

KNOXVILLE - OAK RIDGE SECTION/



## DECEMBER MEETING

DATE: 12/08/05  
COST: \$19.00  
LOCATION: UNIVERSITY CLUB  
2704 KINGSTON PIKE  
KNOXVILLE, TN  
(865) 974-7348

BUFFET

*THE SECTION WILL SUBSIDIZE UP TO 15 STUDENTS.*

**PRESENTER:**

5:30 P.M. EXECUTIVE COMMITTEE MEETING  
(ALL MEMBERS WELCOME)

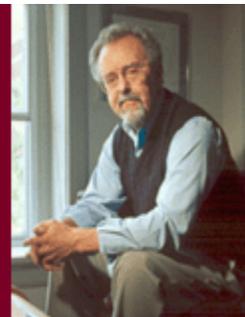
6:00 P.M. DINNER

7:00 P.M. **PROGRAM – THE NANOTECHNOLOGY REVOLUTION: SMALLVILLE COMES TO TENNESSEE. TOO SMALL TO SEE – TOO BIG TO MISS**

FOR RESERVATIONS, PLEASE CALL, LINDA PUCKETT AT 574-6984 ([PUCKETTLF@ORNL.GOV](mailto:PUCKETTLF@ORNL.GOV)) OR BETTY FRAZIER AT 974-2421 ([BFRAZIER@UTK.EDU](mailto:BFRAZIER@UTK.EDU)) BY MONDAY, 12/5.

## Ward Plummer

Distinguished Professor of Physics at  
The University of Tennessee and  
Distinguished Scientist,  
ORNL Condensed Matter Sciences Division



FROM THE STONE AGE, TO THE IRON AGE TO THE AGE OF PLASTICS, CIVILIZATION IS WRITTEN IN THE HISTORY OF MATERIALS. MATERIAL TECHNOLOGIES DETERMINE ADVANCES IN COMMUNICATION, CONSTRUCTION, MECHANIZATION, AGRICULTURE, AND HEALTH PROTECTION. RECENT ESTIMATES FROM THE NATIONAL NANOTECHNOLOGY INITIATIVE PREDICT MATERIALS DEVELOPMENT WILL HAVE A TRILLION DOLLAR IMPACT ON THE ECONOMY BY 2015. GIVEN THE SUCCESS OF PAST PREDICTIONS, THE NUMBER COULD BE EVEN LARGER THAN EXPECTED. THE UNIVERSITY OF TENNESSEE AND OAK RIDGE NATIONAL LABORATORY HAVE THE TALENT AND TOOLS TO, AS

GOVERNOR PHIL BREDESEN RECENTLY SAID, “GRAB” THE OPPORTUNITY. OUR CHALLENGE? TO LEARN HOW TO USE ATOMS, MOLECULES, AND NANOSCALE MATERIALS AS BUILDING BLOCKS TO CREATE A NEW GENERATION OF NANOSIZED MATERIALS WITH BRAND NEW UTILITIES. KNOWING WHAT MATERIAL WORKS BEST FOR A GIVEN NEED IS EASIER WHEN WE UNDERSTAND WHAT MAKES IT STRONG OR HOW IT CARRIES ELECTRICITY, WHY IT RESPONDS TO MAGNETIC FORCES OR CHANGES IN TEMPERATURE, OR HOW IT SWITCHES BACK AND FORTH BETWEEN A METAL AND INSULATOR. MATERIALS ARE THE FUTURE, AND THE FUTURE IS SMALL.

## 2006 AICHE LOCAL SECTION OFFICER BALLOT

CHAIR — BEN LEWIS  
(AUTOMATIC SUCCESSION)

CHAIR-ELECT (SELECT ONE)

MARK SWIENTONIEWSKI  
 WRITE IN

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SECRETARY (SELECT ONE)

DOUGLAS HAYES  
 WRITE IN

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TREASURER (SELECT ONE)

STEVE MCCOY  
 WRITE IN

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DIRECTOR (SELECT THREE)

STEWART DAW  
 CHARLES FORSBERG  
 ED ALPERIN  
 WRITE IN

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PLEASE BRING BALLOTS TO DECEMBER MEETING, OR SEND BY  
EMAIL TO: PUCKETTLF@ORNL.GOV

OR BY POSTAL MAIL TO:

KNOXVILLE-OAK RIDGE SECTION, AICHE

C/O LINDA PUCKETT

OAK RIDGE NATIONAL LABORATORY

P. O. Box 2008-6158

OAK RIDGE, TN 37831-6158

### CANDIDATE BIOGRAPHIES

**MARK D. SWIENTONIEWSKI, PE** HAS PARTICIPATED IN THE LOCAL SECTION OF THE AICHE AS A DIRECTOR FOR FOUR YEARS. MARK BELIEVES THAT A STRONG OUTREACH TO HIGH SCHOOL AND UT STUDENTS IS AN EFFECTIVE MEANS OF PROMOTING THE CORE VALUES OF OUR LOCAL SECTION. AS CHAIRMAN, MARK INTENDS TO LEAD THE SECTION FOR THE BENEFIT OF STUDENT INTEREST IN MATH AND SCIENCE CAREERS. MARK HAS 26 YEARS OF BROAD-BASED ENVIRONMENTAL AND CHEMICAL ENGINEERING EXPERIENCE. THIS INCLUDES THE PAST 12 YEARS EXECUTING PROJECTS WITH BECHTEL JACOBS COMPANY AND BECHTEL NATIONAL INC. HIS EXPERIENCE INCLUDES PROJECT MANAGEMENT, DESIGN, AND OPERATION OF PHYSICAL, CHEMICAL, AND THERMAL TREATMENT SYSTEMS FOR HAZARDOUS AND MIXED WASTES. HE RECEIVED A BS IN CHEMICAL ENGINEERING FROM VIRGINIA TECH IN 1979.

**STEVE MCCOY** IS THE GENERAL MANAGER FOR THE TETRA TECH NUS OAK RIDGE OFFICE. HE RECEIVED HIS BSChE FROM THE UNIVERSITY OF IDAHO IN 1973 AND AN MS IN ENVIRONMENTAL ENGINEERING FROM THE UNIVERSITY OF TENNESSEE IN 1995. IN THE PAST, STEVE HAS SERVED TERMS AS DIRECTOR AND CHAIR FOR THE KNOXVILLE/OAK RIDGE SECTION, AND HAS BEEN TREASURER FOR THE PAST YEAR.

**DOUGLAS HAYES** IS AN ASSOCIATE PROFESSOR OF BIOSYSTEMS ENGINEERING AT UT, SINCE 2003, AND IS ALSO AN ADJUNCT ASSOCIATE PROFESSOR OF CHEMICAL ENGINEERING AT BOTH UT AND UAH. HIS RESEARCH INTERESTS INCLUDE BIOPROCESS ENGINEERING, COLLOIDS AND SURFACTANTS, BIOCATALYSIS IN NON-CONVENTIONAL MEDIA, BIOMASS UTILIZATION AND ANALYSIS. DOUG SERVED AS FACULTY ADVISOR FOR AIChE STUDENT CHAPTER FOR UAH: 1993-2003, AND WROTE THE APPLICATION FOR UAH'S "CLUB" TO OBTAIN CHAPTER STATUS; WHICH WAS ACCEPTED IN 1999. DOUG HELPED FACILITATE INTERACTIONS BETWEEN THE UAH STUDENT CHAPTER AND THE N. ALABAMA LOCAL SECTION OF AIChE (E.G., JOINT MEETINGS ON CAMPUS, MOTIVATING STUDENTS TO ATTEND LOCAL SECTION MEETINGS, ETC.).

**EDWARD S. ALPERIN** IS A CHEMICAL ENGINEER WITH SHAW ENVIRONMENTAL, AND A SENIOR TECHNICAL ASSOCIATE WITH 32 YEARS OF EXPERIENCE. HE A SENIOR VICE PRESIDENT OF SHAW AND IS RESPONSIBLE FOR THE COMPANY'S TECHNOLOGY DEVELOPMENT PROGRAM IN ADDITION TO BEING RESPONSIBLE FOR THE MANAGEMENT OF THE PROCESS DEVELOPMENT LABORATORIES IN KNOXVILLE AND OAK RIDGE, TENNESSEE. HE IS INVOLVED IN THE MANAGEMENT, DEVELOPMENT, DESIGN, AND DEMONSTRATION OF CHEMICAL ENGINEERING UNIT OPERATIONS FOR SOLVING HAZARDOUS WASTE, MIXED WASTE, AND POLLUTION CONTROL PROBLEMS. HIS SERVICE TO AIChE GOES BACK TO HIS STUDENT DAYS WHEN HE WAS PRESIDENT OF THE STUDENT CHAPTER OF AIChE DURING HIS SENIOR YEAR OF COLLEGE AND HAS BEEN A MEMBER OF AIChE SINCE 1974. HE HAS BEEN ACTIVE IN AIChE CONFERENCES OVER THE YEARS PRESENTING PAPERS AND CHAIRING SESSIONS. MOST RECENTLY, HE SERVED AS A DIRECTOR FOR THE KNOXVILLE-OAK RIDGE SECTION IN 1997, 1998, AND 2000. IN ADDITION TO HIS SUPPORT OF AIChE, ED HAS SERVED AS VICE PRESIDENT AND PRESIDENT OF THE KNOXVILLE SECTION OF THE AIR AND WASTE MANAGEMENT ASSOCIATION (AWMA).

**C. STUART DAW, P.E.** IS A NATIVE OF FLORIDA, AND RECEIVED HIS B.S. IN CHEMICAL ENGINEERING FROM THE UNIVERSITY OF FLORIDA AND HIS M.S. AND PH.D. DEGREES IN CHEMICAL ENGINEERING FROM THE UNIVERSITY OF TENNESSEE. HE IS CURRENTLY A DEVELOPMENT STAFF MEMBER IN THE ENGINEERING TECHNOLOGY DIVISION OF THE OAK RIDGE NATIONAL LABORATORY (ORNL) AND AN ADJUNCT FACULTY MEMBER IN BOTH CHEMICAL AND MECHANICAL ENGINEERING AT THE UNIVERSITY OF TENNESSEE. HE HAS WORKED AT ORNL SINCE 1979, PRIMARILY IN COMBUSTION, CATALYTIC REACTION, WASTE TREATMENT, AND APPLICATIONS OF CHAOS THEORY. PRIOR TO THAT TIME HE WAS EMPLOYED BY DUPONT WHERE HE SPECIALIZED IN CHEMICAL REACTOR MODELING AND PROCESS DEVELOPMENT. DR. DAW IS A MEMBER OF THE AMERICAN INSTITUTE OF CHEMICAL ENGINEERS AND THE COMBUSTION INSTITUTE, THE ORNL REPRESENTATIVE TO THE AMERICAN FLAME RESEARCH COMMITTEE, AND A FORMER MEMBER OF THE BOARD OF ADVISORS OF THE CENTRAL STATES SECTION OF THE COMBUSTION INSTITUTE.

**CHARLES FORSBERG** RECEIVED HIS BACHELOR OF CHEMICAL ENGINEERING DEGREE FROM THE U. OF MINNESOTA AND A DOCTORATE FROM MIT. HE HAS WORKED FOR ESSO AND BECHTEL CORPORATION AND IS TODAY A SENIOR SCIENTIST AT OAK RIDGE NATIONAL LABORATORY. HIS AREAS OF RESEARCH HAVE INCLUDED NUCLEAR FUEL REPROCESSING, PROCESSING OF RADIOACTIVE WASTES, ADVANCED METHODS FOR DISPOSAL OF RADIOACTIVE WASTES, NEW USES FOR DEPLETED URANIUM, AND NEW METHODS FOR THE PRODUCTION OF HYDROGEN. HE HAS BEEN A MEMBER OF THE AIChE FOR OVER THIRTY YEARS AND WON THE AIChE 2005 ROBERT E. WILSON AWARD FOR CHEMICAL ENGINEERING CONTRIBUTIONS TO NUCLEAR ENERGY.

**KNOXVILLE - OAK  
RIDGE SECTION**

E-MAIL: AICHE-  
CHAT@CHEM.ENGR.UTK.E  
DU

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WE'RE ON THE WEB!

*SEE US AT.*

**HTTP://WWW.ORNL.  
GOV/SCI/AICHE**

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**KNOXVILLE - OAK  
RIDGE SECTION**

## **SPONSORING OPPORTUNITIES**

KNOXVILLE SECTION IS LOOKING FOR INDIVIDUAL OR CORPORATE SPONSORS TO PROVIDE STUDENT MEALS AT SECTION MEETINGS. THE SPONSOR WILL BE RECOGNIZED AT THE MEETING AND IN THE NEWSLETTER. THE COST TO SPONSOR ONE MEETING IS \$200. IT'S A GREAT WAY TO ENCOURAGE STUDENTS TO ATTEND THE LOCAL MEETINGS AND BECOME FUTURE MEMBERS IN THE INSTITUTE!

### **REMINDER**

IF YOU WOULD LIKE TO SAVE US THE COST OF MAILING A HARD COPY OF THE NEWSLETTER TO YOU, PLEASE PROVIDE US WITH AN EMAIL ADDRESS. IF YOU CHANGE EMAIL ADDRESSES, LET US KNOW SO THAT YOU WILL RECEIVE FUTURE ELECTRONIC COPIES. CONTACT LINDA PUCKETT (PUCKETTLF@ORNL.GOV

FOR MORE INFORMATION.

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