

ISPP REMINDER

January 2013

OUR NEXT MEETING...

...is at
Northeastern Illinois University
Monday February 11
6:30 – 8:00 pm

Scroll down for a map and directions.

FUTURE MEETINGS...

March 6 (W) Loyola U (Gordon Ramsey)
March 16? (S) CSAAPT – Glenbard South?
Apr 10 (W) Lake Forest College (Bailey Donnally/Mike Kash/Scott Schappe)
May 6 (M) Northwestern University (Art Schmidt)
June 4 (T) MSI, tentative (Ruth Goehmann)

AT OUR LAST MEETING.....

Following pizza, soda and conversation, we were welcomed to the 29th annual Tri-Physics Meeting at **Elmhurst College** by **Bryan Wilhite**, the chairman of the Physics Department. Bryan introduced **Nicole Moore**, an optics specialist and the newest member of the department

Debby Lojkutz (Joliet West High School) presented a new teacher bag to **Kris Carter** (Woodstock North High School).

Roy Coleman (CPS, retired) showed us a physics cartoon from Larry Alofs. (I found it using “Saturday morning breakfast cereal mathematica” on Google.) Roy described some power of ten questions that he used with his students. He stressed the importance of insisting that they show their work for the order of magnitude estimates they made. Roy showed a short section of a 25 minute video tour of the International Space Station narrated by astronaut Sunita Williams. See it at: <http://www.wimp.com/orbitaltour>. He also referred to a video on The Race That Changed Everything. Henry Ford is featured. <http://www.youtube.com/watch?v=POXqGsgAtaY>.

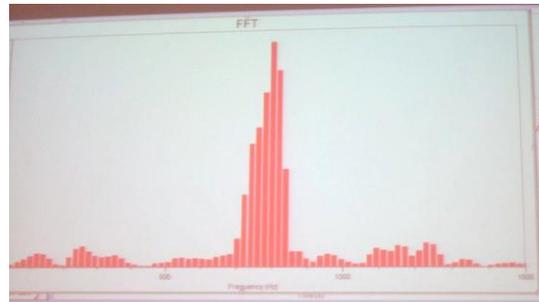


Dan Cahill (Grayslake Central High School) showed us an illustration of inertia. It can be found at de-motivational-posters.com. Better: go to <http://www.fakeposters.com/> and type inertia in the search box.

Ann Brandon (Joliet West High School, retired) attended the AAPT meeting in New Orleans. She showed us some small Pull-Back Cars available from Educational Innovations for \$3.25 or \$5.95 a pair. She also bought a plastic Newton's Apple (\$6.95). Its weight is one newton! Ann encouraged us to view the many links on the AAPT website, such as Compadre and Physics Classroom.



Rebecca Vieyra and **Josh Norten** (Cary-Grove High School) gave us information on two AAPT/PTRA workshops to be held at Cary-Grove on February 23 (Acoustics: Sound and Waves) and April 20 (Teaching Physics with Technology). (rvieyra@d155.org) They showed us a resonance example made of PVC pipe and used a Vernier microphone and LoggerPro to find the resonant frequencies of a rotating corrugated tube of length L . Students find these frequencies and determine the fundamental frequency ($n = 0$). Then from a plot of f vs. n they can find the speed of sound v from $f = nv/2L$, where $v/2L$ is the slope. They also told us about a Physics Toolbox available on Android phones. It includes an accelerometer and a light sensor.



Max Lee (Joliet Junior College) balanced a strip of heavy paper and tried to make it rotate using a newspaper page he had pressed against the wall and peeled off, but we saw no result. With prompting from several people Max pressed the paper again and then peeled to the two sheets apart and we could see the effect of static charge on the paper making the small paper strip rotate. It was pointed out that this can be done on a larger scale by balancing a ruler, a length of PVC pipe, or even a 2x4, on a watch glass, then using a standard static charge generator (glass rod and cloth, rubber rod and fur).



Chris Aderhold (Glenbard East High School) described some of the activities he was able to take part in at a summer workshop for teachers at UIC. One involved scanning pig lungs with ultrasound. Damaged lung cells are more rigid than normal cells, so there is a speed of sound change. In these damaged cells. This is a useful process, since an MRI cannot be used with lungs. Look for summer workshops for teachers at <http://www.uic.edu/uic/>

Patti Sievert (Northern Illinois University) gave us information regarding STEM workshops and internships at NIU. Go to <http://www.niu.edu/stem> and <http://www.niu.edu/stem/camps>

Marshall Ellenstein (Maine West High School) showed us one of the Hewitt Drew It videos on Youtube. This one was on buoyancy. To find the complete set of these films in numerical order, go to “mellenstein’s channel” at <http://www.youtube.com/user/mellenstei>. The videos vary in length from 2 to 50 minutes.

Bob Froelich (Glenbrook North High School) showed us a neat I-phone bubble level app. The image of the level is shown, along with the angle (0° is level). He reminded us that Physics Northwest meets at Glenbrook North on February 13. Bob has developed a prototype of a device that uses an infrared diode to Snell’s law in the infrared region.

Kevin McCarron (Oak Park and River Forest High School) showed us some of the features of “Galaxy Zoo” (<http://www.galaxyzoo.org/>). It allows registered users to collect and submit data for over a million galaxies.

John Lewis (Glenbrook South High School) went to the high school share-a-thon at the AAPT summer meeting and saw a presentation on the standard kilogram. He asked us: “Where is the kilogram?” Most knew that it is at Sevres, outside Paris. It is stored under very carefully controlled conditions of temperature and humidity, yet it does change mass slightly. There is work afoot to try to find a standard based on unchanging physical properties, as is done for the meter and the second. A sphere of a fixed number of carbon-12 atoms is a possibility. The current standard is a cylinder of a platinum-iridium alloy whose diameter equals its height. Something we did not know is that during World War II, both sides agreed not to bomb the region near the location of the standard.

Martin Melhul (Columbia College and Westwood College) described two uses of the Arduino microcontroller unit: as a strobe unit for analyzing free fall, and timing a pendulum period as a function of amplitude.

Andy Morrison (Joliet Junior College) talked about the Global Physics Department (<http://globalphysicsdept.org/>). It has an online meeting every Wednesday at 8:30 pm. Information about the meetings and meeting archives is on the web site.

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 Debby announced that this year’s awardee is **Mark Welter** (Prospect High School). The award itself will be presented at the ISPP Lake Forest College meeting on April 10. Congratulations, Mark.

Our thanks to Bryan Wilhite and his Elmhurst College colleagues. Join us at NEIU on February 11

Reported by John Milton

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.

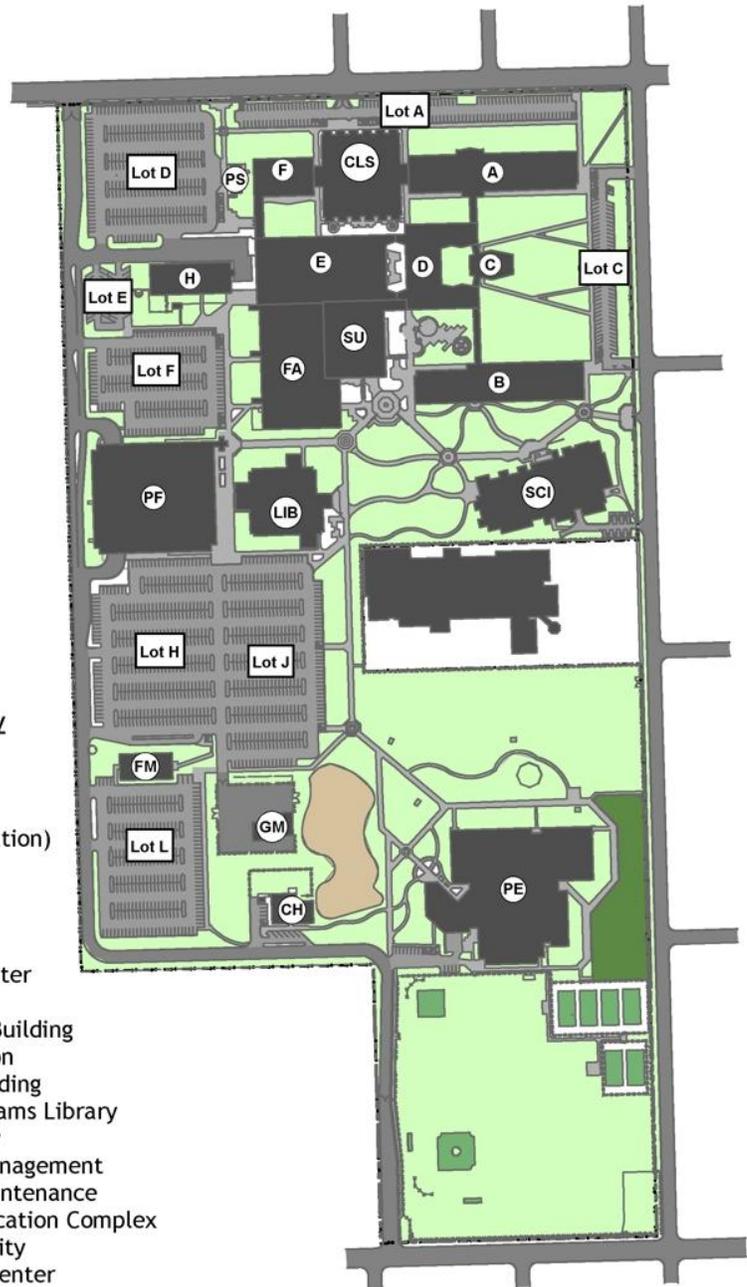
Coming from the north on the Edens exit at Peterson & take that to Pulaski, turn south on Pulaski to Bryn Mawr (just after the nature center). Turn east onto Bryn Mawr.

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