



Physics Tempo

The Newsletter of The St. Louis Area Physics Teachers
an affiliate of the American Association of Physics Teachers
October 1992

Vol. 3 No. 2

Notes and News from the September 1992, Belleville Area College

by Paul Discher

A meeting of the St. Louis Area Physics Teachers was held Saturday September 19, 1992, at Belleville Area College. Frank Cange was our host, and 24 teachers were in attendance. A short business meeting preceded the curriculum sharing session.

The business included a review of the upcoming year's calendar of monthly meetings, a financial, membership, and newsletter report, presented by Paul Discher, and a recap of events of interest to teachers that could not be published in *Physics Tempo*.

A prototype of a Physics Teachers telephone directory was displayed to the teachers. Present membership agreed that the directory should be provided at no cost to the members subscribing to our newsletter *Physics Tempo*, by annual fee of \$10.00. The fees collected will be used to cover the printing and mailing cost of the newsletter and annual telephone directory. *Physics Tempo* continues to be published in alternate months during the academic school year. You or a friend can subscribe to *Physics Tempo*, by sending your subscription request, and check for \$10.00 payable to Paul Discher to the address shown below.

The teachers are testing the idea of video taping this and future meetings. Copies of the meeting video will be available to our membership for \$8.00 which includes the cost of the tape, and postage. Any surplus funds from the sale of video tapes will be placed in the *Physics Tempo* treasury. If you would like a copy of the meeting video please state in your request which month's tape you would like, and send a check in the amount of \$8.00 for each tape that you wish (**Payable to Paul L. Discher**) to:

Physics Tempo Editor: Paul Discher
Washington University
Electrical Engineering \ Campus Box 1127
St. Louis, Missouri 63130-4899.

Our featured speaker was Keith Bradley, a senior, at Parkway North Senior High School, and his Physics Instructor, David Lay. Keith was one of the twenty students nationwide named as a member of the U.S. Physics Olympiad Team. Keith's talk detailed the agenda that he and his team followed while attending the Olympiad Training session at the University of Maryland this



Keith Bradley,
Parkway
North Senior High
School, Physics
Olympiad Participant



David Lay, Parkway
North Senior High School,
Physics Teacher

summer. David Lay, Parkway North Physics Teacher also spoke on the outstanding accomplishments of Keith, praising both him and his caring family in their continued support in Keith's education and support in his Physics Olympiad competition.

Ellen Barr was able to show a remarkable solid state modulated laser that she and other teachers built in a workshop conducted at the University of Missouri this summer.

A number of teachers participated in a curriculum sharing session. David Lay, Frank Cange, David Bross, and Jerry Taylor all made presentations and distributed syllabi on either AP or High School Physics.

Notes and News from the October 1992 at Mehlville Senior High School

by Paul Discher



Mehlville Senior High School, October 1992

A regular meeting of the St. Louis Area Physics Teachers was held October 17, 1992, at Mehlville Senior High School, 21 teachers were in attendance, and Gene Fuchs was our host. A short business meeting preceded the "Laboratory Experiment Sharing" event.

Special guest speakers were Chris Geisert, and Lisa Swafford, sales and marketing representatives from Six Flags Over Mid-America. Chris detailed a renewed commitment from Six Flags management to support the Six Flags Physics Day program. Chris and Lisa fielded questions and comments from the teachers

regarding the past Physics Day program. Many suggestions for improving the program were cited by the teachers. Additional supplies needed by the students and teachers as they perform various experiments in ‘amusement park physics’ were listed. Chris passed out the Amusement Park Physics Handbook which was prepared by members of the St. Louis Area Physics Teachers, Amusement Park Physics committee last year.

Dave Bross reminded all of the AAPT meeting in Rolla next Saturday October 24, 1992, and ask everyone to attend.

Gene Fuchs began the “Laboratory Experiment Sharing Session” by outlining the reasons we use laboratory exercises in teaching High School Physics. Gene then commenced with the sharing event by showing experiment apparatus made from plastic 35mm film canisters that he called the Milli-Can Experiment. Named as a pun on the famous Millikan Oil Drop Experiment, and the micro film canisters used to make them. Rex Rice reminded all attendees that plastic film canisters will be soon be in short supply, as major film manufacturers divert to other packaging materials that are environmentally friendly. Rex suggested that teachers start storing away 35mm plastic canisters for future projects. Gene also demonstrated the circular motion apparatus that he constructed with a battery powered airplane connected to the ceiling via a string.

Debbie Rice presented experiments in classifying motion and showed several accelerometers that could be constructed easily with Plexiglas. Debbie also showed apparatus using toy cars that demonstrated various topics in relative motion.

Rex Rice demonstrated several experiments in Uniform Motion, Uniform Acceleration and verifying “G”, gravitational acceleration. Rex showed a simple construction plans that improved upon the designs of commercial equipment.

Seymon Volsteyn demonstrated material for his “Clock Lab”, “The Center of Gravity”, “Elastic Collisions”, “Centripetal Force” and “Projectile Motion”.

Following the demonstrations the group broke for lunch. After lunch a portion of the group completed the review of PTRAs Laboratory Sharing materials, that Gene brought back from the summer program. More materials from the PTRAs sessions are coming in future meetings.

Next Meeting — November 1992

“Motion”

Date: Saturday November 7, 1992

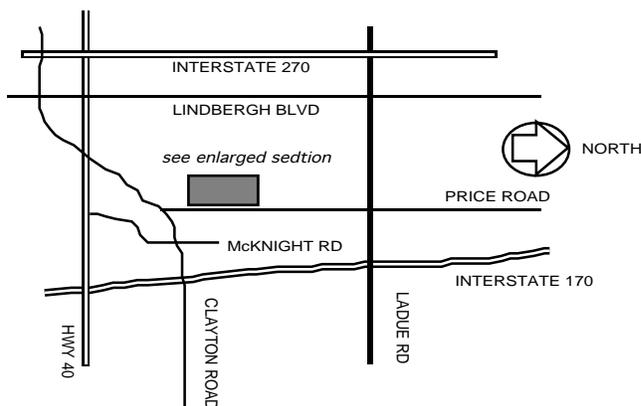
Time: 8:30 a.m.

Place: John Burroughs School

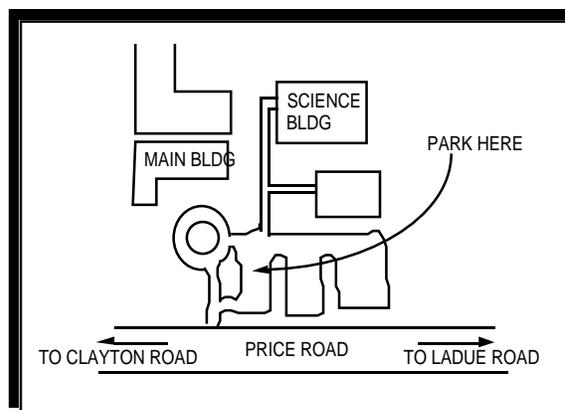
Host: Bill Brinkhorst

The next meeting of the St. Louis Area Physics Teachers will be held at John Burroughs School on Saturday November 7, 1992 at 8:30am. Bill Brinkhorst will be your host. A short business meeting will precede the morning’s events. The topic for the day will be “Motion”.

Participating Teachers are ask to bring at least 1 motion demonstration, and a list of early motion experiments used in their regular high school physics curriculum. If you have special needs for your demonstration that are prohibitive to bring, please contact Bill Brinkhorst in advance at John Burroughs School 314-993-4040.



John Burroughs is located on Price Road, between Clayton Road and Ladue Road, about one mile north of I-64 (highway 40) and one mile west of I-170 (interbelt). (See map above). The main entrance is well-marked. (see inset below). Park in the front lots



and follow the sidewalk on the north side of the main building until you get to the science building entrance.

Next Meeting — December 1992

“Electrostatics”

Date: Saturday December 5, 1992

Time: 8:30 a.m.

Place: Gateway Institute of Technology

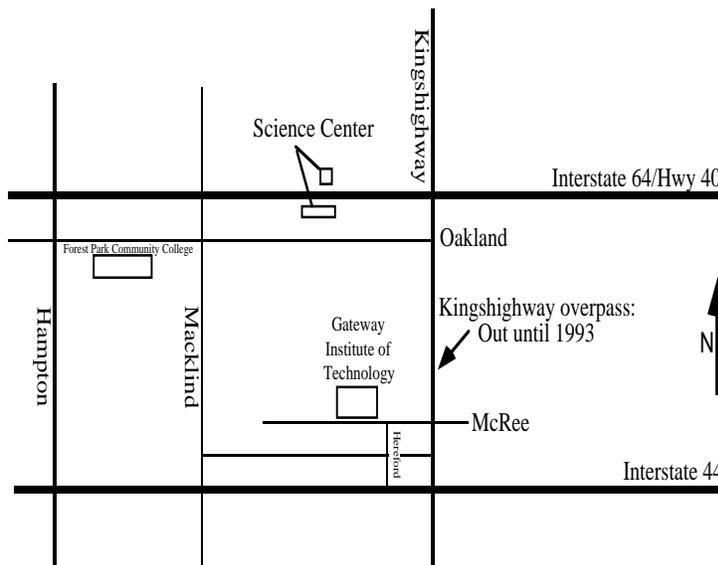
Host: Rex & Debbie Rice

The December meeting of the St. Louis Area Physics Teachers will be held at Gateway Institute of Technology on Saturday December 5, 1992 at 8:30am. Rex and Debbie Rice will be your host. A short business meeting will precede the morning’s events. The topic for the day will be “Electrostatics, a PTRAs Plus program”

PTRAs Plus Program

This summer in Orono, Maine, at the American Association of Physics Teachers Summer Meeting, the PTRAs Plus Program

began the first of three training sessions for new and veteran PTRAs. **PTRA**, which stands for **Physics Teaching Resource Agents**, is a program which began in 1985 and continued through 1988. It has been reincarnated as PTRA-Plus, and is being funded by a grant from the National Science Foundation. Approximately 60 new PTRAs and 60 veteran PTRAs were selected to participate in the program. Participants came from as far away as Hawaii and Puerto Rico.



at Gateway Institute of Technology, December 5, 1992. A third workshop is planned to be held at Clayton High School February 20, 1992. SIUE is offering graduate credit to those who participate in the three workshops and/or a combination of workshops and regular St. Louis Area Physics Teachers meetings. You must keep a log of the meetings and workshops that you attend to receive credit. Details on registration and tuition are forthcoming.

**PTRA Plus Workshop
December 5, 1992
Gateway Institute of Technology**
The second PTRA Plus Workshop will be hosted at the Gateway

Institute of Technology, December 5, 1992 from 8:30 - 2:30. The building is located at 5101 McRee, which is north of the Kingshighway exit of Interstate 44. (See the map.) Kingshighway is closed north of McRee and South of Manchester as the new Kingshighway overpass is constructed.

A three day training session preceded the conference for the new PTRAs and a three day training session followed the conference for both the veteran and new participants. Participants were trained to give workshops in five areas; Labs, Demonstrations, Motion, Static Electricity and DC Circuits. Time was allotted during the first three days for the new PTRAs to share physics teaching ideas in participant sharing sessions.

There will be a \$10.00 charge for this workshop to cover the cost of materials and copyrights for materials provided by the AAPT. Those members who are teachers in the city of St. Louis should contact Florence Gillespie at State and Federal Programs at Raymond Ave. Ms. Gillespie has agreed to pay fees for city teachers to attend this workshop. We suggest that county teachers inquire about having their fees paid with Eisenhower Funds from their respective districts.

The new and veteran PTRAs committed to perform 108 clock hours of workshops over the next three years. These workshops must be in the areas in which participants were trained. The workshops are intended to provide a means by which the PTRA program can become self-sustaining. For each workshop topic a manual has been developed. The copyrights for these manuals are owned by the AAPT. It will be necessary for the PTRAs to charge a fee for the workshops they present to cover the cost of copyright fees and materials.

**On the Road With Woodrow Wilson;
Physical Science II Outreach 7th thru 12th grade**

The St. Louis Area Physics Teachers were better represented than any other area in the country. Four of our regular members were trained in the PTRA Plus Program. Gene Fuchs of Mehlville High School, Richard Garner of Roosevelt High School, and Deborah Rice of Gateway Institute of Technology were trained as new PTRAs. Rex Rice, a veteran PTRA trained in 1986, was the lone veteran PTRA from the St. Louis area who returned for PTRA Plus training.



*Teresa Corley,
Nerix Hall,
High School*

by Teresa Corley & Paul Discher

This summer Teresa Corley, Loren Lund (ptr), Yakima WA, Steve Isoye, Chicago IL, Leslie Kline, Minneapolis MN participated in the ongoing Woodrow Wilson National Fellowship Foundation Outreach Program, Physical Science II.

In the next two years, 25 new PTRAs will be added to the program each year. Veteran physics teachers who are interested in helping to improve the quality of physics teaching are encouraged to participate in the upcoming training sessions. We hope you will support our efforts in improving physics teaching and support the AAPT and the PTRA Plus program by attending our workshops. There should be something at each workshop which all physics teachers will find interesting and useful.

Beginning in late July 1992, the team visited Bates College, in Lewiston Maine. At this private, secluded liberal arts school a diverse group of 23 5th grade to 12th grade certified science teachers gathered for 5-days of the Woodrow Wilson Science Enrichment program. Teachers came from all over the state of Maine. The core topics covered included: Chemistry with Thermodynamics, Computer interfacing (Apple IIe goodies), the Physics of Sound and Classical Kinematics. The teachers reiterated common problems that included equipment shortages and low budgets. The response from the teachers was wonderful, just as was the beautiful New England weather, landscape and famous ocean cuisine. **Trivia:** The state of Maine still provides holidays for students in order to complete the potato harvest.

Gene Fuchs hosted the first of the PTRA workshops at Mehlville High School October 17, 1992. The next workshop will be held

(continued)

In August the team was off to Georgia Southern University, in Statesboro GA. Georgia Southern is a thriving state university located halfway between Savannah and Atlanta. The team assembled in a traditionally steamy southern August morning in order to participate with 32 5th grade to 12th grade elementary school teachers. The same core subjects were covered in this program as in Maine.

Many of the teachers drove up to 2-hours each day to attend this program from all parts of the state. The Georgia Southern teachers were very dedicated to learning and their teaching as they demonstrated by their participation in this Woodrow Wilson Program.

Teresa Corley reminds Physics teachers of the remarkable burden on Physical Science teachers in pursuit of excellence in teaching. She suggests reaching out and helping fellow Physical Science teachers in their teaching goals within your own school districts.



**St. Louis Science Center
and SIGMA XI present**

St. Louis Science Center Seminar Series.

All programs are presented in the St. Louis Science Center Planetarium Sky Theater in Forest Park

November 11, 1992, 7:30pm

Prospects for Prevention of AIDS with a Vaccine.
Professor Robert Belshe, St. Louis University

December 9, 1992, 7:30pm

Life Beneath the Ice and Waves: Studies of Polar Seals and Whales, Dean Douglas Wartxok, University of Missouri, St. Louis.

January 13, 1993, 7:30pm

To Be Announced

February 10, 1993, 7:30pm

How Cells Cope with Stress, The Heat Shock Response.
Professor Milton Schlesinger, Washington University

Mission Statement

Physics *Tempo* is the newsletter of and by the St. Louis Area Physics Teachers, an affiliate of the American Association of Physics Teachers (AAPT), and is intended as an organizational support group for the betterment of Physics and Physical Science teachers throughout St. Louis and Illinois.

Subscription cost is \$10.00 per academic year, September through June. Collected donations are entirely used to print and mail the newsletter. Please make checks payable to Paul L. Discher.

Physics *Tempo* is dedicated to report achievements and announce the activities of the St. Louis Area Physics Teachers. In addition, Physics *Tempo* is intended to help disseminate useful and innovative information for teaching Physics and Physical Science. Physics *Tempo* is your newsletter. Editorial contributions are encouraged and welcomed. No idea is too small. Send articles, as well as subscription requests to: Physics *Tempo*, Editor / Paul Discher, Washington University-Electrical Engineering Campus Box 1127 St. Louis, Missouri 63130-4899. You can also FAX articles or ideas to Washington University- Electrical Engineering Fax Line: 314-935-4842. Please mark your fax mail to the attention of the *Tempo* Newsletter Editor, Paul Discher.

Magnetic Moment

by Paul Discher

Did you ever have the unfortunate accident of dropping your best magnet in iron filings only to find that it is impossible to remove them? Here is a simple way to “clean” any magnet of iron filings or “ferrous dirt” that has contaminated your best magnet. Obtain some strips of strong adhesive tape. Duct tape really works the best. Gently dab the adhesive side of the tape against the “dirty” portions of your magnet. The adhesive action of the tape is much stronger than even the strongest magnet, and small particles and even ferrous dust will easily come free of the magnet.

Physics *Tempo*

First Class Mail

The Newsletter of The St. Louis Area Physics Teachers

an affiliate of the American Association of Physics Teachers



Editorial and Subscriptions information:

Physics *Tempo* Editor: Paul Discher

Washington University-Electrical Engineering

Campus Box 1127

St. Louis, Missouri 63130-4899