

NASGEm News

Notices of the North American Study Group on Ethnomathematics

Volume 3, Number 2
June 2010

In this Issue:

President's Column	1
New Officers & Board Members	2
Martin Gardner Tribute	3
Ethnomathematics in Statistics	5
Math in Mayan Context	7
Mayan Math for Mayans	9
Indigenous Measurement	9
Former President's Column	10
Equity Summit II	12
Announcements	14
Minutes of Annual Meeting	14
NASGEm Member Spotlight	16
News	17
Note of Appreciation	18
Web Resources	18
Publications	20
Publication Opportunities	20

A Tribute to Martin Gardner (1914-2010)

On page 3

Note of Appreciation to Frederick "Rick" Silverman

On page 18

NASGEm Officers & Board Members

On page 2

NASGEm Spotlight

Chadd McGlone

On page 16

President's Column

By Jim Barta, NASGEm President



Summer is in full swing and I know many of us are wrapping up our teaching from the year. ICEM-4 is just around the corner and it looks to be shaping up to be a wonderful opportunity to learn and share on Ethnomathematics. I hope everyone who can attend has a fantastic experience.

As your new NASGEm president, I have been considering how I can best lead and best serve in maintaining, promoting, and expanding our organization. Due to wonderful past leadership, I do believe we are poised to break out this year. I feel such gratitude for what I have personally gained and learned from you -- the members of NASGEm. This gratitude, however, has inspired in me a sense of urgency to do more so that others seeking information, understanding, and support in their mathematical instruction may find this.

Shortly after the NCTM Annual Conference, I sent a survey asking for your input on a variety of topics related to NASGEm. I will briefly summarize what was shared and in the not too distant future wish to begin acting with your participation and support to roll up our sleeves and get the jobs done to move us in the desired direction. Here is that brief summary:

Articulating our NASGEm Mission and Vision could be centered on build and maintain a research community in Ethnomathematics as we

NASGEm Officers: (elected April 2010)

President – Jim Barta
 1st VP of Programs –
 Chadd McGlone
 2nd VP of SIGS –
 Luis Ortis-Franco
 3rd VP of Membership --
 Blidi Stemm
 4th VP of Communication &
 Outreach –
 Ron Eglash
 Secretary – Claudette
 Engblom-Bradley
 Treasurer -- Tom Gilsdorf
 At-Large Canada –
 Dawn Wiseman
 At-Large México -- vacant
 At-Large USA –
 Jenni Harding-DeKam
 NCTM Rep – Rick Silverman
 NCTM Rep Alt -- Bill Collins
 NASGEm News Editors:
 Claudette Engblom-
 Bradley
 Dawn Wiseman (On Leave)

Journal of Mathematics and Culture:

Co-Editors:
 Tod Shockey
 Rick Silverman
 Executive Associate Editor:
 Jim Barta
 Associate Editors:
 Larry Lesser
 Sue Staats

explore, research, and disseminate information about our experiences and findings in communities and cultures around the world.

New researchers can be encouraged and supported in a variety of ways. All ways suggested share the development of a relationship among people. This could involve new researchers and teachers working closely with those having more time and experience in the subject, including: collaborative curriculum and instruction development, article writing, presentations, or just dialoguing on ways to teach more effectively.

We can and should nurture classroom teachers making ethnomathematical connections in their classrooms by providing greater access to our links and information. Many teachers simply do not know of us. We can broadcast our work as we seek to publish in practitioner journals, teacher newsletters, websites, etc. We can conduct presentations during school district in-service and conferences. Perhaps we could develop an online course on Ethnomath for university credit.

Enhancing our partnerships, collegiality, leadership to other organizations providing equity and access for ALL students can be stimulated through exchanges, attending each others meetings, and having dialogue via email, phone and conferencing. We should team with a member from one of these other organizations to write, research, and present.

Website improvements may include a new, colorful, updated look. Why not stage a contest to create a logo? We need to make it a must-see spot for teachers. There had been much discussion on making a 'member – only' link for active members. The majority of respondents saw the rationale but strongly felt withholding access to knowledge and information was contrary to our focus of education for all.

Many felt that increasing membership was important. Over the years, I have seen membership fluctuate upwards to 100 and down to 20 or less. We currently stand around 30. New members increase our capacity. We gain from their experiences and opportunities and they benefit from interaction with our study group. I plan on spearheading a new membership drive in the near future.

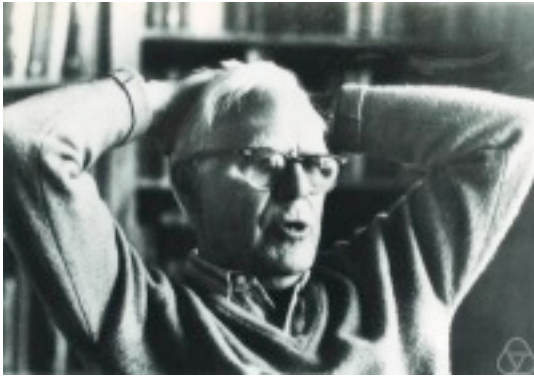
Final thoughts... I greatly appreciate all of the input provided and seek to help implement the many great suggestions received. As you read this our NASGEm Constitution is being reviewed so we can receive guidance on how to create an even more powerful and useful document. We have decided that our NASGEm fiscal year will run

**4th International
Conference on
Ethnomathematics**
(ICEM-4)
July 25-30, 2010
Towson, Maryland USA

from January 1st through December 31st each year. Elections will occur in early March during the years necessary. Memberships will last for one year from the date of the initial membership or renewal.

In closing, I hope you have a marvelous summer. Say, “YES!” when I call I upon you to lead an effort or initiative ☺ and consider writing a piece for *NASGEM News* or our awesome journal, the *Journal of Mathematics and Culture*.

Fondly, Jim Barta
NASGEM President



Mathematics, Culture, and Martin Gardner (1914-2010): A Personal Reflection

by Larry Lesser,
The University of Texas at El Paso

in tribute to the prolific writer and recreational mathematician Martin Gardner, who died May 22, 2010 at the age of 96.

As a high school student, I eagerly awaited Gardner’s “Mathematical Games” column when my dad’s next issue of *Scientific American* arrived. The two years before I became a math major, my most passionate hobby was recreational mathematics – exploring puzzles and paradoxes and connections generally not found in regular textbooks. Gardner’s writing on paradoxes helped inspire my choice of college major and, later, my math education dissertation topic of counterintuitive examples. And his long-standing interest in magic (including the invention of many mathematics-based magic tricks) influenced and is cited in a paper (Lesser & Glickman, 2009) I published just months ago on statistics and magic. Trying to write that paper reminded me of just how rare was Gardner’s gift to balance magic’s goal of concealing (to arouse wonder) and education or science’s goal of revealing (to produce understanding).

So Gardner was quite influential in modeling how (and why) to communicate the beauty, mystery, and connections of mathematics to broader audiences, but how does this specifically connect to culture? Let me count the ways...

First, his writing on recreational mathematics often included mathematical games, many of which (e.g., Tangrams) originate in a particular human culture. The topics in his columns often involved culture, such as Egyptian fractions, origami, numerology, pi in the Bible, the Tower of Hanoi, and the combinatorial basis of the *I Ching*.

Second, the expansive mindset of those who do ethnomathematics parallels the ease with which Gardner explored and connected diverse domains. His 70 books spanned not just topics in mathematics, but also in science (including debunking pseudoscience), literature (e.g., Lewis Carroll’s *Alice in Wonderland*), philosophy, and religion. During my college years of seeking answers to life’s big questions, I was profoundly

influenced by how his book *The Whys of a Philosophical Scrivener* (Gardner, 1983) articulated his beliefs with such nuance and pragmatism on truth, beauty, goodness, government, faith, etc. That book contains these two intriguing statements about culture:

“...[human beings] have a common human nature which makes it rational to believe in transcultural moral standards even though (as with standards for truth and beauty) it is not possible to know with certainty what those standards are.” (p. 86)

“It has been said that cultural relativism was strengthened by Einstein’s theory of relativity. Balderdash! Relativity theory introduced all sorts of new absolutes.... Indeed, one way of formulating general relativity is to say that it makes it possible for all observers, regardless of their frame of reference, to describe all the basic laws of the universe with exactly the same equations.” (pp. 87-88)

Finally, Gardner began writing his *Scientific American* columns without having taken a math course beyond high school (Tierney, 2009). His ability to inspire and communicate so effectively and deeply about mathematics despite having no formal mathematics training (much less a degree in mathematics) is an inspiring rebuttal to those who may deny the possibility of finding profound mathematics beyond the walls of academia in the artifacts and actions of a culture very different from ours.

NASGEm News readers may appreciate knowing that all quarter-century’s worth (1956-1981) of those *Scientific American* columns have been released as a set (Gardner, 2005). Also, one can find online interviews (e.g., Mulcahy, 2006; MAA, 2010) and videos (e.g., Suzuki, 1996) about this influential yet humble man. As they have since 1993, Gardner’s admirers will likely continue to meet every two years for the “Gathering for Gardner” conference (www.g4g4.com) that features a cornucopia of presentations by mathematicians, puzzle fans, and magicians. A better way still to honor his legacy is to cultivate more of his spirit in our own writing – to communicate with delight to nonspecialists the essence of deep and beautiful ideas in our field and a sense of how the creation of mathematics is an ongoing cultural endeavor of human beings.

REFERENCES

- Gardner, M. (1983). *The Whys of a Philosophical Scrivener*. New York: Quill.
- Gardner, M. (2005). *Martin Gardner’s Mathematical Games: The Entire Collection of his Scientific American Columns* (CD-ROM). Washington, DC: Mathematical Association of America.
- Lesser, L. M., & Glickman, Mark E. (2009). Using Magic in the Teaching of Probability and Statistics. *Model Assisted Statistics and Applications*, 4(4), 265-274. Also available online at: <http://iospress.metapress.com/content/j730w4777h667125/>.
- Mathematical Association of America (2010). Renowned Math Popularizer Martin Gardner Has Died. <http://maa.org/news/052410gardner.html>.
- Mulcahy, C. (2006). Card Colm. www.maa.org/columns/colm/cardcolm200610.html
- Suzuki, D. (1996). The Nature of Things: Martin Gardner, Mathemagician. Canadian Broadcasting Corporation. <http://Vimeo.com/7176521>.
- Tierney, J. (2009, October 19). For Decades, Puzzling People with Mathematics. *The New York Times*. http://www.nytimes.com/2009/10/20/science/20tier.html?_r=1

AN ETHNOMATHEMATICS SPIN ON STATISTICS CLASS

by Dr. Larry Lesser
The University of Texas at El Paso



pirinola photograph 2009 by Larry Lesser

Examples of ethnomathematics related to statistics class include the probability games of Native American, African, Mexican, Jewish and Hawaiian cultures (McCoy, Buckner, & Munley, 2007), distinctive connections to the concept of randomness in Native American and African cultures (Eglash, 2005), and the *quipu* developed by the 15th and 16th-century Incas to record data (Ascher & Ascher, 1981). Petocz & Sowe (2009) report that devices similar to the *quipu* are still used by people in Bolivia and Peru, various Pacific Islands, Tibet, and parts of Africa.

In the statistics literacy class (primarily for pre-service elementary/middle schoolteachers) I teach at a university serving a majority Mexican-American student body, I seek ways to incorporate ethnomathematics that honor my students' culture as I did for the high school students I've taught (Lesser, 2006). A 'top' example is the day I brought in a *pirinola* (a six-sided top, or *topa*; see above photograph) for the Mexican game *toma todo*. While some students were unfamiliar with the game, many students (primarily Latinas) were delightfully surprised that I brought in a game they had warm memories of playing with family and friends.

I let students pass the *pirinola* around as I explained the meaning of the Spanish phrase on each of its six sides:

Toma uno	Toma dos	Toma todo	Pon uno	Pon dos	Todos ponen
Take 1 chip from pot	Take 2 chips from pot	Take ALL chips from pot	Put 1 chip in pot	Put 2 chips in pot	Every player puts 2 chips in pot

I wanted to go beyond having them compare experimental frequencies to the six equally likely theoretical frequencies. Having previously demonstrated the calculation of how the expected value of one roll of a standard six-sided die was 3.5, it was an interesting followup to have students find the expected value of the payoff for the first person to spin the *pirinola*. First, students recognized that they had to know the current size of the pot (I told them to assume 10 chips) to know the outcome of spinning the face that said "toma todo". Second, students had to recognize that some outcomes were positive and some were negative -- a richer conceptual complexity. The calculation below yields 4/3 (and students can verify that the result will be positive as long as there are at least 3 chips in the pot):

$$(+1)(1/6) + (+2)(1/6) + (+10)(1/6) + (-1)(1/6) + (-2)(1/6) + (-2)(1/6)$$

Then, recalling the discussion in Lesser (2006) about whether there the first player in the game of *dreidel* has an advantage, a disadvantage or neither, I asked the students a similar question for the *pirinola*. Adapting the familiar 6x6 table for the sample space of two fair 6-sided dice (e.g., COMAP, 2009, p. 252), I gave students a blank

6x6 table where the row and column headings were the outcomes of the spins of the first and second player, respectively, and the 36 cells were payoff values for the second player. After sustained engagement, students realized when the second player's payoff values depended on the result of the first *pirinola* spin as well as the second. They also realized they needed to know what the pot would be before the second spin if the first spin was a "toma todo." I told them to assume that 4 players were playing and that each player put in 2 chips to create a new pot. Other students were overwhelmed at having 36 cells to fill in before they realized that in 5 of the 6 columns, entries would not vary. Only in the toma todo column is the second player's payoff necessarily affected by the first player's spin. Another pitfall was that some students thought each "todos ponen" column would be -8 because they were thinking of the net result for everyone rather than just for the second player.

2 nd spin⇒ ↓1 st spin	Toma uno	Toma dos	Toma todo	Pon uno	Pon dos	Todos ponen
Toma uno	1	2	9	-1	-2	-2
Toma dos	1	2	8	-1	-2	-2
Toma todo	1	2	8	-1	-2	-2
Pon uno	1	2	11	-1	-2	-2
Pon dos	1	2	12	-1	-2	-2
Todos ponen	1	2	18	-1	-2	-2

Averaging these 36 possible payoffs results in an expected value of 1.5 for the second player's spin, which is larger than the first player's ($4/3$), and therefore students found that the first player would be at a disadvantage. One student smiled and said the next time her familia got out the *pirinola*, she would make sure to take her seat in the circle where she would spin last, not first. Obtaining a non-integral expected value helped students reinforce the further connection that "expected value" is a (weighted) mean, which need not be the value we "expect" as most likely and which may not even be a value that is possible for a single outcome (Strauss & Bichler, 1988). This contrasts with, for example, an exercise to verify that the expected value of the sum of two regular dice is 7.

REFERENCES

- Ascher, M., & Ascher, R. (1981). *Code of the Quipu: A study in media, mathematics, and culture*. Ann Arbor, MI: The University of Michigan Press.
- Consortium for Mathematics and its Applications (2009). *For all practical purposes* (8th ed.). New York: W. H. Freeman.
- Eglash, R. (2005). An ethnomathematics comparison of African and Native American divination systems. Paper presented at the National Museum of Ethnology, Leiden, The Netherlands.
http://www.ccd.rpi.edu/eglash/papers/eglash_div_paper.doc
- Lesser, L. (2006). Book of numbers: Exploring Jewish mathematics and culture at a Jewish high school. *Journal of Mathematics and Culture*, 1(1), 8-31. <http://nasgem.rpi.edu/files/1466>
- McCoy, L. P., Buckner, S., & Munley, J. (2007). Probability games from diverse cultures. *Mathematics Teaching in the Middle School*, 12(7), 394-402.
- Petocz, P., & Sowe, E. (2009). Statistical diversions. *Teaching Statistics*, 31(3), 93-96.
- Strauss, S. B., & Bichler, B. (1988). The development of children's concepts of the arithmetic average. *Journal for Research in Mathematics Education*, 19(1), 64-80.



Ethnomathematics in a Mayan Context: Mathematics as Integral to Cultural Ways of Knowing in the Highlands of Chiapas, México

by Dr. Faviana Hirsch-Dubin

Mayan ethnomathematics would appear to be a natural outcome at a Mayan autonomous secondary school in Chiapas, México that devotes itself to revitalizing “language, resources and culture.” Yet it took a period of four years (from July 2000 to August 2004) for Mayan promoters (their preferred term for “teacher”) to feel comfortable with incorporating Mayan mathematics and ethnomathematics into their curriculum.

It is instructive to briefly analyze why it took four years for Mayan ethnomathematics to take root at a Mayan-centered school in Southern México. First, there was great interest in the subject of Mayan mathematics, both in its ancient and contemporary form, yet few resources to accompany that interest. Second, Mayan promoters had been educated in Mexican government schools, whose version of history began with the Spanish Conquest of México, thereby leaving out the entire history of Mayan and other great Pre-Columbian indigenous civilizations. Third, no one at the school was familiar with the concept or argument for ethnomathematics, which became one of my central goals. Fourth, the Mayan promoters, and other members of the educational community, operate according to their own time and rhythm in which they take in ideas, discuss them at length in their own language (in this case, *Tzotzil*), in order to decide whether to make them their own. If one were to attempt to rush or control this process, it would surely lead to failure. Instead, respect for the sovereignty or autonomy of this Mayan community allowed the process to grow and take root.

Once I understood the cultural and political parameters of our work together, my task became one of bringing resources in Spanish to the school on the history of ancient Mayan mathematics, astronomy, calendrics, architecture and more. As evidenced by the study of Mayan mathematics, it could not be separated from the contexts in which it arose and which were integral to its development, like the counting of time, or astronomical calculations. In addition to setting a historical context for Mayan ways of perceiving and practicing mathematics, we worked together to surface Mayan ethnomathematics practices that continue today, surviving more than 500 years through the nurturance of Mayan peoples in communities like this one in the state of Chiapas. It enriched our discussions tremendously to have promoters describe ways that base twenty is still utilized in the community, from the creation of cornfields (*milpas* that are 20x20, using twenty walking steps for each side) to the intricate process of creating utilitarian bags from maguey fiber (also utilizing base 20—see upcoming article in *Journal of Mathematics and Culture* for a longer discussion of this practice). These practices were shown to have even greater value when placed in the context of other indigenous peoples, from Brazil to Mozambique, who were also rescuing traditional ways of doing mathematics that had flourished in their communities for hundreds of years prior to colonial powers defining what counted as mathematics or science.

It was exciting to realize, after watching this Mayan-defined process follow its own path, that the promoters and the school were ready to adopt a mathematics curriculum that incorporated the advanced mathematical and scientific achievements of the ancient Maya, as well as contemporary practices used in the communities that reflect a continuum of Mayan ethnomathematics. When I return to the school each summer, as I have since 2004, promoters have enriched this curriculum with input from Mayan elders in neighboring communities and are eager to explore new ideas and investigations to strengthen the dynamic Mayan side of their mathematics teaching and learning.



MAYAN MATHEMATICS FOR MAYANS

Supported by the NASGEM Equity Fund

by Rick Silverman

NASGEM supported the project, which we have called “Mayan Mathematics for Mayans,” directed by Dr. Faviana (aka Phoebe) Hirsch-Dubin. It reflects input and guidance from leaders of the Mayan autonomous educational communities in Chiapas. This project is designed to advance mathematics education among students in Chiapas, México, using ethnomathematical processes reflective of the culture and heritage of Mayan peoples. It honors their history and language, as well as ethnomathematics processes that, like the Mayan languages, are alive and vibrant today, contrary to stereotypical perceptions. Thanks to their generosity, NASGEM members and friends raised \$500.00 in support of the project, and those who donated at least \$25.00 will be receiving Booklet 3 in the series of booklets that Faviana has developed. The opportunity to contribute has now concluded. I extend thanks to NASGEM’s Treasurer, Tom Gilsdorf, for handling the financial particulars and thanks, as well, to our sister organization, TODOS, for enabling us to use TODOS’ link to credit card and PayPal means by which to make donations. TODOS leaders especially instrumental in the assistance NASGEM received are Bob McDonald, Jose Franco, and Miriam Leiva.

Measurement Strategies of North American Indians

by Rich Sgarlotti
Hannahville Indian School
Hannahville, Michigan

Rich Sgarlotti is projects coordinator and former mathematics teacher at the Hannahville Indian School in Michigan; and contributor/editor of “Creating a Sacred Place for Students in Mathematics, published by the National Indian School Boards Association. As a member of NASGEM, he is currently doing research on mathematics used by North American Indians related to the concept of measurement. Sgarlotti will present the research at the Special Interest Groups (SIG) session at the national meeting of the National Council of Teachers of Mathematics, and will also produce one or more mathematics units that will be made available to teachers at no charge.

Sgarlotti is currently working with several fluent speakers from various language groups, and is looking for others who may be willing to help. The research is specifically looking for precise terms from Native language, and literal translations of those terms from before and after European contact. It will also include examples of terms in daily use, including standard or non-standard measurement. For example, measurement for construction of the traditional Creek homes known as a “chickees,” used the *po-cus-wv e-mv-pe* (pronounced *ba-giz-u-ah e-mobi*) which when translated from the Mikasuki language means the “length of an axe handle” (source: Jim Barta’s paper “Mathematical Thought and Application in Traditional Seminole Culture”, originally published in the June 1996 *ISGEM Newsletter*).

Listed below are some of the concepts in mathematics related to measurement:

- Length, (distance) one dimension – such as inches, feet, miles
- Area, two dimensions – square inches, acres, etc.
- Volume, dry measure – cubic measure - pecks, bushels, etc.
- Volume, liquid – cubic measure - cups, pints, quarts, gallons, etc.
- Mass or weight - pounds
- Position or place – in terms of numbers
- Direction – cardinal directions
- Time – when; and time elapsed, seconds, minutes, hours and other short times; days, weeks, months and other medium lengths of time; years, decades, centuries, and longer times.
- Angles – perpendicular, parallel

To request or submit information on the project, please contact Sgarlotti at:

rich.sgarlotti@hannahvilleschool.net

Former NASGEM President's Report

by Frederick L. "Rick" Silverman

March 2010

NASGEM is coming to the end of another year in the cycle that runs from Annual Meeting to Annual Meeting. I have examined the Constitution and noticed that for a number of years, NASGEM has followed this cycle, but according to the Constitution we should be following a membership cycle that begins January 1 and ends on December 31 of the same calendar year of each succeeding year. We will address this matter at the Annual Meeting in April in conjunction with the NCSM and NCTM Meetings.

A matter that requires a constitutional/by-laws change is the creation of the following office: Vice President for Communications and Outreach. I established that office ad hoc with the approval of Executive Board during 2009, and I appointed Dr. Ron Eglash to fill that position, again with the approval of the Executive Board. Given the need for maintaining NASGEM's presence on the Internet with a substantive website, Dr. Eglash has applied his expertise over many years to accomplish that goal. This new vice presidency will assure that the NASGEM presence on the web will continue. It is an office that requires the expertise that Dr. Eglash possesses, and I urge that we approve the new office and elect him to fill it.

Constitutional/by-laws changes require announcement at an Annual meeting and then a vote at a subsequent meeting. Hence, we will hold two meetings in San Diego, one immediately succeeding the other. In that way, we, if the members assembled approve, will establish the Vice President for Communication and Outreach and will fill that position. Dr. Ron Eglash is a candidate for election to that position.

I attended the Second Mathematics Education Equity Summit held February 2009 at the NCTM Headquarters in Reston, VA. Representatives of the following organizations were present: NASGEM, NCTM, TODOS, NCSM, AMTE, WME, and BBA. A report on this Summit appears on p. 12 of this issue of *NASGEM News*.

NASGEM seeded the upcoming ICEM-4 (International Congress on Ethnomathematics), providing about \$700 to cover start-up expenses. Larry Shirley, Past President of NASGEM, Towson University Professor and attendee/presenter at previous ICEMs, is the organizer and director of this Fourth Congress, which is scheduled for July 25 - 30, 2010, at Towson University, Towson, MD, just outside of Baltimore, MD. More information on ICEM-4 is on page 17 of this issue of *NASGEM News*. Please plan to attend this first-ever meeting of the Congress in North America.

NASGEM initiated a campaign to support a project by Faviana Hirsch-Dubin, Mayan Mathematics for Myans. For a number of years, Faviana has been working with teachers, administrators, and students in Mexico's Chiapas State to foster mathematics education in the cultural context of their Mayan heritage. The project has thus far produced two small books consistent with her goal. The books are printed in Spanish and in Tzotzil, a Mayan language of the people of Chiapas, and have gorgeous color illustrations. NASGEM is campaigning for \$1,000.00 to enable Faviana to complete the Project with a third book in the series. Each donor of \$25.00 or more will receive a copy of the Book Three.

The *Journal of Mathematics and Culture* is thriving. The most recent issue, Volume 4, Number 1, is available at: <http://nasgem.rpi.edu/pl/journal-mathematics-culture-volume-3-number-2>. The Journal accepts manuscripts continually and encourages authors to submit them at any time. Please send submissions to Co-Editor Tod Shockey at jmcsubmission@gmail.com.

Elections for all NASGEM offices are underway. Members of the Election Committee are Bill Collins, Chair, Jenni Harding-DeKam, and Richard Sgarlotti. Our thanks to them for serving on this Committee. Please respond when you hear from the Election Committee.

I would like to thank all members of the NASGEM Board for their service during my years as President. They are Jim Barta - First Vice President, Luis Ortiz-Franco - Second Vice President, Blidi Stem - Third Vice President, Ron Eglash - 4th Vice President, Thomas Gilsdorf - Treasurer, Claudette Engblom-Bradley - Secretary, Dawn Wiseman - Canada At-Large, Swapna Mukhopadaya - USA At-Large, and Bill Collins - Immediate Past President. Jim has been readily and easily available for all manner of counsel on all manner of issues, Luis has provided guidance on constitutional and by-laws matters, Blidi had been very active in leading membership efforts, Ron has overseen NASGEM's outreach and communication, Claudette has been meticulous in taking the minutes and sharing them with the membership, Dawn and Swapna have been available to give input on issues affecting the Organization, and Bill Collins has provided guidance based on his considerable experience with NASGEM and with interfacing with NCTM.

In addition, I want to thank the editorial leadership team for *Journal of Mathematics and Culture*: Tod Shockey - Co-Editor, Jim Barta - Senior Associate Editor, Larry Lesser - Associate Editor, and Sue Staats - Associate Editor. These editors make the *JMC* run smoothly and assume prominence in the field of scholarship. Finally, I thank Kay Gilland for her leadership at NASGEM's Equity Chair. Her role has been essential in advocating for Equity within our organization and in the community of Equity Organizations in Mathematics Education.

It has been my honor and pleasure to hold the Office of President for four years, and I look forward to serving NASGEM in the years to follow.

Sincerely,
Fredrick L. "Rick" Silverman, President

Report on the Mathematics Education Equity Summit II

By
 Fredrick L. “Rick” Silverman,
 Former NASGEM President
 Participant in Equity Summits I and II
 Professor at University of Northern Colorado



The Second Mathematics Education Equity Summit occurred at NCTM Headquarters February 23–24, 2009. Participants and associated organizations were:

National Council of Teachers of Mathematics:

Henry Kepner, President; **Michael Shaughnessy President-Elect**; Jim Rubillo, Executive Director; Dave Shayka, Associate Executive Director and Equity Team Leader; Don Balka, Director, Equity Team, and Summit II Facilitator; Christine Thomas, Director and Equity Team; Karen Karp; Director and Equity Team

National Council of Supervisors of Mathematics:

Tim Kanold, President; Diane Briars, President-Elect; Terri Belcher, Exec. Director

Association of Mathematics Teacher Educators:

Jenny Bay-Williams, Equity Task Force; Rochelle Gutiérrez, Equity Task Force

Women and Mathematics Education

Judith Jacobs; Marilyn Evans

Benjamin Banneker Association

Jacqueline Leonard, President-Elect

North American Study Group on Ethnomathematics

Rick Silverman

TODOS: Mathematics for ALL

Nora Ramirez, President; Jose Franco, President-Elect

Testifying to NCTM’s commitment to equity in mathematics education is the fact that seven members of the Organization, including current President Hank Kepner and President-Elect Mike Shaughnessy, were present at all the sessions. Hank welcomed everyone, shared briefly the outcomes from Equity Summit I (which occurred in February 2008) and pointed toward some types

of actions that might emerge from Equity Summit II. Don Balka very capably and with good humor facilitated all meetings.

The agenda provided time for representatives to describe their organizations' ways of addressing equity in mathematics education. NCSM's representatives -Tim, Diane, and Terri – cited the following for our Organization: NCSM web presence, *NCSM Newsletter* articles, Regional and Annual Conferences with Equity sessions, development and availability of an Equity Tool Kit, professional development for Board Members, Mathematics Education Trust Fund Equity grants, and publication and distribution of the *PRIME Leadership Framework*.

Participants agreed that collaboration to advocate for equity in mathematics education is a worthwhile endeavor, consistent with the intent of all the organizations at the table. Out of this Equity Summit II came the formation of the *Coalition for Equity and Excellence in Mathematics Education*, whose acronym is CEEME. Following is the mission statement for CEEME that participants drafted and agreed to present to their respective governing boards: The CEEME is a consortium of national organizations that advances knowledge and takes actions that result in equitable practices and equal opportunities in PreK-16 mathematics education.

Participants drafted two vision statements, same meanings but somewhat different phrasing, one of which appears below, and agreed to present them to their governing boards.

To achieve our mission, CEEME will:

C – Collaborate with member organizations and broader education stakeholders to advocate for practices and policies that ensure that all students participate in high quality mathematics

E- Exchange resources among member organizations that further the equity mission and vision of each member organization as well the coalition as a whole

E- Educate teachers, teacher educators, school leaders, policy makers, families, and community stakeholders about issues and effective practices critical to obtaining equitable mathematic preparation for all

M- Make explicit the research that shows the increased success of specific groups of learners of mathematics

E - Extend national dialog to address the disparities and specific needs of underrepresented groups in mathematics education

Governing boards of each participating organization agreed to the rationale and vision statements with minor modification. An action step the organization took following the first Equity Summit was to collaborate on a series of articles on Equity and Mathematics Education that appeared in the Equity Column in the *NCTM News Bulletin*, in the academic year 2008 – 2009. Those articles are available at <http://www.nctm.org/news/content.aspx?id=15971> . Further steps to advance equity in mathematics education are underway within each organization and in collaboration among the various organizations. NCTM will host a website of information related to CEEME, and it is currently under construction. CEEME invites you to share your wishes for access and equity in mathematics education.

Announcements

Ron Eglash, Associate Professor of Science and Technological Studies at Rensselaer Polytechnic Institute (RPI), has received a 5 year \$2.9M National Science Foundation (NSF) grant in Community Situated Research. This project will create “Civic Scientists” in low-income communities who will solve community problems using new methods for “directing cutting-edge research.”

To learn more, explore this website:

www.sts.rpi.edu/pl/sts-news/ron-eglash-sts-awarded-5-year-29m-nsf-research-grant-community-situated-research

New NASGEm Officer -- Ron Eglash of Rensselaer Polytechnic Institute (RPI) to the position NASGEm Vice President for Communication and External Relations.

Science magazine article on NASGEm – NASGEm was featured in a June 2010 issue of *Science*, the magazine of the AAAS (American Association for the Advancement of Science). It is a small mention, but the organization is respected and its magazine has good distribution. Readers of *NASGEm News* who have access to personal or institutional AAAS memberships can download a PDF form of this article at <http://www.sciencemag.org/cgi/content/full/325/5945/1187-a> (Click “Science Magazine” in upper left hand part of web page).

Alaska Math-Science conference was held at Juneau Douglas High School in Juneau, Alaska in October 2009. There were several presentations of ethnomath and ethnosience regarding Alaskan Natives.

- a. Jerry Lipka was selling his collection of math/Yup'ik culture books.
- b. Ray Barnhardt's presentation covered ethnosience in summer camps and science fairs.
- c. Claudette Engblom-Bradley's presentation connected the math standards to Alaska Native cultural math endeavors.

Minutes from the 2010 NASGEm Annual Meeting

San Diego, California

April 22, 2010

Members Present: Fredrick Silverman, Blidi Stemn, Nirmala Naresh, James Barta, Luis Ortiz-Franco, Richard Sgarlotti.

Rick Silverman announced the formation of the 4th Vice President position and announced that Ron Eglash was appointed by the president and then elected to the position.

Motion: Chadd McGlone moved that we accept the 2009 minutes with corrections. Seconded by Jim Barta. Approved unanimously.

Reports

Treasurer's Report – Jim Barta, for Tom Gilsdorf, provided the treasurer's report. Active memberships dropped by 30% and are now at 21 members. NASGEM currently has a balance of \$3123.25.

President's Report – Rick Silverman provided a written president's report. Rick emphasized that despite its small size, NASGEM has an influence on mathematics education, especially with regard to equity.

Other Business

Mayan Project: Rick Sgarlotti suggested that the President make an appeal to TODOS support the Mayan Project. Rick Silverman proposed other organizations. Rick Silverman suggested that we craft guidelines for future projects.

Motion: Luis Ortiz-Franco moves that we do not engage in funding of proposals in ethnomathematics. Seconded by Jim Barta. Approved unanimously.

Journal of Mathematics and Culture: Journal is accepting manuscripts throughout the year and has had several submitted. The journal is an open access journal.

NASGEM News: Rick Silverman reports that the *NASGEM News* is currently delayed. It was due in November but will be published soon. Claudette Engblom-Bradley will work on publishing it after May 15th

ICEM-4: Rick Silverman announced the 4th meeting of the International Congress on Ethnomathematics is being held in Towson, MD. Proposals should be sent to Tod Shockey.

Outcome of Elections: Rick Silverman provided the outcome of the elections. Bill Collins chaired the election committee. Rick Sgarlotti reported that the elections were held online for the first time. Rick Silverman thanked the elections committee for their hard work.

Constitution and Bi-laws review: Rick Silverman reported that the constitution and by-laws contain some inconsistencies.

Motion: Luis Ortiz-Franco moved that NASGEM review the constitution and bi-laws and provided suggested revisions not later than the 2011 meeting. Seconded by Jim Barta. Approved unanimously.

Luis Ortiz-Franco moved that NASGEM review the constitution and by-laws and provided suggested revisions not later than the 2011 meeting. Seconded by Jim Barta. Approved unanimously.

Acknowledgment of Presidential Service of Fredrick Silverman: Jim Barta formally thanked Rick Silverman for his years of tremendous service as the president of NASGEM.

Motion: Rick Silverman moved that the meeting be adjourned. Seconded by Chadd McGlone. Approved unanimously.

Second Meeting with New President:

Call to order: President, Jim Barta, calls meeting to order.

Motion: Chadd McGlone moved that Ron Eglash fill the position of 4th Vice President (Communication and External Relations). Seconded by Jim Barta. Approved unanimously.

Motion: Jim Barta moved that the meeting be adjourned. Seconded by Chadd McGlone. Approved unanimously.

NASGEM SPOTLIGHT



Chadd McGlone is the type of teacher everyone wishes they could have. This is the sentiment of many of those who know him. Chadd earned his doctorate at the University of North Carolina at Chapel Hill while mentored by Carol Malloy.

Currently, Chadd teaches at the Trinity School of Durham and Chapel Hill in Durham, North Carolina where he has been a driving force in initiating a number of educational efforts in ethnomathematics.

Chadd conducts workshops on ethnomathematics for his school and others schools in his district, is an active scholar, and a productive presenter at local and national mathematics conferences. Chadd also was recently elected as NASGEM Vice-President.

When asked what he considered to Chadd's greatest contributions to NASGEM, Jim Barta stated, "Chadd is a vision for the future! He is bright and energetic and typically thinks 'outside of the box'. He demonstrates that a focus on ethnomathematics can serve as a foundation for math instruction. He additionally provides leadership in the field to others as he freely shares his knowledge and experiences. One project he is pursuing is contacting the "Pennies of Peace" organization where school children collect and donate pennies to build schools in poverty-stricken, rural locations through the world. Chadd's idea is to work with the organization to create an ethnomathematical curriculum for our public schools to align with the service project. As children save and contribute, they could also learn how the children in these communities learn mathematics and how culture influences the math in their communities."



Rick Silverman, Jenni Harding-DeKam, Jim Barta in DC, 2009

News

in

the NASGEM Community

Fourth International Conference on Ethnomathematics (**ICEM-4**)—July 25-30, 2010—Towson, Maryland USA

- The Fourth International Conference on Ethnomathematics will be held July 25-30 at Towson University, near Baltimore, Maryland. ISGEM and NASGEM are the institutional hosts. Ubi D'Ambrosio will present the opening plenary address.
- The previous three ICEMs were in Spain, Brazil, and New Zealand, and now it comes to its fourth continent—convenient for North Americans! (but of course, world-wide ethnomathematicians are all encouraged to come!)
- The conference will include scholarly presentations, cultural features, excursions, lunches, etc. and a day-tour to the National Museum of the American Indian in Washington DC. Inexpensive accommodations will be offered in university residence halls; also, there are hotels nearby holding rooms for the conference participants.

There is a website for the conference at <http://icem-4.org>.

Contact Lawrence Shirley at LShirley@towson.edu if you have questions.

Note of Appreciation

For Frederick "Rick" Silverman

June 16, 2010

On behalf of the our readers and NASGEm members we offer our most sincere appreciation and gratitude to Immediate Past President Fredrick "Rick" Silverman, for his dedication and leadership, in developing the North American Study Group of Ethnomathematics into the robust research community it has become.

During Professor Silverman's presidency (2006 – 2010), NASGEm has acquired a new website, inaugurated a newsletter, and a professional research journal, established partnerships (with TODOS, Benjamin Bannecker Association, NCTM, NCSM, and ICME) and established yearly NASGEm panel presentations at NCTM and NSCM. As a result, our membership has increased and our visibility has heightened among education researchers both nationally and internationally. Dr. Silverman has encouraged members to share their research in the *Journal of Mathematics and Culture*, NCTM and NCSM presentations, NASGEm meetings, *NASGEm NEWS* and to network in the NASGEm community including our partnership organizations.

Thank you Rick Silverman for your outstanding leadership as President (2006 – 2010) of NASGEm.

Yours respectfully,

James Barta, President

Claudette Engblom-Bradley, Secretary



Claudette Engblom-Bradley navigating in Paxton, Alaska

Web Resources

Science/Math Website for Spanish Speaking Families -- You probably already know about this site: <http://www.cientec.or.cr> and its director, Alejandra León. It has wonderful science and math for Spanish speaking families. León writes: "I am so excited, I wanted to share this with you."

Bingo Estelar Software --The Bingo Estelar (Stellar Bingo) is available to download from the web, besides its distribution through the cereal boxes in four countries. You can find it here: <http://www.cientec.or.cr/mhonarc/boletincientec/doc/msg00804.shtml> Of course, we have also had some MATH campaigns on the cereal boxes and will do it again in the future.

African Fractals at http://www.csdt.rpi.edu/african/African_Fractals/

Central America -- Galarie Nica: The people Nicoya are indigenous to Central America. The following sites feature work by artists: Gregorio Bracamonte, Helio Guterrez, Miguel Maldonado, Juan Boza, Luis Enrique Guterrez, and Gabriel Shaffer. Here is a link to the website for the above artists, their gallery located in Nicaragua: <http://www.gallerynica.com>

Gallery in Costa Rica:

http://www.galerianamu.com/art/folk_art/mixed_media/jorg_engestermann/4123C_Painted_Nicoya_beach_stone_large.php

Americas First Graffiti: Since it was the real shove that started slavery (discovery of gold) the slaves were primarily the artists that constructed much of the city. In so doing one notices an unusual amount of spirals (<http://www.csus.edu/indiv/o/oreyd/trilha/spirals.htm>). What we found is that the spirals are a symbol for liberty and freedom. It may be the first example of graffiti with a message in the Americas.

Politics of Hybrid Identity: Yes, while it is perhaps too optimistic to say “without losing their own cultural characteristics” (surely where there is colonialism there is loss) there has been a lot of really important work done on the politics of hybrid identity in the field of cultural studies, and much of it has a positive valence. For example:

Chela Sandoval’s work: <http://www.stumptuous.com/comps/sandoval.html>

Gloria Anzaldua’s work: http://en.wikipedia.org/wiki/Gloria_E._Anzald%C3%BAa

Intersectionality: <http://en.wikipedia.org/wiki/Intersectionality>

Brazil Research and Study Group on Ethnomathematics: I am sending the link for the Grupo de Estudos e Pesquisa em Etnomatemática - FEUSP, Research and Study Group on Ethnomathematics from the Education Department at University of Sao Paulo (Sao Paulo University) in Brazil. The page is Portuguese. <http://etnomatematicagepem.ning.com>

Independent professional update on numeracy and functional mathematics:

- Numeracy Briefing supports teachers of Numeracy and math courses for adults: Functional skills, Financial literacy, and employability skills.
- Math skills for learners on other courses: Key features, News and analysis, Examples of good practice and current initiatives, Reports on research, Implications of policy and government strategy, Reviews and resources.
- Value Numeracy Briefing publishes 3 information-packed issues a year. We have held our subscription rate at only £61 pa for the second year.
- Download a sample issue and find out how to subscribe at: <http://www.basicsskillsbulletin.co.uk/numeracy>

Publications

Paulus Gerdes' book, *Geometry and Basketry of the Bora in the Peruvian Amazon* (170 pp.) The English language version has now been published together with a supplement (36 pp.). The supplement contains images in colour of the photographs included in black-and-white in the book itself. Book and supplement are available in print and as download from Lulu: <http://stores.lulu.com/pgerdes>
The book was originally published in Portuguese (also available from Lulu).

Paulus Gerdes' book, *African Pythagoras: A study in culture and mathematics education* (originally published in Portuguese in 1992 and in English in 1994) is now also available in Italian: "Pitagora africano: Uno studio di cultura ed educazione matematica" (Lampi di stampa, Milan, 2009, 115 pp., ISBN 978-88-488-0755-5) (email: lampidistampa@lapidistampa.it, webpage: www.lapidistampa.it) Emanuele Vinassa de Regny, professor emeritus of the University of Pisa, translated the book from Portuguese into Italian. Also in Italian was published my book "Disegni africani dall'Angola: per vivere la matematica" (Lulu, 2008, <http://stores.lulu.com/pgerdes>)

Book Chapter – Claudette Engblom-Bradley of Alaska Pacific University published the book chapter "Seeing Mathematics with Indian Eyes" in *Alaska Native Reader*, edited by Maria Williams, published by Duke University Press in 2009. Available at Amazon.com.

Publication Opportunities

Journal of Mathematics and Culture (JMC). The following link will take you directly to the Journal: <http://nasgem.rpi.edu/pl/journal-mathematics-culture-s37>. Directions for submitting articles are available at: <http://nasgem.rpi.edu/pl/submission-guidelines>

Teaching for Excellence and Equity in Mathematics (TEEM). Consider submitting a paper (anytime, but especially during the preferred submission windows of April or November) or signing up to be a reviewer (of 1-2 papers/year) for the new journal *Teaching for Excellence and Equity in Mathematics* (TEEM). This national refereed journal is sponsored by the NCTM affiliate organization TODOS, whose mission is "to advocate for an equitable and high quality mathematics education for all students -- in particular, Hispanic/Latino students -- by increasing the equity awareness of educators and their ability to foster students' proficiency in rigorous and coherent mathematics." For more information about *TEEM*, see: <http://www.math.utep.edu/Faculty/lessner/TEEM.html>.