

NOTICIAS de TODOS TODOS Newsletter: Mathematics for ALL Winter 2015/16, Volume 11, Number 2

Publication funding provided by Pearson Education

See TODOS on line

www.todos-math.org



http://www.facebook.com/todosmath



<u>(a)todosmath</u>



Sounding off on Stereotypes

By Larry Lesser, <u>Lesser@utep.edu</u> Professor in the Mathematical Sciences Department The University of Texas at El Paso and a founding editor of *Teaching for Excellence and Equity in Mathematics* (TEEM)

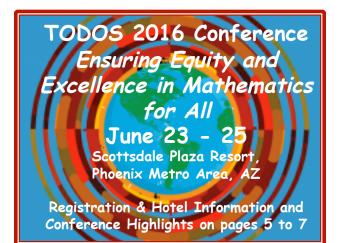
Lesser (2014a, p. 568) states: "Stereotypes are encountered in many contexts in society and are often reflected in the humor of a community." Could stereotype-based jokes or comments we make in our schools have a negative (even if unintentional) impact on our students?

After presenting an invited workshop on equity at the 2013 NCTM Interactive Institute for High School Mathematics, I browsed the NCTM bookstore booth. Having interest in using content-related fun to humanize and improve learning in the classroom (e.g., Lesser et al., 2013; Lesser 2014b), I bought a new book (Vennebush, 2012) of math jokes. While reading it back home, I had a nagging feeling that the jokes were unduly (and avoidably) reinforcing negative stereotypes (especially for gender) in mathematics.

To test my gut feeling, I did a count and saw that neutral words referring to an authority figure or a professional (e.g., statistician, mathematician, engineer, etc.) were revealed by subsequent pronoun usage to correspond to males five times more often than to females. Such disparities undermine the message of equity and opportunity for which NCTM and TODOS stand. For what it's worth, a much older collection of math jokes (Azzolino, Silvey, & Hughes, 1978) actually has the much better ratio of 2:1.

Other jokes were problematic for other reasons –e.g., focusing on females' appearance or attractiveness or implicitly accepting the not uncommon notion in popular culture that mathematics is an intimidating, boring, or useless gatekeeper.

Mark Your Calendars!



Winter 2015/16, Volume 11, Number 2

In this issue:

- Sounding of on Stereotypes, p. 1
- News from the President, p. 2
- TODOS 2015 Iris Carl Equity and Leadership Award, p. 3
- Carol Edwards Retires as Executive Secretary, p. 4
- Call for Nominations for the TODOS 2016 Iris Carl Equity and Leadership Award, p. 4
- TODOS 2016 Conference, Information and Highlights, p. 5-7
- · "I Will Survive," p. 7
- TODOS Student Award at CMC-S, p. 8
- Newsletter Editors and Contributors, p. 8

TODOS Mission Statement

The mission of *TODOS: Mathematics for ALL* is to advocate for equity and high quality mathematics education for all students—in particular, Latina/o students.

Lesser, continued

The bigger point, of course, goes beyond joke books, dolls (Leggett, 1992), songs (Oldenburg 1999), or tshirts (McCaughey, 2011). I started reflecting more generally about how subtle and pervasive stereotypes are and how real their damage is, and this inspired me to write my first op-ed, a *Mathematics Teacher* Sound Off column (Lesser 2014a). Space limitations allow me to summarize and supplement, but not reproduce that piece, so I personally invite you to read the full piece, discuss with your co-workers, and share your reactions.

Most of the research I cite in that piece details the effect of stereotypes on students' attitude and performance, but stereotypes also affect how students are taught. For example, Chval and Pinnow (2010) report (in the most-cited paper to date in our TODOS journal Teaching for Excellence and Equity in *Mathematics*) how pre-service elementary teachers' misconceptions or stereotypes affected how they would teach mathematics differently to English language learners who emigrated from China compared with those who emigrated from Central America. Chval and Pinnow also note that Good (1987) documented how "differential expectations... would lead to differential treatment in the classroom in terms of grouping practices, locus of responsibility for learning, feedback and evaluation practices, motivational strategies, public display of thinking, and cognitive demand of tasks posed to students" (p. 10). Such inequities are clearly not consistent with the equitable, rigorous, and high quality mathematics education TODOS calls for at

http://www.todos-math.org/mission-goals. Other examples of stereotyping and misconceptions are more subtle and I believe most instructors (including myself) have at some point committed some version of at least one of the verbal slights or false assumptions detailed by Su (2015). I highly recommend that you read that column and his follow up column in the December 2015/January 2016 issue of that periodical. And if students – e.g., the viral letter by Mauldin (2015) – are pointing out the bias and stereotypes still found in mathematical disciplines, then shouldn't we teachers reflect if we are doing everything we can to counteract those stereotypes?

In Lesser (2014a), I share several responses, resources, and recommendations – including the need to cultivate empathy for our diverse students (e.g., Lesser, 2015) and cultivate awareness of the pitfalls of stereotyping. News From the President

by Susie W. Håkansson shakans@g.ucla.edu

In the first months of the 2015-16 school year, many of you have implemented new strategies and activities learned from and motivated by summer workshops, conferences, institutes, and other types of professional



development that focused on equity and excellence in mathematics.

Some brought innovations into K-12 classroom while others are bringing these ideas to postsecondary classrooms with pre-service teachers in both content and methods courses. We all need to think about how we and teachers can provide access to high cognitive demanding mathematics tasks to all students.

We are ready to begin a new year in which we will have the **2016 TODOS Conference** with the theme: *Encouraging Equity and Excellence in Mathematics for ALL*. A variety of sessions in this conference will provide exemplary ideas and forums for discussion for you to further your goals. In addition, you will gain the most from networking among the attendees with interaction of ideas flowing freely. This has been one of the main achievements of our first TODOS conference, in 2014.

Beginning this year TODOS would like to focus on retention of members. Many of you have found TODOS to be beneficial in supporting your efforts to promote equity and excellence in mathematics. What encouragement can you give to new members to take advantage of what TODOS has to offer? If you have recently joined TODOS, what would you like to see in terms of resources? Are you interested in taking a more active role in TODOS? We are an all-volunteer organization and draw upon the expertise of its members. What expertise would you like to contribute? How can TODOS retain more of its members?

This is an exciting time of the year, with election of officers (two Directors) and nominations for the Iris M. Carl Equity and Leadership Award. You can find information on both the elections and the Iris M. Carl award on the TODOS website.

Have a fulfilling and productive new year 2016!

Hope to see you at a local, regional, or national mathematics conferences.

Susie W. Håkansson

Lesser, continued on page 3

Lesser, continued

I also call for greater awareness of how mathematics itself can be a vehicle to teach concepts of tolerance (e.g., Lesser, 2007) by confronting student tendency to overgeneralize (mathematically or otherwise) and that statistics itself can be a tool to uncover possible instances of bias (e.g., using randomized response, list experiments, etc.) or inequity.

And I also give examples how the habits of mind called for in documents such as the Common Core might be leveraged to appropriately disrupt stereotypes. I invite you to share the inspiring profiles of women and minorities in our field (e.g., http://ggstem.wordpress.com or http://bio.sacnas.org/biography/),

assess your own possible biases (e.g.,

https://implicit.harvard.edu/implicit/education.html), and to learn strategies from

http://reducingstereotypethreat.org/reduce.html.

REFERENCES

- Azzolino, A. A., Silvey, L. S., & Hughes, B. H. (1978). Mathematics and humor. Reston, VA: National Council of Teachers of Mathematics.
- Chval, K. B., & Pinnow, R. J. (2010). Pre-service teachers' assumptions about Latino/a English language learners in mathematics. Teaching for Excellence and Equity in Mathematics, 2(1), 6-13. Good, T. L. (1987). Two decades of research on teacher
- expectations: Findings and future directions. Journal of *Teacher Education*, 38(4), 32-47.
- Leggett, A. (November/December 1992). Barbie. Association for Women in Mathematics Newsletter, 22(6), 12. http://www.drivehq.com/folder/p8755087.aspx
- Lesser, L. (2007). Using 'objects' to object to objectification. *Teaching Tolerance*, no. 32, p. 15. Also at http://www.tolerance.org/exchange/using-objects-objectobjectification
- Lesser, L. M.; Wall, A.; Carver, R.; Pearl, D. K.; Martin, N.; Kuiper, S.; Posner, M. A.; Erickson, P.;
- Liao, S. M.; Albert, J.; Weber, J. J. (2013). Using fun in the statistics classroom: An exploratory study of college instructors' hesitations and motivations. Journal of Statistics Education, 21(1), 1-33.
- http://www.amstat.org/publications/jse/v21n1/lesser.pdf Lesser, L. (2014a). Staring down stereotypes. *Mathematics Teacher*, 107(8), 568-571.
- Lesser, L. (2014b). Mathematical lyrics: Noteworthy endeavours in education. Journal of Mathematics and the Arts, 8(1-2), 46-53.
- Lesser, L. (2015). Learning language: A mathematics educator's reflection on empathy and privilege. Teaching for *Excellence and Equity in Mathematics, 6*(1), 25-32.
- Mauldin, J. (2015, October 5). Letter to the Editor: STEM. The Easterner. http://easterneronline.com/36007/letters-tothe-editor/letter-to-the-editor-stem/
- McCaughey, M. (November/December 2011). "I'm too smart to wear that t-shirt." Association for Women in Mathematics Newsletter, 41(6), 14-15 http://www.driveha.com/folder/p8755087.aspx
- Oldenburg, A. (1999, May 19). Math teachers flunk Buffett tune. USA Today, p. 2D.
- Su, F. E. (2015). Mathematical microaggressions. MAA Focus, 35(5), 36-37 http://www.maa.org/sites/default/files/pdf/MAAFocus/

FOCUS OctoberNovember_2015.pdf

Vennebush, G. P. (2012). Math jokes 4 mathy folks. Bandon, OR: Robert D. Reed Publishers.

2015 Iris M. Carl Equity and

Leadership Award

As it has been announced in the Summer 2015 issue of Noticias (available on the TODOS



website), the 2015 award was announced at the 2015 TODOS business meeting on April 15, in Boston MA, to Dr. Gill Cuevas. Following is the complete text of the announcement that was read by Carol Edwards.

Our awardee already stated 30 years ago that "the language used to convey mathematical ideas to students has become a topic of increased concern to mathematics educators ... " He also stated that "an inadequate grasp of the language of instruction is a major source of underachieving in schools."



In the decades that followed, our awardee has participated at all levels of mathematics education with the focus on teaching mathematics to English Language Learners, cultural and *linguistic issues, and the appropriate* pedagogy to teach this student population.

He has collaborated with many researchers and mathematics educators,

including colleagues in Australia, Mexico and Central America, advised masters and doctoral students, given workshops for inservice teachers, and worked with pre-service teachers and school children. He has made presentations at many conferences, including as the invited opening speaker at the conference organized by CEMELA in Tucson in 2010, and given workshops for in-service teachers. He highlights the necessity to prepare new teachers to understand the culture and the language needs of immigrant students while developing teaching methods that support their learning of mathematics and language. His impressive publication list of articles, book chapters, chapters and book reviews includes articles in the Journal for Research in Mathematics Education and the Navigating through Algebra series of the National Council of Teachers of Mathematics. His chapter, "Empowering all students to learn mathematics," was included in the 1995 NCTM yearbook, Seventy-five Years of Progress: Prospects for School Mathematics, edited by Iris M. Carl.

Our awardee's lengthy list of accomplishments reflects his unwavering commitment to the mathematics education of ELLs and minority students. His early experiences in the United *States included teaching fifth grade in a small rural community* in southwest Florida. Visiting the family of one of his students at a migrant camp was an eye opener into the poverty, racism, and educational inequities faced by his students. These experiences significantly influenced his future professional career. He received an award from the Mathematical Sciences Education Board of the National Research Council, National Academy of Sciences for work contributing to the increase of minority student representation in mathematics.

Our awardee is one of the founders of the International Study Group of Ethnomathematics (ISGEm). He was the founding president of Future Leaders of America, a program that had been created to support struggling high school students, the majority of which were Latina/o.

Iris Carl Award, continued on page

Iris Carl Award, continued

In that program high-achieving students became peer mentors of recent immigrants to not only assist them academically but also to provide emotional and social support. The Los Angeles Times reported that enrollment of Latina/o students at community colleges in areas where the program was implemented increased in the years following the implementation. Our awardee was one of the founders of TODOS in 2003, having served on NCTM's Equity and Diversity Committee, and has since held TODOS leadership positions as director, chair of several committees, and Vice President.

Our awardee is Professor of Mathematics at Texas State University-San Marcos and Professor of Mathematics Education Emeritus at the University of Miami. At Texas State University, he has served as a leader in building a successful Mathematics Education doctoral program, served as Co-Pi in an NSF DRK-12 Project to investigate the impact of dynamic geometry software in a large predominantly Latino school district. He has helped and supported young faculty through the difficult path to tenure and advises doctoral students, providing support without reservations. According to one of his colleagues, he is a true educator, sensitive mentor and openminded leader.

For his pioneering work and lifetime commitment to the mathematics education of Latina/o and other underrepresented students and for his continued remarkable collaborations with scholars, practitioners, future teachers and students, I am very pleased, on behalf of TODOS, to present the 2015 TODOS Iris M. Carl Equity and Leadership Award to **Dr. Gil Cuevas.**

CALL for NOMINATIONS for the TODOS 2016Iris M. Carl Equity and Leadership Award

- Nominate a deserving mathematics educator for TODOS's top award!
- For information about the criteria, nomination process, and nomination forms, please consult www.todos-math.org/awards
- Questions should be directed to iriscarlaward@todos-math.org.
- https://toma.memberclicks.net/assets/ docs2015/2015Enews/ 11.2016iriscarlapplication.pdf

VOTE IN TODOS ELECTIONS!

On behalf of the TODOS Election Committee, Ellen Barger, Chair I'm pleased to announce a slate of 4 wonderful candidates to fill **TWO** open positions for TODOS **Directors**. The candidates are: **Kyndall Brown, Sandra Crespo, Tod Shockey and**

Kyndall Brown, Sandra Crespo, Tod Shockey and Alejandra Sorto.

Please, read the candidates' statements on the TODOS website and vote!

Carol Edwards Retires as TODOS Executive Secretary

During the Annual Business meetings held on April 15, 2015 at the NCSM conference in Boston, TODOS President Susie Håkansson thanked board members who ended their terms that day (see this information on the Summer Issue of Noticias on the TODOS website.)



One of these members was Carol A. Edwards. Her dedicated contributions deserve a special mention in Noticias. Carol has been on the TODOS Board for 9 years, and the last 7 as its Executive Secretary

The position of Executive Secretary was created as TODOS was growing in size and becoming more involved in its commitment to its mission and goals.

Carol agreed to be the first executive secretary of TODOS. But then ... she agreed to continue renewing her appointment several times. Finally, after seven years in the position, Carol retired on April 2015.

TODOS wish to thank Carol for her diligent job, for the tireless "behind the scene" planning and organizing efforts, for setting up dates for task completion and checking in to see if the tasks were, indeed, completed. We are grateful that she offered help when members took new responsibilities and mentored them into their positions. Carol was very encouraging while holding high expectations for every required task.

While in her position as Ex. Sec, Carol received the 2011 TODOS Iris Carl Award and the 2012 NCSM Ross Taylor/ Glenn Gilbert Award.

TODOS is thankful to Carol

for her continued commitment to TODOS: Now as *non-executive secretary* she continues volunteering for TODOS as part of the Planning Committee for the 2016 TODOS Conference.



Past TODOS president and

Iris Carl awardee Nora Ramirez is TODOS Executive Secretary since April 2015. We are looking forward to enjoying Nora's leadership.

Voting begins January 15th and closes February 15th



I

TODOS 2016:

Ensuring Equity and Excellence in Mathematics for All Scottsdale Plaza Resort, Phoenix Metro Area, AZ



The TODOS 2016 Conference is co-sponsored by NSF-funded Arizona Master Teachers of Mathematics (AZ-MTM) - Award #1035330



Conference Overview

TODOS thanks to the Conference and Program

Committees whose members have been working diligently to organize each aspect of the conference. From the selection of the keynote speaker, to the design of the application form and the careful acceptance process, to the scheduling of sessions and activities, everything will be ready for attendees to enjoy, learn, and become energized to continue striving for equitable mathematics education.





The Conference sessions will focus on these themes:

- Integrating Language, Literacy, and Culture in Mathematics
- Building on Student, Family, and Community Strengths
- Framing Mathematics Education through the Lens of Social Justice
- Implementing Rigorous Mathematics Standards-Based Curriculum
- Assessing Student Mathematical Thinking through Formative Assessment
- Developing Leaders to Achieve Equity and Excellence in Mathematics

Thursday, June 23 - Opening Day

- Check in and Materials pickup will open at 3:00 PM
- Keynote presentation by Lee Stiff at 5:00 PM
- Presentation of the 2016 Iris Carl Equity and Leadership Award after the keynote
- Reception with hors d'oeuvres and a cash bar after the award presentation

Friday, June 24

- Continental Breakfast and Orientation, Setting the Tone!
- Morning: Impact Sessions each focusing on one of the conference themes (see topics and speakers at: https://toma.memberclicks.net/assets/
 docs2015/2015Enews/10.impactsessions.pdf
- Lunch: Ignite Sessions will be presented during lunch time. Speakers will "enlighten us but will make it quick"!!
- Last session of the day will be a return to your Impact Community.
- Student Awards: Following the last session on Friday, we will have the TODOS Student Award Presentation.
 Students were selected from underserved populations, especially Latino/Hispanic; they had demonstrated continued success in mathematics while striving to go "above and beyond" in areas of their interest.
- Dinner (on your own): There are plenty of restaurants to choose from; some around the hotel, others 5 to 8 miles away.

Saturday, June 25

- Continental Breakfast
- Lunch Panel on Social Justice
- Throughout the day on Friday and Saturday there will be a variety of Investigate Sessions.
 - These are 30, 60 and 90 minute sessions that focus on the conference themes. Updates of these sessions will soon be on the conference homepage.
 - The "capstone" event for the TODOS 2016 Conference is a set of sessions titled the Kay Gilliland Equity Workshops (see next page)

Keynote Speaker Dr. Lee V. Stiff Will Open the 2016 TODOS Conference Thursday, June 23 at 5:00 PM

TODOS is fortunate to have Dr. Stiff as the Keynote speaker to open the 2016 Conference. Lee V. Stiff has been a Professor of mathematics education at North Carolina State University since 1983.



He has taught courses in mathematics and mathematics education, including

uses of technology in teaching mathematics, and the mathematics education of African-American children. Since 1989, Dr. Stiff has been a co-author of elementary, middle grades, and high school textbooks in mathematics.

Dr. Stiff has been recognized for his work. He received the *Reginald V. Blackmon Award for Excellence in Teaching*, the *W. W. Rankin Memorial Award for Excellence in Mathematics Education*, and a *Fulbright Scholar Award to the Department of Mathematics of the University of Ghana*.

From 2000 to 2002, Dr. Stiff served as President of NCTM and has served on the Board of Directors of the Benjamin Banneker Association. He has been a member of the Mathematical Sciences Education Board of the National Research Council and the Education Advisory Committee of the National Aeronautics Space Administration.

Dr. Stiff's message will be food for thought for attendees; it will help begin the conversation around important issues, which are targeted at the conference sessions.

 \bigcirc

The Kay Gilliland Equity Workshops at TODOS 2016

......

The capstone event for the TODOS 2016 Conference is a set of sessions titled, "**Kay Gilliland Equity Workshops**," to honor Kay's legacy and forward the equity agenda of TODOS. Kay Gilliland was tireless in her efforts to seek quality mathematics for all students and a champion for TODOS.

The workshop **speakers** for the 2016 TODOS Conference year are:

- o Don Balka (TODOS Past President)
- Jose Franco (TODOS Past President)
- Diane Kinch (TODOS President Elect)
- o Matt Larson (NCTM President Elect)
- o Nora Ramirez (TODOS Past President), and

N_____

o John W. Staley (NCSM President)



Important Information and Dates

Conference Registration

FEE : \$350, which includes:

- Conference materials
- Thursday: Reception with hors d'oeuvres
- Friday: Continental breakfast & lunch
- Saturday: Continental breakfast and lunch

NOTE: Stipends for K-12 teachers

A limited amount of stipends for K-12 teachers are available through the NSF funded Arizona Master Teachers of Mathematics administered by the Department of Mathematics at The University of Arizona. Part of the application for the teacher stipend includes submitting a Teacher Assignment Verification Form. **Registration will be capped, so don't delay your registration!**

Housing:

K-12 Teachers Eligible for Stipends may also apply for a pre-paid room.

Housing reservations are now open. A block of rooms at a special conference rate has been reserved at the Scottsdale Plaza Resort. The special rate is available to conference attendees two days before and two days after the conference on a space available basis

Transportation

- Scottsdale Plaza Resort provides shuttle service to and from Phoenix Sky Harbor Airport every half hour from 5:00 AM to 9:00 PM at a cost of \$23 one way. For airport pickup arrange ahead of time with the hotel by calling 800-306-0059.
- Super Shuttle provides shuttle service for a fee. Check <u>www.supershuttle.com</u>
- Uber and Lyft are also available.
- There is a Hertz car rental desk in the hotel. The rates may be less than renting a car at the airport.
- Free self-parking at the resort.
- The Scottsdale Trolley provides free rides around Scottsdale.

Shopping, Eating and Recreation

Scottsdale has shopping, many fine restaurants and several breweries, with easy access via the Trolley. Restaurants and shopping across the street from Scottsdale Plaza Resort.

Kierland Commons which includes restaurants and shops is about 6 miles north of the Resort.

Scottsdale Fashion Square, which is a major mall, is 3 miles south.

Old Town Scottsdale with shops and restaurants is about 4 miles south.

Spas, hiking trails and golf courses are everywhere.

Sightseeing Around Phoenix

Are you free in the morning and afternoon before the beginning of the conference?

Spend your extra time visiting and enjoying these unique sites in Phoenix.

The Desert Botanical Garden

https://www.dbg.org/

Note: Try to go early in the morning to avoid the heat



The Heard Museum of American Indian Art and History

(Late morning or early afternoon) http://heard.org/





Don't miss the "groundbreaking exhibition Remembering Our Indian School Days: The Boarding School Experience"

http://heard.org/exhibits/boardingschool/





TestingPlease, be quiet...

With all the controversy and stress over high stakes testing some teachers might smile at this song's lyrics and, perhaps, get some stress relief when singing and/ or dancing with their students to he music!

"I Will Survive" lyric © 2007, 2015 by Larry Lesser (Tune: Gloria Gaynor's 1979 hit with the same-title. Song by Dino Fekaris & Freddie Perren)

(https://www.youtube.com/watch?v=XZGwHtGBZJU)

At first I was afraid, I was petrified--

Kept thinking they won't pass that test without me by their side. But then we spent so many months on a preparation path Until at last they knew the language of doing math!

And now it's here, we drilled all year--

I just peeked in the room to see we have sharp minds and pencils here.

They should have had a healthy breakfast, they should have had a good night's rest.

I cannot doubt for just one second that they're ready for this test!

CHORUS:

Oh, now -- go, walk out the door--

We'll turn our school 'round, and beat the cutoff score! Weren't you the test that put the stakes way up so high? Did you think we'd crumble did you think we'd lay down and die?

Oh no, not I – I will survive:

Oh, as long as I know how to teach with my job on the line. Multiple-choice will never show all that my kids know but I'll survive, I will survive!

It takes all my mind to think why a passing rate's The only thing they use to say who's doin' good or great. And I spent oh so much focus on those near the passing line, I used to cry that I left some child behind!

Now let me teach the way that's best--

And that's more than boring drills for the latest test! Some try selling magic bullets and just expect they'll set us free, But by just practicing good teaching, then each student can succeed!

(Repeat CHORUS)



TODOS Student Awards at CMC-S

TODOS recognized 8 students at the 56th CMC-South Annual Mathematics Conference in Palm Springs, CA on November 6, 2015.

Students were selected from underserved populations, especially Latino/Hispanic; they had demonstrated continued success in mathematics while striving to go "above and beyond" in areas of their interest.

The student awardees are:

Standing left to right: **Natalie Rose, Elvis** and **Julianna.** Sitting left to right: **Carolyn Amber**, **Raul**, **Evan** and **Valeria**. Not shown: **Christopher**

TODOS thanks Texas Instrument for providing Graphic calculators for the student award winners.

Winter 2015/16, Volume 11, Number 2

In this issue:

- Sounding of on Stereotypes, p. 1
- News from the President, p. 2
- TODOS 2015 Iris Carl Equity and Leadership Award, p. 3
- Carol Edwards Retires as Executive Secretary, p. 4
- Call for Nominations for the TODOS 2016 Iris Carl Equity and Leadership Award, p. 4
- TODOS 2016 Conference, Information and Highlights, p. 5-7
- "I Will Survive," p. 7
- TODOS Student Award at CMC-S, p. 8
- Newsletter Editors and Contributors, p. 8



NOTICIAS de TODOS - Winter 2015/16 Vol. 11, No. 2

Editors: Susana Davidenko (Editor), Mary Alice Hatchett, Virginia Nelson and Christine Uliassi.

Contributors: Susana Davidenko, Susie Håkansson, Annette Kitagawa, Larry Lesser, Bob McDonald, Sylvia Celedón-Pattish, Diane Kinch Please send new items to: Susana.Davidenko@cortland.edu.

• The publications of TODOS present a variety of viewpoints. The views expressed or implied in this publication, unless otherwise noted, should not be interpreted as official positions of TODOS. ©2012 TODOS 501 (c)(3) non-profit organization.



NOTICIAS de TODOS News from TODOS: Mathematics for ALL Newsletter publication funding provided by Pearson Education

PO Box 25482 Tempe AZ 85285-5482