2009-20010 NMMATYC Board

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New Mexico Mathematical Association of Two-Year Colleges

NMMATYC News

Volume 22

Issue 1

Inside this issue:

President's Message

JOANNE PEEPLES

As I sit in Ruidoso looking out at all the fall leaves it is hard to believe that we are so far into the Fall Semester, and that it is almost time for the AMATYC conference (hope to see some of you there). Then it's Thanksgiving and the end of the semester. Where has the time gone?

Last April we held our spring conference jointly with the Southwestern Section of the MAA at Western New Mexico University. Our co-chair, Fariba Ansari, and the SW-Section co-chair, Tom Gruska, along with a "crew" of people at WNMU, worked very hard to make the conference a success --- and succeeded!

We gave three scholarships to students: Victor Arzola (El Paso Community College) won the Michelle Jimenez Memorial Scholarship. Mr. and Mrs. Carpenter, Michelle's parents, were there to give Victor his $1,200 check. Tracy Jones (San Juan College) won the Vickie Froehlich Memorial Scholarship and received a check for $500. Jeremy Busby (Eastern New Mexico University –Roswell) received the Celeste Nossiter Book Award and received a $100 credit at his campus bookstore to be used for textbooks. Congratulations to all three scholarship winners!

Peggy Brock received this year's NMMATYC Professional Development Award, and used the award to help pay her expenses for the Silver City Conference. Congratulations Peggy – we're glad you were able to participate in the conference!

Continued

There were no nominations for the David Lovelock Teaching Excellence Award. A nomination is a wonderful way to show a colleague that s/he is doing an excellent job teaching and is making a difference. Please check on the NMMATYC web site (NMMATYC.org) to see how you can nominate someone for next year. A couple of years ago, the nomination process was simplified – so consider nominating that special instructor!

Elections will be held next spring, and nominations are needed. We will be electing a president-elect, a secretary and a treasurer. If you want to nominate someone (and that person agrees to being nominated) send your nomination to Mary Caffey (mary.caffey@clovis.edu). If you or someone you know wants to be on the NMMATYC board, in a position other than an elected position, please let Ali Ahmad (aahmad@nmsu.edu) our incoming president, know.

There is a website, www.wolframalpha.com, that if you have not yet visited that site– you should. It's amazing how problems are solved, and all the steps are shown. Just for fun try "Line (2,7) and (3, ½)" , then try "integral (x^2)sin (x^3)" (be sure to click on show steps for the last one). Students are able to get these solutions on any device that can connect to the web. We, as mathematicians and educators, need to be aware. And, I think we need to figure out how to constructively use this computational search engine.

Finally, I'd like to introduce you to an online journal – it's free! You can find interesting tidbits that can make any level math class more interesting (such as: what mathematician was born today? I know Grace Hopper and I share a birthday!) Go to MAA.org, near the bottom of the page click on Math DL Home Page, and then click on LOCI in the middle of the right side of that page (for some reason http://mathdl.maa.org/mathDL/46i/ doesn't work for me). Then EXPLORE. There are article, activities, projects, etc. for you to use. The electronic journal is called *Convergence: Where Mathematics, History and Teaching Interact.* Check it out.

Wishing you all the best, and hope to see you at our annual meeting next May in Gallup.

Joanne

Call For 2010-2012 Officer Nominations

By Mary Caffey

President-elect Ali Ahmad (DABCC) will succeed Joanne Peeples (EPCC) as President at the conclusion of the next NMMATYC conference in May. Also at that time, a newly elected slate of officers which will include a President-elect, Secretary and Treasurer will join Ali to serve for the 2010-2012 term.

Please consider nominating a current NMMATYC member (or self-nominate) for one of the above positions. Becoming involved in the state two-year college math organization is a great way to get to know and interact with math instructors from throughout the state.

The President-elect position is a six year commitment; the first two years are as President-elect, followed by two years as President and concluding with two years as Past-president. This cycle ensures greater continuity for the organization and also allows for the individual to become familiar with the workings of the organization before taking over as President. Both the Treasurer and Secretary positions are two year commitments. Dianna Orrantia (EPCC) currently serves as Secretary and Janet Macaluso (ENMU-R) as Treasurer.

The deadline for nominations for President-elect, Secretary and Treasurer is January 29, 2010. Please send the names of nominees to Mary Caffey, NMMATYC Nominating Chair, Clovis Community College, 417 Schepps Blvd., Clovis, NM 88101.

Professional Development at Silver City

By Peggy Brock

Thank-you NMMATYC. I appreciate so much the Professional Development Award that allowed me to attend this year's Conference in Silver City. The award was enough that Joanna Ortiz and I were both able to attend this year's Conference in Silver City. The plaque was beautiful and will hang in my office at CNM. Silver City is such a great place for a Conference and retreat. The 2 day get away gave me the rejuvenation needed to complete the teaching term. Since I am a Developmental Math Instructor I attended mostly presentations that would or could pertain to the developmental level.

I did attend Steve Krevisky's workshop on baseball stats. As always Steve does a grand job with his presentations. Steve had us working through the calculations for slugging averages. As I was doing this I determined that this was something that my students could use when exploring formulas in Algebra. This would be a real life situation that my students might actually enjoy. Because of this workshop I am creating a hand-out for my students that would involve formulas and baseball stats. Thank-you Steve.

I also attended Dr. Ali Ahmad's presentation "What Do you Need to Know about Developing your Teaching Portfolio?" I believe this is the first session I have ever attended on this subject. We work so hard at what we do, and it is critical that we transfer our wonderful ideas and achievements into a few pages of a portfolio for others to know. My portfolio is due soon, so this was a timely and significant hour for me. I feel that I can focus a little bit more on the required essentials as well as spotlight my performance and teaching goals. Thank-you Dr. Ahmad.

I also enjoyed Dr. Ahmad's presentation on factoring. This one had the instructors all involved in their favorite method of factoring. New for most of us is: the bottoms up method. It is always good to view other teaching methods; change can be good for us. Thank-you for sharing this new-to-me method of factoring.

I was able to view the presentation on the Interactive Notetaking system, given by Jeff Rushall and Kurt Herzinger. I am thinking of using something like this that would encourage and motivate my developmental students to take notes. My students will sometimes sit and stare at me but not write anything down. A hand-out where they have to actually fill in the blanks might work for those who think they can't do it or may motivate those who don't want to do it. I want to use a condensed version that will allow my developmental students to take a few notes that they can use for study without generating a burden for them. Thanks Jeff and Kurt.

Other things that I took back to think about—Ron Dassanyake's Word problems session. Ron suggested that word problems should come earlier in the curriculum. I liked this approach. As a class, when we reach the word problems section everyone goes into shock, just because it is word problems. Starting off gently and progressing to the required word problems seems like a reasonable way to handle a student's fear and intimidation. Thanks Ron for this thought provoking encounter.

Another thought provoker: Dan Teague's dinner message, "The Residue of Mathematics" was stirring to say the least. What is left over after the course? What are our students really getting from this class? We need to leave them with something. Are we? Thanks for getting me to think about these things, Dan.

The Conference was great; I am already looking forward to next years. I always come away with new things to try and plenty of things to contemplate. Thank-you all for all your hard work.

Peggy Brock
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NMMATYC's Professional Development Award

Through the generosity of an anonymous donor in 1999, NMMATYC has a $10,000 CD. The interest on this CD is intended to provide financial support for members to participate in professional development activities. The award is for up to $300 to cover a professional development activity. This year's winner was Peggy Brock, who used the money to help pay for the 2009 spring conference in Silver City. Please go to the NMMATYC web page (NMMATYC.org) and click on Student and Faculty Awards to see how simple it is to apply for the award. The winner of this award must agree to write an article for the NMMATYC newsletter.

The applications are to be sent to Joanne Peeples, NMMATYC President, at joannep@epcc.edu or 6917 Orizaba, El Paso, TX 79912. The due date is January 29, 2010. If you have questions about the award you can email Joanne or call her at 915.831.5047.

A Different Approach to Students' Performance

By Fariba Ansari

In an effort to develop more effective methods to assess student learning outcomes for the Conceptual Physical Science course at EPCC in Spring 2009, two strategies were employed in two different classes. A third class was used as the control group. First, a series of rubrics were developed, and second a comprehensive student survey was created in order to study students' performance data. The goal was to improve the class average and to determine which improvements could be made to the course in future semesters. . Students were placed into collaborative teams of four in which they could create a model of various physical properties of matter and subsequently demonstrate it in front of the class. The strategies that were developed were Self-Evaluation, Mentoring-Review Teaching, Cooperative Learning, Workgroups, Inclusion, Direct Measurement, Summative Assessment, and Formative Assessment.

The series of rubrics used consisted of four different assessment approaches: Student Performance Evaluation (PACES); Students' Peer Presentation Evaluation; Physical Model Project Evaluation; and Teacher Evaluation of Student Presentation/Demonstration. The Students' Performance Evaluation (PACES) is a self and peer evaluation form for teamwork. All students in a team complete this form individually. This is a confidential evaluation and it's never shared with the rest of the group. Later, the instructor compares all evaluations for each team. The Students' Peer Presentation Evaluation is a self and peer evaluation form. Students on a team complete one of the forms individually and in confidence from their group. Later, the instructor compares all evaluations of the same team. The Physical Model Project Evaluation or Demonstration rubric shows the minimum requirements required for the physical models. Its purpose is to provide students with a general idea of requirements in advance for formal and summa-

tive evaluation of the students' learning. This form may be modified to suit any assigned project. The Teacher Evaluation of Student Presentation / Demonstration is a self and peer evaluation form. Students in a team complete one of the forms individually and in confidence from their group. Later, the instructor compares all evaluations of the same team.

The results (fig. 1) showed that the classes in which the new strategies were implemented had a better outcome compared to the control group or traditional classroom. The class average of the first group was 86.5% and the average of the second group was 83.4%. For the control group, the average was 79.5%. In conversations with other colleagues, some unintentional results were discovered. A colleague who shares the same students in her math class commended me because the students in my conceptual physics class were ahead of the other students, since they had already been introduced to concepts such as conversions and measurement.

	CLASS 1 Strategies Implemented	CLASS 2 Strategies Implemented	CLASS 3 No Strategies Implemented
NUMBER STUDENTS	32	20	8
CLASS % AVERAGE	86.5	83.4	79.5

Fig. 1

The following chart shows the results of the Student Survey (fig. 2). Expanding on the concept after students' presentations, Peer to Peer presentation, and reviewing problems on the board were the most effective strategies.

STRATEGY:	Currently more effective
Expanding on Concept after students' presentations	1111111111111111
Reviewing Problems on the board	1111111
Creating a Study Guide or outline prior to tests	111
Collaborative work (team-work)	11111
Peer to Peer presentations	11111111111111111111111111
Group tests	1111
Student hands-on exercises	11
Other strategy	1

Fig. 2

In summary, it appears as though the use of rubrics and the use of the strategies is improving performance in the Conceptual Physics Course. We believe that we are on the right track when it comes to improving this course and will continue to look for ways to help students develop the competencies required to succeed in this course.

Fariba Ansari
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NMMATYC Student Scholarship Opportunities

NMMATYC is an organization that not only serves the needs of New Mexico and El Paso mathematics educators but also recognizes outstanding students who plan to pursue careers based on mathematics. We recognize these outstanding students by awarding two scholarships of at least $500 each.

The ***Michelle Jimenez Memorial Scholarship*** is presented jointly by the family of Michelle Jimenez and NMMATYC. The scholarship is primarily for students pursuing a degree in which mathematics plays a major role. At least two of the following courses must have been completed prior to the application deadline: Trigonometry, Pre-Calculus, Statistics, Calculus I, Business Calculus, or any mathematics course for which one of the listed courses is a prerequisite.

The ***Vickie Froehlich Memorial Scholarship*** is designed for education majors with emphasis in mathematics. To be eligible, a student must have completed at least three of the following courses prior to the application deadline: Math for Elementary Teachers I, Math for Elementary Teachers II, Pre-Calculus, College Algebra, Trigonometry, Statistics, Calculus I, or any math course for which one of the listed courses is a prerequisite.

Additional requirements for both scholarships include having completed a minimum of 12 credit hours of which 6 credit hours must be from a New Mexico or El Paso two-year college. Applicants must have at least a 3.2 GPA overall and a 3.5 GPA in all math courses. A student may apply for both scholarships.

The recipients of the scholarships may use the awards to further their education in any way they feel appropriate with the stipulation that a short article explaining how the award benefited them be written for NMMATYC News. The students are also invited to attend the annual NMMATYC conference to receive their award and are given up to $300 in travel expenses and free conference registration.

The 2010-2011 application forms and a list of other required materials may be obtained from the NMMATYC website at www.nmmatyc.org. The deadline to apply for both scholarships is April 9, 2010. Flyers for both scholarships are available on the website. Direct inquiries for either scholarship to Mary Caffey, NMMATYC Nominating Chair, at mary.caffey@clovis.edu , or 575-769-4967.

The Information Corner:

Choices, Choices, Choices

By Eleanor J. Barber

Daily, we need to select from a variety of options and always hope that we have made the best choice. Selecting a pair of shoes and finding a college to attend are two seemingly unrelated choices. Each of these requires consideration of availability, fit, cost , utility, and comfort. Often people will spend more time and effort making the short - term "shoe" decision than the long-term "college " decision. Purchasing the wrong shoes can be easily remedied but selecting a college for the wrong reasons can affect a person's life forever.

If some of your students are completing a 2 year degree program and are planning to transfer to a 4 year college, add New Mexico Tech (Socorro NM) to their list of options. Earlier this year, the opportunity was provided for me to visit the NMT campus for an entire day. I visited classes, laboratories, dormitories, and the student center and talked to students and employees. My conclusion is that NMT would be a great consideration for the student who wants a guarantee of immediate research opportunities, and a small family-type environment.

NMT offers:

1. small classes
2. hands-on education
3. research opportunities (may include travel to other continents)
    a. petroleum exploration
    b. geo-physics including volcanic research in Antarctica
    c. cave and karst studies
    d. explosives
    e. cyber-security
    g. air quality
    h disease control
    i. many more too numerous to mention

All of the above and more are offered on the beautiful and peaceful NMT campus. Students are seen all over campus working on assignments in small groups. The campus environment seems well suited for family-

Continued

oriented students. There is constant interaction with others in the classroom and within the organizational and recreational activities. Students and employees seem to be friendly and easy to approach.

Costs are very reasonable if compared with costs at other institutions with similar programs. New Mexico residents may take advantage of the Lottery scholarship and transfer students will get a significant break for a strong grade point average and/or membership in a scholastic honorary.

Please pass this information on to any interested students who are getting ready to transfer. The NMT office of admissions is very willing to show them the opportunities that are available. Perhaps the "shoe" will fit for some of them.

Ellie Barber, Professor of Mathematics
El Paso Community College
ebarber3@epcc.edu

2GB USB drive (Data Band)

On Sale

Quite convenient to carry

Only $10

For information contact

Ali Ahmad

575-527-7687

aahmad@nmsu.edu

A Summer Journey

By Steve Krevisky

I had another interesting summer of travel! In June, I visited family and friends out West, also seeing 4 baseball games in the process! I had the chance to visit Yosemite again, for the first time in many years! I also enjoyed seeing Monument Valley and Mesa Verde again! It might be a fun statistics project to rank the top natural sights in the world, but I rate Monument Valley very highly!

Then, in July, I had the chance to give a math and baseball paper at the 9th annual International Conference on Technology in Mathematics Teaching (ICTMT 9). This took place in Metz, France, which is near the borders with Germany and Luxembourg. I enjoyed the conference, and gave a paper on Using Z scores to determine the best sluggers in baseball, which was co-written with Randy Taylor from California. I also got to see the town, which seemed to be a mini-Paris! It's good to see what people are doing in other countries, and many of you know that I have a great interest in international math education. I chair a subcommittee on this topic, and look out for our poster presentation at the upcoming AMATYC conference in Las Vegas in Nov!

On this same trip, I also got to see Frankfurt, Germany, Paris, France, Heidelberg, Germany, Basel Switzerland, and Zurich, Switzerland, all in 18 days! It went well, and soon, I'll be ready for more of the same!

I will continue to publicize other international math conferences, such as the upcoming International Conference on Teaching Statistics, or ICOTS, which will take place in Llubljana, Slovenia, in July 2009. I will be chairing a session there on Sports and Statistics, which is close to my heart as a big baseball fan (all my teams won on Sunday, Sept. 27, 2009, so I was happy!). I will let people know about this and more through my A-NET AMATYC interest group on international math education.

I am starting my 25th year here in CT, and we will run our 20th annual Math Contest in April 2010. Amazing how time flies! I appreciate getting to know a lot of you through NMMATYC, and I appreciate the friends that I have made accordingly!

I hope to see many of you soon! Regards, Steve Krevisky

Steve Krevisky
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CALL FOR NOMINATIONS

NMMATYC David Lovelock Teaching Excellence Award

Nominations will be taken until April 9, 2010 for the David Lovelock Teaching Excellence Award which was established by NMMATYC to honor an educator who has made outstanding contributions to mathematics education at the two-year college level. Please visit http://www.nmmatyc.org/ to download the nomination form.

The Philosophy Connection: The Thoughts of Blaise Pascal

Not only was Blaise Pascal a great mathematician and physicist, but he is considered the first existential philosopher. The following is a passage from Chapter 1 of his book ***Pensee*** in which he discusses the differences between mathematical thinking and intuitive thinking, both of which he believes are rational forms of thought, but which are distinguished by the way in which information is sensed and ultimately evaluated. Considering this passage may help us understand how to help our students, many of whom are so used to intuitive thinking.

THOUGHTS ON MIND AND ON STYLE

1

The difference between the mathematical and the intuitive mind._[1]—In the one the principles are palpable, but removed from ordinary use; so that for want of habit it is difficult to turn one's mind in that direction: but if one turns it thither ever so little, one sees the principles fully, and one must have a quite inaccurate mind who reasons wrongly from principles so plain that it is almost impossible they should escape notice.

But in the intuitive mind the principles are found in common use, and are before the eyes of everybody. One has only to look, and no effort is necessary; it is only a question of good eyesight, but it must be good, for the principles are so subtle and so numerous, that it is almost impossible but that some escape notice. Now the omission of one principle leads to error; thus one must have very clear sight to see all the principles, and in the next place an accurate mind not to draw false deductions from known principles.

All mathematicians would then be intuitive if they had clear sight, for they do not reason incorrectly from principles known to them; and intuitive minds would be mathematical if they could turn their eyes to the principles of mathematics to which they are unused.

The reason, therefore, that some intuitive minds are not mathematical is that they cannot at all turn their attention to the principles of mathematics.

But the reason that mathematicians are not intuitive is that they do not see what is before them, and that, accustomed to the exact and plain principles of mathematics, and not reasoning till they have well inspected and arranged their principles, they are lost in matters of intuition where the principles do not allow of such arrangement. They are scarcely seen; they are felt rather than seen; there is the greatest difficulty in making them felt by those who do not of themselves perceive them. These principles are so fine and so numerous that a very delicate and very clear sense is needed to perceive them, and to judge rightly and justly when they are perceived, without for the most part being able to demonstrate them in order as in mathematics; because the principles are not known to us in the same way, and because it would be an endless matter to undertake it. We must see the matter at once, at one glance, and not by a process of reasoning, at least to a certain degree. And thus it is rare that mathematicians are intuitive, and that men of intuition are mathematicians, because mathematicians wish to treat matters of intuition mathematically, and make themselves ridiculous, wishing to begin with definitions and then with axioms, which is not the way to proceed in this kind of reasoning. Not that the mind does not do so, but it does it tacitly, naturally, and without technical rules; for the expression of it is beyond all men, and only a few can feel it.

Intuitive minds, on the contrary, being thus accustomed to judge at a single glance, are so astonished when they are presented with propositions of which they understand nothing, and the way to which is through definitions and axioms so sterile, and which they are not accustomed to see thus in detail, that they are repelled and disheartened.

But dull minds are never either intuitive or mathematical.

Mathematicians who are only mathematicians have exact minds, provided all things are explained to them by means of definitions and axioms; otherwise they are inaccurate and insufferable, for they are only right when the principles are quite clear.

And men of intuition who are only intuitive cannot have the patience to reach to first principles of things speculative and conceptual, which they have never seen in the world, and which are altogether out of the common.

Pascal, B. (2006). Pascal's Pensees. Retrieved on October 28, 2009 from http://www.gutenberg.org/files/18269/18269-h/18269-h.htm#INTRODUCTION