Teaching and Learning Mathematics
K-14:
“Connecting to the Common Core Standards”

60th Annual
Western Illinois University
Mathematics Teachers Conference

Friday, March 25, 2011
The instructor of children should aim gradually to combine knowledge and doing. Among all sciences mathematics seems to be the only one of a kind to satisfy this aim most completely.” Immanuel Kant

PROGRAM

FIRST SECTIONAL CONFERENCE
of the
ILLINOIS COUNCIL OF TEACHERS OF MATHEMATICS
on
THE TEACHING OF ELEMENTARY AND SECONDARY
MATHEMATICS
Sponsored by
WESTERN ILLINOIS STATE COLLEGE and the PUBLIC
SCHOOLS OF MACOMB
WESTERN CAMPUS LABORATORY SCHOOL
Saturday, April 28, 1951

REGISTRATION Second Floor, Laboratory School—8:30-9:00 a.m.

SHOWING OF FILMS Little Theatre—8:45-9:25 a.m.
Joseph J. Stipanowich, Western Illinois State College, Macomb

MEETING OF ELEMENTARY TEACHERS Little Theatre—9:30-10:30 a.m.
Presiding: Mary Ensinger, Vice-President, ICTM, Southern Illinois University, Carbondale.
Welcome: P. F. Shafer, Superintendent of Schools, Macomb
Address: “Seeing is Believing”
Mary A. Potter, Supervisor of Mathematics, Racine, Wisconsin

MEETING OF SECONDARY TEACHERS Third Floor, Laboratory School—9:30-10:30 a.m.
Welcome: F. A. Beu, President, Western Illinois State College, Macomb
Address: “General Mathematics, Past, Present, and Future”
H. Vernon Price, State University of Iowa, Iowa City, Iowa.

DISCUSSION GROUPS Laboratory School 10:30 a.m.-12:15 p.m.
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<th>Main Speakers</th>
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<tr>
<td><strong>Opening Speaker: George Schlott</strong> 8:30 – 9:30 am</td>
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<tr>
<td>“The Condition of College and Career Readiness in Illinois”</td>
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<tr>
<td>Since 1959, ACT has collected and reported data on students’ academic readiness for college. Because becoming ready for college and career is a process that occurs throughout elementary and secondary education, measuring academic performance over time in the context of college and career readiness provides meaningful and compelling information about the college readiness of students. A focus on the number and percentage of Illinois students meeting or exceeding the ACT College Readiness Benchmarks does just that. Using ACT® test scores and the ACT College Readiness Benchmarks, this report provides a snapshot of college and career readiness of the Illinois graduating seniors in the class of 2010 who took the ACT in high school. The data presented herein are based on the ACT Profile Report—Illinois: Graduating Class 2010.</td>
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<tr>
<td>George Schlott is Senior Consultant for Educational Services-Illinois, ACT (American College Testing), Inc-Midwest Region, Lincolnshire IL</td>
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<tr>
<td>Email address: <a href="mailto:George.Schlott@act.org">George.Schlott@act.org</a></td>
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| **Closing Speaker: Susan Morrison** 2:30 – 3:15 pm |
| “Moving Forward with New Standards” |
| This is an exciting time for educators in Illinois! The expectations we have for what students must know and be able to demonstrate at the end of high school are different today than in 1997 when the Illinois Learning Standards were adopted. The New Illinois Learning Standards Incorporating the Common Core are designed to be rigorous and relevant to the real world, reflecting the knowledge and skills our young people need for success in both college and work. The new standards include specificity for teachers and emphasize 21st century skills to help guide classroom instruction. The session will provide an overview of the new standards, an update on assessment, and planning for implementation. |
| Susan Morrison is Illinois Deputy State Superintendent of Education. |
60th Annual
Western Illinois University
Mathematics Teachers Conference
Friday, March 25, 2011

8:00 – 8:30 AM Registration & Continental Breakfast
Morgan Hall, First Floor

8:30 – 9:30 AM Welcome
Keynote Address
George Schlott: “The Condition of College and Career Readiness in Illinois”
Morgan Hall 109

9:45-11:00 AM Morning Sessions
Horrabin Hall

11:05 AM -12:05 PM Workshops
Horrabin Hall

12:10 -12:40 PM Lunch
Horrabin Hall Gymnasium

12:45-2:00 PM Afternoon Sessions
Horrabin Hall

2:05 – 2:25 PM 60th Anniversary Recognition
Morgan Hall 109

2:30 – 3:15 PM Closing Address
Susan Morrison: “Moving Forward with New Standards”
Morgan Hall 109
### Schedule
60th Annual Western Illinois University Mathematics Teachers Conference
Macomb, Friday, March 25, 2011.

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<th>Time</th>
<th>Room</th>
<th>Grades K-4 HH 26</th>
<th>Grades 5-6 HH 27</th>
<th>Grades 7-8 HH 3</th>
<th>Grades 9-14 HH 82</th>
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<tbody>
<tr>
<td>8:00 – 8:30</td>
<td>MG 109</td>
<td>Registration / Breakfast Morgan Hall (MG), 1st floor</td>
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<td></td>
<td>Horrabin Hall</td>
<td>Coffee - Continued Registration</td>
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<td>9:45 – 10:20</td>
<td>Horrabin Hall (HH)</td>
<td>Nancy Frakes The Math “Buffet” in the Classroom K-6 HH 26</td>
<td>Cliff Petruk Don’t Slow Me Down with that Calculator: Mental Math (multiplication) 3-8 HH 27</td>
<td>Mike Egan They Should Know This Already! 7 - 11 HH 3</td>
<td>Loretta Meeks Bridge to Success for At-Risk Learners 9-14 HH 82</td>
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<td>Fern Tribbey How to Challenge Students’ Problem Solving Thinking K-6 HH 26</td>
<td>Sean Genovese Hierarchy of Operations: Structure across Grade Levels 5-14 HH 27</td>
<td>Amanda Meiners Is it Magic or is it Math: Interesting ways to use magic to explore important mathematics. 5-11 HH 3</td>
<td>Robin Manker Caveats for Fitting Equations to Data Using Least-Squares 9-14 HH 82</td>
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<td>Horrabin Hall Large Gymnasium (facing Computer Lab 111 on the map)</td>
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<td>Iraj Kalantari Of Radicals &amp; Rogues 9-14 HH 82</td>
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Morning Sessions
09:45 – 11:00 AM
Horrabin Hall

9:45 – 10:20 AM  Morning Sessions - Horrabin Hall

Grades K-4,  HH  26

Dr. Nancy Frakes, Consultant for LizMark Corporation, frakes@geneseo.net
“The Math Buffet in the Classroom” K – 6

Make your classroom a challenging and exciting “cafeteria” for creating newer and deeper learning experiences in math. Learn how multiple intelligences and teaching/learning styles can make a difference in motivating children to do their best. Learn easy ways to teach math concepts and experience hands-on fun approaches using real-world situations. Come away with ideas to improve how students think, learn and perform, and at the same time, enhance your teaching to inspire action in both you and your pupils.

Grades 5-6,  HH  27

Cliff Petrak, Brother Rice High School in Chicago, Teacher Emeritus cpetrak1@hotmail.com
“Don’t Slow Me Down with that Calculator: Mental Math (Multiplication)” 3 – 8

Learn to master a multitude of little-known, super-shortcut computational techniques and strategies involved in multiplication and other operations. These methods will prove to be almost always faster than either the traditional algorithmic methods or even the calculator.

Grades 7-8,  HH  3

Mike Egan and Students, Augustana College mikeegan@augustana.edu
Students: Brian Green, Josiah Martin, Jennie McKey, Natalie Radziejewski, and Dani Rogers
“They Should Know This Already! Strategies for Revisiting Elementary Content with Secondary Students” 7 – 11

Unfortunately, many students enter grades 7 – 10 without adequate mastery of elementary content. Participants in this session will learn practical approaches for revisiting elementary content with secondary students, and also strategies for accelerating these students from remedial work to grade level expectations.

Grades 9-14,  HH  82

Loretta Meeks, University of Illinois at Springfield meeks.loretta@uis.edu
“Bridge to Success: Preventive Aspects of Failure for At-Risk Learners” 9 – 14

Characteristics of at-risk learners and mathematics curricular approaches that were successfully utilized to address their needs will be introduced with assessment results from a school/university partnership that operated for over ten years in a midsize city.
10:25 – 11:00 AM  Morning Sessions - Horrabin Hall

Grades K-4,  HH 26

Fern Tribbey,   ICTM President and Mathematics Consultant  tribbeyf@gmail.com
“How to Challenge Students’ Problem Solving Thinking”
K – 6

There will be two very interesting problems (Handshake Problem and Doing Dishes Problem) presented that integrates algebraic thinking, problem solving, number sense and data in arriving at solutions. The use of modeling will help the students move from concrete to the abstract in working out the two problems.

Grades 5-6,  HH 27

Sean Genovese,  Macomb Junior/Senior High School  genoveses@mcusd185.org
“Hierarchy of Operations: Structure across Grade Levels”
5 – 14

The order of operations is not an arbitrary set of rules. It reflects an underlying structure and relationships between the operations. This simple hierarchy, if understood at an early age, can facilitate the understanding of order of operations and exponents in early middle grades, through logarithms in advanced algebra and concepts in calculus.

Grades 7-8,  HH 3

Amanda Meiners,  Western Illinois University  meinersaj@live.com
“Is it Magic or is it Math: Interesting Ways to Use Magic to Explore Important Mathematics”  5 – 11

How did you know that? Has anyone ever pulled the wool over your eyes by doing a magic problem… or was it mathematics? We will look at ways to help students understand place value, divisibility rules, the power of nine’s, algebra, and other mathematical topics. Join me in this engaging presentation using the power of Mathematics to amaze your students. Information packets will be available to take home.

Grades 9-14,  HH 82

Robin Manker,   Illinois College  rmanker@hotmail.com
"Caveats for Fitting Equations to Data Using Least-Squares"
9 –14

Analysis of various regression models (linear, exponential, logistic) and related decisions and technology usage will be discussed. During the process, we will discuss questions that can (should) be asked and caveats that must be heeded to avoid pitfalls. Four conclusions and several classroom ideas will be provided.
| Workshops 11:05 am – 12:05 pm  
Horrabin Hall |
|---------------------------------------------------------------|
| **Workshop #1:** “Number Sense to Problem Solving the Singapore Way” | Grades K – 4  
HH 26 |
| **Bess Thompson** | Lincoln Elementary in Macomb  
thompsonb@mcusd185.org |
| Singapore Math has three important components - number sense, place value, and problem solving. Hands-on activities will be explored in each of these areas. Participants will leave with ideas and activities to take back to their classrooms. |

| **Workshop #2:** “Tessellations - Make It, Take It, Frame It” | Grades 5-6  
HH 3 |
| **Martha Mitchell** | Western Illinois University  
MA-Mitchell@wiu.edu |
| The works of M.C. Escher will inspire students to create their own works of art. This workshop will investigate and alter tessellating shapes to create works of art suitable for framing. Participants will leave with all the information needed to replicate the workshop in their classroom. |

| **Workshop #3:** “Geometric Constructions with GeoGebra Software (Technology)” | Grades 5-14  
HH 111 (for room location, check the map at the end of the sessions outlines) |
| **Marko Kranjc** | Western Illinois University  
M-Kranjc@wiu.edu |
| Geometric constructions will be studied with the help of GeoGebra, from standard (and not so standard) triangle and circle constructions to conics and their properties. |

| **Workshop #4:** “Why Should Teachers Get to do All the Fun Stuff? Students Doing Mathematics in the Classroom” | Grades 9-14  
HH 82 |
| **Brian Katz and Students** | Augustana College  
briankatz@augustana.edu |
| Students: Stephanie Adamkiewicz, Brian Green, Danielle Knaizer, Joshua Martin, Amanda Miller, Ryan Miller, Natalie Radziejewski, Brooke Randazzo, and Benjamin Studer |
| Inquiry allows students to experience math authentically, which has benefits in terms of affect, skill, and content. Some teachers worry about (1) the perceived lack of control, (2) dealing with feedback and student errors, and (3) the work making modules. We will engage the audience in an inquiry experience that aims to reduce these fears. |

**Lunch in Horrabin Hall Large Gymnasium from 12:10 pm to 12:40 pm**  
(Facing Computer Lab 111 on the map)

**Remember to attend the closing keynote by Susan Morrison entitled “Moving Forward with New Standards” at 2:30 pm in Morgan Hall 109.**
Afternoon Sessions
12:45 – 2:00 PM
Horrabin Hall

12:45 – 1:20 PM  Afternoon Sessions - Horrabin Hall

Grades K-4,  HH 26

James Bielicke  Valley Park Elementary  jbielicke@vp.k12.mo.us
“Concepts and Strategies to Use for the Primary Learner”  K- 4

The objective of this presentation is to help the audience understand and think about the many different ways to implement math concepts in the primary (K-2) classroom. The topics of assessment, investigations, think time, spiraling and cooperative learning will be discussed as it all pertains to the beginning foundations of a math education. These topics play a vital role in creating interest in the learner and the information is important because it gives some insight into the building blocks of math education in our public schools.

Grades 5-6,  HH 27

Connie Stoner,  Stark County Junior High School  cstoner@stark100.com
“Using Wikis and Glogs in the Math Classroom”  5 – 8

See how technology has enriched my junior high math classroom. Creating a wiki and embedding widgets make sharing assignments, problems, and web site activities much easier. Student projects done on wikis encourage collaboration and really engage students in their learning.

Grades 7-8,  HH 3

Lindsay Henderson,  Western Illinois University  lj-henderson@wiu.edu
“Where Are We Now? – Student Achievement and Graduation Rates in 2010”  7 – 14

The ISAT was first administered to Illinois students in 1999, and in 2001 the PSAE was given for the first time. The intent of this talk is to cover the key factors and results from these two tests over the past 10 to 11 years. Are our students improving in mathematics or are more falling behind? How many of our students are graduating? How many of our students are actually prepared for college? This presentation will use trend data to provide an indication of our overall success in meeting the NCLB goals.

Grades 9-14,  HH 82

Dr. Iraj Kalantari,  Western Illinois University  I-Kalantari@wiu.edu
“Of Radicals & Rogues”  9-14

What if you lived in the 16th century and your livelihood was dependent on how clever and self-sufficient you were in solving equations? This talk is promoting the concept of *owning* one's mathematical formulas in general, and the solution formulas for quadratics, cubics, quartics and beyond (?) in specific. Fascinating history of competitions among and events around an intriguing cast of characters (stuff of a movie someday, at least I hope!) will be telegraphically provided.
1:25 – 2:00 PM  Afternoon Sessions -  Horrabin Hall

Grades K-4,  HH  26

Glory Jurich-Sarna,  Indian Springs  SarnaBGD@aol.com
“Easing Students into Math Writing for Extended Responses”  K-6
Learn how to include writing in your math program that leads to explaining math through extended responses. Come away with problems, math writing prompts, centers, literature circles, and many more ideas to help your students improve their math writing.

Grades 5-6,  HH  27

Cliff Petrak,  Brother Rice High School in Chicago, Teacher Emeritus  cpetrak1@hotmail.com
“Don’t Slow Me Down with that Calculator: Mental Math (Squaring)”  3-8
Learn to master a multitude of little-known, super-shortcut computational techniques and strategies involved in squaring numbers and other procedures. These methods will prove to be almost always faster than either the traditional algorithmic methods or even the calculator.

Grades 7-8,  HH  3

Tosha Downey,  Academy for Urban School Leadership (AUSL)  mkemp@ausl-chicago.org
“Urban Teaching: Transforming Public Education”  K – 12
mdkemp@cps.k12.il.us
The Chicago-based Academy for Urban School Leadership (AUSL) has emerged as one of the leading school management organizations transforming the educational experience of the children in high-need, high-poverty schools. AUSL has successfully “turned around” underperforming schools by dramatically changing how teachers are prepared for urban instruction.

Grades 9-14,  HH  82

Jason Dietrich,  Illini Central High School  jdietrich@illinicentral.org
“STEM Activities for Math and Physics”  9 – 14
Math and science classrooms need to engage students’ creativity and interests using “real-world”, “hands-on” activities and research. This presentation will describe STEM (Science, Technology, Engineering, and Mathematics) Curriculum Activities that will engage, excite, and prepare students to pursue careers in these very important disciplines.

2:05 – 2:25 PM  60th Anniversary Recognition -  Morgan Hall (MG 109)

Meet together to celebrate the 60th Anniversary of the conference with cake, coffee, and colleagues. Prize winners and problem solutions will be revealed, as we reflect upon the value of learning and teaching mathematics.

2:30 – 3:15 PM  Closing Address -  Morgan Hall (MG 109)

Susan Morrison
Illinois Deputy State Superintendent of Education
“Moving Forward with New Standards”
The shaded areas are the conference rooms.

60th Annual
Western Illinois University
Mathematics Teachers’ Conference
We are grateful to the following sponsors for supporting this conference.

- Western Illinois University
  - College of Arts and Sciences
  - Department of Mathematics and Faculty Foundation
  - College of Education and Human Services

- Illinois Council of Teachers of Mathematics (ICTM)

- West Central Council of Teachers of Mathematics (WCCTM)

- Bureau Henry and Stark Counties ROE #28
  Bruce Dennison, Superintendent

- Knox County ROE #33
  Bonnie Harris, Superintendent

ICTM 62nd Annual Meeting and Conference

"Conversations on Teaching Mathematics"
October 21-22, 2011
Springfield, Illinois

Leadership Conference, October 20
Go to www.ictm.org for more information

Next Year’s Tentative Conference Date
Friday, March 30, 2012.
Are you interested in being a speaker?
Do you have suggestions for speakers?
Contact: Mathematics-Western Illinois University
Phone: (309) 298-1054 or (309) 298-2275
Email: Mathematics@wiu.edu
Website: www.wiu.edu/math