

POINTS AND ANGLES

Newsletter of the Metropolitan
Mathematics Club of Chicago

NCTM
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Metropolitan
Mathematics
Club of
Chicago



Volume XXXIX

October 2004

No. 2

The Tooth Fairy, Monday-morning Quarterbacking, Coin-flipping Salmon, and Viagra Statistical Vignettes only 3/4 of which you will be able to take into the classroom

Chris Olsen

BY JOHN DIEHL

Be sure to join us for the October meeting featuring Chris Olsen. Chris is a well known teacher and textbook author. He brings an incredible depth of knowledge combined with a truly entertaining delivery to every presentation. You will be educated and entertained regardless of whether you teach statistics or not.

The presentation will reflect the philosophy that statistics is the most real-world of the mathematical disciplines, and yet our mathematics texts seem to offer rather pedestrian examples of data, graphs, and examples of statistics used in real contexts. During this talk, examples of context, data, and graphics appropriate for the 9-12th grade student will be presented. These examples will cross disciplines of social, behavioral, and physical sciences. Chris will generously make copies of the presentation available electronically!

Chris has taught statistics at George Washington High School in Cedar Rapids, IA, for over 25 years. He currently is the Math / Assessment Facilitator for the Cedar Rapids Community Schools. He graduated from Iowa State University majoring in mathematics and philosophy, and in his graduate work concentrated on statistics, computer programming, and psychometrics and test development.

Chris is a Woodrow Wilson Fellow, has been involved nationally in workshops and conferences for almost 20 years, was the Iowa recipient of the Presidential Award for Excellence in Science and Mathematics Teaching in 1986, and a recipient of the 1999 Siemens Award for Advanced Placement in mathematics. He currently writes a column for Stats magazine. He is a co-author, with Roxy Peck and Jay Devore, of the Introduction to Statistics and Data Analysis, published by Duxbury Press. He is a past member of the AP Statistics Test Development Committee, and the author of the current Teacher's Guide for Advanced Placement Statistics.

REMEMBER!! You can earn CPDU credits for attending dinner meetings!

Date: Friday, October 29, 2004
Time: 5:30 p.m. Doors Open
6:00 p.m. Social Hour
7:00 p.m. Dinner and Talk
Place: Fountain Blue Banquets &
Convention Center
2300 Mannheim Rd.
Des Plaines, IL
(847) 298-3636
Cost: Members \$31
Nonmembers \$37

RESERVATION DEADLINE
Monday, October 25, by noon,
please!

To RESERVE:
Call Lee Ann Swanson at
(630) 570-8421 or
email: lswanson@hinsdale86.org
Requests for special meals must be made
in advance.



From Southbound I-294 &
Eastbound I-290:
Exit at I-190 West to O'Hare; Exit onto North
Mannheim Rd.; Take Mannheim Rd. North
2.25 miles.
From Northbound I-294:
Exit at West Touhy Ave.; Take Touhy Ave. to
Mannheim Rd.; Turn right on Mannheim Rd.
Public Transit:
Take the CTA Blue Line to the Rosemont
Bus Terminal; Take Pace Bus #223; Exit at
Touhy Ave. & Lee Rd.; Walk East on Touhy
to Mannheim Rd.

Future Meetings:
November 12, December 10, January 14,
February 11, March 11, May 13

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Points from the Interior

BY GWENN ZIMMERMANN

The leaves are beginning to turn and the evenings are getting cooler. The school year is well underway, and we are once again into comfortable routines and patterns. At least most of us who are veteran teachers with several years experience are into those routines and patterns. It is likely and probable that the newer teachers in our departments are feeling overwhelmed, tired, and have the beginnings of their first cold of the year.

On one hand, the media informs us that teacher shortages exist, in particular in mathematics. On the other hand, we hear that more adults are leaving other fields to become teachers. Yet all those that become teachers don't remain teachers. Research indicates that 30% of beginning teachers leave the teaching profession within their first 2 years of teaching. Many cite job dissatisfaction as a reason for leaving. These beginning teachers have concerns about classroom management, being evalu-

ated, being liked and respected by students, and about being viewed as a credible professional by their peers. It appears that new teachers often have an unrealistic expectation of what it takes and means to teach. What can be done to support our novice teachers?

Formal mentoring programs have proven to be successful in supporting new teachers. However, each of us can also choose to take some responsibility in supporting teachers new to the profession as well as teachers new to our respective schools and departments. There are some important lessons we can help new teachers learn, and I would like to share 3 of these. Lesson #1, "you don't try to do it alone." As members of MMC, we recognize the value of networking and sharing ideas with other colleagues. New teachers may not have the time, money, or energy to attend regular meetings, but as veteran teachers we can provide them our support within their own environment, the school building. Offer to plan a lesson together or sit in on their class or invite them to see you teach. Find ways to let the new teacher know they have support and resources available to them. Lesson #2, "you will make mistakes!" New teachers need to accept that mistakes happen and are often not fatal. In fact mistakes are acceptable if we can learn and grow from them. Lesson #3, "some days you'll cry (or want to)." Even after teaching several years, there are those days when we want to put our heads down and let it all out. What the novice teachers haven't experienced yet is the days we laugh! Some of the most rewarding experiences are when we can laugh with our students and we can laugh at ourselves.

MMC members are passionate about teaching mathematics. We share this passion daily with our students, and we share it monthly with other MMC members. Let's make a conscious effort to share our love of teaching with teachers new to the field. They too should have the opportunity to experience the joy and passion of teaching mathematics.

[Many of the ideas expressed above were taken from NCTM's publication *Empowering the Beginning Teacher of Mathematics: High School*. I highly recommend this book for any new teacher – not just mathematics teachers!]

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Making Math Work For All Students

Lee Stiff

BY PAT BOWLER JOHNSON

M.M.C.'s theme for the year is "Equity in the Mathematics Curriculum." Who could address this issue better than Lee Stiff, past president of N.C.T.M., to "kick-off" this year's program of speakers? Lee's talk "Making Math Work for All Students" provided a solid foundation for each of us to explore our careers in the field of mathematics education. Lee combined humor in the form of anecdotes, audience participation, and classroom examples, along with components of N.C.T.M.'s Principles and Standards of Mathematics, to lead us to develop methods/strategies to address the issue of equity.

Lee's opening statement set the direction of his talk. Educators must maintain higher standards for their students and themselves. One should not accept excuses for not doing math. We, as educators, are always faced with the challenge of improving the mathematical performance of all students. Lee feels that we need to fight for this on three fronts: the Programmatic front, the Personal front, and the Political front.

Under the Programmatic front, educators need to develop meaningful and challenging curricula. The Principles of School Mathematics provides a comprehensive and coherent set of goals for improving mathematics teaching and learning. Educators need to explore ways to achieve these goals. Lee provided us with examples, involving "carrying and regrouping," as well as problems to illustrate how we need to begin to achieve these goals. He stated that teachers, students, and the public must demand constructive reform. Beyond the formalism and manipulation of mathematics, however, we must "grasp the real essence of mathematics." Lee provided us with a personal example about himself and his daughter when she was a child. After relating his story, he stated, "If a personal connection with the child is established, **THE CHILD CAN DO ANYTHING.**" If children have a connection with you, they feel that they are special. Students always try to make sense of their world based on what you have told them. They **DO** as you have told them. "The Differentiation of Instruction is the teacher's response to a learner's needs. These needs are guided by the principles of differentiation, such as attending to student differences, flexible grouping, respectful tasks,

ongoing assessment, and a focus on essentials." Students solve problems using different methods. Educators need to show them that there exists more than one way to solve problems to achieve the same solution.

On the Personal front, Lee focused on the statement of the "Equity, Teaching, and Learning" Principles.

- Equity Principle: Excellence in mathematics education requires equity- high expectations and strong support for all students.
- Learning Principle: Students must learn mathematics with understanding, actively building new knowledge from experience and prior knowledge.
- Teaching Principle: Effective mathematics teaching requires understanding what students know and need to learn, and then challenging and supporting them to learn the material well.

Lee stated that educators must focus on the components of Identity, Security and Validity: Identity entails: "What is important to you is important to me." Security entails: "Teachers and students need to work together to develop a strong desire to learn, to be accountable, and to provide an environment of unconditional love and caring." Lastly, Validity entails: "Acknowledge hard work and achievement. Respect and value the dedication of students. Maintain high expectations and do not accept failure." Don't accept excuses. If a student says she does not have access to supplies, question how she has access to Michael Jordan's shoes and yet cannot follow through on her given task. Follow what Bill Cosby says: "Life is tough ...but open the books. Don't let excuses interfere with learning." Remember, "Nothing more than math can make a student's life better."

On the Political Front: Public Education is important. The "No Child Left Behind" Act sounds good, but it is far from being realized. Currently, we have too many issues that need to be addressed: these issues involve teacher shortages, under-funded schools, over-tested students, lower standards, and parents who demand better schools regardless of their socio-economic status. It becomes a political issue. Lee discussed the Glen Commission Report. Goals of the report include the establishment of an ongoing system to improve the quality of math

Making Math Work continued from page 3:

and science teachers. The desired result would be improving the working environment while making the teaching profession more attractive for K-12 math and science teachers. But why should we try to achieve these goals if the possibility for success is severely limited?

Lee concluded by providing MMC with a challenge, a challenge for the members of MMC to write an alternative proposal to the "No Child Left Behind" Act: Create an environment for success. Recalling the statement, "Do unto others as you would have them do unto you."

The MMC election committee will meet on October 29th to discuss the 2005 spring elections. If you would like to join this committee or have suggestions for possible candidates for board members and/or president elect please join us prior to the dinner meeting at 6:00PM in the lobby of the Fountain Blue Banquet Hall. You can also contact Sam Urbain at samu303@aol.com

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Thanks to Isaac Greenspan for creating P&A graphics.

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Board Report Meeting of August 2004

BY STEVE VIKTORA

Board Report
Meeting of August 2004

The Board of Directors held its first meeting of the 2004-2005 academic year on 24 August 2004. The following are highlights of that meeting.

- Mary Wiltjer reported a club membership of 502, of whom 14 are first year members, 46 are retired members, and 65 are student members.
- Bill Roloff reminded Board members that Sally Dodge's quilt would be raffled at the October meeting.
- The Board decided to investigate the possibility of holding a workshop for new teachers some time this year.

The next meeting of the Board is scheduled for 16 November 2004 at Cucina Biagio (7309/7319 W. Lawrence Ave., Harwood Heights) at 6:00 PM. Members of the club are welcome to attend any Board meeting, but please contact Gwen Zimmermann at gzimmer@hinsdale86.org before 9 November if you plan to attend this meeting. Because this is a dinner meeting, you would be expected to pay for your meal.

Win Sally's Quilt!

Many of you have seen the quilt displayed that Sally Dodge made to benefit our Scholarship fund.
Tickets are \$1 each or six for \$5.

Detach the coupon below and send it with your check and a self addressed, stamped envelope to:

Bill Roloff
Lake Park High School
500 W. Bryn Mawr
Roselle, IL 60172

MMC Quilt Raffle

Name _____
Number of tickets purchased _____
Amount of purchase _____

MMC Dinner Coupon

\$5 off a dinner for New Attendees
— or —
\$7 off a dinner for New Attendees
who join MMC

name _____ date used _____

Valid only at the MMC Meetings on September 17, October 29,
November 12, and December 10, 2004 and January 14, 2005.
Expires January, 2005. Limit one (1) coupon per person.

Problem 0405-01
BY MICHAEL KEYTON

This is problem 2 for the 2004-05 Points and Angles.

Last month's problem was a geometry problem with a small algebraic flavor. This problem is subdivided into three variations, each of which increases the amount of algebra needed.

(1) If a point is in the plane of an equilateral triangle so that the distance from each vertex is 3, what is the length of a side of the triangle?

(2) If a point is in the plane of an equilateral triangle so that the distance from one vertex is 4 and the distance from the other two vertices is 3, what is the length of a side of the triangle?

(3) If a point is in the plane of an equilateral triangle so that the distance from the vertices is 3, 4, and 5, then what is the length of a side of the triangle?

MMC Membership and Change of Address Form

Mail to: MMC
415 S. Ridgeland Ave. #2
Oak Park, IL 60302

Make check payable to MMC.

Please use a different form for each person.

Name _____

Address _____

Phone _____

School _____

Address _____

Phone _____

E-Mail _____

Membership: New Renewal

Choose one:

1 year (\$20) _____

2 year (\$35) _____

3 year (\$50) _____

1st year teacher

retired (\$10) _____

student

Donations:

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Total amount of check: _____

Check preferred mailing address above.

Change of Address

