

## Fall 2003

### NCMATYC Elections To Be Held In January 2004

Are you interested in being more involved in NCMATYC? Want to learn how decisions about conferences and projects are made? Do you have complaints about the way NCMATYC is run? Well, here's the answer to all of those questions! Run for an office on the NCMATYC Executive Board? Elections will be held in January 2004 before our spring conference at Mayland CC in Spruce Pine on March 12-12, 2004. Elections will be held for the following offices for the 2004-2006 Executive Board: President-Elect, Western Vice President, Central Vice-President, Eastern Vice-President, Secretary, and Treasurer.



If you are curious about the duties of each of these offices, contact the current officers or go the NCMATYC website and look up the duties as defined in the NCMATYC constitution.

Want to run or nominate someone else? Contact Melissa

Staley at (919) 718-7249 or [mstaley@cccc.edu](mailto:mstaley@cccc.edu) no later than December 15 to get on the ballot.

The NCMATYC NEWS is an official publication of the North Carolina Mathematics Association of Two-Year Colleges and is published by Wake Technical Community College's Mathematics and Physics Department. Questions and comments should be directed to Rob Kimball, Editor, Wake Tech Comm College, 9101 Fayetteville Road, Raleigh, NC 27603-5696. Articles for publication are welcomed and should be submitted electronically to the editor in Word format: [rkimball@waketech.edu](mailto:rkimball@waketech.edu). The deadline for the Winter issue is January 9, 2004.

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## Usiskin's 12 Beliefs Underlying UCSMP

by Rob Kimball, Wake Tech CC

In 1987 the 3<sup>rd</sup> Annual UCSMP Conference was held (University of Chicago School Mathematics Project). It was the first year that Zalman Usiskin was the director of that project. You've probably heard Zal speak at NCTM or NCCTM conferences. In his talk, in 1987, he listed 12 beliefs that would guide his project for the next 15 years.

In a recent article in the UCSMP Newsletter <<http://social-sciences.uchicago.edu/ucsmp>>, Zal listed those same 12 beliefs and discussed their impact on the project and on mathematics education.

Here are his 12 beliefs, circa 1987.

- Belief 1:* Mathematics is valuable to the average citizen.
- Belief 2:* Huge numbers of students leave high school mathematically ill-prepared for the activities they will undertake.
- Belief 3:* We can learn from other countries.
- Belief 4:* A major cause of this problem (mathematical ill-preparedness) lies in the curriculum.
- Belief 5:* The existing (traditional) K-8 mathematics curriculum wastes time. It underestimates what students know when they enter the classroom and needlessly reviews what students have already learned.
- Belief 6:* Calculators and computers render some content obsolete, make other content more important, and change the ways we should view still other content. New technologies also present new possibilities for instruction.
- Belief 7:* The scope of mathematics should expand at all levels.
- Belief 8:* The classroom should not be divorced from the real world.
- Belief 9:* To make any significant change at the elementary level, we need specialized mathematics teachers.
- Belief 9a:* To make any significant change at the middle school level, teachers of mathematics in grades 7 and 8 should have at least a college minor in mathematics or its equivalent.
- Belief 10:* To make significant changes in any school, teachers and administrators (and parents) must work together.
- Belief 11:* Reality does not always coincide with our impression of reality, so impartial examinations of reality are necessary.
- Belief 12:* We cannot improve education alone. We need help from the entire education community.



### Out Of The Mouth Of A Student

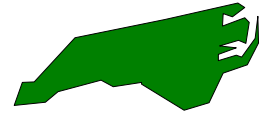


In all of my classes, I have the students complete a brief information sheet (asking for their name, major, last math class taken, etc.). One of the questions asked about their Excel experience. Here's a direct reply to that question from one of my 171 students:

"I am a very motivated student wanting to excel."

## What's Happening?

### News from Durham Tech



Durham Tech's own **Chuck Wessell** has been named to the prestigious position of Student Math League Contest Coordinator for the American Mathematical Association of Two-Year Colleges. This is indeed an impressive appointment in that Chuck will be working with two-year colleges across the country in the administration and scoring of the Student Math League contest.

Chuck has been a full-time mathematics instructor at Durham Tech since 2000, and during that time he has made great progress in enhancing Durham Tech's statewide and national performance in mathematics competitions.

Not only is Chuck a gifted mathematician, he has also appeared on "Jeopardy", and he was named by the governor of North Carolina to the Order of the Long Leaf Pine for leading NC State University to the 1988 College Bowl National Championship.

Please congratulate Chuck on this magnificent accomplishment!

Under the leadership and direction of Chuck Wessell, Durham Tech placed first at the ninth annual Gainesville Mathematics College Tournament held April 12 in Gainesville, Georgia. In addition, Durham Tech students **Jun Jian Hou** and **Joshua Vanderwall** won cash prizes. Congratulations are in order for the Math team members Austen Lethbridge-Scarl, Joshua Vanderwall, Chuck Wessell (advisor), Jun Jian Hou, and **Jase Wilkinson** for all of the hard work.

Also, congratulations to Durham Tech students and advisor Chuck Wessell for achieving the first place score in the N.C. Student Math League Competition.

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### News from Wake Tech CC

The Pre-Curriculum Mathematics program at Wake Technical Community College is introducing a number of new offerings during the Fall 2003 - Spring 2004 school year. In the Fall 2003, the Mathematics department added Algebraic Concepts (MAT 095) as a local prerequisite for Precalculus Algebra (MAT 171). For those MAT 171 students who find they need to drop back, Pre-Curriculum is offering 4 sections of MAT 095 with a delayed start 4 weeks into the semester. Pre-Curriculum is also doing a pilot of an integrated Essential Mathematics course in an attempt to get students through both Essential Mathematics and Introductory Algebra in one semester. Finally, in the Spring 2004 semester, we will offer both Intermediate Algebra and Algebraic Concepts over the Internet. The addition of these 2 courses will mean we will now be offering all our Pre-Curriculum Mathematics courses in a distance format.

The Mathematics and Physics Department is teaching several new courses this fall. New additions include MAT 145; Analytical Mathematics, MAT 141; Mathematical Concepts I; PHY 151 and PHY 152, College Physics 1 and 2; and PHY 121, Applied Physics I. 145 is part of several CIS programs, and 141 is an option in the college transfer track for future teachers. 151 and 152 are the non-calculus-based physics for college transfer students and 121 is a hands-on, integrated physics (with math taught just-in-time) that is now part of the program for most of the vocational programs.

Two other projects are new this term. Several faculty have created "Excel 911", a CD that contains a collection of 30 - to 90-second videos that teach the basics of Excel. The movies are actually what happens on your PC screen and the audio explains the sequence of events. The MAT 115 text now includes a CD as well. The supplemental CD contains the exercises with links to spreadsheet templates, answers, and reading exercises to encourage students to read the text before attending class.

**Jay Martin** has been selected as the AMATYC Commercial Exhibit Chair for the next three annual conferences. He is accepting this position beginning November, 2003 following **Michael Schachter** who has lead the Exhibit show for the past 6 years. Well done Mike!

*continues on page 4*

### *What's Happening continued*

Wake Technical CC is pleased to announce the employment of ten new math instructors: **Kimberly Hawkins** and **Kelly Vetter** full time, **Lora Kalbaugh** and **Miranda Cave** full time temp and **Alyson Paszek** part-time (pre curriculum department). **Melinda Auman**, **Megan Early** and **David Harvey** full time, **Charlotte Song** full time temp, and **Melissa Greiner** part-time (math and physics department).

### **Our Condolences**

Jim Scanlan, math instructor at Durham Tech, passed away during the summer. He had been at Durham Tech for the past 14 years, and he regularly attended the NCMATYC Conferences.

Jim was diagnosed with esophageal cancer last September, and he suffered a great deal over the past 10 months. He turned 60 last February. We will certainly miss Jim.

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### **News from Caldwell CC and Technical Institute**

Caldwell Community College and Technical Institute is pleased to announce the employment of **Stacy Reagan** as a new full-time math instructor on our Watauga campus. Stacy comes to us from Tennessee where she taught in various capacities for ten years at Roane State Community College and for two years at a private Christian academy. Stacy holds Bachelor's and Master's degrees from Tennessee Technological University. Her husband, Jason, is the editor of the Watauga Democrat newspaper. They have two children, Justin (8) and Shelby (5).

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by Tim Beaver, Western Regional VP

## **News from the Regions**

Hello from Western NC! As always, my wishes are for each of you to be having a most splendid start to the semester. At ICC, we are experiencing a population explosion. We've had some additional tragedies concerning employment in Rutherford County, but that has produced the biggest enrollment figures for ICC in its history. There is job security in our profession, as we will never run out of students, and even with the eventual recovery of our economy, we will always have a population to train and educate. NOW, IF THE PEOPLE IN RALEIGH WOULD GET THE HINT OF JUST HOW MUCH WE ARE NEEDED.

Yes, I'm going to take a second with the opportunity that this bully pulpit gives me. We need to let the politicians know just how valuable our services are. I realize that counties and the state are facing financial difficulties, but keeping us at essentially the same salary over the past three years while seeing our expenses grow exponentially (had to throw that word in!) is such an insult.

Let them know that we're tired of lip service. With our service population well over 700,000, it's about time we were recognized for the jobs we do. That doesn't just apply to math instructors, or to instructors as a whole, but the entire NCCCS family. What can we do? Make noise!!! Our (NCCCS) future depends on our ability to convince these "honorable" people of the NC House & Senate that our service is worth more than a bunch of "attaboys and attagirls". It's not like we're asking for million dollar contracts. We, like the rest of NC, cannot recruit new and improved talent with these insulting salaries. We, like the rest of NC, cannot retain invaluable faculty by denying raises, denying retirement contributions, promoting a most inferior health care system that has doubled (at least) over the past three years while our income has come to a standstill, and other various actions that would insult the lowest position in the lowest occupation. MAKE NOISE!!!

*continues on page 5*

*News from the Regions continued*

Now that I've griped about our current status, I'll move on to more positive matters. I am very excited that this year's upcoming conference will be held in the beautiful NC mountains. Thanks to Mayland CC for the wonderful conference that I know is going to take place. This will be a most excellent opportunity for all of us to escape. I'm already planning on taking extra days to enjoy the splendor of the scenery, as well as spend time with some family that live in the area. Plan on getting involved NOW! Plan to share your ideas with the rest of the state. Plan on presenting now!!

One of our positive experiences at ICC was hiring a new full-time math instructor. His name is James Matthew Spratt, and he is a home-grown, born here in Rutherfordton, NC. He attended public school locally, participating in quiz bowl, math counts, and other cultural events here at ICC throughout his public school experience. Although he never officially attended ICC, he has three members of his immediate family graduate from ICC. He graduated in the spring of 2001 with a B.S. in Math and Physics from Western Carolina. He then continued on at WCU to graduate in the summer of 2002 with an M.S. in applied math. He taught at USCS for the fall 2002 semester before being hired at ICC at the start of this year. He is the typical "mountain boy", enjoying the outdoor activities and playing guitar in a bluegrass band in addition to his mathematical talents.

Well, I've written a novel, so I'll exit stage left. Hope to see you all soon, whether it be at the NCCCFA conference or NCCTM conference (yes, had to throw that plug in!!!) or just out enjoying life. Continue to wow them with the talents you have been blessed with, and continue to educate them so well that you make that noise with your talents!

## **Help Us Make The Case !**

by JoAnn Williams, Wake Tech CC

This past summer I have attended the AMATYC Teacher Preparation Institute in Washington plus the MAA Preparing Mathematicians to Educate Teachers (PMET) conference in Boone, NC. Through discussions with various two-year and four-year faculty both inside and outside the state of North Carolina, I have decided that the two-year institutions have a grave responsibility and marvelous opportunity to help provide standards based, in depth, connected, "make sense" mathematics to our future elementary teachers. I began to make some connections with four-year faculty who agree. We just need to change MAT 141 and 142 from transferable electives to core mathematics for elementary majors. Future elementary teachers are starting here and they need a different type of mathematics exposure. They need a deeper understanding of the curriculum that they will teach.

My first step is to find out how many perspective elementary teachers we have at Wake Tech CC right now. My surveys of 161 and 140 classes are coming in. Could you do the same at your institution so that we can start to present our case with actual numbers of students that we are dealing with. Send your numbers to [jgwillia@waketech.edu](mailto:jgwillia@waketech.edu).

## **SESSION SPEAKERS--Specialists**

Have you been wanting some specialists to come present at the next conference? Some of you have suggested that we bring in some specialist from outside the state to present a session. The Board voted to invite two or three specialists to come speak at the NCMATYC Conference in Spruce Pine. Do you know of someone who inspired you? Provided you with new ideas that you implemented? Analyzed and solved a problem that had challenged you? Let one of your Board members know and we will invite that person to come and do a session for us all. Or contact me at [cupittmm@gwmail.dtcc.cc.nc.us](mailto:cupittmm@gwmail.dtcc.cc.nc.us).

**TREASURER'S REPORT**

As of August 25, 2003

	May 1 - Aug 25	Year - to - Date	Prior Year-2002
<b>INCOME**</b>			
Conference Registration	\$0.00	\$2,825.00	\$4,300.00
Membership Dues	\$330.00	\$935.00	\$1,295.00
Vendor's Fees	\$0.00	\$3,650.00	\$4,300.00
Designated Gifts	\$0.00	\$0.00	\$500.00
Intrest Income	\$22.48	\$49.51	\$420.96
<b>TOTAL INCOME</b>	<b>\$352.48</b>	<b>\$7,459.51</b>	<b>\$10,815.96</b>
<b>EXPENSES</b>			
AWARDS: Math Contest	\$0.00	-\$700.00	-\$700.00
Bank Charge	\$0.00	-\$6.00	-\$14.50
Board Meeting Expenses	-\$343.20	-\$343.20	-\$955.31
Conference (State):			
Programs	\$0.00	-\$166.92	-\$271.58
Food	\$0.00	-\$1,978.36	-\$3,354.38
Gifts	\$0.00	-\$21.40	-\$50.00
Supplies	\$0.00	-\$67.06	-\$301.00
Flowers	\$0.00	-\$131.27	-\$51.75
Rent			
Projects	\$0.00	\$0.00	-\$1,600.00
Conference (National):	-\$100.00	-\$100.00	-\$1,124.05
Donations/Memorials	\$0.00	\$0.00	-\$100.00
Mini-Grants	\$0.00	\$0.00	-\$1,000.00
Newsletter: printing and	-\$558.22	-\$687.85	-\$1,589.85
Postage and election costs	\$3.70	-\$33.30	-\$202.72
Web Site	\$0.00	-\$500.00	-\$1,000.00
Professional Services (Lawyer)			
Supplies	\$0.00	\$0.00	-\$14.89
<b>TOTAL EXPENSES</b>	<b>-\$997.72</b>	<b>-\$4,735.36</b>	<b>-\$12,330.03</b>
<b>NET CHANGE</b>	<b>-645.24</b>	<b>2,724.15</b>	<b>-1,514.07</b>
<i>Transfer to(-)/from(+) Savings</i>		-1,000.00	1,900.00
<i>Report Summary</i>			
Checking Balance		\$3,558.29	\$1,883.65
CD		\$9,598.60	\$9,558.45
Money Market		\$4,293.00	\$3,283.64
<b>Total Cash and Cash Equivalents</b>		<b>\$17,449.89</b>	<b>\$14,725.74</b>
<b>CONFERENCE SUMMARY</b>			
Receipts		\$6,475.00	\$8,600.00
Expenses		-\$2,365.01	-\$5,628.71
Net		\$4,109.99	\$2,971.29

## **A Vision From the Mountaintop NCMATYC Conference March 11-12, 2004**

by Chuckie Hairston, Program Chair

Mark your calendars for March 11-12, and begin planning now to attend our annual conference at Mayland Community College in Spruce Pine, NC, just north of Asheville. Site Coordinators Paula Schlesinger, Sandy Pierce, and Larry Shook are hard at work preparing for our visit, and Western Regional VP Tim Beaver is talking with the vendors. In honor of our location, this year's theme is "A Vision From the Mountaintop". The conference will run from 9 am to 5 pm on Thursday, with sessions beginning on the hour, and lunch running from 12 to 1:45 pm. On Friday, breakfast and the business meeting will run from 8 to 9:15 am, and sessions will run from 9:30 am to 12:30 pm, beginning on the half-hour. Again this year, we will be offering regular 45-minute sessions, mini-sessions, and 90-minute workshops on a variety of interesting and informative topics. In

addition to the Presenters Form included in this newsletter, online registration for presenters is available at the NCMATYC website. Either way, forms must be submitted by February 1, 2004, with time slot preference given by date of receipt of the form. The conference schedule will be on the web site by February 15.

Come join us and bring a teaching idea, project, classroom activity, or other information to share with your colleagues at our conference in the lovely mountains of North Carolina. As always, the conference team needs your participation to make this conference successful. You can start now by submitting your Presenters Form. We look forward to seeing you in Spruce Pine on March 11-12.

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## **A Report on the AMATYC Summer Institute in Raleigh**



by the Facilitators, Wake Tech CC

During the AMATYC Summer Institute in Raleigh, May 18 – 23, 17 Institute participants from 12 states had time to learn more about how and when mathematics is used in the workplace and to create industry "snapshots" with workplace applications. These interactive, web-based, multimedia snapshots contain a company overview, profiles of selected employees, a warm-up quiz, and a brief introduction to the industry-based applications. The accompanying applications cover topics from developmental mathematics to calculus, may be short in-class assignments or multi-day projects, and are designed for teachers to use in their classrooms without a great deal of adaptation. CD's containing these snapshots and applications enable instructors to make math more meaningful, to motivate more students to enroll in additional mathematics courses, to increase the students' awareness of job opportunities in the workplace, and to encourage more students to pursue degrees in AAS programs.

Visiting eight different industries was a rewarding process for all involved. Industry reaction to the visits by AMATYC faculty was very positive, and companies voiced their high regard for the professionalism of the faculty who visited. In addition, Summer Institute participants found the experience "energizing" and "eye-opening". Participant feedback was enthusiastic and several have already visited industries in their regions and plan to write snapshots of their own.

During the evenings, participants were given the opportunity to meet industry representatives, to tour Raleigh, and to experience some of the fine dining establishments in the area.

For further information and a view of the snapshots, come to session S25 on Thursday November 13, 2003 in Salt Lake City.



## A Message From Your Regional AMATYC VP

Rob Kimball, Wake Tech CC



Fall is always a very busy time for two-year college math faculty.

You've begun a new term, which usually means you are teaching a new course, teaching out of a new textbook, trying out new technology, and experimenting with different pedagogy. You are working very hard to assess what works and what does not in an effort to get students to learn a subject that most would rather not take. Isn't that a shame! That question has to be addressed as we seek to improve student outcomes and supply the nation with at least quantitatively literate citizens.

There are many studies that show the decline in student attitudes about mathematics beginning in about the sixth grade. But lets not go there. Lets just deal with what we can do something about – the mathematics in the first two years.

There are at least four initiatives every two-year mathematics faculty member should know about.

AMATYC supported by NSF and in conjunction with the MAA, queried faculty from other disciplines as well as practitioners from industry to see what skills they expected in our graduates. With the input of mathematics faculty who attended a national conference, the result was a publication that all AMATYC members should have received: A VISION: Mathematics for the Emerging Technologies. If you don't have that report, the searchable and interactive version is on the web at <http://www.waketech.edu/~rlkimbal/CRAFTY/webvision.pdf>.

The recommendations are useful to all who teach mathematics.

With support coming from many areas, AMATYC is heavily involved in the dialogue concerning teacher preparation. The data clearly shows that two-year mathematics faculty teaches the mathematics to many, if not most, of the future elementary and middle school teachers. As we teach, we need to realize that we are setting an example for future teachers. More information about this initiative can be found at: <http://amatyc.dtcc.edu>.

AMATYC is updating the 1995 CROSSROADS. The task is involving a great many professionals. The first product, a written document, will be available in Salt Lake City for review comments. Future products may include videos of teaching strategies, examples of appropriate activities, assessment ideas, and more. If you can't be in SLC, then keep up with the progress using the link on the AMATYC home page: <http://www.AMATYC.org>.

The effort to reform College Algebra (not pre calculus) can probably do as much to improve what students think about mathematics as anything. The student who plans to major in something this is not math intensive should enjoy studying the math that will be most useful to them – as citizens or in their profession. That probably is NOT algebra. A couple of good websites to examine are:

<http://www.oswego.edu/nsf-precalf/Herriott-College Alg Reform.pdf>

and <http://matc.siam.org/workshop/CurRef.cfm>.

Even though you are busy, I hope many of you can attend the conference in Salt Lake City. The program is outstanding, the hotel is splendid, and the company will be fantastic.

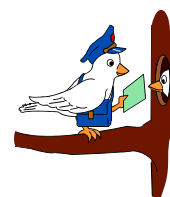


## Conferences & Other Opportunities

<b>Conferences &amp; Other Opportunities</b>	
FTYCMA Fall Retreat Tarpon Springs, FL	26-27 September, 2003
LaMsMATYC Annual Meeting Long Beach, Mississippi	27 September, 2003
NCCTM Fall Conference Greensboro, NC	9-10 October, 2003
16 <sup>th</sup> Annual International Conference on Technology in Collegiate Mathematics Chicago, IL	30 Oct-2 Nov, 2003
AMATYC ME Awards Nominations	3 November, 2003
NCTM Regional Meeting Charleston, SC	6-8 November, 2003
AMATYC 29 <sup>th</sup> Annual Conference Salt Lake City, Utah	13-16 November, 2003
MAA-AMS Joint Math Meetings Phoenix, AZ	7-10 January, 2004
NCMATYC Conference Mayland, NC	11-12 March, 2004
T <sup>3</sup> Conference New Orleans, LA	12-14 March, 2004
NCTM National Conference Philadelphia, Pennsylvania	21-24 April, 2004
10 <sup>th</sup> International Congress on Math Education, Copenhagen, Denmark	4-11 July, 2004
AMATYC 30 <sup>th</sup> Annual Conference Orlando, Florida	18-21 November, 2004

### Please do a Session

Help make the Conference a success! The best presenters are the presenters who make up our membership. Come prepared to share your ideas as well as soak up ideas from others. Enclosed in the Newsletter is a ***Presenter's Form. Tear it out! Fill it out! Send it in!*** We need you and your ideas for the NCMATYC Conference to be held on March 11<sup>th</sup> and 12<sup>th</sup> at Mayland CC for it to be the success that you expect it to be.



### Membership Fee Increasing To \$10.00

The monthly costs of operating NCMATYC have been gradually eroding our economic base. The costs of mailing the *NCMATYC NEWSLETTER*, and reimbursing the costs of travel for the board members come to far more than the sum of all of those \$5.00 fees that we currently collect. As a result the Board has voted to increase the membership fee to \$10 per year for single year memberships and \$25 for a three-year membership. This increase will go into effect January 1, 2004. However, if you are frugal like me, you might want to get in on the \$5 per year membership-deal ONE LAST TIME. You must send in your fee before January 1, 2004. Make your check out to NCMATYC and mail it to Sharon Killian, Asheville-Buncombe Technical Community College, 340 Victoria Road, Asheville, NC, 28801. She will be glad to hear from you.

<b>2001 – 2003 NCMATYC Leadership</b>			<b>2004 Conference</b>
President-Elect <b>Chuckie Hairston</b> Wake Tech CC 919 662-3637 mchairst@waketech.edu	President <b>Mary Marsha Cupitt</b> Durham Tech CC 919 686-3300 cupittmm@gwmail.dtcc.cc.nc.us	Past President <b>Melissa Staley</b> Central Carolina CC 919 775-5401 mstaley@gw.ccarolina.cc.nc.us	Mayland CC March 11-12, 2004
Western VP <b>Tim Beaver</b> Isothermal TCC 828 286-3636 tbeaver@isothermal.cc.nc.us	Central VP <b>Jan Mays</b> Guilford Technical CC 336 334-4822 (ext.2412)	Eastern VP <b>Phyllis Patterson</b> Wayne CC 919 735-5151 ppatt@wcc.wayne.cc.nc.us	Site Coordinators <b>Sandy Pierce</b> <b>Paula Schlesinger</b> <b>Larry Shook</b>
Treasurer <b>Sharon Killian</b> AB Technical CC 828 254-1921 (ext.228) skillian@abtech.edu	Secretary <b>Mitzi Logan</b> Pitt CC Pitt CC 252 321-4200 mlogan@pcc.pitt.cc.nc.us	Student Math League <b>Chuck Wessell</b> Durham Technical CC 919 489-2704	
Newsletter Editor <b>Robert Kimball</b> Wake Tech CC 919 662-3602 rkimball@waketech.edu	Webmaster <b>Matt Sherrard</b> Wake Tech CC 919 662-3423 mmsherra@waketech.edu	Visit NCMATYC Online at <a href="http://www.waketech.edu/ncmatyc">www.waketech.edu/ncmatyc</a>	Program Chair <b>Chuckie Hairston</b>

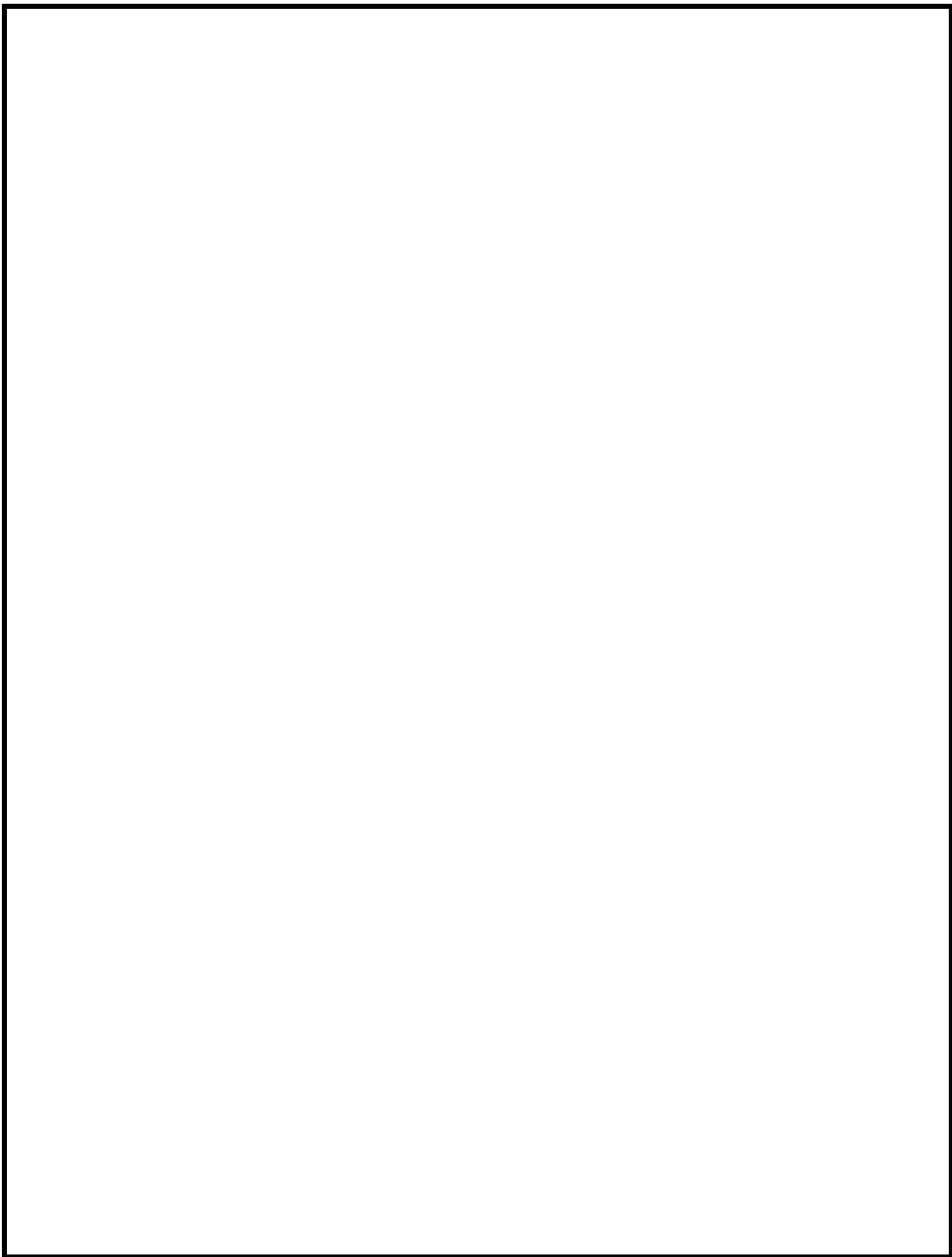
## **SESSION SPEAKERS--Specialists**

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## FROM THE PRESIDENT'S DESK

by Mary Marsha Cupitt, Durham Tech

The Board held its annual retreat in Asheville, NC, at the beautiful home of **Sharon Killian**, located up a mountainside on the edge of one of North Carolina's most charming cities. (I mention this only to help you recognize that there are perks associated with serving on the NCMATYC Board. I took two other days and went kayaking on the Little Tennessee.) Sharon not only hosted the retreat, she invited us to spend the night at her home. Perfect setting, perfect meeting place. Thank you Sharon for your generosity.

**Increased the Membership Fee:** **Sharon Killian** reported at the Board Meeting that the present membership fee is no longer sufficient to cover the costs of mailing the *NCMATYC Newsletter*; much less the cost of the quarterly board meetings, mini-grants, contest awards, and other costs. It has been clear for some years that the membership fee was inadequate for supporting NCMATYC initiatives. The past two or three years we have been drawing on our reserves. In response to these issues, the Board voted at the retreat to raise the membership fee to \$10.00 per year or \$25.00 for three years, beginning January 1, 2004. However, if you still want a bargain membership, you may extend your membership for one year at the old rate of \$5.00 per year, if you extend it before January 1, 2004. Make your check out to NCMATYC and mail it to Sharon Killian, Asheville-Buncombe Technical Community College, 340 Victoria Road, Asheville, NC, 28801. I am eager to see how many of you are as thrifty as I am. I am writing my check right now, as I write this article.

**Membership by School:** We have members from every community College in the state of North Carolina except Johnston CC and Bladen CC. **Phyllis Patterson** reported that she had made several efforts to contact mathematics instructors at those schools to no avail. Can you help? Do you know anyone who teaches at that school who can help us contact the instructors? We would really like to have a member at every community college in NC.

**Brochure:** The NCMATYC Brochure has recently been updated and several copies have been sent to every North Carolina CC and university. Please distribute the copies to the new members of your mathematics faculty as well as to the mathematics faculty who are not active in NCMATYC.

**A VISION:** AMATYC just released a publication, *A Vision of Mathematics for Emerging Technologies*. Several instructors from Wake Tech were involved in putting together the recommendations. You should have received it in the mail in May 2003. I hope that you have read it and that it generated some discussion at your institution. [www.waketech.edu/~rlkimbal/CRAFTY/webvision.pdf](http://www.waketech.edu/~rlkimbal/CRAFTY/webvision.pdf)

**Survey of Common Course Library:** I have been in contact with **Edith Lang** as to the most efficient way to promote the recommended changes in the Common Course Library. I will keep you posted as to where we are in this process. You will recall that we are going to try to imbed the labs into MAT 171, 172, 175 and 263. Wish me luck.

**Mayland CC at Spruce Pine:** MAYLAND CC in Spruce Pine, NC, will host the Spring 2004 NCMATYC Conference on March 11<sup>th</sup> and 12<sup>th</sup>. Put it on your calendar today!! The Board spent one full morning at the retreat planning the conference. Sandi Pierce, one of the site coordinators (the others are **Paula Schlesinger** and **Larry Shook**), attended. We are excited to have their enthusiasm and energy as we put this conference together. Spruce Pine is a charming town. Plan to spend the weekend and enjoy the mountain scenery.

The Board decided to set aside some money to invite to the conference two or three presenters from outside the state. I have two suggestions thus far for presenters and a few ideas of my own. Do you have some ideas also? Email me at [cupittmm@gwmail.dtcc.cc.nc.us](mailto:cupittmm@gwmail.dtcc.cc.nc.us). We will see what we can put together.

This is the year that we elect a new Board. Are you interested in being a member of the Board? If you are, contact **Melissa Staley**, [mstaley@gw.ccarolina.cc.nc.us](mailto:mstaley@gw.ccarolina.cc.nc.us), at Central Carolina CC. She would love to hear from you.

Another year with a pitiful raise. Do you feel like you are volunteering your time to help the people of North Carolina achieve their academic goals. I know I do. I know you do to. But, keep volunteering. It's important and satisfying in its own right. And we do get some compensation, so it is not all volunteer.

See you in March...March 11 and 12...Mayland CC...Spruce Pine, NC. Put it on your calendar.

## Developments in Developmental Math

by Naomi Gibbs, Pitt Community College

Lots of changes will greet instructors and students in the developmental math program at Pitt Community College in the fall. The greatest visible change will be the relocation of lab and office facilities to the new Reddick Building, a huge improvement over the "trailer park" quarters that have been home for more years than anyone can remember.

At last, there will be a permanent, dedicated math lab, not one that must function also as a classroom. Seeded in part by a \$5000 donation from a local citizen, the lab will offer paper and pencil resources as well as computer-aided tutorial and instructional resources. Online students, required to test in a secure, proctored setting, will take their tests in the lab under the direction of the lab assistant. In addition, the department will begin offering sessions designed to help students experience greater success in their math courses. On the drawing board already are sessions dealing with math anxiety and calculator use.

For its MAT 060, 070, and 080 online courses, the department will begin trial use of Interactive Mathematics, an offering of Academic Systems Corporation. This system is a faculty-guided, student-centered approach that blends traditional methods of instruction with an interactive software approach. At its core is a management system that will allow online instructors to more closely monitor student progress and involvement.

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## Student Math League Report

by Chuck Wessell, Durham Tech

North Carolina community colleges turned in an impressive performance in the 2002-03 AMATYC Student Math League as six of the top seven teams in the Southeast region were from our state. Following Georgia Perimeter College, Atlanta's multi-campus two-year school, were Durham Tech, Forsyth Tech, Wake Tech, Catawba Valley CC, Guilford Tech, and Wayne CC. Surry CC, Central Carolina CC, and Coastal Carolina CC also participated.

NCMATYC gives cash awards to the top three individual scorers in this annual competition, and **Jimmy Hou** of Durham Tech won the top prize of \$300 with a score of 58.5 points. **Billy Schrader** of Forsyth Tech won \$200 for finishing second, and \$100 went to third place finisher **Keith Sinclair** of Guilford Tech. These three students had the second, third and fourth highest scores in the Southeast region, with Jimmy missing first place by just half a point.

Other North Carolina students who finished in the Southeast region's top fourteen are **Hai Ngo** (Catawba Valley), **Brandon Crews** (Forsyth), **Austen Lethbridge-Scarl** (Durham), **Joey Edwards** (Surry), **Miles Mykel** and **Tread Willis** (both of Wake Tech).



There are some important changes that campus coordinators should be aware of for the upcoming school year. Registration for the Student Math League is only available via the internet this year. Go to the AMATYC website, [amatyc.org](http://amatyc.org), and look for the SML registration link on that page. You may choose to pay when registering via credit card or be sent an invoice. Note that the charge has increased to \$35. The deadline for registration is September 30, 2003.

For being the first two schools to respond to challenges made by AMATYC President Phil Mahler and myself during last spring's NCMATYC conference, Nash CC and Asheville-Buncombe CC will be participating in the SML for the first time this year and will have their registration fee covered. Certainly other new schools are welcome to register. Thirty-five dollars is a small price to pay to give your very best students an opportunity to compete for recognition at your school, within the state, and nationwide.

If you want any more information on the Student Math League, please contact me at [wessellc@gwmail.dtcc.cc.nc.us](mailto:wessellc@gwmail.dtcc.cc.nc.us).

## Do we care about Discrete Math?

by Vasilica  
Marhao, CVCC

### *MAT 167 Discrete Mathematics at the Community College*

Being exposed to Discrete Math topics early in my life as a student in my country of origin, Romania, gave me the appetite for being involved more deeply with the subject of mathematics in general. It built confidence to compete in different mathematics competitions (Olympiads) as a middle school and high school student. As a result I loved math more and more, and later I become a math teacher.

As a math instructor at CVCC, I was first assigned to teach Discrete Math (MAT 167) two years ago in 2001. The Math Department at CVCC chose the textbook written by Kenneth Rosen that was at that time used as a Discrete Math textbook at Appalachian State University.

The population of our Discrete Math class depends upon the computer science undergraduates, with few exceptions, as no other program requires Discrete Math as a core course. Prior to being taught by a math instructor, the same course was taught by a computer science instructor. Teaching it by a math instructor resulted in the shift of the amount of time spent on algorithms, trees and graphs, and other computer programming problems, to the content of discrete topics in mathematics. These topics include combinatorics and basics of counting, mathematical reasoning and induction, and mathematical logic and functions.

My first generation of students 'taught' me that the content of the course exceeded the '167' level, which should have been comparable with College Algebra (MAT 161) and Precalculus (MAT 171). It was surprising for me to see that the students in my class had never been exposed to discrete math topics like combinatorics and induction in their past math instruction. All together the whole course was like a different language of math.

Looking back, I do think that I exhausted them with the amount of testing and homework I assigned, and what should have been a pleasant experience, opening the mind and getting in love with mathematical experiences, became a tiring one. Even more discouraging, the students completing this course at the community college were to take Discrete Mathematics again when transferring to UNC Charlotte if they wanted credit for it.

As I accessed the UNCC web address, I have tried their on-line transfer credit evaluation. The equivalency of MAT 167 Discrete Math is MATH 0001 Math Elective. The Math 1165 Discrete Math web page at UNCC has the same Ken Rosen's Discrete Math textbook as we do, and the syllabi has the very same topics as we do. But still MAT 167 does not transfer for math 1165. As I cannot do anything about the possibility of transferring the credit for our Discrete Math to the universities, I have decided to change my approach of teaching the course and get my students to love the subject.

First of all, due to the large number of chapters to be covered, I have renounced chapter tests, and give only the comprehensive midterm and final exam, which together make up 50% of the grade. This change gave me more time to spend with the interesting and challenging problems. Actually it gave me 12 more hours previously spent on reviewing the material for the chapter tests. The other 50% of the grade was made up of projects on given subjects, topics in discrete math of personal preference to be researched and then presented to the class, and a few programs on algorithms. For example, some of the titles are: Why codomain and not range? A theorem on bipartite graphs (written by the class –their own theorem! and they started to feel like real mathematicians) Examples of the generalized pigeonhole principle I plan to present some of my students most interesting projects at our conference in March.

### *The reward of teaching Discrete Math topics*

Looking at the results of the International Mathematics Olympiad (IMO), which is an annual mathematics competition for high school students, I have concluded that someone is teaching Discrete Math in the United States but it must be elsewhere than a normal high school.

*continues on page 12*

*Do we care about Discrete Math? continued*

The United States team is usually one of the top three out of more than 80 countries competing. However, it is rare to find a local student who knows about Discrete Math.

Discrete Math may not be general knowledge for a normal student of any level, yet topics covered by IMO problems come from the following categories.

*Number theory* including Fundamental Theorems of Arithmetic (discrete math topic), arithmetic of residues modulo  $n$ , Fermat's and Euler's theorems (discrete math topics), *Algebra* including Fundamental Theorems on Algebra, inequalities, symmetric polynomials and Vieta's theorem (discrete math topics).

*Combinatorics* including graph theory (discrete math topic), and *Geometry*.

Excluded topics are Calculus (!), complex numbers, and solid geometry.

As you compare these topics with the topics that are considered the basics of mathematics in most US high school curriculum, you will be surprised by the difference.

My conclusion is that the international community of math appreciates Discrete Math as the heart of mathematical knowledge, a very important tool for those who will be focusing their later career on science and math and we, in the United states, should change our approach to make it more popular.

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### **AMATYC Membership Drive**

If you are receiving this newsletter, you probably are already a member of NCMATYC. We'd like you to consider joining our national organization, AMATYC.

Why should you join AMATYC? You will receive the AMATYC Review containing scholarly articles on mathematics issues in lower division collegiate mathematics. You will get reduced registration to national conferences. Most of all, AMATYC provides resources such as traveling workshops, speakers, and grants that benefit those of us at the local level. You can get more information about joining AMATYC at [www.amatyc.org](http://www.amatyc.org). Watch for more information at the spring conference on the benefits of AMATYC membership.

Janet Mays Mathematics [jmays@elon.edu](mailto:jmays@elon.edu)

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### **Scholarships Available**

Do you know an adjunct mathematics faculty member who might benefit from attending the upcoming NCMATYC Conference at Mayland CC in Spruce Pine, NC? Or a graduate student majoring in Mathematics or Mathematics Education? Or a Developmental Mathematics Instructor who has never been active in NCMATYC but would, given the opportunity? Then invite them to fill out an application for the scholarship money available for three such people to attend the NCMATYC Conference in 2004.



An anonymous donor has provided scholarship money to cover the cost. The hope is that this opportunity will encourage the Math/Math Ed graduate student to specialize in teaching at the community college, or that the Developmental Mathematics Instructor to become more active in our organization, or the adjunct instructor to land that full-time position and also become active in NCMATYC. Applications have been sent to every university and community college in North Carolina. Ask your department chair for a copy of the form.

Pass the form to a friend. Have them fill it out and send it in. They just might be selected for this great opportunity.



