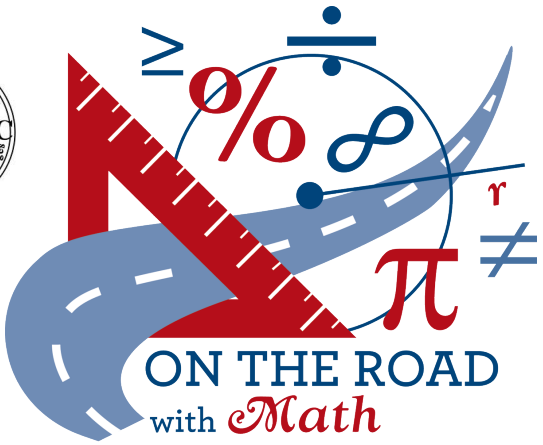

40th NEMATYC Conference

April 4-5, 2014

MIDDLESEX COMMUNITY COLLEGE

FRIDAY: April, 4

2:30 – 5:00 p.m.	**Registration, Refreshments, Vendor Displays** *Lowell Federal Building, Lobby*
3:15 – 4:00 p.m.	**Presentations**
4:15 – 5:00 p.m.	**Presentations**
5:30 – 9:00 p.m.	**Trolley Tour, Boott Mills, Appetizers** *The Old Court Restaurant*

SATURDAY: April, 5

7:30 a.m.– 2:00 p.m.	**Registration and Continental Breakfast** *Lowell Federal Building, Lobby*
8:20 – 8:50 a.m.	**Welcome by Chairs and Dean Kate Sweeney** *Lowell Federal Building, Assembly Room*
9:00 – 9:45 a.m.	**Presentations**
10:00 – 10:45 a.m.	**Presentations**
11:00 – 11:45 a.m.	**Presentations**
11:45 a.m. – 12:15 p.m.	**Dedicated Exhibit Time** *Lowell Federal Building, Lobby*
12:15 – 1:45 p.m.	**Lunch with Professor Steve Pennell, UML** *Keynote Speaker* *Lowell City Building, Lower Café*
2:00 – 2:45 p.m.	**Presentations**
3:00 – 3:45 p.m.	**Presentations**
4:00 – 5:00 p.m.	**Annual Meeting** *(Door Prizes)* *Lowell Federal Building, Assembly Room*

FRIDAY: April, 4 • 3:15 – 4:00 p.m.

The Importance of Math in the Criminal Justice Field LF-206

Heloisa DaCunha, Middlesex Community College

In this session you will hear about a collaborative project between Criminal Justice faculty from Middlesex Community College and the University of Massachusetts Lowell. At both institutions, it is very common for faculty members to hear from our Criminal Justice students about their fear of math; it is also common to have students question the use of math in Criminal Justice. To help our students, faculty members from both institutions created signature assignments beginning at the introductory level courses at Middlesex Community College leading up to assignments at the senior level courses at the University of Massachusetts Lowell. In this session you will learn about Criminal Justice assignments that require students to use mathematical formulas, create line graphs, use Microsoft Excel, interpret and analyze data, while identifying patterns of crime rate.

Math in Life (sciences) LF-219

Jean Cremins, Jane Wiggins, Middlesex Community College

Many students come into A & P with the idea that quantitative reasoning is not going to be necessary. WRONG!! Concepts such as pH and surface area are just two examples that are encountered throughout both A & P I and II. In this session, we will explore some activities that create lasting quantitative comprehension (hopefully) for our A & P students.

Developmental Mathematics: A Modular Approach LF-220

Matt Genaway, Senior Implementation and Training Specialist, Cengage Learning

Enhanced WebAssign, a leading online homework platform for math and science, offers a self-paced option to help your students master developmental mathematics. Cengage Learning presents this option to help your students learn concepts and apply them in your course to be successful.

FRIDAY: April, 4 • 3:15 – 4:45 p.m.

An Alternative Teaching Model of Teaching Conditional Probabilities: Truth Table LF-213

Eiki Satake, Emerson College

This paper demonstrates how the truth table of elementary mathematical logic can be used to teach the derivations of complex conditional probabilities. As evidenced by many literatures, statistical novices have difficulties in grasping the concept of conditional probability because of such complexities as (1) how to distinguish between conditional and unconditional statements, (2) how the sample space can be identified and defined, and (3) how the formula can be applied for calculation. The author invented an alternative approach called Truth Table Method to not only simplify the computation process but also help students understand underlying logic behind the conditional probability.

FRIDAY: April, 4 • 4:15 – 5:00 p.m.

A Modular Self-Paced approach to Remedial Mathematics LF-206

Mark Snyder, Fitchburg State University

For the last year and a half, I have been teaching a modular, self-paced class in Remedial Algebra at FSU. I describe the structure of the course, the grading criteria and preliminary results on the performance of students in their college math class.

Teaching a Hybrid Mathematics Class LF-219

Gail St. Jacques, JWU

Hybrid courses (also referred to as a blended classroom) truly represent the best both worlds, that is combining face-to-face classes with online learning. In order for a hybrid course to be successful, a complete course redesign is necessary. The presentation will focus on how the presenter designed and developed her hybrid class, her experience from having taught it twice and lessons learned.

SATURDAY: April, 5 • 9 – 9:45 a.m.

Math Literacy: An Alternative Pathway for Non-STEM Students LF-206

Jim Sullivan, Lori Heymans, Northern Essex Community College

Learn about a new developmental math course, Mathematical Literacy for College Students, developed and implemented as an alternative pathway for non-STEM students intending to take a college level math course in Statistics, Quantitative Reasoning, or General Education Mathematics. Participants will explore new curriculum materials that engage students in mathematics that is relevant for their college level pathway. Attendees will also investigate the ups and downs of implementation at Northern Essex Community College and leave with an understanding of how to start a similar pathway at their college.

Practical Applications of Math in Health Care LF-213

Cassie DelCheccolo, Kathy Gehly, Middlesex Community College

Have you ever heard a student ask, "When will I ever use math in real life?" Find out how nurses rely on math skills in the health care setting. This presentation will include a discussion of the challenges and rewards of incorporating math into the nursing curriculum through the application of math skills in real life situations and scenarios.

Shape up Your Algebra LF-219

Natalya Vinogradova, Plymouth State University

Do your students struggle with algebraic formulas and procedures? Let's get together to explore how geometric shapes can help. By moving rectangles and squares, we will help our students attach meaning to algebraic symbols. Visualization can and should be a useful tool in learning mathematics. Any tool requires skillful handling, and so does visualization. We should teach our students how to use it flexibly and efficiently. You will be able to use these strategies and activities in your next math class!

Acceleration Through Hybridization LF-220

Magdalena Luca, MCPHS University

Every fall semester I teach Biostatistics, a second course in the statistics sequence required for Public Health and Premed students. And every semester I encounter the same problem: students either forgot most of the statistics they have learned in the first course, or, even worse, they were not properly taught statistics. To improve and accelerate students' basic statistical knowledge, I have developed a hybrid course. In this presentation I will address effective hybrid teaching techniques. More specifically, I will describe what topics, assignments, and assessment methods are appropriate to be offered online instead of being presented in class.

SATURDAY: April, 5 • 10 – 10:45 a.m.

So You Think You Know MyMathLab? LF-206

Kevin O'Brien, Sr. Learning Technology Specialist, Pearson Education

Pearson introduces new features to MyMathLab twice a year allowing you to rethink how use MML with your students and course each semester. In this session, we will review Personalized Homework, the Adaptive Study Plan, adding questions from books outside of your course, Gradebook diagnostics, the new reporting capabilities coming this April and much more. Also learn about the new Adaptive MyMathTest.

On The Road (Mathematically) With Red Sox Championship Teams! LF-213

Steve Krevisky, Middlesex Community College, Middletown, CT

Since 2004, the Red Sox have won Three World Series. Is this a golden age for the Beantowners? How does the current version stack up against previous series winners? What are the strongest Sox teams of all time? Using the Pythagorean Projection, Slugging Average, and many other statistical measures, we look at the many titles of the Bosox, and also examine the careers of such famous players as Ted Williams, Tris Speaker, Cy Young, Yaz, Pedro, Manny, Big Papi and others. Intended for teachers of Statistics, Algebra, and Quantitative Literacy.

Cape Cod Community College's New Non-STEM Algebra LF-220

Mary Moynihan, Cape Cod Community College

What should the prerequisite to a non-STEM college level mathematics course look like? CCCC has reworked our entire developmental mathematics and college level mathematics curriculum. One of our new courses is a 3 credit, 5 hour developmental level Algebra for non-STEM students which replaces our Elementary and Intermediate Algebra courses. I piloted the Intermediate Algebra level material during Spring 2013 and Fall 2013. Mary E. Sullivan and I developed the course during the summer and fall semesters and we're offering it for the first time in Spring 2014. We believe that the new course is a substantial change from our traditional algebra courses.

SATURDAY: April, 5 • *10 – 11:30 a.m.*

Homogeneity of Variance Tests Using Excel Kerouac Room

Barry Woods, Unity College

While Minitab lists two (2) separate Homogeneity of Variance (HOV) tests Bartletts and Levenes, and JMP lists four (4) HOV tests; OBrien, BrownForsythe, Levene, and Bartlett, Excel lists none. However, Excel will be used to calculate and demonstrate two powerful, commonly used HOV tests; Levenes test and the BrownForsythe test.

Asking good questions to promote inquiry and mathematical conversations LF-219

Volker Ecke, Christine von Renesse, Westfield State University

In this interactive workshop participants will be considering the different kinds of questions a professor could ask in a mathematical conversation. Good questions promote deeper thinking, clarify students reasoning, reveal contradictions, or stimulate participation and discussion among students. Conversations can take place as a whole class, in a smaller group or just between the professor and the student. Our work on the use of questions has grown out of broader effort on promoting student inquiry. At Westfield State University we successfully use inquiry based materials and techniques to engage students in mathematics. In our project Discovering the Art of Mathematics (www.artofmathematics.org), we are now developing teacher materials and offering workshops making our best practices explicit through vignettes, videos and reflections on our own teaching.

SATURDAY: April, 5 • *11 – 11:45 a.m.*

Math Placement and Support Strategies LF-206

Mary Rayappan, Justice-Taylor Baker, Middlesex Community College, Middletown, CT

In response to PA 12 – 40, signed by CT Governor Malloy that became effective July 1, 2012, we have been constructing several strategies for students who have skills gaps and do not get placed in a college level math course. Few such initiatives are fast-track math workshops, embedded courses, free supplemental resources in classes like Khan Academy and in-house videos, and traditional courses in split classrooms with supplemental instructors. Key aspects of these initiatives along with available data will be presented.

Multiple Pathways on the Horizon for Developmental and College Mathematics LF-213

Kim Ward, Eastern Connecticut State University

As a result of the Connecticut Public Act 1240 Law, the offering of remedial/developmental education courses at Community Colleges and State Universities in Connecticut, must fit into the following levels: Intensive, Embedded and College. Therefore, commencing summer 2014 Eastern will offer multiple pathways to developmental and college mathematics courses. Only time will truly reveal whether this approach will better provide students with the mathematical skills needed for success in their current math course and strengthen basic math readiness skills for future coursework in mathematics and subjects requiring quantitative skills.

Developmental Mathematics at MWCC: Reduce, differentiate and Integrate LF-220

Yoav Elinevsky, Mt. Wachusett Community College

We are addressing two major issues: (a) The large number of students who need Developmental Mathematics (b) The small number of students who start in Developmental Mathematics and able to complete a college level math course. We: (a) reduce the number of students that are placed in our Developmental Mathematics courses by teaching Developmental Mathematics at the HS to seniors, (b) differentiate between STEM majors and non-STEM majors by offering two different developmental math pathways; one which is heavy in Algebra and one which is not, (c) Integrate some algebra into entry- level college math courses such as Statistics and Survey of Mathematics.

SATURDAY: April, 5 • *2 – 2:45 p.m.*

The Convolution Summation: A Nifty Accounting Technique LF-213

Robert Cournoyer, Wentworth Institute of Technology

The concept of convolution is used in the engineering world. In my own words it's a nifty accounting technique. It keeps track of the past inputs as well as the present inputs of a system. Convolution comes in integral form, the convolution integral, and in summation form, the convolution summation. The convolution summation can be explored by precalculus students who have studied functions, function notation, graphing functions, horizontal shifting of graphs, and the reflecting of graphs about a vertical line. I will present a sequence of two Laboratory Investigations in which students develop and learn to appreciate a convolution summation. I will then present a third Laboratory Investigation called Medication Dosing. The concept of half-life is used in this Laboratory Investigation.

The Statistics Connection LF-219

Joseph Manthey, University of St. Joseph

Discussion boards are a central feature of many online courses and are used to develop communication and critical thinking skills. However, discussion boards can also be used to encourage students to see the big picture. In this presentation, I will share examples of discussion questions used in an online statistics course. These examples illustrate the connections between statistics concepts and larger societal issues such as income inequality, poverty, energy and health care. Several compelling examples of the consequences of statistical illiteracy will also be included.

Classroom Management: How to Eliminate Unruly Behavior and Complete Your Curriculum Without Disciplinary Drama LF-220

Howard Coffman

Classroom management has never been easier and more effective. Learn proven ways to raise the level your students' behavior such that it exceeds your wildest expectations. This session will demonstrate practical methods that guide your students to a new level of learning, you never thought possible. Your students will finally be able to focus on the learning objectives and no longer be distracted by disciplinary drama and delay.

SATURDAY: April, 5 • *2 – 3:30 p.m.*

Charting Your Way to Multiplying and Factoring Polynomials LF-206

Elizabeth Reith, Great Bay Community College

Help your students who are struggling with polynomial operations. Learn a great method where they can multiply any size polynomial without the common problem of dropping terms. Also, instead of the tedious "Trial and Error", learn a different technique that works for factoring trinomials. Supporting activities will help reinforce the transition from the concrete manipulations to the abstract pencil and paper.

Embracing Disruption: Transforming Developmental Math Programs with Khan Academy Kerouac Room

Tim O'Connor, New England Board of Higher Education

One of the key findings of the New England Board of Higher Education's Davis Educational Foundation Summit on Costs in Higher Education is that "The confluence of rising prices for students and concerns about quality have increasingly entered public discourse and now promise to prompt regulatory action from government and change cultural attitudes toward higher education."

The NEBHE Developmental Math Demonstration Project with Khan Academy directly addresses this concern on at least three levels:

- Instructional Costs and Student Savings
- Time and Competency – Based Learning
- Quality and Real – Time Student Progress Data

Join us for a tour of Khan Academy and the Developmental math Demonstration Project. We'll show you what we're learning and how our discoveries can positively impact you and your students.

SATURDAY: April, 5 • 3 – 3:45 p.m.

Elementary Math: It's Not So Elementary! LF-213

Linda Dart-Kathios, Carol Henry, Middlesex Community College

With the focus on STEM programs it is imperative that students gain a deep understanding and an appreciation of the beauty of mathematics. This needs to start at the earliest level and elementary teachers can have the most profound effect on students in laying this foundation. This panel will include pre-service teachers currently taking one of their required teacher mathematics courses here at Middlesex. They will discuss what they have learned this semester that has helped give them a better understanding, what they know now they wished they knew then, and techniques that would be helpful in any math class. Come hear what our students are saying about the math challenges that they have faced and how a course like this will influence how they will teach math in the early grades.

Vision Project: A Discussion of its Impact on Higher Education in Massachusetts LF-219

David Henry, Bristol Community College, Bob Cantin, MassBay Community College

The Vision Project, which is funded by The Boston Foundation, is relatively new, but changes are coming to the Massachusetts community college system. We will be discussing the recommendations from the report submitted by the projects Task Force on Transforming Developmental Math Education and try to develop an understanding of the road ahead for our profession.

Mathematical Dictionaries: Reducing the Language Barrier in Mathematics LF-220

Rachel Olson, Mount Ida College, Endicott College, MassBay Community College

Despite increased access to mathematics via technological advances and educational research, students continue to struggle with becoming independent mathematical learners. This is, in part, due to challenges in decoding the language of mathematics itself; understanding this language is a crucial part of a student's interaction with mathematics. Students must discover meaning in phrases, such as solve versus simplify and equation versus expression. By exploring these very subtleties, students found their own conceptual understanding of mathematics. The goal of this workshop is to start a discussion on the role that understanding the language of mathematics plays in learning mathematics. We will look at common directive words used in math instruction and attempt to assign meaning.

Special Thanks to Middlesex Community College for the Donations and Support and to *Pearson Education for the Friday Evening Reception Food*

Thanks to our Exhibitors:

Cengage Learning Pearson Education W. H. Freeman Worldwide Center of Math

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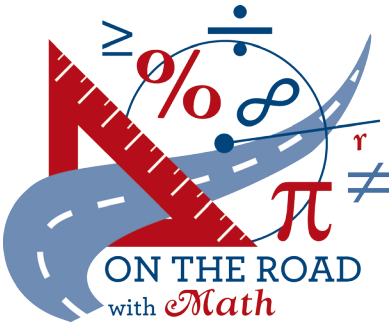
ON THE ROAD
with Math


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