NASGEm President’s Report & Minutes

Shared at the 2011 NASGEm Business Meeting
in Indianapolis, Indiana
April 14, 2011

Present: Rick Silverman, Tod Shockey, Kay Gilliland, Rich Sgarlotti, Angela Thompson, and Jim Barta

President – Jim Barta

• My report incorporates minutes of the NASGEm Annual Meeting, particularly in the form of comments from various NASGEm position holders, including those from some members of the Board of Directors. NASGEm has experienced a successful year of continued growth and expansion, increased networking with other math organizations, and productivity in our newsletter efforts and Journal of Math and Cultural publications. We appear primed to take continued positive future steps. I wish to once again thank all you who served NASGEm in any capacity and those who have carried the message of equity and access through ethnomathematics to those they lead and teach. Below are summaries of their activities from members of the Board of Directors and other NASGEm position holders.

1st VP of Programs—Chadd McGlone

• Chadd reviewed the by-laws with an attorney and began to investigate what our next steps might be in changing them. A decision was made to propose a formal investigation of the by-laws at the 2011 meeting and establish a committee of members to oversee any revisions.
Chadd is posting lessons on the Mixxt.com website. Chadd reports this effort has just been instigated and the site was opened two weeks ago.

Chadd has been doing ethnomathematics presentations generally connected with World View at the University of North Carolina – Chapel Hill. Teachers in North Carolina are required to illustrate world and cultural issues in their mathematics lessons as part of their review process. To assist teachers, he has been conducting teacher-training workshops. The Mixxt website grew out of this program.

In conjunction with his World View activities, he has developed a team to help Claudette publish NASGEm News, beginning in the fall.

Chadd has been investigating plans to grow our membership among teachers. He is interested in discussing a plan to develop culturally connected lessons made available on our website for teachers who are members. Chadd is working with a group of teachers in North Carolina to write several lessons that use some of the interactive on the NASGEm website.

2nd VP of SIGs - Luis Ortis-Franco

- Luis attended ICEM-4 in Maryland and recruited several scholars from Latin America to join NASGEm.
- Luis recruited Natalia de Bengochea from México to be the NASGEm representative in México.
- Luis provided translation services, English-Spanish-English, in several panel/regular sessions at ICEM-4.
- Luis refereed one article submitted to the Journal of Mathematics and Culture.
- Luis submitted a statement in Memory of Isaias Aldaz Hernandez, Researcher in Ethnomathematics in Oaxaca, Mexico to the NASGEm newsletter for publication.

3rd VP of Membership - Blidi Stemm

- Blidi reports we currently have 34 NASGEm members. Recruiting at the ICME – 4 Conference was effective, and we gained 12 new members. Blidi has sent renewal reminders to members who membership has lapsed. Thomas and Blidi are using ‘Drop Box’ as a way to
• share files and information related to membership and the treasury.

4th VP of Communication & Outreach – Ron Eglash

Secretary – Claudette Engblom-Bradley

• Claudette served as the Editor of *NASGEm News: Notices of the North American Study Group on Ethnomathematics*, our newsletter, and with the collaboration of Rick Silverman, *NASGEm News* Director of Development published Issue 5, Number 2, dated February, 2011.

Treasurer – Tom Gilsdorf

• Thomas helped with details of collecting donations for Faviana’s Mathematics and Maya project, and with the delivering of copies to qualified donors.

• Thomas filed the necessary paperwork with the IRS and obtained a tax identification number for NASGEm (now required by federal law, in order for NASGEm to maintain a bank account).

• Thomas maintained financial records, conducted the usual treasurer activities, such as depositing membership payments and keeping track of a current list of active members. (Please see the attached yearly financial report).

At-Large Canada – Dawn Wiseman

• Dawn has temporarily stepped back from her NASGEm duties while she pursues her Ph.D. at the University of Alberta under the mentorship of Florence Glandfield.

At-Large México - Natalia de Bengoechea

At-Large USA – Jenni Harding-DeKam

NCTM Representative and Immediate Past President – Rick Silverman

• Rick Silverman attended the recent Delegate Assembly, and his report is attached.

• Rick has been instrumental in working diligently to support (often behind the scenes) multiple efforts throughout NASGEm including *NASGEm News, Journal of Mathematics and Culture*, presentations, etc.

NCTM Rep Alternative – Bill Collins
**NASGEm News Editor:** Claudette Engblom-Bradley

**Director of Development for NASGEm News –** Rick Silverman

**Journal of Math and Culture** – Co-Editors – Tod Shockey and Rick Silverman

**Associate Editors** – Sue Staats, Larry Lesser, and Jim Barta

- In 2010-2011, the *JMC* continued to attract manuscripts from around the world. Volume 5 Issues 1 and 2 were published in 2010. For the ICEM-4 meeting, we agreed to organize a focus issue and that work is underway. We expect to release this focus issue around September 1, 2011.

- Tod, who usually receives all submissions for review, reports that he is always in need of reviewers. Please volunteer or nominate individuals that you feel would support the Journal. For members working in higher education, we encourage you to suggest the JMC as an outlet for your graduate students. Tod and Rick also remind all recipients of *NASGEm News* that the *Journal of Mathematics and Culture* is a peer-reviewed, open-access journal sponsored by NASGEm. We accept manuscripts all the time. The acceptance rate is about 7%. See this website for further information and past issues: [http://nasgem.rpi.edu/pl/journal-mathematics-culture-s37](http://nasgem.rpi.edu/pl/journal-mathematics-culture-s37)

**Treasurer’s Report:** NASGEm, April, 2011.

- **Beginning balance (from the previous report of 2010):** $3,123.25.

- **Current balance (as of April 6, 2011):** $3,768.25

- **Significant transactions during the past year:**

  $90.00 paid to NCTM for 2011 – 2012 Affiliate Dues.

- **Other items/comments:**

  - My records show 41 current members (including those whose membership will expire soon, in April, 2011). This is up from 21 members from last year.

  - I hope the NASGEm meeting goes well, and that the NCTM and NCSM conferences are enjoyable, too!

  Respectfully submitted by Thomas E. Gilsdorf, 6 April 2011.

**Note:** Treasurer's piece – 4th ICEM

NASGEm seeded the conference by providing funds to help move the meeting forward. Congress Chair, Larry Shirley indicated a profit for ICEM 4 and some return to NASGEm.
NCTM DELEGATE ASSEMBLY 2011 INDIANAPOLIS

- Presented to NASGEm Annual Meeting April 14, 2011, by Rick Silverman, NASGEm NCTM Representative

NCTM president Mike Shaughnessy presented the following information:


- Equity: All students have chances for Reasoning and Sense Making. Online Special Issue of Journal for Research in Mathematics Education. [www.nctm.org/equity]

- Video Library: Video clips of exemplary practice. Prototype video due out Fall 2011.

- Common Core State Standards – PowerPoint presentations on NCTM Website. AMTE, NCSM, and 2 other affiliates are working with National Governors’ Organization and several other outside organizations for getting ready.

- See NCTM publications: Making It Happen, Developing Understanding and Curriculum Focal Points

- Awards given for NCTM publications: Teaching Children Mathematics, Mathematics Teaching in the Middle School, and Mathematics Teacher

- See Research Briefs & Clips at www.nctm.org/research

- Transition from HS to College: MAA-NCTM-AMATYC something other than calculus and algebra.

- Lots of Professional Development.

- Algebra Readiness 9-11 August in Baltimore and online all year.

- Communication with US Department of Education is positive. Secretary of Education Arne Duncan: Friday, 11:00, Hall F, Convention Center

OTHER ITEMS FROM THE GENERAL ASSEMBLY

RESOLUTIONS PASSED
1. Action: Continue current form the Affiliate Rebate Program. Online, but still not offline.

2. Work to implement Common Core State Standards. Action: Ongoing. CCSS watch group exists now. Meetings will occur, e.g., DC meeting.
LEADERSHIP CIRCLE: Perks – Various perks. See NCTM website for details.
- 65% Platinum: Council of Presidential Awardees
- 50% Gold: AMTE (MA), Metro Chicago, New York SAMS, TX Supervisors,
- 30% Silver: TODOS, Iowa, Maryland, Minnesota, Mississippi, Northern Nevada,

RESOLUTIONS
- NCTM to strive to schedule Regional Conferences not in conflict with other math ed meetings in the same region. PASSED: 71 – 5.

- *Daily News* will report the news of the 62nd Delegate Assembly.

GRANTS
- See NCTM website.

LEADERSHIP CONFERENCE

**NOTE:** Discussion of efforts for the future completed the meeting. A summary of this discussion will be shared in the near future via the NCTM website, presumably.

**President Barta’s concluding comment:**

NASGEm, as we can see is flourishing, and is fortunate to have a highly committed, energetic Board of Directors and set of leaders in all positions. I look forward to the coming months to build on the accomplishments of the past year.

Sincerely,
Jim Barta, President
Utah State University
Vedic Multiplication Algorithm:
An Ethnomathematics Activity (Part 1 of 2)

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The term ethnomathematics is used to describe the mathematical practices of identifiable cultural
groups such as urban and rural communities, labor groups, professional classes, children of a certain age
bracket, or indigenous societies (D’Ambrosio, 2001). Vedic mathematics is the name given to the
ancient mathematics system from the Vedas (the main scriptural texts of Hinduism) that was
rediscovered between 1911 and 1918 by Sri Bharati Krsna Tirthaji (Williams, 1991). In his book, Vedic
Mathematics, published in 1965 five years after his death, Tirthaji expounded sixteen sutras or word
formulas and thirteen sub-sutras or corollaries from the Vedas (Joseph, 2000; Shan & Bailey, 1991). A
sutra which means a thread, expresses fundamental principles and may contain a rule, an idea, a
mnemonic, or a method for solving a problem (Nataraj & Thomas, 2005). For example, “All from nine
and last from ten” is one of the sutras for subtraction. Explanations appear later in the article.

The Vedic system provides interesting and unconventional ways for solving mathematics problems
that can be applied to geometry, trigonometry, both differential and integral calculus, algebra, and
astronomy. It also provides a system of mental computation of small and large numbers (Joseph, 2000;
Datta & Singh, 2001). In this article, I provide examples of the multiplication algorithm relating to the
sutras “Vertically and Crosswise” (Urdhva-tiryagbhyam), “By One More than the Other” (Ekadhikena
Purvena), and a sub-sutra for NiKharin (All from Nine and Last from Ten) for squaring numbers.

Vertically and Crosswise (UrdhvaTiryagbhyan Sutra)
The sutra “Vertically and Crosswise” embodies a method for performing multiplication computation starting from either right to left or left to right. It has applications to determinants, simultaneous equations, and trigonometric functions, in addition to use in arithmetic computation.

Example 1: Suppose we want to multiply 32 by 21 from left to right. The “X” denotes multiplication.

Example 2: (Right to Left): Multiply 43 \times 25? 

Answer: 32 \times 21 = 672

First you multiply the 2 \times 3 = 6. Place the 6 under the hundreds column. Next, multiply crosswise by multiplying 1 \times 3 = 3 and 2 \times 2 = 4. Add the 3 and 4 and the result is 7, which you place in the tens column. Now multiply the 1 \times 2 = 2 and place the 2 under the ones column. So, 32 \times 21 = 672.

You can carry out the same process this time starting from right to left and arrive at the same answer.
The steps are as follows:

1. $5 \times 3 = 15$. The 5 goes under the ones column.

2. $(4 \times 5) + (2 \times 3) = 26$. Now add the 1 to the 26 and that is 27. Put the 7 down and add the 2 to next product $2 \times 4$ and that becomes 10.

3. **Answer:** $43 \times 25 = 1075$ Maharaja (1998)

Below is a pictorial representation of the cross-wise method of multiplication. Note that the use of the letters is arbitrary.

\[
\begin{array}{cccc}
\text{Step 3} & \text{Step 2} & \text{Step 1} \\
4 \times 2 = 8 & (4 \times 5) + (2 \times 3) = 26 & 3 \times 5 = 15 \\
\end{array}
\]

**Explanation of the Pictorial Representation:** Multiply units by units to get the unit digit of the answer. Multiply tens by units and units by tens to get tens digit of the answer and then multiply tens by tens to get the hundreds digit(s) of the answer. This method can be extended to numbers with three or more digits. It is important to note that this method of multiplication can be carried out from left or right. For example, the pictorial diagram for multiplying a three digit by a three digit number would look like this:

\[
\begin{array}{cccc}
A & B & C & A \\
D & E & F & D \\
\end{array}
\]

\[
\begin{array}{cccc}
A & B & C & A \\
D & E & F & D \\
\end{array}
\]

\[
\begin{array}{cccc}
A & B & C & A \\
D & E & F & D \\
\end{array}
\]

\[
\begin{array}{cccc}
A & B & C & A \\
D & E & F & D \\
\end{array}
\]

\[
\begin{array}{cccc}
A & B & C & A \\
D & E & F & D \\
\end{array}
\]

\[
\begin{array}{cccc}
A & B & C & A \\
D & E & F & D \\
\end{array}
\]
Example 3: Multiply $302 \times 514$

\[
\begin{array}{ccc}
3 & 0 & 2 \\
5 & 1 & 4
\end{array}
\]

The steps are as follows:

A. $2 \times 4 = 8$

B. $(0 \times 4) + (2 \times 1) = 2$

C. $(3 \times 4) + (0 \times 1) + (2 \times 5) = 22$, carry the 2

D. $(3 \times 1) + (0 \times 5) = 3$, $3 + 2 = 5$

E. $3 \times 5 = 15$

so, $302 \times 514 = 155,228$

The sutra vertically and crosswise provides a nonconventional strategy for multiplying numbers on a single-line either from left to right or right to left. One of the fascinating features of this method of doing multiplication is that it makes use of an important concept that children generally find difficult to understand, and that is our place value system. As we all know, the place value is the given digit multiplied by some power of 10. Thus, the number 23 for instance is actually $20 + 3$ or $2 \times 10 + 3$. Why does the method work? The answer can be found in the algebraic explanation below.

\[
43 = 4x + 3, \quad 35 = 3x + 5, \text{ when } x = 10
\]

So $43 \times 35$ is equivalent to $(4x + 3) \times (3x + 5) = 12x + 20x + 9x + 15$

or, in general, $(ax + b) (cx + d) = acx + adx + bcx + bd = acx + (ad + bc)x + bd$.

The vertically and crosswise sutra method is direct, totally unconventional, and encourages mental computations. With a little practice, one can do cumbersome computations mentally. In addition, the method re-emphasizes that mathematics is not mostly about memorization and manipulation of symbols but rather a way of thinking. The Vedic methods, particularly the vertically
and crosswise sutra, provide a fresh insight into number relationships and patterns. It also helps foster the notion that there can be more than one way to solve a problem and that students can invent their own method and are not limited to one approach to solving a problem. It is culturally based on Sanskrit textual interpretations and may be useful as an alternative to standard algorithms with which some struggling students have had failure experiences and whose learning may profit from novel approaches. This can help them become proficient at computation while preserving their belief that mathematics makes sense which can aid in reducing the prevalence of math phobia among students.

The Vedic methods of doing mathematics provide opportunities for teachers and students to discuss the connections between mathematics and culture, a central feature of ethnomathematics. The vertically and crosswise method of multiplication, in particular, underscores one of the attribute of ethnomathematics, namely one that challenges a common Eurocentric bias that ignores, if not denies, the substantive mathematical practices of non-western cultural groups. The Hindus invented the sixteen sutras, or mathematical formulas, as a tool for understanding, explaining, and managing problems and activities arising in their environment. This underscores the ethnomathematical idea that mathematics is a human activity and a continually expanding field of human creation and invention with contributions from diverse cultural groups and not a static discipline.

Part 2, which will appear in the Fall 2011 issue of NASGEm News: Notices of the North American Study Group on Ethnomathematics, presents the Vedic Mathematics Sutra titled, “all from 9 and the last from 10.”

References


USING LAKOTA STAR QUILTS AND ETHNOMATHEMATICS TO TEACH MATH CONCEPTS (Part 1 of 3)

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I’ve been teaching mathematics at Oglala Lakota College on the Pine Ridge Indian Reservation in South Dakota since 2004. Opportunities to embrace the cultural relevance of all academic subjects present themselves all the time; in fact, all teachers and faculty on the reservation are strongly encouraged and often required to operate fluently within the culture and across generations. I am fortunate to be able to teach in such a place, and I have learned a lot.

In 2006, I was teaching a Secondary Math Methods course at our attendance center in the small town of Allen, SD. There were Lakota Star Quilts decorating all the walls of the classroom building, and the students, their families, and the staff identified very strongly with them. The quilts are created and displayed to honor people and special events. They are given as gifts at weddings, graduations, and births; they are displayed at funerals, and they are given in honor of loved ones who have passed away. Most of these quilts have 8-fold rotational and 8-fold mirror line symmetry. I began to relate many of the algebra concepts we were exploring to these colorful quilts. It felt very natural.

Here is an example of one of the Oglala Lakota College, Allen College Center Star Quilts:

The first time we really worked with the quilt image, we were studying the Cartesian Plane. If we consider the center of the star to be the origin with coordinates (0,0), we can explore distances and relationships between points that are equidistant from the origin. We can also look at the eight points of the star, and talk about similarities and differences between the coordinates that they would have. Before we even superimposed a grid on the star image, we talked about the Quadrants, we estimated distances and areas, and ordered pairs corresponding to similar images on the quilt.

This discussion led to an investigation of right angles and perpendicular and parallel segments. We had some friendly arguments about right angles, and the fact that some of the right angles in the image look more obvious than others. We talked about different ways that you can prove two line segments to be perpendicular, and why these methods work. We also tried to discover why it is less apparent that two segments form a right angle when both the segments are oblique.

As we progressed through basic geometry concepts and methods, using protractors to measure angles, a straight edge, drafting tools, finding a perpendicular bisector, a circumcenter, areas and attributes of polygons, etc., I noticed that a Cartesian Grid system would help reinforce and extend some
of the concepts we were working on. Combining algebra with geometry and Star Quilts would bring
more power to our explorations, by making more connections that would make sense to my students and
their future students as well.

At the time, I used overhead transparencies of the regular rectangular grid system, along with a
coloring book template of the Star Quilt, which the Lakota women use for creating their designs, to
create an overlay that we could work with. I also incorporated some real color copies of star quilts from
that classroom center. Here is an example of the coloring book template, and a blank rectangular grid:

I have since then learned that some Lakota people design their Star Quilts differently. Here is an
image of a quilt design in progress, created by Gerald One Feather (pictured below) who was a
participant at our OLC Summer Math Camp last year:

Notice the difference in orientation, the incorporation of circles, and the use of a compass. This opens
up a whole new world of circle explorations that I have not yet expanded upon with my own students,
but plan to. The circle image is very pervasive and meaningful in Lakota culture and spirituality.

Recently, for my 2011 NCTM Conference presentation in Indianapolis, I had a quilt image built
by a graphic artist, so that it would fit together with a Cartesian grid more easily. This is the image I
used for my more recent teaching and the one off of which we worked at the presentation:
From this image, we can easily move to plotting points, calculating distances using the Distance Formula, finding slopes with the Slope Formula, and other graphing activities. Here is one of my slide images, including some ordered pairs and showing their similarities and differences:

Let’s return to our $D_8$ eight pointed star quilt.

We can overlay it with the Cartesian Plane and do some basic Algebra.

In my next article, I will use this image to discuss mirror symmetry in much more depth, along with other isometries and some abstract algebraic basic group theory. For now, I will conclude this article on Cartesian connections with an extension into Calculus that might give a taste of some further possibilities. The shaded finite triangular region of the Star Quilt below is bounded above by the line $f(x) = x - 3$, and below by the line $g(x) = 0$, from where $x = 3$ to where $x = 9$. Thus, we can use a definite integral to determine the exact area of the enclosed region:

\[
\int_{3}^{9} (x-3)\,dx - \int_{3}^{9} 0\,dx
\]

\[
= \left[\frac{x^2}{2} - 3x + C\right]_{3}^{9} - \left[0\right]_{3}^{9}
\]

\[
= \left[\frac{81}{2} - 27 - \left(\frac{9}{2} - 9\right)\right]
\]

\[
= 18 \text{ square units}
\]
I have been incorporating Ethnomathematics in my college level math teaching since 2001. I find it to be one of the most effective pedagogical methods for long term student retention, extensions, and deeply meaningful comprehension. I have noticed that students who see math through their culture do not forget the underlying mathematical concepts that were explored; especially if they develop, analyze, and discuss their own culturally relevant designs in a mathematical context. I have also seen how students literally light up when they connect math and culture! Even the most apathetic students become interested. When I return to my doctoral studies, I plan to further explore this phenomenon, for I feel that in our richly diverse society, Ethnomathematics is an essential aspect of successful mathematics education.

Please feel free to contact me with questions, comments, suggestions, or for further information and ideas about Ethnomathematical classroom connections. My email address is jrodin@olc.edu and my phone number is 308-430-2995.

From Culturally Situated Design Tools (CSDTs)

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As we have noted elsewhere, our work on Culturally Situated Design Tools (CSDTs: www.csdt.rpi.edu) suggests that “computational thinking” (Wing, 2006) has received little notice in ethnomathematics, largely because it is outside the purview of the standard math curriculum. As Margolis (2008) notes, computing education is a key to the high-status skills and knowledge that allows a student to tap into the grid of 21st-century opportunities; one which under-represented students are often left out of. In a recent publication (Eglash et al., forthcoming), we report on the use of our “African Fractals” CSDT (http://csdt.rpi.edu/african/African_Fractals/index.html) in a controlled study of two high school computer science classes with the same instructor. The control group received the same amount of instruction with a comparable fractal education website (it also used java-based applets) without any emphasis on cultural design. The results showed statistically significant advantages for the class using the African Fractals site in both performance and attitudes towards computing careers.

In order to make such computing connections available for all CSDTs, we have initiated development of “programmable” Culturally Situated Design Tools, or pCSDTs. Similar to the interface developed by CMU (“Alice”) and MIT (“scratch”), our interface allows students to generate algorithms by dragging and dropping snippets of programming language (“codelets”) into a ‘script”—thus eliminating the frustrating experience of having a program fail because, for example, you were missing a comma on line 137.

Since our cornrows simulation was the first CSDT, it made sense to make it the first of our pCSDTs. The menu now has two software links: the old one for math and a new one for computing (http://csdt.rpi.edu/pCSDT/CC/index.html). This has capabilities that go far beyond what was available.
in the old cornrows – for example, we can keep track of odd or even duplications, and thus alternate colors in the simulated braid.

We are not only working on creating pCSDT versions of older tools, but also creating new pCSDTs. The best example so far is the simulation for skateboarding (http://csdt.rpi.edu/subcult/sb/index.html). Here students can use mathematics to design the slope of skateboard ramps, devise programming to modify behavior (such as jumping obstacles), and experiment with the underlying “physics engine” that can vary gravity, momentum, acceleration, etc.

We hope that this “ethnocomputing” approach will provide new opportunities for teachers, students, and researchers using culture in science and technology, engineering, and mathematics (STEM) education.

Reference


REPORTS

Educators of Native American Students (EONAS) annual meeting

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Educators of Native American Students (EONAS) is a loosely knit group within TODOS-Mathematics for All, an affiliate of the National Council of Teachers of Mathematics. The group has met at the NCTM annual meetings for the past seven years to discuss the unique situations of teachers of Native American students at risk of educational failure due to cultural, language, racial, geographic, or economic factors. These include the gap between Native students and their non-Indian counterparts in STEM testing; the under-representation of American Indians in STEM fields, low graduation and attendance rates in school, lack of role models in STEM fields, and lack of opportunities for Native students, especially in some reservation schools.

It has been shown that integration of Native culture into subject areas, including mathematics, helps Native students see the relevance of those subjects and encourages interest in them. It is important for teachers and others to know the mathematics of Native people, both past and present, and that is a focus of EONAS, and of these meetings.

The 2011 meeting was held at the NCTM national meeting in Indianapolis in April, and the Eiteljorg Museum of American Indians and Western Art agreed to host us. The museum is adjacent to the site of the conference and was a perfect setting for the meeting. Thirty people, all involved in Indian education in some way, attended the meeting. In addition to a discussion of ways to address those situations in teaching Native students in urban and reservations settings, there was also a mathematics presentation by Richard Sgarlotti based on exhibits of the museum, including those exhibits that show patterns (beadwork, pottery, baskets, blankets, etc.), dwellings or other constructed artifacts, any exhibits with numbers (demographics, area of habitation, etc.), tools or weapons (bows, atlatl, bow and drill, etc.), and games (Potawatomi dice game). Some of the artifacts are shown below.

Rachel Dillow in the Events Department and Director of Education, Cathy Burton, talked about the Eiteljorg museum, provided some of the educational material which was used for door prizes, and allowed the participants to tour the museum at no charge. The session concluded at the Sky City café with a social time, with food and beverages provided by EONAS.
The goals of EONAS are closely aligned with the North American Study Group on Ethnomathematics, especially related to the mathematics of Native peoples, and several NASGEm members also participated in the meeting. The mathematical information of the exhibits and artifacts was left with the Eiteljorg Education Department to use as they see fit.

Lakota Shirt

Hopi Basket

Birchbark Band Box

Other information from the Eiteljorg can be found on these sites:

- [http://www.eiteljorg.org/ejm_EducationActivities/ArtistsInResidence/Bridges.asp](http://www.eiteljorg.org/ejm_EducationActivities/ArtistsInResidence/Bridges.asp)
- [http://www.eiteljorg.org/ejm_EducationActivities/ArtistsInResidence/Parker.asp](http://www.eiteljorg.org/ejm_EducationActivities/ArtistsInResidence/Parker.asp)
- [Eiteljorg Fellowship for Native American Fine Art](http://www.eiteljorg.org/ejm_EducationActivities/ArtistsInResidence/Parker.asp)

For more information, contact

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Also, please check out the EONAS link on the NASGEm website.

12th International Congress on Mathematical Education (ICME-12)

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The Twelfth International Congress on Mathematical Education (ICME-12) will be held in Seoul, Republic of Korea, July 8-15, 2012 (see http://www.icme12.org/)

ICMEs are the biggest international meetings for mathematics education. The series of ICMEs began in 1970, and soon got onto a cycle of gathering every four years. The most recent ICMEs were in Tokyo, Japan, in 2000, Copenhagen, Denmark, in 2004, and Monterrey, Mexico, in 2008 (the only meeting in the US was in 1980 in Berkeley, California). Attending an ICME is an exciting experience of meeting and exchanging notes with mathematics educators from around the world, including some of the famous “rock-star” mathematics educators, whose articles you may have read. The meetings have several plenary talks and numerous special invited lectures. Much of the work of the Congress happens in Discussion Groups and Topic Study Groups, each of which focuses on a specific area of mathematics education.

Of particular interest to NASGEmers is Topic Study Group 36 (TSG 36) on “The role of ethnomathematics in mathematics education.” Pedro Palhares of Portugal and I are the co-chairs of this group, with the following team members: Willy Alangui (Philippines), Kay Owens (Australia), and Paulus Gerdes (Mozambique, President of ISGEm). The local representative for the group is Ho Kyung Ko (Korea), and the liaison to the International Program Committee is Bill Barton (New Zealand), who is the President of the International Commission on Mathematics Instruction and a noted ethnomathematician. Most of the committee members attended the Fourth International Conference on Ethnomathematics (ICEM-4) last year in Towson, Maryland, and Paulus Gerdes will be the organizer and host of ICEM-5 in 2014. Here is a link to the TSG 36 website, which has information and links for submitting proposals for papers: http://sites.google.com/site/tsg36aticme12/

Ethnomathematics, ISGEm, and NASGEm have a long history with ICMEs. In 1984 at ICME-5 in Adelaide, Australia, Ubi D’Ambrosio gave a plenary address which is often considered the formal birth of ethnomathematics into the world of mathematics and mathematics education. ICME-6 in Budapest, Hungary, gave a boost to ethnomathematics by devoting a whole day of the conference to issues of mathematics, culture, and society. Most recently, NASGEm President Rick Silverman led the Discussion Group on ethnomathematics at ICME-11 in Monterrey, Mexico.

Now we look forward to continuing this tradition as we gather in Seoul! If you have questions or comments about ethnomathematics at ICME-12, please contact me at LShirley@towson.edu.

NASGEm News Vol. 4 No. 2
In Memoriam: Daniel Soares (1961-2011)

posted to the ISGEm listserv by Paulus Gerdes on May 17, 2011 (with thanks to Marcos Cherinda)

Ethnomathematician and university administrator Daniel Soares died Friday, May 13, 2011 in Beira after a prolonged period of illness. He is survived by his wife Fernanda Mandara and his daughters Eufrásia, Danna, Natacha, Zailde, and Gulzarina.

Dr. Daniel Bernardo Soares was born in Quelimane - Maquivale (Zambezia Province, Mozambique) on September 4, 1961. After concluding high school, he attended (1980-1981) the Mathematics and Physics Teacher Education Programme at the Eduardo Mondlane University in Maputo, where he was one of my students together with other future ethnomathematicians, Abdulcarimo Ismael and Marcos Cherinda. From 1984 to 1989, he studied at the Higher Pedagogical Institute in Guestrow, Germany, where he concluded a master’s degree in mathematics education. From 1989 onwards, he was employed at Mozambique’s Pedagogical University. He was one of the pioneers of the first branch of a higher education institution outside the capital Maputo, the Beira Campus (Sofala Province) of the Pedagogical University. He fulfilled important administrative positions in Beira. Because of his excellent interpersonal relationships, I had the honour to appoint him in 1995 Head of Student Affairs (1995-1999). Thereafter, he became the Director (1999-2002) of the Beira Campus of the Pedagogical University. Later, he had several other responsibilities at the Beira Campus, and in 2011 he was appointed head of the Visual Arts Programme.

Also since 1989, he was a member of our Ethnomathematics Research Project, taking part in research training and doing research in the Sofala and Zambezia provinces. For instance, together with Marcos Cherinda, he assisted me in 1992 during a week-long workshop at the Federal University of Santa Catarina (Florianopolis, Brazil) (see photographs), and in 1993 he assisted me during two weeks of research at the Cairo Museum on geometrical drawings engraved in scarabs. During the first half of the 1990s, he was my dedicated assistant in Beira in the course ‘Mathematics in History’ for the bachelor and master of mathematics education for primary schools programme.


In 1994, he started to work on his doctoral thesis on the mathematical knowledge of traditional house builders in central Mozambique, the transmission of it from one generation to the next, and some possibilities of using this knowledge in mathematics education. He presented several communications on his doctoral research, for instance, at the Third International Conference on the Political

Notwithstanding his heavy academic duties and later his progressing illness, Daniel insisted bravely in trying to conclude his doctoral thesis and defend it at the University of the Western Cape (South Africa), where Professors Cyril Julie and Jan Persens were his thesis advisors. On March 31, 2010, he was awarded his doctoral degree by the University of the Western Cape, having successfully defended his doctoral thesis entitled, “The incorporation of geometry involved in the traditional house building in mathematics education in Mozambique: The cases of the Zambezia and Sofala provinces.” Thereafter, he expressed his intention to return to and actively participate in our ethnomathematics research team. Very sadly, his illness did not permit him to do so. We will remember him as a very dedicated student, assistant, colleague, and friend. May Daniel rest in peace. Each photo below shows Daniel in the center.

References


Announcements

NCTM Regional Conference – Fall 2012 will soon be seeking proposals for presenters. A central theme of the conferences is 'math in use.' Our ethnomathematical efforts illustrate culturally situated uses of mathematical application. Start thinking now of developing a proposal and attending one or more of these events. The Dallas meeting is the best one to target for ethnomathematics, but, of course, presenting strong ethnomathematics opportunities at any of these conferences would be very welcome. Follow this link to submit proposals for Regional Conferences in Fall 2012 at Dallas, TX, Hartford, CT, and Chicago, IL.

http://www.nctm.org/conferences/content.aspx?id=7866

Use the ISGEm Listserv to find collaborators for proposal develop, submission, and presentation.

2011 Bridges Conference

The Bridges Conference, running annually since 1998, brings together practicing scientists, mathematicians, artists, educators, musicians, writers, computer scientists, sculptors, dancers, weavers, and model builders in a lively atmosphere of exchange and mutual encouragement. Please click the following link for the 2011 Bridges Conference, Coimbra, Portugal that was held July 27-31 at University of Coimbra: http://www.bridgesmathart.org/bridges-2011/ If you would like to share your experiences from the 2011 Conference, please send your comments to NASGEm NEWS editor Claudette Engblom-Bradley at ebradley2008@gmail.com Our intent is to publish attendees’ comments about this conference in the Fall 2011 issue of NASGEm News.

Faculty Updates

Daniel Clark Orey has moved from Sacramento, California to Canosas, RS, Brazil.Dr. Orey requests that you do not use the old address orey@csus.edu, but instead use his new contact information:
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Milton Rosa has moved to Canosas, RS, Brazil. His new contact information is:
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New Publication

Authors: Milton Rosa and Daniel Clark Orey
Article: For a Critical Ethnomathematics Perspective: Get off the dance floor and get on the balcony!
   *ACTA SCIENTIAE* Revista de Ensino de Ciências e Matemática, Vol. 12 - Nº 2 - Jul./Dez. 2010
Abstract: In this article, the authors discuss an analogy in which ethnomathematicians need to make a change in their research paradigm; that is, to stop dancing for a moment and go up to the balcony. In this perspective, researchers and educators have to leave the dance floor and get on the balcony in order to reach other academic fields and dialogue with different cultures. Thus, they may be able to learn and understand new perspectives and theories for a more profound work in ethnomathematics. In this regard, they can acquire the capacity to analyze and positively criticize their own and others’ work on ethnomathematics.

A Final Note

We invite you to follow up with the authors on any of the articles in *NASGEm NEWS*.

We also invite you to send any articles you would like us to consider for publication in *NASGEm NEWS* to us:

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