NCMATYC NEWS
Spring 2013

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Inside this Issue

The President's Message
by Ann S. DeBoever, Catawba Valley CC

We are now in my favorite time of year, spring! The flowers and trees are beginning to bloom and the days are getting warmer. We are all coming out of a season of very hard work and are looking forward to a few days of rest. Some of that hard work produced an outstanding NCMATYC Conference. Our thanks go to Glynis Mullins (Program Chair), Christopher Mansfield (Vendor Chair) and Rudy Beharrysingh and his Haywood CC team for creating such an inviting atmosphere at our conference. Many people commented on the beauty of Haywood CC's campus and the excellent organization of the conference.

Twenty-five years of NCMATYC was celebrated at this 2013 conference. It was great to see retirees Lee Ann Spahr, Robert Kimball and Joe Southards join us. Each one of them played an integral role in NCMATYC over the years.

The NCMATYC Conference is always a success because of the members who step forward to present and those who attend. Our attendance was again over 180. Thank you to those who brought new ideas forward to share so we could all go back to our home schools energized with our teaching "tool kits" filled with new tools. We were honored to have Annette Cook, the Southeastern Vice-President for AMATYC, attend the Friday Business Meeting and Friday sessions. She was very complementary of our conference and expressed that our conference was one of the best she had ever attended! We had the pleasure of hearing Julie Miller, our Keynote Speaker, share activities to incorporate money management strategies in our classrooms. Julie also shared with me how impressed she was with our event. Evan Evans, from Fredrick Community College, MD, was the President's Invited Speaker. Evan is a Project ACCCESS Fellow and shared with us his thoughts on the Blended Classroom. Amy Getz, Manager of Community College Services at the University of Texas at Austin, spoke regarding her interest in quantitative literacy for all students. We ended our conference this year with a closing session led by Dr. Gary Rockswold of Minnesota State University.

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The NCMATYC NEWS is an official publication of the North Carolina Mathematics Association of Two-Year Colleges. Articles for publication and comments should be submitted electronically to Ann DeBoever at adeboever@cvcc.edu. The deadline for the fall issue is November 20, 2013.

The President's Message

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The math community of North Carolina Community Colleges is facing many changes at this time. There were several sessions regarding the new Developmental Math Courses that will be in full implementation in fall semester, 2013. Thanks to those who shared their experiences regarding this change. Suzanne Williams, Director of the Math Curriculum Project and a former NCMATYC President, and members of the Steering Committee for the CIP shared valuable information about possible upcoming changes in our curriculum math courses. A lot of work has gone into this project to study the need for new curriculum math courses. Thanks to the members of this committee for giving us vital information to keep us informed of the possible changes.

It is unfortunate that no one from NCMATYC was nominated for the AMATYC Excellence in Mathematics Award this year. I certainly hope this never happens again!!! We are now accepting nominations for the AMATYC Excellence in Teaching Award. I know each one of you knows a great teacher in North Carolina who has changed the lives of students. Please take time to nominate this person. I want the members of NCMATYC to continue to reach out to the communities around the schools that host our annual conference. Thank you to those who brought non-perishable food items to our conference. Several families in the community surrounding Haywood CC benefited from your generosity. We will continue this project at next year's conference by working with the host school to see how we can best assist those in need in the local community.

The Executive Board of NCMATYC is a true treasure for this organization. I am surrounded by dedicated, thoughtful and creative people who work continually to make our organization better and to keep our foundation strong. Nancy Rivers (Past-President) keeps me pointed in the right direction. John Bakken (Treasurer) and Valerie Melvin (Secretary) keep track of our money and our members. Glynis Mullins, our President-Elect, created a beautiful program for our conference; our Vice-Presidents, Jeannie Hollar and Chris Mansfield, bring to our attention ideas from across the state. I look forward to working with Lisa Williams who will be joining us as our Eastern Vice-President this month.

Before our next conference in 2014, you will be voting for a new Executive Board. Want to be part of a professional organization that is directly related to your daily work? Consider putting your name on our ballot for the 2014-2016 Executive Board. I can truly say that you will learn volumes by being part of this great group of people.

At publication time, we do not have a site for our 2014 conference. It is scheduled to be held in our Central Region. Please contact me for details if your school would like to have the opportunity to host this great event. Check our website for updates regarding the 2014 conference. In spring of 2015, our conference will be held in the Eastern Region. I would love to be able to announce this location in our fall 2013 newsletter!

Everyone knows that budgets will be tight in NC Community Colleges in the upcoming years. So, why not apply for an NCMATYC travel grant or an AMATYC travel grant? This is a great way to get to join the fun and not worry about the cost!

I look forward to seeing all of you again at our 2014 Conference (wherever it is!) and wish you the best until then.

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The deadline for the fall issue is November 20, 2013.

Math CIP Update by Suzanne Williams, Central Piedmont CC

The Math CIP Steering Committee and Liaisons have made significant progress toward developing our final suggestions for revising the Common Course Library. For those who may not have been at one of our NCMATYC presentations, our goals, several of which relate directly to the CCL, are:

- To streamline the mathematical experience for all NCCCS students.
- To encourage uniformity of content within each math course regardless of the NCCCS school where it is taught.
- To ensure that NCCCS AA/AS degree math curriculum transfers to the UNC system.
- To reduce the confusion that students face when making choices regarding their math curriculum.

After meeting with 51 of our 55 Liaisons and after seeking input from faculty at NCMATYC, we are recommending creation of two new courses, MAT 143 Quantitative Literacy and MAT 152 Statistical Methods I. We are also recommending revision of MAT 110 and renaming it Mathematical Measurement and Literacy. Following are the descriptions, learning outcomes and rationale for creating/revising these courses.

MAT 110 Mathematical Measurements and Literacy
Hours: 2 Classroom 2 Lab/Shop 3 Total Credit
Prerequisite(s): DMA 010-020-030
Description: This course provides an activity-based approach that develops measurement skills and mathematical literacy using technology to solve problems for non-math intensive programs. Topics include unit conversions and estimation within a variety of measurement systems; ratio and proportion; basic geometric concepts; financial literacy; and statistics including measures of central tendency, dispersion, and charting of data. Upon completion, students will demonstrate the use of mathematics and technology to solve practical problems, and to analyze and communicate results.

Student Learning Outcomes:

1. Demonstrate estimation skills and justify results
2. Use dimensional analysis to convert units of measurement
3. Employ fractions, percentages and proportions to solve contextual problems
4. Compute geometric measurements of perimeter, area, volume and angles
5. Use technology to analyze and interpret elements of personal finance
6. Compare and contrast measures of center and measures of dispersion
7. Interpret tables, charts, and graphs and communicate results

Rationale for Change: This course is updated due to archiving MAT 101 and MAT 115. The update includes key topics identified by program faculty. The updated title reflects the contextual approach of the course, with an emphasis on mathematical literacy

MAT 143 Quantitative Literacy
Hours: 2 Classroom 2 Lab/Shop 3 Total Credit
Prerequisite(s): DMA 010, DMA 020, DMA 030, DMA 040, DMA 050, DRE 098
Description: This course is designed to engage students in complex and realistic situations involving the mathematical phenomena of quantity, change and relationship, and uncertainty through project- and activity-based assessment. Emphasis is placed on authentic contexts which will introduce the concepts of numeracy, proportional reasoning, dimensional analysis, rates of growth, personal finance, consumer statistics, practical probabilities, and mathematics for citizenship. Upon completion, students will be savvy consumers of quantitative information with the ability to use data to make personal, professional, and civic decisions by decoding, interpreting, using, and communicating quantitative information found in modern media encountered in everyday life.

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Student Learning Outcomes (SLOs):

1. Judge the reasonableness of results using estimation, logical processes, and a proper understanding of quantity.
2. Utilize proportional reasoning to solve contextual problems and make conversions involving various units of measurement.
3. Identify, interpret, and compare linear and exponential rates of growth to make predictions and informed decisions based on data and graphs.
4. Differentiate between simple and compound interest and analyze the long-term effects of saving, investing, and borrowing.
5. Describe, analyze, and interpret statistical information such as graphs, tables, and summarized data to draw appropriate conclusions when presented with actual statistical studies.
6. Determine probabilities and expected values and use them to assess risk and make informed decisions.
7. Analyze civic and/or societal issues and critique decisions using relevant mathematics.

Rationale for Change: In keeping with the guiding principles of the CIP, this course will supplant MAT 140 and MAT 115 with a more robust, relevant, and transferable mathematics course designed to present mathematics in multiple work and life contexts. This description is aligned with recommendations by the National Council on Education and the Disciplines, the Dana Center Math Pathways project, the Mathematical Association of America (MAA), the American Mathematical Association of Two-Year Colleges (AMATYC), the Carnegie Foundation for the Advancement of Teaching, and the Organization for Economic Cooperation and Development. In addition, this course has been designed based on broad response from program and subject faculty from across the NCCCS system when they were given the opportunity to provide feedback concerning the necessary mathematical and critical thinking skills desired in their students.

Mat 152 Statistical Methods I
Hours: 3 Classroom 2 Lab/Shop 4 Total Credit
Prerequisite(s): Appropriate placement test scores or DMA 010, DMA 020, DMA 030, DMA 040, DMA 050, DRE 098
Description: This course provides a project-based approach to introductory statistics with an emphasis on using real-world data and statistical literacy. Topics include descriptive statistics, correlation and regression, basic probability, discrete and continuous probability distributions, confidence intervals and hypothesis testing. Upon completion, students will be able to use appropriate technology to describe important characteristics of a data set, draw inferences about a population from sample data, and interpret and communicate results.

Student Learning Outcomes:

1. Organize, display, calculate, and interpret descriptive statistics
2. Apply basic rules of probability
3. Identify and apply appropriate probability distributions
4. Perform regression analysis
5. Analyze sample data to draw inferences about a population parameter
6. Communicate results through a variety of media

Rationale for Change: Two introductory statistics courses are not necessary. This course will improve student communication skills in statistics based on ASA standards. Additionally, this course will increase awareness of uses of technology in statistics.

With the revisions to MAT 110 and the addition of MAT 143 and MAT 152, we are recommending that MAT 101, MAT 115, MAT 120, MAT 151, MAT 155, MAT 161, MAT 175 and the A sections of all courses be archived.

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Math CIP Update

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We are also recommending some changes to the hours of the courses we are keeping. Specifically we would like to see MAT 171, MAT 172, and MAT 263 become four credit hour courses with embedded labs, like the current MAT 271.

Four of the Steering Committee members will be meeting with four of our university counterparts to discuss the college transfer courses as they relate to the revision of the Comprehensive Articulation Agreement that is currently in progress. Some of our recommendations may be revised as a result of this on-going discussion. In that event, the final proposal we send out will be amended. It is our hope that these amendments would be minimal. We will update the proposal before posting it to the web site mentioned below.

Months of thinking, rethinking, revising, un-revising, etc. has gone into this recommendation. It is often the case that thoughts change gradually over time, and this has certainly been our experience. We hope you, too, will spend time with these recommendations, examining the SLO's as well as the rationale provided. Please do contact me if you have questions about the process or the results. Proposed CCL amendments and other CIP recommendations will be posted at http://vlcbb.nccommunitycolleges.edu/webapps/portal/frameset.jsp. If you are not officially enrolled as a liaison, the guest option is available. The username is **mathcipguest** and the password is **mathcip** (all lowercase). Guests will not have access to the 'Discussion' area.

In addition, the liaisons will be sent a package containing all of our recommendations. We will ask them to share these with math faculty at their college. Departments will want to convey support or concerns to their Chief Academic Officer, each of whom will receive a separate package by May 30. The CIP process and the curriculum review process ask that CAO's provide feedback to CPCC, the lead school, by June 30.

The Math CIP will continue in the next academic year. During that time, we plan to have workshops to develop materials for the new curriculum, as well as opportunities to provide professional development to guide faculty as they prepare to bring the new courses to our students. If you are interested in assisting with a pilot or in course development, please contact your Liaison or any member of the Steering Committee listed at the website.

State Placement Committee

by John Bakken, NCMATYC Treasurer, Wake Technical CC

Since joining the NCMATYC Board in 2010, I have had the honor of serving on the State Placement Committee. I have very much enjoyed working with my colleagues on this committee, and am saddened to hear of the dissolution of the committee. Below is the e-mail sent to the committee members. I strongly hope that, as mentioned, a new placement committee will be convened. The input of faculty on placement is definitely needed.

"Dear Placement Testing Committee colleagues,

I am writing to thank you for your excellent service on the Placement Testing Committee. As you know, our community college system is moving away from placement testing in the traditional sense and toward a system of multiple measures for placement. Therefore, at this time we are ending the work of the Committee.

Your work has helped to inform the policy reforms for placement in North Carolina and nationally. It also served as the basis for the new statewide ACT/SAT waiver scores, and will be used as a reference for future placement policies for NCCCS. In one form or another, the work on placement issues will go on, and I'm sure that we will each contribute however we are able. I don't know if a formal Placement Committee will be convened at some point, but I am hopeful, as the new policies and measures will need to be assessed.

Thank you again for your dedication and service,
Brad Bostian, Chair NCCCS Placement Testing Committee"

Placement Testing and Multiple Measures

by Jeannie Hollar, NCMATYC Western Vice-President, Caldwell CC and Susan Morgan, Caldwell CC

Suzanne McGurk from the College Board shared the following information with our college and others about the new math placement test. Ms McGurk said the following: "There have been a few questions circulated about the length of time for test taking on NC_DAP Math. I reviewed all the test score results for students who only tested in NC-DAP Math so I could compare the length of testing time. I excluded any testing done in a Demo account. Average test time is 114 minutes. The results are showing that Math faculty made a good decision to continue testing even when a student fails a module or more than one module as there are many instances of students passing higher modules after failing lower modules. Also of note is that some of the best scores are for some of the longest testing times."

After reading her information, along with John Bakken's revelation about the Math Placement Committee's dissolution, we were left with some serious questions as to our future, not just at our college, but as a system. Of particular concern to us was Ms. McGurk's statement that there are "many instances of students passing higher modules after failing lower modules." We all know of programs requiring lower modules and not the higher ones: nursing, landscape gardening, radiography, just to mention a few. If students are passing the higher modules, then it can be inferred that they were good algebra students and would have made good grades, thus, making them exempt from the placement test through the multiple measures guidelines. What will this do to programs requiring the skills in those lower modules? Nursing, for example, has a math proficiency test based on material in the lower modules. We believe the multiple measure proposal passed without those in charge considering the big picture.

2013 NCMATYC Conference Material Available Online

by Luke Walsh, Catawba Valley CC

I had an exciting time at Haywood Community College and was amazed at all of the amazing resources available. Here is a link (http://padlet.com/wall/ncmatyc13) to a website were attendees have begun to add their presentation resources, ideas, comments, thoughts, links, etc. about NCMATYC13.

Please remember that there are many math educators across the state that could not attend. Let's make sure that we share with everyone, not just those fortunate enough to be there in person. Plus, I know I missed lots of great sessions since I could only choose one per hour. Thanks for your help and being an active member.

Pictured here is Luke Walsh presenting at NCMATYC 2013

"Calling All CaR's, Calling All CaR's"

by Nancy J. Rivers, NCMATYC Past President, Wake Technical CC

Some of you may remember that phrase from an old radio or television show ("G-Men: Heroes of Law", "Car 54, Where Are You?", "Adam 12", "Adam Ant", and many others!). Still others may be familiar with it because of the lyrics to various songs, including raps. I just wanted to try to grab your attention and, at the same time, put out a call for **Ca**mpus **R**epresentative**s**. Get it? OK, attempts at being cute aside, we are looking for people at each community college in our state who are willing to serve as Campus Representatives (Campus Reps). We are actually looking for NCMATYC Campus Reps and AMATYC Campus Reps. One person could fill both roles, or two people could serve from your school. Your choice!

You might be wondering what a campus rep's role would be. The responsibilities would be very similar for the two organizations. The primary responsibility would be to serve as a two-way conduit of information between the executive board of the organization(s) and the instructors at your school. For NCMATYC the current Campus Rep contact person is Lisa Williams, lawilliams@albemarle.edu, assisted by Nancy Rivers, njrivers@waketech.edu. For AMATYC the contact people are Nancy Rivers, njrivers@waketech.edu, and Luke Walsh, lwalsh@cvcc.edu.

What sort of information might you pass along? The executive boards would love to hear ideas, concerns, or requests from the membership. The boards would appreciate help in getting the word out regarding conferences, awards, Student Math League, the North Carolina Calculus Competition and Project ACCCESS. Does everyone at your school know about the Teaching Excellence Award, the Mathematics Excellence Award, the NCMATYC Travel Award, or the AMATYC Travel Award? Is your school participating in the Student Math League? Have you competed in the NC Calculus Competition? Have you had any Project ACCCESS fellows from your school? Do you have new faculty members that qualify for the PROJECT ACCCESS program?

In addition to information transmission we would ask that you be an encourager. Encourage your fellow faculty to join these organizations. While we would prefer that our contact person be a member of the organization(s), membership is not required. We just want to get the information out there and open channels of communication. Encourage others to: attend the conferences of these great organizations, contribute articles to the newsletters, enroll in the NCMATYC listserve (instructions are on the website www.ncmatyc.matyc.org), read the newsletter (a hard copy of the NCMATYC newsletter is sent to every school that could be routed around your department), make nominations (even nominate yourself) for the various awards already mentioned, apply to the Project ACCCESS program, and participate in the Student Math league or the NC Calculus Competition.

Does your school already have a campus rep? We have recently attempted to make contact with those on our latest list of campus reps, but several of your email addresses have changed and so we were unable to contact some on the list. If you have not been in recent contact with Nancy Rivers regarding serving as a Campus Rep for NCMATYC and/or AMATYC and you are willing to serve, please, send the information below in an email to her at njrivers@waketech.edu. If you do not believe you were on the list and are interested in serving, please, send the information below in an email to her at njrivers@waketech.edu.

Name:	School:
email:	Phone number:

If I have mentioned something in this article with which you are not familiar but would like more information, please, feel free to contact me or any other NCMATYC board member. We would love to hear from you!

My NCMATYC Conference Experience, Spring 2013

by Iva McNeil, the recipient of the 2013 NCMATYC Travel Assistance Award, Wilkes CC

How did I spend π day? Attending the NCMATYC Conference, of course. On March 14, I started my morning by driving to the beautiful campus of Haywood Community College in Clyde, NC. In Clyde I attended the 25th NCMATYC Conference with many other math instructors from community colleges (and some universities) from all across North Carolina.

After registering and visiting the vendor booths set up in the lobby, I began the task of deciding which workshops I should attend. I felt like there were many good choices and I couldn't go wrong no matter what I chose. I had topics from developmental math, curriculum math, CIP information, special classroom techniques and vendor sponsored sessions. My first session was "What I learned in Jamaica" and was immediately fascinated by the quick and easy way to follow patterns of math to complete computations in arithmetic and algebra. Mr. McIntosh was fascinating and fun as he described life in Jamaica and how he learned math there. Next, my session was about the DMAs presented by Gregg Miller. I could relate very well to his topic. Much of the material presented, questions asked, and solutions posed were the very same ones I experienced at my school as well. It is nice to know we were on the same page with our thinking. The third session was about π day activities. Among the activities presented was a Jeopardy game where all the questions were related to π—and calculus. I have not had calculus in too many years to mention so, honestly, I wasn't very much help to my team. I did enjoy receiving a children's book authored by the presenter.

Next was lunch in the Sunrise Café. A delicious lunch of salad and lasagna was served. The cookies for dessert were tasty and pretty, too. After the lunch we all went back to the auditorium for special speakers. The first speaker, Julie Miller, spoke about how money talks and students listen. She presented several "real-life" applications involving money that can be used in the classroom from basic math to higher levels of math. I agree with her in that money seems to get everyone's attention, including the students. The second speaker, Amy Getz, spoke of the need for students to take a quantitative literacy course. She said that such a course would relate to personal finance, medical and health information, helping people understand descriptive statistics, social and political issues and more. Not every college graduate necessarily needs to take a calculus series of math.

My last session of the day was about the "flipped" classroom. I was curious to see what was meant by the flipped classroom and the experience of one teacher's use in her class. Posting videos and pen-casts as well as using other outside of class resources made up the "lecture" of the course. The student then attended class to complete the homework where he/she could get help from the instructor. Interesting concept! Friday morning brought a new set of sessions. Still intrigued by the flipped classroom session from Thursday, I attended "Flipping the Class: Heads Up to Avoid Landing on Your Tail" by Susan Howard and Daniela Zemanek. Both of these fine ladies gave both the pros and cons of their experience. Daniela's part of the presentation was showing that a flipped class is very much like a hybrid class. She uses videos and posted lectures online, especially about the graphing calculator. The second session for the day was "Module Madness" where we learned what Central Carolina CC is doing with their DMAs in the developmental math redesign. Since we will be fully implementing DMAs for fall semester, I wanted to get as much information from other colleges on what they have done, if it worked, and what changes needed to be made in order to make our transition easier.

The closing session in the auditorium was truly inspiring. Gary Roskswold talked about the essence of math and the role of math today. In his discussion about "The essence of math…" he informed and encouraged mathematicians about the function of math today and how math will be useful in the future in our society. What a great conference. Presenters—thank you for your hard work preparing and your willingness to share your ideas. NCMATYC board—thank you for your work of putting together such a great conference. Thank you, vendors, for your support. And lastly, thank you Haywood Community College for hosting the NCMATYC Conference. You have a beautiful campus and facility that you shared with us. See you next year!!

Catawba Valley CC Highlights NC Schools Dominance in Student Math League Competition

by Chris Mansfield, NCMATYC Central Region Vice-President, Durham Technical CC

Catawba Valley Community College won its first Student Math League state championship as North Carolina schools claimed the top three places in the Southeast Region of the United States. Catawba Valley CC was followed by Wake Tech CC and Durham Tech CC, who finished in second and third place respectively. Catawba Valley CC's SE Region Championship is the state's fifth in the last six years, with Central Piedmont CC and Durham Tech CC claiming two each. Further highlighting the competitiveness of many different North Carolina schools, Catawba Valley CC becomes the third school in three years to rise to the top of the state scoreboard, following Wake Tech CC and Central Piedmont CC.

This year marks the first time three schools from the same state have finished in the top three spots in the Southeast Region, which includes schools from Florida, Georgia, South Carolina, Mississippi and Tennessee as well as North Carolina.

Further highlighting the depth of quality of North Carolina schools, the three best individual scores in the state came from three different schools: Wake Tech's Chase Yandle paced the field with a score of 39.5, followed closely by Forsyth Tech's Brian Daniel with a 38 and Catawba Valley's Russell Emerson with a 37.5. NCMATYC awards the top three finishers in the state with prizes of $300, $200, and $100 respectively.

Thanks to the ten North Carolina schools that competed in the Student Math League this year, particularly to Mitchell CC, who participated for the first time this year. I'm sure your students appreciate the work you do to give them the opportunity to compete against their peers from around the country. If your school is not involved in the competition, please consider joining—it's easy to administrate and helps foster community within the math discipline. Simply send me an email at mansfieldc@durhamtech.edu for further information.

Mary Pearce Wins 8th Annual Faculty Math League Competition

by Chris Mansfield, NCMATYC Central Region Vice-President, Durham Technical CC

The 8th annual Faculty Math League competition was held at the NCMATYC conference at Haywood CC in March. Perennial contender Mary Pearce of Wake Tech CC took first-place honors by very nearly getting a perfect score—missing only one of the fifteen test questions, giving her a score of 27.5 points. Durham Tech CC's Emma Borynski returned to the top three after a one-year hiatus, finishing second with 25.5 points, and Michael Boone made Catawba Valley CC proud with a third-place score of 25 points.

Fifteen fearless faculty members took this year's test, many of whom stayed behind and engaged in animated discussions over how to approach particular problems. The actual test is printed in this newsletter; give it a try and consider taking it when you come to next year's NCMATYC Conference.

2013 Faculty Math League Test

1. Square ABCD in inscribed in a circle of radius r. Square EFGH circumscribes the same circle. Find the ratio of the area of square EFGH to the area of square ABCD.

   A. 3:2 B. $\sqrt{2}$:1 C. $\sqrt{2}$:2 D. 2:1 E. 3:1

2. Which of the following could not be the sine of an acute angle?

   A. e – 2 B. $\sqrt{13}/4$ C. $\pi/6$ D. $\frac{\sqrt{2}}{5}$ E. $\frac{1-\sqrt{2}}{2}$

3. How many capital letters in the standard English alphabet have symmetry across a vertical and also a horizontal line?

   A. 3 B. 4 C. 5 D. 6 E. 7

4. If $\log_{\sqrt{a}} a = \log_a 16$, find a. Write your answer in the appropriate area on the answer key.

5. Consider the following statements: All toves are wabes. Some toves are borogoves. No borogoves are raths. Assuming the above are all true statements, which of the following must be true?

   A. Some toves are raths B. Some wabes are raths C. No toves are raths

   D. All wabes are raths E. None of the above

6. Find the acute angle made by the lines y = 1.5x + 1.5 and y = 0.5x + 0.5.

   A. 29.74° B. 30.04° C. 30.34° D. 30.64° E. 30.94°

7. There are 12 Ping-Pong players in a league that meets weekly. Each week, each player competes against exactly three others. What is the minimum number of weeks before every player could possibly have played every other player the same number of times?

   A. 4 B. 11 C. 12 D. 33 E. 36

8. Let f(x) = $x + \left|-x + |x - c|\right|$, with c being a real number > 0. Find the value of x that minimizes f(x).

   A. 0 B. c/2 C. c D. 3c/2 E. 2c

9. If f(2x – 5) = 6x – 8, f(x) can be written in the form ax + b. Find a + b

A. -26 B. 1 C. 10 D. 25 E. 34

10. Let f(x) be a polynomial function such that f(0) = -10, f(1) = -5, and f(2) = -2, and f(3)= 4. Find the sum of the coefficients of the terms of the polynomial.

A. -5 B. -2 C. -13 D. -10 E. 19

11. AB + BC + CD = ADD, where A, B, C and D each stand for a unique digit between 0 and 9 inclusive (thus each of the addends are two-digit numbers and the sum is a three-digit number whose tens and ones digits are the same). Find the sum of A, B, C and D.

A. 11 B. 12 C. 13 D. 14 E. 15

12. A regular ten-sided polygon has an area of 40 square inches. Find the side length of the polygon to the nearest 100^{th} of an inch.

A. 2.19 B. 2.22 C. 2.25 D. 2.28 E. 2.31

13. Find the number of **distinct** combinations of a, b, and c such that a + b + c = 10, where a, b, and c are all (not necessarily distinct) integers between 0 and 10 inclusive.

A. 11 B. 12 C. 13 D. 14 E. 15

14. Let a sequence be defined recursively by $a_{n+1} = a_n + n$, with $a_0 = 0$. Which of the following would be an accurate definition of the n^{th} term of the sequence?

A. $\sum_{k=0}^{n-1} k$ B. $\sum_{k=0}^{n} k$ C. $\sum_{k=0}^{n+1} k$ D. $\sum_{k=0}^{n-1} \frac{k(k+1)}{2}$ E. $\sum_{k=0}^{n} \frac{k(k+1)}{2}$

15. Adam and Brendan play a game of tennis, declaring the winner to be the first person to be ahead by two points at any time. If Adam has a 40% chance of winning any given point, what is the probability that Adam wins the match?

A. 4/19 B. 4/17 C. 4/15 D. 4/13 E. 4/11

2013 SOCAMATYC Conference, Rock Hill, SC

by Nancy J. Rivers, NCMATYC Past President, Wake Technical CC

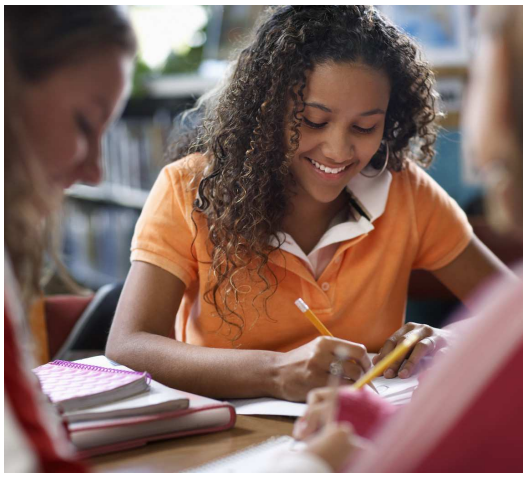
On March 16, the day after our NCMATYC Conference, SOCAMATYC held their 2013 Conference at York Technical College in Rock Hill, SC, just south of Charlotte, NC. This was just too convenient to pass up! Three of my Wake Tech Community College colleagues, Tom Aydlett, Julia Head and Alison Schubert, myself, and Ann DeBoever from Catawba Valley Community College attended the SOCAMATYC Conference. It is important for you to understand that SOCAMATYC is currently a smaller organization than NCMATYC. They are striving to build up their organization and have come to NCMATYC for assistance. Our executive board has offered suggestions on how to increase their membership and for two years now we have had people from NCMATYC present at their conference.

The SOCAMATYC Conference schedule is very different from ours. This year they had a one day conference that began with a welcome session and continental breakfast style goodies. The first "session" on the program was the Faculty Math League by Tom Aydlett and Alison Schubert in which participants took the NCMATYC Faculty Math League Test written by Chris Mansfield. Tom and Alison offered this opportunity in the hopes of inspiring faculty to join in the Student Math League Competition. No school in SC had participated this year. All participants were encouraged to take the test, however, a tour of the college campus was offered as an alternative. Most of the approximately 30 conference attendees did take the test and enjoyed it. The winner actually had a perfect score on the test! He was awarded a copy of Maple that had been donated to their conference by Maplesoft.

To quickly sum up the remainder of the day, there were three time slots with two sessions in each from which to choose – two before lunch and one after. Their lunch was done as a pot luck meal this year. It worked very nicely for them. After lunch they held their business meeting during which Annette Cook, AMATYC Southeast Regional VP, spoke. They also made updates to their constitution and nominated officers for the next two years. After the two breakout sessions in the afternoon they had a closing session during which those present voted for the new officers. During the morning breakout session, Julia Head and I presented "When You're Thrown for a Loop: Keeping Your Calculus Class on Track", which some of you may remember from NCMATYC.

Greg Colley of Piedmont Technical College gave a great presentation. Actually, it was two presentations in one slot. He first presented "Online vs. Paper Homework" and then "Partial Flipping a Class." After each he handed out feedback forms – gathering our opinions and suggestions. I thought this was a great idea! In "Online vs. Paper Homework" Mr. Colley looked at the pros and cons of both styles of homework. He then shared some data he had collected in his College Algebra sections that, although not statistically tested, seemed to indicate that online homework was better in that students doing online homework scored higher on the tests. Following the pedagogy theme, Mr. Colley then shared "Partial Flipping a Class." Mr. Colley had tried flipping his College Algebra class for two years. Some of the issues he encountered were: being prepared before class was a foreign concept to students, students have poor time management skills, students were overwhelmed with the responsibility, they were unable/unwilling to attempt new material on their own and felt the instructor was not doing his job. He was unwilling to completely give up on the concept of flipping the class and so came up with the idea of partially flipping it. What he chose to flip was the review or "just-in-time" material and those really easy sections. His new plan of flipping five sections of his College Algebra class gained him two weeks of class time to devote to the more difficult material. He believes this to be a win/win scenario. Again he shared data collected from his classes that support his belief in partially flipping a class.

Articles for publication and comments should be submitted electronically to Ann DeBoever at adeboever@cvcc.edu.
The deadline for the fall issue is November 20, 2013.



2013 MMATYC Spring Conference

Friday May 31 9:30 am – 3:00 pm
At: **Frederick Community College**
Conference Center E-124
7932 Opossumtown Pike
Frederick, MD. 21702

Theme: The Flipped Classroom
Leveraging technology in your class or program

Share your methods for getting students to use technology outside of class to maximize their experience in class. This conference is a great opportunity to share your experiences and to learn from your colleagues.

Don't miss this great opportunity for professional development and a chance to network with your colleagues! Please feel free to duplicate this form and share it. The conference is open to both fulltime and adjunct faculty.

Cost: Pre-registration by May 17, 2013:
$10 for MMATYC members (you still have time to join! Membership is just $10.)
$25 for non-members

Late Registration – May 17 - May 31
$25 for members; $35 non-members

Return the bottom portion of this sheet. Checks should be made payable to MMATYC.

Name _____

College _____

Email _____ Phone _____

Please note any dietary restrictions:

Amount enclosed:

- o $10.00 Conference fee paid member by May 17
- o $20.00 Conference fee and membership dues by May 17
- o $25.00 Conference fee non-member or late registration for members
- o $35.00 Late registration non-members

Checks should be made payable to **MMATYC**. Complete and return with payment to:
Tom Seremet, CSM Mathematics
8730 Mitchell Road, PO Box 910
La Plata, MD 20646

New Mathematics Instructors

Laila Thompson and Kevin Winfree are Piedmont CC's newest mathematics instructors.

Laila Thompson is a graduate of Fayetteville State University with a Master of Education, Secondary Mathematics and joined our team in January 2013. Outside of Piedmont CC, you might find Laila exploring a museum with her family or engaged in a fierce game of Scrabble.

Kevin Winfree is a graduate of North Carolina State University with a Bachelor of Science in both Mathematics and Mathematics Education, and he joined our group in August 2012. When he's not working with students, you might find him on the golf course or planning a trip to visit a state he hasn't yet explored.

We Are Proud of Our Colleagues! by Luke Walsh, Catawba Valley CC

Michael Boone and Lica Marhao were among six full-time faculty that were nominated for the Excellence in Teaching at Catawba Valley CC. We are proud to announce that Lica Marhao was the overall winner.

In the picture on the right taken at the awards ceremony Michael Boone is the second from the left and Lica Marhao is the third from the left.

Congratulations Lica and Michael!

A Note from the Editor by Daniela Zemanek, Pitt CC

In January 2013 I accepted the position as the AMATYC News editor. As I wrap up this last issue as editor of the NCMATYC News, I would like to thank all of you for your support. During my tenure I worked with three different NCMATYC boards and it was a pleasure to work with every one of the board members. NCMATYC has a strong leadership and I see our organization growing even stronger. I am grateful for all the articles the members took the time to write. I am especially grateful to my colleagues and my department chair Stephanie Woodley here at Pitt CC for being supportive during my five years tenure as editor. Also, I would like to thank Mitzi Logan that proposed me as the editor in 2007. I would have never volunteered for this position if I would not have had her encouragements and support.

It is important for department chairs to encourage their faculty to get involved. Some of the new and maybe not so new faculty may need your encouragement to get started volunteering on a new position within our organization. Please show them your support and help them get involved. It takes time and effort but being part of NCMATYC is a very rewarding experience.

Last but not least, I would like to thank the NCMATYC board for the recognition plaque I received at the 2013 NCMATYC conference. This recognition means a lot to me. Thank you again for a great experience.

Images from 2013 NCMATYC Annual Conference
Haywood Community College
Clyde, NC
March 14-15, 2012

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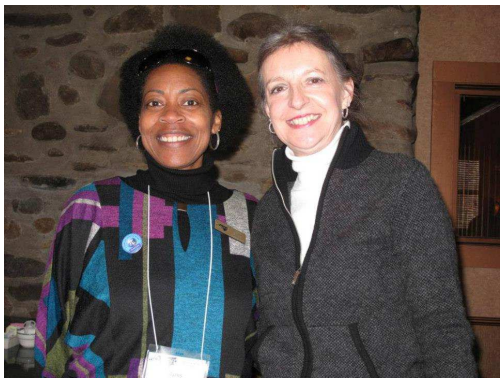









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Southwestern Supports Professional Development for Adjuncts

by Hilary Seagle, Southwestern CC

For a number of years I've requested funds in our budget to cover NCMATYC attendance for interested adjunct faculty. Of the twenty-one instructors/developmental content coaches at Southwestern CC, only four are full-time faculty. To their credit, our administration has recognized the value of the NCMATYC Conference and has budgeted for both full-time and part-time faculty attendance for a number of years. Last year three full-time and four adjunct faculty traveled to Cape Fear CC.

This year, due to proximity of the conference, no overnight travel was required. I still requested the same funding which allowed three full-time and two part-time faculty to attend AMATYC in Jacksonville, Florida in November and for a total of thirteen of us to be at the NCMATYC in March.

If you aren't currently requesting funds for your adjunct faculty to attend the NCMATYC conference, now is the time to start! Administrators at Southwestern CC recognize that our association and conference sets the bar for other programs. It isn't a hard sell; the conference is a true bargain. I thank the NCMATYC board for keeping the quality high and the price low.

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