

# CASMEO Inc.

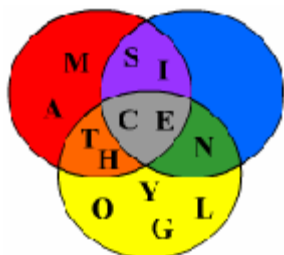
A nonprofit organization

# The Apothem

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<http://www.casmeo.org>



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### Special points of interest:

- Executive Board Meeting
- National News
- Analysis 2003 State Indicators
- Join CASMEO Committees
- Check the CASMEO website for Professional Development opportunities

The CASMEO Executive Board met on July 8th at Lincoln Park Zoo. Dr. Robert Howard of the University of Tulsa and CASMEO treasurer reported that the current balance is \$11, 285.97 with a possible \$4,000 additional revenue coming from an unpaid invoice. According to Dr. Howard CASMEO's accountant is still working with the IRS to attempt to resolve the penalty incurred in 2003. If a positive resolution is reached CASMEO could have approximately \$1,000 returned by the IRS. Dr. Jon Pederson of the University of Oklahoma and CASMEO Co-Executive Director recommended the organization develop standing committees with chairs from the executive board, board members and other interested parties that support CASMEO's goals. This was approved and the following committees were established: Professional Development Committee, Scien-

In the spring of 2004, Dr. Jon E. Pedersen was appointed by the CASMEO Board as the Co-Executive Director for CASMEO. Jon comes to the position with over 20 years of experience in education. Dr. Pedersen earned a B.S. in Biochemistry and Nutrition (1982), M.Ed. in Administration, Curriculum & Instruction (1988), Ph.D. in Administration, Curriculum & Instruction (1990), at the University of Nebraska-Lincoln. Dr. Pedersen began his teaching career as a secondary school science teacher and taught high school chemistry and physics. After finishing his PhD at the University of Nebraska, he be-

came an Assistant Professor of Curriculum and Instruction at the University of Arkansas, in Fayetteville, AR. During his tenure at the University of Arkansas he served as Co-Director of the Center for Middle Level Education, Research and Development. In 1995, Dr. Pedersen accepted a position as an associate professor at East Carolina University in Greenville, North Carolina. For the next five years Dr. Pedersen held several leadership positions at ECU including director of partnership research, interim department chair and Associate Dean for research and graduate studies at East Carolina University. In 2000, Dr. Peder-

son moved to the University of Oklahoma as Full Professor, where he is currently a faculty member in science education in the Instructional Leadership and Academic Curriculum Department. Dr. Pedersen is very active in several national organizations and is the author of over sixty-five publications on social issues and science teaching.

tific Theory Committee, Math/ Science Literacy Project Committee, January Summit Committee, Principal Training for Teacher Evaluation Committee, Legislative Committee, Financial Committee, and National Connections Committee.

Dr. Sacra Nicholas, Co-Executive Director, reviewed the goals of CASMEO and outlined some of the activities of the organization for the year. These included participation at national level meetings including the National Alliance of State Science and Mathematics Coalitions (NASSMC) Board of Directors Fall and Spring meetings as well as the Annual Conference along with CASMEO's acting President Mary Stewart. Dr. Nicholas also reported CASMEO will have at least two representatives attending the Fall Forum in Albuquerque, New Mexico, September 2004 hosted by the Southwest Educa-

tional Development Laboratory (SEDL).

For a second year CASMEO's Co-Executive Director, Sacra Nicholas, and acting President, Mary Stewart, assisted in the No Child Left Behind Grant titled Teachers Increased Content Knowledge Equals Student Achievement in Mathematics with an award of \$109,492. Mary Stewart also participated in a Teacher Mathematics/ Pedagogy Assessment Instrument Camp conducted by well-known researcher/ mathematics educator Dr. Deborah Ball in Ann Arbor, Michigan. Information gained from this workshop was used in part to assess teacher participant content knowledge in the areas of algebra and data analysis, statistics, and probability. At the state level, CASMEO (continued page 4)

## New Co-Executive Director for CASMEO

4th Annual CASMEO  
Summit  
February 3, 2005

# National News

## NASSMC/NASA

### CASMEO Representative Attends Triangle Coalition Conference

Sacra Nicholas attended the second annual Triangle Coalition for Science and Technology Education Conference March 15-16, 2004 titled "Informing Policy in Support of Mathematics, Science and Technology Education. There were numerous presentations and panel discussions scheduled for the first day of the conference and individual appointments with congressmen and staff were scheduled on the second day. Dr. Nicholas visited staff in the offices of Senator Don Nickles, Senator

James Inhoffe, and Representative Tom Cole's to request support for mathematics and science bills being considered by both houses.

One of the highlights of the conference sessions was a presentation on "The Science and Engineering Workforce: Realizing America's Potential" Report ([www.nsf.gov/nsb/documents/2003/nsb0369/start.htm](http://www.nsf.gov/nsb/documents/2003/nsb0369/start.htm)) by science author and member of the National Science Board, Jo Anne Vasquez, Ph. D. Some of the points from the report she shared include:

- Jobs in STEM related fields grew three times faster than in other occupation.
- The number of American students training for these jobs remained flat or even declined.
- Foreign-born scientists and engineers working here increased between 1990 and 2000.

- During, the number of H-1B visas issued to workers in STEM fields fell by more than half.

The National Science Board also reports:

- Thirteen countries now produce more college graduates in STEM degrees than the U.S.
- The number of underrepresented minorities earning college degrees is expected to grow, with 90% growth among Latinos.
- Recruiting this critical mass into STEM careers is critical.

A summary of a report from the Center on Education Policy (CEP) titled "From the

4th Annual CASMEO Summit  
February 3, 2005

Capital to the Classroom: Year 2 of the No Child Left Behind Act" was shared. CEP reported the following:

- States and school districts are trying hard to meet the requirements of the Act and agree with its goals.
- Broader and deeper effects of the law were being felt by school districts in 2003, which is resulting in additional help for schools identified for improvement.
- Choosing another public school is rarely used by parents of children in identified schools, while the option of receiving tutoring services is used more frequently.
- States and school districts are moving slowly to update the qualifications of teachers and paraprofessionals as required by the Act.

- Some of the requirements of the Act are unworkable.
- States and school districts face serious funding pressures and a lack of capacity to carry out the Act.

A full report is posted on the Center's website at [www.cep-dc.org](http://www.cep-dc.org).

NASSMC continues to expand its services and strengthen alliances by developing additional states in the Linking Leaders Program and offering assistance

Oklahoma Science Teachers of Association (OSTA)  
<http://www.angelfire.com/ok3/osta/>

grants to states with NASA Explorer Schools (Sasakawa, Public Schools just received the first Explorer School award in Oklahoma). NASSMC also has developed a new GrantSeeker service which is designed to help state coalitions identify both federal and private funding opportunities. The organization has access to information of over 300,000 public and private sponsoring agencies, including program announcements and guidelines, application materials, the latest updates and deadlines, and awards lists. Contact Sacra Nicholas at [snicholas@ou.edu](mailto:snicholas@ou.edu) for additional information.

Oklahoma Council for Teachers of Mathematics (OCTM)  
<http://www.octmok.org>

## CASMEO President Attends Summit on Science

Mary Stewart, CASMEO's acting President, attended the US Department of Education Summit on Science March 16, 2004. At that meeting Secretary Rod Paige set the scene for the rest of the speakers by focusing on these topics:

- The achievement gap based on NAEP scores shows that 2/10 of Native Americans and 3/10 of Hispanics reach basic or above on the national assessment.
- All 50 states have accountability plans in place.

- Testing is in place for reading and mathematics in states, and science is to follow.
- Families of students at low performing schools will be given a choice of what school their child attends.
- The education budget has increased 36%.
- In order to improving science we need to find a lot more that works; in other words, what curricula is best for students.
- Rod Paige suggested six projects to increase mathematics and science achievement

1. Participation in Math Science Partnerships.
2. Developing effective teachers.
3. Allowing for all teachers to become highly qualified by 2006.
4. Providing opportunities for teachers to develop deep knowledge in science.
5. Providing resources to allow achievement of these goals.
6. Providing professional development to attain these goals.

**Summit on Science continued...**

Other speakers who enhanced ways of reaching the goals that Secretary Ron Page suggested were: Dr. John Marburger (OSTP), Sean O'Keefe (NASA administrator), and Professor Carl Weisman (Nobel Laureate from University of Colorado). Some diverse perspectives were expressed during three panel. The essence of some of the comments (not necessarily direct quotes) includes:

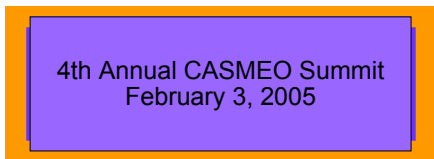
**Panel I - Science of Learning**

- We need to develop more of a research base for science literacy. (Russ Whitehurst - Psychology)
- Direct instruction is the best way to teach science because more learning can be transferred and mastery can be reached. (David Klahr - CMU Psychology Science)

**Panel II – Standards – Formal and Informal**

- Most teaching K-14 is ineffective, most students are learning very little science K-14, it is hard to teach, most curriculum materials don't have the potential to help teachers teach and students learn (very little research has been done), and there is not enough room in the curriculum for all that informal education would like to push (George "Pinky"

participants to share and continue to explore the issues that had been raised in the morning sessions.



**Op-Ed Piece "Algebra A Key Step To better Math Skills" Receives Statewide Attention**

As a proactive response to anticipated low scores on the Oklahoma Algebra End of Instruction Criterion Reference Test, CASMEO Executive Director, Sacra Nicholas, consulted with the Oklahoma math community and wrote a consensus position paper outlining actions parents and schools could take to build a firm foundation in basic algebra concepts during the elementary and middle school years. Strategies that have been shown to make the most significant difference in Algebra I test scores at the high

Nelson-ex-NASA/currently W. Washington University)

- Ninety-two percent of our learning is free choice. Students are not doing well in the classroom so use informal science museums and websites. (Allen Friedman- New York Hall of Science)
- Business can be a good role model, share dollars, and use staff as mentors particularly to support women and minorities. The focus needs to be put on what is necessary to learn. (Cherry Murray- Vice-president for research, Lucent).

**Panel III – Professional Development**

- Teaching is hard to change because it is a culture. If teachers get great materials, they transform them into routine activities. Professional development must be the tool to improve teaching. To do this teachers need to analyze teaching and learning in the classroom. (Jim Stigler- UCLA and Lesson Lab).
- There is too much stuff to teach, we teach disconnected concepts so decide what are the core ideas. (Bob Tinker - Concord Consortium)
- Students need to develop their imaginations and they learn best by doing. Hands-on science outscores textbook learning. (Tom Scruggs - GMU, expert on science learning for the disabled).

school level as well were outlined. The full paper was condensed into an editorial piece and published in the Daily Oklahoman in December 2003.

**New Committees Being Formed**

The following Standing Committees were established in alignment with CASMEO's goals and chaired by the executive directors, officers and board members. (see page 1 for list of committees)

**Math/Science Literacy Project Underway**

The Math/Science Literacy Committee is developing a 20-minute Math/Science Program to be presented to the state PTA Council in September 2004. This will be a program that can be duplicated across the state in a variety of venues (e.g. elementary PTA programs) for the purpose of helping parents build an awareness of quality math and science learning and also providing activities and resources available to support children's informal learning at home.

**CASMEO/ SEDL**

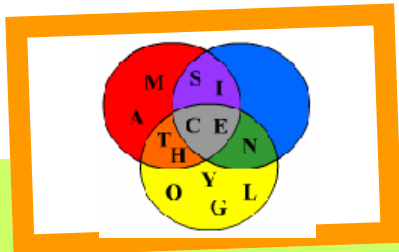
**Summit Report, January 9th**

CASMEO held its fourth annual mathematics and science education summit on 9 January 2004 at the Langston University Campus in Oklahoma City. Approximately 150 people attended. The theme this year was "Bridging the Achievement Gaps in Science and Mathematics". Kati Haycock, Education Trust Director from Washington D.C. was the keynote speaker. Ms. Haycock outlined some of the key issues from a national perspective. Dr. Vicki Dimock, Program Manager, Southwest Educational Development Laboratory, Science, Technology and Mathematics Program (SCIMAST/SCRTEC) presented regional data to help participants more clearly identify the achievement gaps in math and science issues in our own "neighborhood". To complete the morning sessions a business panel shared their perspectives on the impact of math and science achievement gaps on Oklahoma businesses. Members of the panel included: Mike Rogers, Senior Vice President of Banc First, Phyllis Hudecki, Executive Director of the Oklahoma Business Education Coalition, Craig Knutson President of E-conographic Consulting Services, Paula Marshall-Chapman, CEO of Bama Companies and Ira Schlinger, Managing Director of Strategic Services, Integris Health. An afternoon working lunch with round table discussions provided a more focused opportunity for

**Analysis of the 2003 State Indicators of Science and Mathematics Education published by the Council of Chief State School Officers**

was conducted to address the following 5 questions:

- Is student achievement in mathematics and science improving nationally and, specifically in Oklahoma and a "comparable state" (Kansas)?
- What proportion of students complete challenging courses in mathematics by graduation?
- What are state policies regarding graduation requirements in mathematics and science, and how have those policies affected course-taking trends?
- How adequate is the quantity of qualified teachers of mathematics and science in terms of meeting state needs?
- What factors are affecting the balance between supply and demand in the market for teachers of mathematics and science (grades 7 - 12)?



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[www.casmeo.org](http://www.casmeo.org)

President Dr. Sandy Johnson, Stacey Weinand and Dr. Sacra Nicholas developed and submitted a mathematics textbook evaluation form to the Oklahoma State Department of Education's Textbook Division, Ms. Weinand and Dr. Nicholas, and Dr. Pedersen also worked on the statewide Professional Development Standards committee during the spring of 2004. The Oklahoma Council of Teachers of Mathematics (OCTM) conference and board meeting was attended by CASMEO a number of CASMEO representatives with Dr. Nicholas presenting two sessions and Stacey Weinand receiving an award for her service to the organization. Many other activities can be investigated on the CASMEO website at <http://www.casmeo.org>.

4th Annual CASMEO Summit  
 February 3, 2005

## CASMEO MISSION

**CASMEO, Inc.** has one basic goal...to ensure that every student in Oklahoma has the opportunity to learn science and mathematics skills s/he will need in today's market-place.

**CASMEO** is a nonprofit alliance of representatives from business, education, and the private sector working to support and coordinate efforts to revitalize science and mathematics education in the state of Oklahoma.

**CASMEO's** overall task is to encourage, coordinate and facilitate state-wide efforts to achieve curriculum changes and professional development in science and mathematics education.

### 2004 Officers

President: Mary Stewart (Interim)  
 University of Tulsa  
[marystewart@utulsa.edu](mailto:marystewart@utulsa.edu)

V. President: Vacant

Secretary: Jan Sands  
 Putnam City Public Schools  
[pcact@onenet.net](mailto:pcact@onenet.net)

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 University of Oklahoma  
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## Board of Directors

<b>Julie Angle</b> Pres, OK Science Teachers	<b>Linda Bailey</b> Mathematics Education Cons.	<b>Dr. Debbie Blue</b> OBU/OK Board of Education	<b>Dr. Belinda Bisco</b> Director, Region VII Comprehensive Center
<b>Tom Carlisle</b> Conoco Phillips	<b>Dr. Joy Culbreath</b> Education Director Choctaw Nation	<b>Dr. Vicki Dimock</b> Program Manager SEDL	<b>Ted Gillespie</b> OCTP
<b>Tom Gruber</b> Office of the Attorney General	<b>Dr. Phyllis Hudecki</b> OBEC	<b>Darlene Johnson</b> OCTM Past Pres.	<b>Dr. Sandy Johnson</b> Business Consultant CASMEO, Past Pres. Anautics, Inc.
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<b>Dr. Belinda McCharren</b> OK Dept of Career Tech Ed	<b>Dr. Dolores Mize</b> OK Regents for Higher Education	<b>Patricia Podolec</b> Business Consultant	<b>Dr. Victoria Duca-Snowden</b> OK NASA Space Grant
<b>Dr. Suzanne Spradling</b> OK Building a Presence for Science	<b>Dr. Doug Sprung</b> University of Central Oklahoma	<b>Dr. Alfred Striz</b> University of Oklahoma	<b>Dr. John Ulrich</b> NASA AESP/TFSP
<b>Dr. John Woods</b> Southwestern Oklahoma State University			