Alexey Petrov from Wayne State University started off the meeting with a talk entitled “Time is Relative: Muon Decay”. Alexey’s talk consisted of an overview of the special theory of relativity postulates and evidence for time dilation.

Alexey also enlightened us to two programs with which he has been involved. The first is an NSF-sponsored program in which undergraduate students and teachers are able to participate in particle physics and astrophysics experiments at national labs such as Fermi Lab and Cornell University. This program is a paid summer internship.

The second program is Project DiSCo (High School Distributed Scientific Computing), which involves teaching computational science and modern physics to high school students. Students in classroom are connected to an internet site and learn the material via computer. To learn more about this program go to: www.physics.wayne.edu/~apetrov/DISCO.
Al Gibson announced the joint spring meeting for the OSAPS and MIAAPT organizations. The meeting was held at Wayne State University on Friday, March 31, 2006 and Saturday, April 1, 2006 (no foolin’). This meeting’s theme was Physics of the Early Universe. The keynote speaker was Dr. Peter E. Nugent, Lawrence Berkeley Laboratory. Other presentations were made by Professor Fred C. Adams, Physics Department, University of Michigan and Dr. Paul Stankus, Oak Ridge National Laboratory. Al Gibson hosted a CASTLE workshop on Friday and Dr. Edward Prather, University of Arizona, Department of Astronomy hosted a workshop on Saturday.

Al passed out Physics 2000 CDs to everyone present, and stated that a muon film could be found on the disk. He also showed the group a demo for circuits using a hula-hoop. The demo is one of many that come from a book by Mary Wynn and Jan Mader that is still in the works.

Nicole Murawski asked the group to complete a survey indicating which topics each teacher covered as part of a first-year physics program. After the meeting, the DMAPT group was contacted participate in this survey as well. You will find the results at the end of this newsletter!

The survey led to a discussion about Physics First, a program in which physics is taught first in the curriculum as a 9th grade class. According to Al Gibson, 3% of all public schools and 10% of private schools have implemented the physics 1st curriculum.

Birch gave the group a quick account of his visit to the Johnson Space Center in Houston, Texas. He shared that science teachers could receive a Free Shuttle Tile, if you sent a request on school letterhead to the following address:

Johnson Space Center
Mail Code JB
2101 NASA Road 1
Houston, TX 77058-3696

All members at the meeting were given a copy of the video: “Toys in Space”. Birch also shared some of his findings regarding innovative new toys such as the Zizzle ($30 at Target.com) and the Fly Pentop computer.

Keith Bozin gave the group an update on the new Advanced Placement standards for high school physics. Colleges want to raise the bar in April 2006. AP teachers will get a form to fill out in order to prove that they’re teaching content at the college level. The College Board intends to visit classrooms and individual teachers may be audited. They are also requiring more technology-based labs, which may prove to be a problem for schools who have limited resources.

Mark Davids is one of 18 people (and one of the only high school teachers) working on the Michigan Department of Education High School Science Content Expectations (HSSCE). The group had been meeting since January and continued to meet through April. Below is a message from Peggy Butler, from the OSMTech Center at Oakland Schools regarding the HSSCE:

All middle and high school science teachers should register for a three-hour, facilitated web review of the DRAFT High School Science Content Expectations. The Oakland Schools Science, Mathematics and Technology (OSMTech) Center is offering review sessions on May 25th and May 30th, 4-7 PM at the OSMTech Center (1480 Scott Lake Road). Please register for one of these dates at the Oakland Schools web site (www.oakland.k12.mi.us).

It is most critical that science educators take the time to thoughtfully analyze the DRAFT expectations and provide MDE with useful feedback through an online survey. The web review window is open from May 15 to July 1. While it’s possible to independently complete the survey, it is recommended that you participate in a facilitated session that leads to a collaborative analysis, so feedback is most insightful.

This will be your primary opportunity to impact the new High School content standards that will be measured eventually by the new Michigan Merit Exam. We strongly encourage participants to read one of the discipline sections before attending (earth and space science, biology, chemistry, physics).

You can access the full DRAFT document at: http://www.michigan.gov/documents/Sci4-062_159070_7.pdf

MDE Science website (www.mi.gov/science) has a PowerPoint that has links that access the whole document as well as the discipline sections alone, and the survey.
Mark also gave the group a quick update on his piloted cell phone curriculum. Motorola donated a very cool Bluetooth “sniffer” (worth $12,000) to the cause! This summer, Mark, Don and Rick will be training about 35 more Michigan teachers at Oakland Schools and the Kalamazoo Area Math and Science Center. In addition, there will be about 18 teachers from other Midwest states receiving training this summer, as well as approximately 24 more teachers the national AAPT conference at Syracuse University (July 23-26). Sounds like they’re really getting this program off the ground. Great job, guys! If you, or someone you know, is interested in getting involved in Mark, Don and Rick’s *Physics of Cell Phones and Wireless Technology* program, email Mark at: markdavids@comcast.net

### Fourth Meeting of the Year: May 3, 2006—Rochester
*Hosted by the Physics Department at Oakland University*

Jeff Conn (Wayne State University) invited all to Michigan Science Education Leadership Association Summer Institute in Dearborn, Michigan July 9-12. The theme of the conference is “Driving the Future” and will feature keynote speakers and workshops—including a presentation by Mark Davids on his Cell Phone Project. Go to [www.nsla.org](http://www.nsla.org) for more information and to register.

Ramon Torres-Isea (University of Michigan) announced that the 5th annual Physics Olympics event at the University of Michigan on Saturday, May 6, 2006. The Olympics consist of 6 events and a physics bowl to conclude the day. Schools may enter multiple teams. The top 3 schools receive a financial award for physics laboratory equipment. For more information about this event visit [wwwlsa.umich.edu/physics](http://wwwlsa.umich.edu/physics).

Ramon is the outreach coordinator for FOCUS (Frontiers in Optical Coherent and Ultrafast Science). He is interested in hosting a DMAPT meeting in February at the University of Michigan. The meeting would be a Saturday meeting that would consist of demos that relate to ultrafast science and tours of the laboratory. More information to come. For more information about FOCUS, visit [www.umich.edu/~focuspfc](http://www.umich.edu/~focuspfc).

Al Saperstein (Wayne State University) announced that the national meeting of Sigma Psi will be early November at the Renaissance Center. Discussions of a possible joint DMAPT meeting proceeded. He also proposed that the Wayne State chapter is interested in sponsoring a high school student essay contest – more details to come.

Kristin Elsner (Dondero High School) is in need of a long-term substitute for September through November of the following school year at Royal Oak High School. Her schedule includes 4 first year physics and a section of AP physics B.

Al Gibson (retired) passed out demo copies of Crocodile Physics.

Steve Dickey has British video series—he can make you a copy.

Rick Forrest (Rochester High School) had some electrostatics demos planned for the evening. He brought in a student-built electrostatic generator, which unfortunately was not working too well.

Dave Barnes (Arbor Scientific) brought in a hand-cranked VandeGraff generator ($179 includes accessories!!!!). This was interesting because it does not have to be plugged in! He showed the group a demo in which a rubber o-ring was placed on the generator with puffed rice inside. After a couple cranks, the puffed rice slowly jumped off one by one. This happens because the charge moves slowly through the rice puffs and, since they are different sizes, they jump off at different times. Dave, who teaches the workshops for the software that Arbor Scientific sells, also gave the group maintenance tips. Replace your belts often and be sure to check the tension.
Louie Miller (retired) showed us how to demonstrate electrostatics with a pocket comb and 2 x 4 balanced on a watch glass. He charged the comb by brushing it through his hair and brought it near the 2 x 4. The comb attracts the wood and the wood moves towards it. A very cool demo for students!

Doug “Birch” Birchmeier (Divine Child - retired) demonstrated how everyday events can become electrostatics demos. For example, when a newspaper slides out of its protective plastic bag, the bag becomes charged and sticks to you. Also, Styrofoam cups attached by string can be used to demonstrate how like charges repel when they are charged by wool.

Dominic Crea (homeschool instructor) had some interesting demos involving a transistor radio. Remove the back of an old transistor radio. The solenoid inside is an antenna, which responds solely to the magnetic component of an electromagnetic wave. Put the radio on its side and provide students with regional maps. He devised a lesson in which students locate 2 radio stations on map by orienting the radio in such a way that there is a lull in the reception. The intersection of the lines of orientation will locate your position on the map.

Stephanie Spencer (De La Salle) shared her idea to build an obstacle course for students to navigate after charging a Styrofoam plate covered in aluminum foil using the VandeGraaff generator. A piece of tinsel will float on top and students can run it through hoops, etc. in the obstacle course.

Chris Deyo (Rochester High School) shared AP Physics tips with the group. At the Arizona State University Summer Modeling Workshop, she learned about Ranking Tasks in Physics (Higley). These worksheets require students to consider the critical information in order to solve a problem and rank their answers in a thoughtful way. The authors of these worksheets will be running a workshop on how to use them at this summer’s AAPT conference.

She shared CDs that included modeling curriculum and also AP physics questions. Chris doesn’t do much modeling in her 2nd year AP class. She sets a fast-paced schedule and finishes mechanics before Christmas vacation.

Chris uses the free University of Texas website (https://hw.utexas.edu) to supply homework problems online. The site will grade assignments for you and tell you the number of attempts a student made to answer a problem correctly. The site has a few drawbacks since it doesn’t use “sigfigs.” Teachers, however, can opt to manually change grades when desired.

As for AP review, Chris stresses the need for review time (at least 2 weeks before the test). She recommends the Princeton Review as supplemental review materials and often holds review sessions outside of class time for her own classes.

**Look at the fun you missed out on at our May 3rd Meeting! Hope you can join us in the fall...**
AL’S CORNER: Tidbits and goodies from the desk of Al Gibson

To me this was always a bittersweet time of the year. In many ways, I had done about all I could for my current crop of students and I was looking forward to a summer of family fun and usually the hope of learning something new that I had not had time for during the year. Some of these hopes were realized and many were not. Perhaps some of the websites I have listed will be of interest to you as you do your summer ‘physics projects’.

Probably the most important summer project for MI Physics teachers is to check out the Michigan High School Science Content Standards and Expectations. Our own Mark David’s of Grosse Pointe South High School served on the committee that developed these standards. They are now out for public review and comment. The Power Point can be found by following the link below. Nicole included lots more information in an earlier section of this newsletter. View the HSSCE documents directly at: 
http://www.michigan.gov/documents/HSCEScienceSurvey52_159071_7.10.06.ppt

Another site you might find interesting is the AAPT listserve for Physics First. If you are interested in having a physics course be the foundation of your high school science curriculum, then you can ask questions and share info at the AAPT list serve. You will need to sign up before you will be allowed to post messages. Go to: http://lists.aapt.org/cgi-bin/lyris.pl?enter=physicsfirst

Check out the following sites for really interesting articles about science. You can access many of the articles that appear in Scientific American at the following link: 
http://www.sciam.com/

You can sign up to receive free physics updates from APS at www.aip.org/pnu. Willis Garrett let me know about both of these sites.

Finally, we have two openings at SVSU this summer for paid participants. This is the last summer of our rural PTRA program. Keith Forton, George Amman and I will be running a weeklong introduction to CASTLE workshop. We have enough equipment for 28 teachers and have our full allotment of 25 supported teachers from rural schools. We also have one person who is paying his own way. If your school pays your expenses it will cost about $500 for the week. If you want to earn 3 hours of grad credit then the cost is another $830 or so. If you’re interested in participating, contact me at: gibson@oakland.edu

Have a great summer. You all deserve it. Teaching is hard exhausting work, but it is some of the most important work that anyone in our society has the privilege of doing.

Al
The results are in! There were 29 submitted surveys, and here are the percentages of people who said they teach the following topics during their “first year” Physics course:

<table>
<thead>
<tr>
<th>Topic</th>
<th>%</th>
<th>Topic</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Uncertainty &amp; Precision</td>
<td>66</td>
<td>• Mech. Adv. &amp; Efficiency</td>
<td>14</td>
</tr>
<tr>
<td>• Significant Figures</td>
<td>66</td>
<td>• Thermodynamics</td>
<td>24</td>
</tr>
<tr>
<td>• Motion in 1D</td>
<td>100</td>
<td>• Phase Changes</td>
<td>17</td>
</tr>
<tr>
<td>• Forces in 1D and 2D</td>
<td>100</td>
<td>• Fluids (Archimedes/Bernoulli)</td>
<td>17</td>
</tr>
<tr>
<td>• Pendulums</td>
<td>79</td>
<td>• Thermal Expansion</td>
<td>10</td>
</tr>
<tr>
<td>• Springs</td>
<td>79</td>
<td>• Waves</td>
<td>97</td>
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<tr>
<td>• Projectiles</td>
<td>100</td>
<td>• Sounds</td>
<td>97</td>
</tr>
<tr>
<td>• Circular Motion</td>
<td>93</td>
<td>• Light</td>
<td>90</td>
</tr>
<tr>
<td>• Planetary Motion</td>
<td>55</td>
<td>• Optics</td>
<td>79</td>
</tr>
<tr>
<td>• Linear Momentum</td>
<td>100</td>
<td>• Electrostatics</td>
<td>90</td>
</tr>
<tr>
<td>• Angular Momentum</td>
<td>31</td>
<td>• Electric Fields</td>
<td>76</td>
</tr>
<tr>
<td>• Conservation of Momentum</td>
<td>100</td>
<td>• Electric Potential Difference</td>
<td>69</td>
</tr>
<tr>
<td>• Mechanical Energy</td>
<td>97</td>
<td>• Electric Circuits</td>
<td>76</td>
</tr>
<tr>
<td>• Energy Conversions</td>
<td>100</td>
<td>• Magnetic Fields</td>
<td>62</td>
</tr>
<tr>
<td>• Conservation of Energy</td>
<td>100</td>
<td>• Electromagnetism</td>
<td>55</td>
</tr>
<tr>
<td>• Work</td>
<td>100</td>
<td>• Quantum Theory</td>
<td>14</td>
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<tr>
<td>• Power</td>
<td>100</td>
<td>• Special Relativity</td>
<td>24</td>
</tr>
<tr>
<td>• Machines</td>
<td>17</td>
<td>• Nuclear/Atomic Physics</td>
<td>14</td>
</tr>
</tbody>
</table>

_Haven’t been to a DMAPT meeting in a while?_ This is just a friendly reminder of what DMAPT has to offer:

- Great professional development opportunities
- Fantastic relationships with other area Physics teachers and professors
- Great activity and demonstration ideas that you can use immediately in the classroom
- Information on upcoming Physics related events
- A place to ask those pesky unresolved Physics questions
- And, might I say, the best door prizes in town
- The list could go on and on…..

_Suggestions?_ If you have any ideas or suggestions for future newsletters, please email them to Nicole Murawski at: [murawskin@royaloakschools.com](mailto:murawskin@royaloakschools.com)