

# 2008 Joint Spring Meeting of the Texas Sections of AAPT, APS and Society of Physics Students Zone 13

Host: Texas Electronic Coalition for Physics  
Corpus Christi, Texas  
March 6-8

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## Thursday March 6, 2008

5:00-9:00	Registration	Riviera Foyer
7:00-8:30	AAPT Business Meeting	Riviera 2
7:00-8:30	APS Business Meeting	Riviera 1
7:00-9:30	SPS Reception	Marina View

- *Welcome reception for SPS Students and mentors is sponsored by the Angelo State SPS Chapter with the support of the National SPS.*

## Friday March 7, 2008

8:00-5:00	Registration	Riviera Foyer
8:00-8:20	Welcome	Riviera 1& 2
8:20-10:00	Plenary Session I	Riviera 1& 2
10:00-12:00	Workshop 1	Padre C
10:30-11:54	APS 1 (AMO & General)	Padre A
10:30-11:42	APS 2 (Astronomy)	Riviera 1& 2
10:30-12:06	SPS 1	Padre B
12:30-2:00	Lunch (Business Meetings)	Riviera 3-5
2:00-3:24	SPS 2	Riviera 1& 2
2:00-4:00	Workshop 2	Padre C
2:30-3:54	APS 3 (Condensed Matter)	Padre B
2:30-3:42	AAPT 1	Padre A
3:30-4:30	APS & AAPT Poster Session	Riviera Foyer
3:45-6:30	SPS/AAPT Special Session	Riviera 1& 2
6:00-6:30	TECP Faculty Meeting	Padre A
7:00-9:00	Banquet	Riviera 1& 2

## Saturday March 8, 2008

8:00-10:30	Registration	Riviera Foyer
8:15-9:55	Plenary Session 2	Riviera 1& 2
9:00-1:00	Workshop 3	Padre C
10:30-11:54	APS 4 (High Energy Physics)	Riviera 1& 2
10:30-11:30	AAPT 2	Padre A

## **Friday March 7, 2008**

### **Riviera 1& 2**

#### **8:00 Welcome and Plenary Session I**

**Session Chair: Dan Suson, Purdue University -Calumet**

8:00 Welcoming Remarks

8:20 "The Role of Colleges and Universities in the Preparation of Future Teachers," Monica Plisch, American Physical Society

9:10 "Science on the Texas Petawatt Laser," Todd Ditmire, University of Texas

### **Padre C**

#### **10:00 Workshop 1: "How to Survive Your First Five Years of Teaching Physics"**

**Session Chairs: Carolyn Schroeder, Texas A&M University, Texas Regional Collaborative; Debbie Walker, Montgomery High School; and Holly Duncan, Region 9 Education Service Center**

### **Padre A**

#### **10:30 APS 1: Atomic, Molecular, Optical and General Physics**

**Session Chair: Mirley Balasubramanya, Texas A&M University-Corpus Christi**

10:30 "Light/Gravity Conversion Equation," Paul Gill, NIU

10:42 "Comparative Study of Absorption Intensities of Ho<sup>3+</sup>: Y<sub>2</sub>O<sub>3</sub> Nanocrystals for Photonic and Biomedical Applications," Douglas Dee, Kelly Nash, John Gruber, Dhiraj Sardar, UTSA

10:54 "Spectroscopic Analysis of Nd<sup>3+</sup>:Y<sub>2</sub>O<sub>3</sub> Nanocrystals for Photonic and Biomedical Applications," Robert C. Dennis, Kelly L. Nash, John B. Gruber, Dhiraj K. Sardar, UTSA

11:06 "Digital Micromirror Device (DMD) Holographic Data Storage Update and Optical Analysis," Daniel Bullock, Toni Sauncy, Charles Allen, Angelo State Physics

11:18 "Principle of Least Action and Approximations in Quantum Mechanics," Donald Kobe, University of North Texas

11:30 "Semiclassical electron-radiation-ion dynamics: past successes and future extensions," Roland Allen, Meng Gao, Petra Sauer, Texas A&M University, Yusheng Dou, Nicholls State University

11:42 "A Classical Theory of Blackbody Radiation," James Espinosa, Rhodes College, James Woodyard, West Texas A&M University

### **Riviera 1& 2**

#### **10:30 APS 2: Astrophysics, Space Physics, Astronomy, and Cosmology**

**Session Chair: Shaukat Goderya, Tarleton State University**

10:30 "Ultraviolet Radiation on the Early Earth," Billy Quarles, Stephen F. Austin State University

10:42 "Analysis of the Viscous Potential Determined from MHD Simulations and Comparisons to Observations and a Model," Robert Bruntz, Ramon Lopez, UT Arlington

10:54 "MOSES rocket tempboard," Kenneth Rice, Montana State University

11:06 "Effects of Solar in Density on Geo-effectiveness of Storms," Elizabeth Mitchell, Ramon Lopez, UT Arlington

11:18 "Laser Driven Radiative Shocks in High Energy Density," C. Manka, R. Lunsford, S. Nikitin, RSI, Lanham, MD, M. Laming, D. Zabatakis, J. Grun, NRL, Washington, DC

11:30 "Ionospheric Skill Scores in TING," Jorge Landivar, UT Arlington, Alan Burns, National Center for Atmospheric Research, High Altitude Observatory, Ramon Lopez, UT Arlington

### **Padre B**

#### **10:30 SPS 1: High School and Undergraduate Student Research**

**Session Chair: Dan Suson, Purdue University at Calumet**

10:30 "Using SPS at the Community College Level to Develop a Science Road Show to Present to K-12 Schools," Jess T. Dowdy, Northeast Texas Community College

10:42 "Forces and the Potential Energy Function for a Bow and Arrow System," Ken Taylor, Blaine Coutant, Tatum Crow, Austin James, Lake Highlands High School

10:54 "How to Use a Bed of Nails to Facilitate Excitement during a Science Road Show Presentation at Local Schools," Fabian Pena, Shawn Kridler, Pete Berger, Northeast Texas Community College

11:06 "How much sun does sunblock block?" Jennifer Hendryx

## Friday March 7, 2008

<b>Continued</b>	<b>Padre B</b>
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- 11:18 "Synthesis of porous silicon on a p-type substrate using a non-contact method," Kristin Peterson, Toni Sauncy, Angelo State University, Tim Dallas, Texas Tech U. Electrical Engineering, Mark Grimson, Texas Tech U. - Biological Science
- 11:30 "Fluid Resistance Studies with an Atwood Machine," Ken Taylor, Omar Aragon, Russell Braun, Ellias Fessahaie, Lake Highlands High School
- 11:42 "Stripes or Bubbles in the N=2 Landau Level: A DMRG Study," Candice Withrow, Barry Friedman, Lauren Rod, Department of Physics, Sam Houston State University
- 11:54 "Temperature dependence of photoluminescence from a strained InGaAs/GaAs quantum well" Meagan Saldua, Toni Sauncy, Angelo State University

<b>Riviera 3-5</b>
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**12:30 Lunch (TsAAPT & TsAPS Business Meetings)**

<b>Padre C</b>
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**2:00 Workshop 2: "Introducing the TI-Nspire CAS Learning Technology"**  
**Session Chair: Michael Osbourne, Texas Instruments**

<b>Riviera 1&amp; 2</b>
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- 2:00 SPS 2: High School and Undergraduate Student Research**  
**Session Chair: Wayne Kinnison, Texas A&M University-Kingsville**
- 2:00 "A Single Mother's Perspective of How High School Students Respond to her Interaction with the Science Road Show at Northeast Texas Community College," Ashley Hanson, Northeast Texas Community College
- 2:12 "Quality Analysis and Control Procedures for the PHENIX RPC Forward Trigger Upgrade," Dillon Thomas, Abilene Christian University
- 2:24 "Vibrational Modes on a PASCO Track," Ken Taylor, Geoff Dunham, Austin Levinton, Cameron Tyler-Vann, Lake Highlands High School
- 2:36 "Effect of Magnetic Dipole Moment on Magnet Forces," Ken Taylor, Ian Campbell, Matthew Mirochna, Robbie Stewart, Lake Highlands High School
- 2:48 "A Meter Stick Torsion Oscillator," Ken Taylor, Chris Atieno, Shannon O'Brien, Ben Stewart, Lake Highlands High School
- 3:00 "The Mystery of the Missing Baryons," Joseph Kish, Abilene Christian University
- 3:12 "Phoenix Mars Mission and the Phoenix Student Interns Program," Ken Taylor, Matthew Gaba, Tony Xie, Lake Highlands High School

<b>Padre B</b>
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- 2:30 APS 3: Condensed Matter**  
**Session Chair: Paul Cox, Texas A&M University-Kingsville**
- 2:30 "Polymer-Conducting Polymer Composites," Juan Monreal, Heinrich D. Foltz, Elsa Garcia, Karen Lozano, Marcos Villarreal, Steven C. Tidrow, Magdalena Dorina Chipara, Mircea Chipara, University of Texas Pan American
- 2:42 "Assessment of Bone Microstructural Changes by NMR," Qingwen Ni, Texas A&M International University, Xiaoduwang, University of Texas-San Antonio
- 2:54 "Functionalized Nanomaterials to Sense Toxins/Pollutant Gases Using a Resonant Cavity," James Roberts, University of North Texas, Jai Dahiya, Southeast Missouri State University, Aman Anand, University of North Texas
- 3:06 "Ultraviolet, Infrared, and Raman Spectra of Pyridine and Its Fluoro Derivatives," Jaan Laane, Praveen Boopalachandran, Kathleen McCann, Texas A&M University
- 3:18 "Characterization and Optical Tuning of CdSe & ZnS Quantum Dots Generated by Laser Ablation of Microparticles," Ignacio Gallardo, Kay Hoffmann, John Keto, The University of Texas-Austin
- 3:30 "Photonic Band Gap and Negative Refraction in Two Dimensional Photonic Crystals with Centered Rectangular Symmetry," Kris Ohlinger, Department of Physics and Geology, University of Texas-Pan American
- 3:42 "Photonic Band Gap Calculation and Holographic Fabrication of Orthorhombic and Tetragonal 3D Photonic Crystals," Kris Ohlinger, Department of Physics and Geology, University of Texas-Pan American

## **Friday March 7, 2008**

**Continued**

**Padre A**

- 2:30 AAPT 1: Physics Teaching and Physics Education Research**  
**Session Chair: Lionel Hewett, Texas A&M University-Kingsville**
- 2:30 "Physics of Music: A Course in Transition," Bruce Miller, Texas Christian University
- 2:42 "Organizing an undergraduate research group: Graduate Mentoring, Scaffolding, and Wikis," Ramon Lopez, Robert Bruntz, University of Texas-Arlington
- 2:54 "Comparison of Four Methods for Teaching Phases of the Moon," Brianna Upton, Ximena Cid, Ramon Lopez, UT Arlington
- 3:06 "Dynamic Transfer in the Context of Microscopic Friction," Edgar De Guzman Corpuz, The University of Texas-Pan American, N. Sanjay Rebello, Kansas State University
- 3:18 "Activities in The Regional Collaborative for Math and Science Teaching UNT," James Roberts
- 3:30 "UTeach Replication: Impacting Teacher Preparation at a University Near You," Jill Marshall, University of Texas

**Riviera Foyer**

**3:30 APS & AAPT Poster Session**

1. "Size-dependent Raman and infrared studies of PbSe nanoparticles," Felicia Manciu, Francisco Carreto, University of Texas-El Paso
2. "FTIR, Raman, and XPS Studies of a Thioindigo/Palygorskite Pigment," William Durrer, Felicia Manciu, Alejandra Ramirez, Jayesh Govani, Russell Chianelli, University of Texas-El Paso
3. Role of symmetry in dissociation of highly symmetric molecules," Vandana Sharma, University of Colorado, Bhas Bapat, Physical Research Laboratory, Ahmedabad, India, Margaret Murnane, Henry Kapteyn, University of Colorado.
4. "Optical properties of L-arginine doped potassium dihydrogen phosphate crystals," Jayesh Govani, Felicia Manciu, University of Texas at El Paso, Mihirjoshi, Ketan Parikh, Dipak Dave, Saurashtra University, Rajkot, India
5. "Fragmentation dynamics of highly symmetric molecules," Vandana Sharma, University of Colorado, Bhas Bapat, Physical Research Laboratory, Ahmedabad, India, Margaret Murnane, Henry Kapteyn, University of Colorado
6. "Optical Characterization of Biological Tissues," L. Mimum, Frederick Barrera, Dhiraj Sardar, Andrew Tsin, University of Texas-San Antonio
7. "The Relationship Between Magnetosheath and Solar Wind Parameters," Phyllis Whittlesey, Crystal Red Eagle, Elizabeth Mitchell, Ramon Lopez, UT Arlington
8. "Is All  $v \cdot B_z$  Equal?" Felipe Mulford, Jorge Landivar, Elizabeth Mitchell, Ramon Lopez, UT Arlington
9. "DMSP Observations of Auroral Arcs that Brighten," Jose Barona, Randall Bradshaw, Robert Bruntz, Ramon Lopez, UT Arlington

**Riviera 1&2**

**3:45 AAPT Special Session**

**Session Chair: Daniel Marble, Tarleton State University**

- 3:45 "Future Faces of Physics," Toni Sauncy, Zone 13 SPS Councilor
- 4:30 "High School Roundtable Discussion on the Process and Implications of the Physics TEKS Revision," Hugh Henderson, Birdville ISD, Chris Comer, Science Consultant, Jill Marshall, University of Texas, David Bixler, Toni Sauncy, Angelo State University

**Riviera 1&2**

**6:00 SPS Officers Meeting**

**Padre A**

**6:00 TECP Faculty Meeting**

**Riviera 3-5**

**7:00 Banquet**

**Talk: "The Physics of Hang Gliding," Lionel Hewett, Texas A&M University-Kingsville**

## Saturday March 8, 2008

**Riviera 1&2**

**8:15 Plenary Session 2**

**Session Chair: Daniel Marble, Tarleton State University**

8:15 "Video Analysis and Modeling in Physics Education," Doug Brown, Cabrillo College

9:05 "GLAST: The Gamma-ray Large Area Space Telescope Mission," Peter F. Michelson, Stanford University

**Padre C**

**9:00 Workshop 3: "Radiation and Health"**

**Session Chair: Albert E. Evans, Chairman, STW Committee, South Texas Chapter of the Health Physics Society**

**Riviera 1&2**

**10:30 APS 4: Nuclear and High Energy Physics**

**Session Chair: Wayne Kinnison, Texas A&M University-Kingsville**

10:30 "Development of Digital Hadron Calorimeter Using Gas Electron Multiplier Technology," Jacob Smith, H. Brown, UT Arlington, C. Han, Chang Won National University, K.P. Hong, Korean Atomic Energy Research Institute, S.N. Kim, Korea National University of Education, W.J. Kim, Chang Won National University, J. Li, C. Medina, UT Arlington, S. Park, Chang Won National University, Andrew White, Jaehoon Yu, UT Arlington

10:42 "A PEP model of the electron," R.L. Collins, retired UT Austin

10:54 "Obtaining the inverse square law from Quantum Field Theory," Morgan Lynch, David Bixler, Angelo State University

11:06 "The Physics of the Very Small Using a Very Large Machine," Rishiraj Pravahan, University of Texas at Arlington

11:18 "New Fission Cross Section Measurements using a Time Projection Chamber," Michael Sadler, Abilene Christian University

11:30 "Returning to Lattice QCD," BETH THACKER Texas Tech University

11:42 "Calibrating Scintillator Position Measurement for Testing RPC Modules for PHENIX at RHIC Daniel Jumper, Abilene Christian University

**Padre A**

**10:30 AAPT 2: Physics Teaching, Lectures, and Demonstrations**

**Session Chair: James Espinosa, Rhodes College**

10:30 "Holes in Hall Effect," Lianxi Ma, Blinn College

10:42 "Summative Evaluation of Polymers, Composites & Sports Materials: An Introduction to Chemistry and Physics," Eric Hagedorn, UTEP, Milijana Suskavcevic Team, David Chavez Team

10:54 "Formula Recollection Through a Never Before Seen Mnemonic Technique," Shannon Schunicht, Texas A&M

11:06 "An Examination of Temperature Fluctuations in the Sargasso Sea," James Roberts, University of North Texas

11:18 "Using PhET Simulations in the Introductory Physics Classroom," Paul Williams, Austin Community College