints) limited in quantity; Andy also found he was writing the same thing over and over again. Andy shared with us his experiences using Turnitin.com – students upload their paper and it checks for plagiarism; Andy then types his comments for them. He can type much faster than he can hand write. Smaller grammar mistakes take more time to grade. He uses Quickmarks for common comments. However, this can seem removed/impersonal. Andy also recorded verbal comments as he is grading the lab. Students listen to this grading and fill out a reflection form. He found it takes about the same time as hand grading. However, the amount and quality of feedback is much greater than written feedback. And he can explain expectations and answers. He can save pre-recorded segments to copy and paste into each student’s lab. He uses Audacity (free program) for audio feedback and Google Drive – one folder for each student.

**Nickey Walker** (Plainfield HS) – Nickey talked about her recent efforts at flipping the classroom: in particular, flipping the lab. Her first effort was with a conical pendulum lab using a flying pig or flying cow. The students watch her video before class. She explains the lab on the video. Have the kids watch the video first and then answer some questions on the video using a Google form. She never repeats your pre-lab during class. The kids that don't watch the video beforehand must ask the other students how to do the lab. She found this an effective way to communicate the lab to the students in a way that they are best prepared to complete the lab.

**Kathy Fritsch** (Waukegan HS) - Kathy shared with us her ideas for interactive sub plans She has plans in a box, so the sub can pull the box down with all the equipment in it. In the lesson she spoke about, the students are each given a sheet of paper and some tape and asked to make the tallest possible tower.

**Jim Vetrone** (Hinsdale Central HS) – Jim showed well he made for demonstrations. He made circles that is flexible and can bend more. He used 30 feet circles, ten feet for the posts that support the circles. made of \$10 worth of stretch fabric. He uses it at year when he teaches general relativity. He rolled around in the well. He used an 8 lb ball to curve the and a chair to support the shot when it is in the ideas for demos: spin two magnet balls around each binary star system. Gion Matthias Schelbert following modification: use a square sheet of roll it around a meter stick on each side, and clamp clamps to tables. When the sheet is flat, marbles straight line. When the sheet is weighted with a path is curved.



us a gravity out of CPVC for the two The well is the end of the the marble space time sheet. Other other for a suggested the spandex and with C-traverse it in a mass, then the

Jim also told us about STEM Summit at Hinsdale Central on February 28<sup>th</sup>. More information can be found at <http://central.hinsdale86.org/Pages/STEMSummit.aspx>.

**Jeremy Paschke** (York HS) – Jeremy offered ideas for understanding voltage and electric potential using contour mapping. He used images from Physics Earth Science Regents Tests to provide students with the gravitational analogy for equipotential lines: contour maps. He then gave them sheets of conducting paper and had them map out the regions of equipotential lines. Then they color it. Each range gets a color. In this way, he draws the analogy between gravitational potential and equipotential.

Jeremy also shared an idea with us from Make Magazine: Physics of Paper Rockets. <http://makezine.com/2008/12/13/compressed-air-rocket/>. Can get pdf of plans. He has his students use a paper towel tube as the body of the rocket. He has a PowerPoint and does have some worksheets that go with it.

**John Lewis** (Glenbrook South HS) – John shared with us his methods for making a homemade set of Boomwackers from fluorescent light tube protectors available at a local home supply store. He also demonstrated the Octivator – an end cap for the Boomwacker. Then he used 1" diameter Styrofoam balls moving through the same clear plastic tubes used for the homemade Boomwackers: he used to show how electrons move through wires; then he dropped the Styrofoam balls through the tube and we watched terminal velocity; When put on top of a motion detector, the motion detector can graph the motion of the falling Styrofoam balls. He also shared a trick for the older motion detectors: put a sock over the old motion detectors to get the narrow beam setting available on the new motion detectors.

**Paul Dolan** (NEIU) – Paul used a metronome to spark a conversation about different kinds a pendula. The metronome is a “real world” example of a driven physical pendulum.

**Roy Coleman** is encouraging people to go out and step in the snow. It is claimed that Eskimos can tell how cold it is by the squeak of the snow. He suggests that with all this snow around, we record the sound on our phones and record the temperature and see what we can find out.

**Dan Pfeifer** (Antioch HS) – Dan shared software he uses to flip the classroom. He uses PhET animation with smart board and transparent mode and a table to make a motion map. His videos are on his web page. He also provides graphing tutorials. Dan also shared with us another project he is working on. Plot.ly is an on-line graphing tool; integrates with DropBox and Google Drive. Good to use with Chrome books. He meets with the CEO and gives feedback on what he wants coded, so if you have changes you would like to see integrated, let Dan know. Can fit curves and works with Google Chrome books. Mrpfeifer.com web site has all these resources.

**Ann Brandon** (Joliet West HS – redial) Ann shared with us her sundial tshirt: you simple use a pen to create a shadow and tell the time. She also shared a sound glass video from Earl Zwicker:  
[http://www.youtube.com/embed/QdoTdG\\_VNV4?rel=0&iv\\_load\\_policy=3](http://www.youtube.com/embed/QdoTdG_VNV4?rel=0&iv_load_policy=3). Thanks Earl! That was really neat. It was filmed at the Festival de San Stefano. [www.glassduo.com](http://www.glassduo.com).



Finally, Ann Brandon and Debby Lojkutz came forward to announce the **Harrald Jensen Award winner**. Ann began with a brief history of ISPP and the important role Harrald played in the early days of the group. Then they announced that this year’s awardee is **Nick Szarzak** from Glenbard West. The award itself will be presented at the ISPP Lake Forest College meeting on April 9. Congratulations, Nick.

Reported by Martha Lietz

## Directions to ISPP at NEIU

### IMPORTANT PARKING INFORMATION

**WHEN YOU PARK AT NEIU, YOU WILL NEED TO PICK UP A PARKING TAG. GET A TAG IN THE MEETING ROOM AND RETURN TO YOUR CAR TO HANG THE TAG FROM THE REAR VIEW MIRROR.**

We will meet in Bernard Brommel Hall (BBH) (formerly the Science Building, SCI on the map), Room 237, Second Floor East. (The name of the building is changed, not the location.)

#### To get to

Northeastern Illinois University

From the expressway:

Coming from the northwest or from the south on the Kennedy, exit at either Kimball or Pulaski going north, and follow that to Bryn Mawr Avenue. From Kimball turn west. From Pulaski turn east.

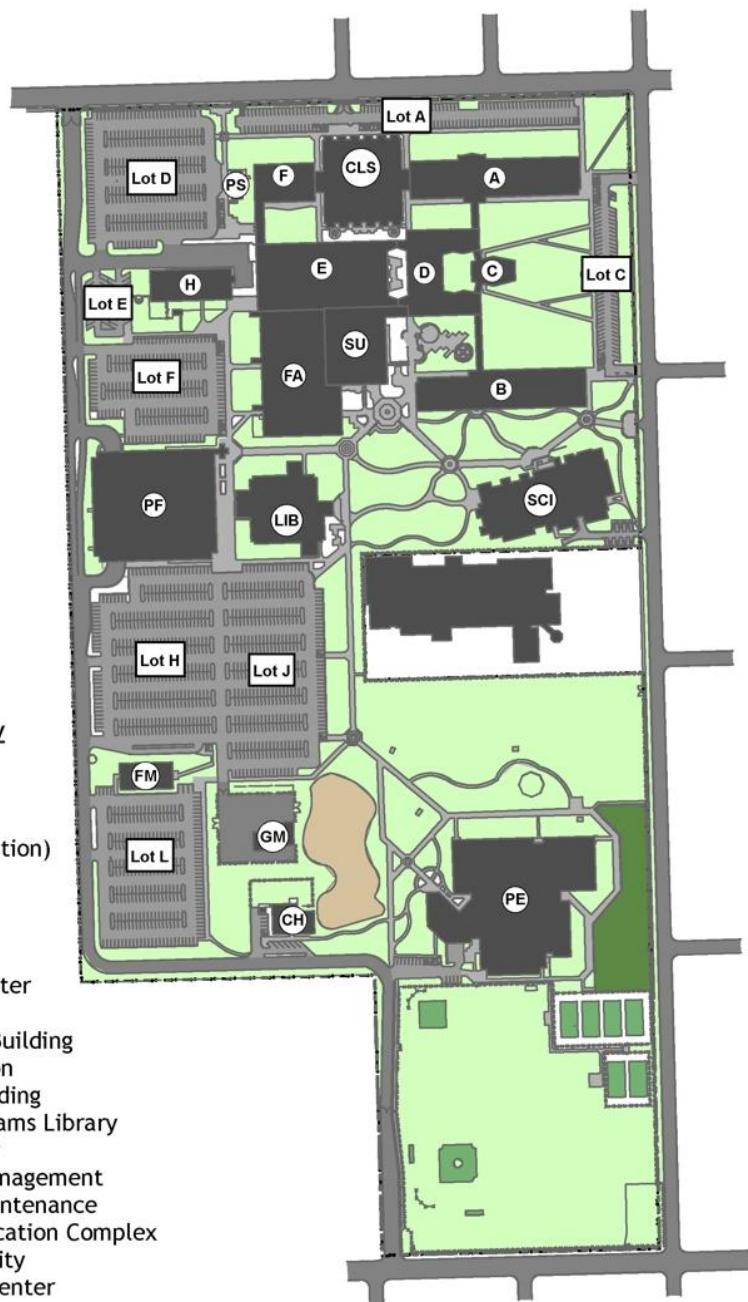
Coming from the north on the Edens exit at Peterson & take that to Pulaski, turn south on Pulaski to Bryn Mawr (just after the nature center). Turn east onto Bryn Mawr.

Park in the Level II lots or the Level II area in the garage (which is labeled "PF" on the map - Parking Facility)

By CTA

Take the Brown Line to the end (Lawrence & Kimball), and take the Kimball (#82) bus north about 1 mile to Catalpa, and walk 2 blocks east to campus) -- or take the Blue Line to Foster (Jefferson Park), and take the Foster bus east to Central Park -- the bus stops at the south end of campus (just beyond the PE complex).

### Northeastern Illinois University Campus Map



#### Building Directory

- A - Building A
- B - Building B
- C - Building C  
(Sachs Administration)
- D - Building D
- E - Building E
- F - Building F  
(Stage Center)
- FA - Fine Arts Center
- H - Building H
- CLS - Classroom Building
- SU - Student Union
- SCI - Science Building
- LIB - Ronald Williams Library
- PS - Public Safety
- FM - Facilities Management
- GM - Grounds Maintenance
- PE - Physical Education Complex
- PF - Parking Facility
- CH - Child Care Center