

Minutes of AOK Fall 2005 Section Meeting

The annual AOK Section meeting took place at the Oklahoma City Community College, Oklahoma City, Oklahoma on Friday October 7 and Saturday October 8th. The meeting was hosted by the AOK Vice President Dr. Debra L. Burris of the University of Central Arkansas (Formerly at Oklahoma City CC) and her physics colleagues Steve Kamm and Tad Thurston, and the rest of the OCCC staff assistants.

Numerous activities occurred on both days of the meeting. On Friday members were given the opportunity to participate in four different workshops titled and conducted by the following AOK section members:

The Population Game Workshop A socially significant laboratory activity Presented by Art Hobson Professor Emeritus of Physics University of Arkansas.

Learning Cycle Experiments Presented by Carl Rutledge East Central University

Virtual Astronomy on the Web with SDSS presented by Tad Thurston Oklahoma City Community College

and **Heartland BEST** presented by Steven Maier, Northwestern Oklahoma State University

A social hour was held before the annual Banquet and evening speaker presentation. The Social Hour was sponsored by OKCCC Foundation.

Approximately 55 people attended the evening banquet and listened to the excellent presentation by Dr. Chuck Stone AAPT National Board Two-Year College Representative. Dr. Stone's presentation was titled "Breaking the Bored" His abstract is below and highlights his activity based talk on the physics of karate and its use as a motivational teaching technique.

Demonstrating Work and Energy with a Varying Force

Chuck Stone, Department of Physics, North Carolina A&T State University

In my continuing efforts to show students interesting applications of physics, I have extended and expanded upon an activity I first witnessed several years ago. The activity, often dubbed "The Physics of Karate", helps students develop a more intuitive feel for calculating the work done on an object by a varying force. In its simplest form, students apply a known force to a pine board, measure the board's deflection, and then increase the load until the board breaks. They next determine the work required to break the board by calculating the area under the force vs. deflection curve. This area calculation is performed in a manner consistent with the students' mathematical background. Students also determine how much kinetic energy their swinging fist possesses, and then predict if their karate chop can break a similar board. This workshop-style presentation will feature a live demonstration of the activity and a written guide that will allow teachers to implement this activity into their course.

Debra L. Burris presented the Oklahoma Outstanding High School Physics Teacher Award and Cash Stipend to Steve Mathis, Edmond Memorial High School, Edmond, OK

An Executive Council Meeting followed the banquet, award presentation and dinner speaker. During this meeting a slate of officer candidates were discussed. Upcoming

meeting and national AAPT meeting reports were delivered to the executive council. Treasurer's report, Secretary notes, and updates on sectional activities were given.

Saturday's meeting was filled with a number of contributed papers. An invited key note address also given by Chuck Stone and two special presentations. A summary of the titles of these contributed papers, and the major author/presenter of the talks is listed in this section report.

Platform Session Papers:

PhysTEC and the TIR: A Work in Progress Donna Owen, U. of Arkansas at Fayetteville

Astronomy at the SLL Observatory Chad K. Ellington, Rose State College & UCO

Constructing a Professional Development Strategy: Case Study of Everyday Electrical Devices N. Sanjay Rebello, Kansas State University (KSU)

Developing a Survey to Detect Relative Humidity Misconceptions

Wilson J. Gonzalez-Espada, Arkansas Tech University

In a Quandary? Grounded Theory, Phenomenology and Action Research

Peter R. Fletcher, KSU

Adding Activities to Astronomy Lecture Dr. Rudy Eichenberger, Southern Arkansas U.

Civic Engagement in Physics Courses Dr. Karen Williams, East Central University

Why Go to a Winter AAPT Meeting in Alaska? Todd R. Leif, Cloud County CC

Physics Teaching Web Advisory: Present and Future Brian Adrian KSU

Positron Emission Tomography -- Physics Material Development for a Pre-medical Course

Bijaya Aryal, KSU

Science in Nursery Rhymes

June Marie Thompson, Henderson State U., Early Childhood Instructor

Shane Thompson, Physics Instructor, Arkansas School for Math, Sciences, and the Arts

Assessing College Students' Retention and Transfer from Calculus to Physics*

Lili Cui KSU

Magnetic Dipole-Dipole Interaction Via Air Track Motion Study Al Adams, ULAR

Students' Modeling of Microscopic Friction: Dynamic Transfer Perspective*

Edgar G. Corpuz, KSU

Dynamic Transfer & Learning While Interacting With 'Constructing Physics

Understanding Curriculum' (CPU): A Case Study Charles C. Mamolo, KSU.

Understanding and Accessibility in Astronomy Mojgan Matloob-Haghanikar, KSU

Keynote Address:

Physics and Ultralight Backpacking

Chuck Stone, Department of Physics, North Carolina A&T State University

Physics is a formal method of studying our natural world using a well-defined set of rules, laws, or guidelines that describe phenomena that have been repeatedly observed over time. Over the past decade, a series of long-distance hikes and outdoor adventures have enhanced and expanded my appreciation of nature. The experiences gained from these endeavors have provided me with many ideas that I have incorporated into my astronomy, earth

science, and physics courses. In this presentation, I want to share with you some of the advances in construction techniques, developments in new materials, and refinements in my mental conditioning that have given me the opportunity to streamline my backpacking gear into a set of lightweight equipment. Simple physics principles have guided the evolution and selection of my gear that allows me to travel fast, light, and safely through the outdoors.

AOK Section Business Meeting

The slate of officers were presented, voted on and approved by the general membership. This list will appear in the announcer at a later time. The presidential chain rotated and the official meeting locations were decided upon for the next three years. The next meeting for the AOK section will be held at Emporia State University, in Emporia, Kansas. It will be hosted by our section VP. The section VP is Jorge Ballester his contact information is phone(620)341-5970 and email. ballestj@emporia.edu Themes and ideas for papers, workshops and activities should be directed to the meeting host when a name is determined. The 2007 section meeting will be held in Arkansas and will be hosted by Stephen Addison at the University of Central Arkansas in Conway, Arkansas. The three year cycle of meetings and their hosts were approved along with the vote of the membership officer's slate. Updated copies of the revisions from the AOK constitution were available for the membership and proclamations and thanks for Debra L. Burris, Tad Thurston, and Steve Kamm and additional OCCC faculty and staff were read by Dr. Al. J. Adams and accepted by the membership. It was noted that Steve Mathis, of Edmond Memorials High School was awarded the AOK Outstanding High School Physics Teacher award and accepted his plaque and honorarium.

Special Presentations

A special presentation to assist in the celebration of the 2005 World Year of Physics also took place during the meeting. Dwight E. Neuenschwander, SPS/Sigma Pi Sigma Publications Editor, and Department of Physics, Southern Nazarene University, Bethany, OK gave an invited talk titled, Taking Einstein's Ethics Into the Twenty-First Century: "Remember Your Humanity" His abstract is also listed.

With the observation in 1919 of his predicted deflection of starlight by the Sun, Albert Einstein became an international celebrity. He used his fame to speak out on thoughtfully, forcefully, and continuously on matters of justice and human dignity, including war and peace, arms control, religion, personalities, civil rights, life and death, moral trends, education, economics, international relations. Whether his views were popular or not was never Einstein's concern. In his life Einstein faced many ethical dilemmas; for example, when as a pacifist on the eve of war he was asked to solicit President Roosevelt's support for the development of nuclear weapons. In this century the familiar ethical dilemmas will be joined by new ones, such as genetic technologies that could make possible a posthuman future. What can Einstein's ethics tell us about wisely addressing the ethical dilemmas of the twenty-first century?

Another of the special Saturday presentations that occurred during the platform sessions was Magi Whitaker President, Sooners Touching the Future Oklahoma City Challenger Learning Center. Magi's presentation is described below.

Sooners Touching the Future, Inc. is an IRS recognized non-profit organization dedicated to establishing the best possible aerospace educational resources available to the citizens of Oklahoma. We are currently in the process of establishing the State's first Challenger Learning Center. Challenger Learning Centers were created by the families of the crew of the ill-fated Challenger 51-L (otherwise known as the "Teacher in Space" mission). Challenger Learning Centers provide hands-on space mission simulations for children and adults that provide a link from the classroom to the real world. Children are able to experience first hand why they need to learn science, math, and technology in school and see some possible careers they might want to pursue.

The meeting ended with all traveling physicists starting their long journeys back across the AOK prairies home.

Submitted by
Todd R. Leif
AOK Section Representative