

We had a great AMATYC conference this November in Washington, DC. I enjoyed meeting friends and making new acquaintances, as well as the chance to be part of finding solutions to problems many share as we teach mathematics. I could not attend all sessions, and am aware that probably most of you reading this newsletter could not even be at AMATYC this year. I have used the Proceedings page at [www.amatyc.org](http://www.amatyc.org) to at least find some handouts from conference sessions. If you did a presentation even in previous years, but haven't sent in your handouts, you still can send them to [proceedings@amatyc.org](mailto:proceedings@amatyc.org) (give year, session number/day and time if possible, and it is helpful to others if you include your email so people can follow up with any questions or comments). There is a special PAC area of the general website, and our Themed Session is represented there as well as on the overall Conference Proceedings.

The Themed Sessions are a good way to share content that can be presented in 15 minutes (10 - 12 minutes for presenting, and 3-5 minutes for questions). We had some great presentations in DC, and I am already using some of the ideas in my own classrooms, and sharing them with my colleagues. Sometimes people give the gist of their ideas/research at the Themed, and then submit a proposal for a longer, more detailed presentation for a regular session.

In this time of tightened college budgets, it is easier to get support for conference attendance if you are presenting something, and if you can bring back ideas that others have tried at their colleges. The deadlines are fast approaching, however. **Friday, January 15 is the deadline for the PAC Themed session this year in Las Vegas.** (see earlier e-mail from [cbuller@mccneb.edu](mailto:cbuller@mccneb.edu) for details). Last year I had to turn down some good presentations simply because they came in too late. This year I can accept only 3-4 presentations, limited to Assessment at classroom, course, or program levels.

This newsletter contains several articles on the Placement side of the PAC Committee, and I hope you find them helpful! I particularly like AMATYC because it helps find and share solutions. Find below:

- **A Kentucky Experience—Placement at or below College Algebra.** Article by Kathy Mowers, past president, AMATYC
- **Two Kansas Studies: Placement into Calculus I using Standardized Exams and ACT scores, and Comparing COMPASS Placement into Intermediate Algebra with Student/Instructor Feedback.** Submitted by Beth Edmonds and Libby Corrison, Johnson County Community College, based on an idea from Bill Worpenberg
- **Placement – How does a college decide how to set cut-off scores?** Article by PAC Central States liaison, Darlene Hatcher of Metropolitan CC in Nebraska
- **xyAlgebra: Free Software for Developmental Math Placement—and Partial Credit on Assessment!** Given by its author, John C. Miller, The City College, CUNY.
- **Periodically Assessing What We Teach, and Why**  
Letter from Robert Kimball, AMATYC Principal Investigator, “The Right Stuff”
- **An Assessment Strategy That Helps Students Face Misconceptions** Article by PAC Southwest liaison, Julie DePree , [jdepree@unm.edu](mailto:jdepree@unm.edu)
- **Regional liaisons for Placement and Assessment, nominated by their regional vice presidents.** One of these is from your region!
- **And more**



## *A Kentucky Experience—Placement at or below College Algebra*

**How OwensboroCC uses ACCUPLACER® and COMPASS® for placement into courses at and below college algebra, and how it works with the Kentucky Online Testing (KYOTE) and the Ability to Benefit (ATB). Article by Kathy Mowers, former president of AMATYC. [Kathy.Mowers@kctcs.edu](mailto:Kathy.Mowers@kctcs.edu)**

At Owensboro Community and Technical College (OCTC), we've used both ACCUPLACER® and COMPASS® for placement into courses at and below college algebra. Those faculty who were here during the transition preferred ACCUPLACER®, but that most likely had more to do with our cut scores than with the test itself.

We now use COMPASS®. Students can use calculators, but we supply the calculators. This was at the request of the testing center since they did not want to deal with issues of which calculators could be used and which couldn't. The calculators we supply are an old classroom set of TI 81s. You should hear the gnashing of teeth by the students since the 81 did not convert decimals to fractions. The software calculators that are available from Microsoft may also be used.

A number of years ago, placement starting with the ACT® and the COMPASS® test were mandated for all public community colleges in Kentucky. Now some (if not all) of the community colleges are looking at using a new online exam, Kentucky Online Testing (KYOTE). KYOTE was developed by mathematics faculty and spearheaded by Northern Kentucky University's Steve Newman and the University of Kentucky's Paul Eakin. KYOTE has a big benefit in this time of economic difficulties--it is free to colleges in Kentucky. At OCTC, we plan to begin using it in our high school intervention programs.

One issue that would prevent us from using it with all of our students is the federal financial aid ruling that a nationally-normed exam must be used to demonstrate Ability to Benefit (ATB). Under ATB, students must show they can score high enough to have the "ability to benefit" from college instruction if they do not have a high school degree and they want financial aid. Only a limited number of our applicants fit this description, but it something to think about when considering placement exams.



## ***Two Kansas Studies: using Standardized Exams for Placement into Calculus I, and Comparing COMPASS Placement into Intermediate Algebra with Student/Instructor Feedback***

**Placement Mechanisms at Johnson County Community College: guidelines using standardized exams for placement into Calculus I, and a comparison of COMPASS placement into Intermediate Algebra with student and instructor feedback (using an idea from Bill Worpenberg on informed self-placement).**

**Submitted by Beth Edmonds at [bedmond3@jccc.edu](mailto:bedmond3@jccc.edu) and Libby Corrison at [libbyc@jccc.edu](mailto:libbyc@jccc.edu)**

During the two most recent semesters, the Johnson County Community College Mathematics Placement and Assessment Committee focused on, among other projects, two major endeavors related to placement:

- During the Fall 2007 semester, we focused on establishing a mechanism for students to test into Calculus I. The guidelines we ultimately created for students to place into Calculus I were:
  - A COMPASS Trig score of 55 – 100, or
  - An ACT Math score of 28 or higher, or
  - An SAT Math score of 630 or higher.Anecdotal evidence from instructors and the department chair reveals satisfaction with the preparedness of Calculus I students this fall.
- In the Spring 2008 semester, we borrowed an idea from Bill Worpenberg of Southern State Community College concerning “Informed Self-Placement – Are you Kidding.” In our continued efforts at JCCC to determine whether our Intermediate Algebra students are correctly placed by COMPASS, we conducted a survey of Intermediate Algebra students and instructors. At the beginning of the semester and again midway through the semester, we asked students, “Do you feel you were placed correctly?” At the end of the semester, we asked the instructors if they agreed with the COMPASS placement. (Of course, student names were removed prior to tallying the results.)
  - Out of 855 students who were enrolled in Intermediate Algebra, 532 completed the survey. Of those 532, there were 108 students that had been placed into the course by COMPASS.
  - The data from these 108 students revealed that the majority of students (65% in January, and 70% in March) felt they were placed correctly into the class by COMPASS; and the instructors confirmed appropriate placement by COMPASS for 65% of the students.
  - We are repeating the survey again this fall.

If you have any questions, please contact one of us:

Beth Edmonds at [bedmond3@jccc.edu](mailto:bedmond3@jccc.edu) , or Libby Corrison at [libbyc@jccc.edu](mailto:libbyc@jccc.edu)

*Editor’s note:* Bill Worpenberg presented his paper, “Informed Self-Placement—Are You Kidding?” at the 2007 Minneapolis PAC Themed Session, [Details](#).



## *Placement—A Complicated Process. How Does a College Decide to Set Cut-Off Scores?*

**Placement – It’s a complicated process. How does a college decide how to set cut-off scores that suit the students at their own college? Article by PAC Central States liaison, Darlene Hatcher of Metropolitan CC in Nebraska [dhatcher@mccneb.edu](mailto:dhatcher@mccneb.edu)**

As educators, we all want our students to succeed and the first step in the process is getting them placed into the correct course for their mathematical ability. This is definitely easier said than done given the many variables that attribute to the process.

To begin, which test do you use for placement? For many schools this is predetermined by college administration. For example, at Metropolitan Community College (MCC) in Omaha, Nebraska we use COMPASS for Math (and English) placement. Since this is a test designed for ‘the masses’ it does well in courses that are mainstream to all colleges, however, it doesn’t always do well for placement into developmental mathematics. I believe the future will give so many more alternatives to the current methods for placement. Publishing companies are working directly with mathematics departments and listening to their concerns with placement. To help with the solution, they are developing software to (hopefully) better place students, especially in developmental courses. Until these tests become more common, I believe many schools will be faced with working with the same programs that have been around for many years. With this in mind, our department created a ‘homegrown’ math placement test several years ago for students who score low on COMPASS. The question is what is ‘low’? This leads to the second variable...cutoff scores.

The company that designed COMPASS (and ACT) has suggested cutoff scores for the various levels of placement. The problem is these don’t necessarily work for all colleges. They even state on their website, “*The COMPASS program comes preloaded with recommended cutoff scores based on national averages. You can **adjust these cutoff scores to meet the requirements of your institution.** You are encouraged to evaluate your students’ success rates and adjust these cutoff scores so they meet your institution’s placement goals.*”

So, how does one decide what cutoff scores are appropriate for their school? I don’t know if there is a hard and fast rule, but generally a lot of research needs to go into this process. This can take a lot of time and energy and it can be too long before results are obtained and students end up losing in the long run. I believe this is where professional experience as instructors in recognizing students’ abilities entering the classroom and analyzing their success in the classroom. Monitoring different trends in class enrollments can also be an indicator. For example, if suddenly there are many more students registering for Beginning Algebra versus Developmental Mathematics than previous quarters, and success rates are lower, this could be a sign of incorrect cutoff scores. This is an ongoing process as student demographics constantly change, however, I believe the process is worthwhile and in the end benefits students.

Another variable to consider is the use of a calculator. For example, at MCC up until about 1½ years ago, students were not allowed to use the calculator when taking COMPASS. The

compromise was that the department adjusted cut off scores to reflect that we were not letting students take the test the way it was designed. Well with the change of allowing a 4-function calculator on the COMPASS, the department forgot to adjust the scores back. Many instructors noticed students in their class with much lower abilities than the class required. We have recently made the changes to the cutoff scores and will be carefully monitoring students – realizing that for the next few quarters we may have students entering classes with ‘old’ and ‘new’ scores.

All of this is a long process that involves not only working with testing facilities at the college to make the changes, but also communicating with advisors and counselors about the changes and the reasons behind the change. In addition, at MCC we do not allow the calculator for the ‘homegrown’ test, and this needs to be communicated on a regular basis. This is especially important because many students take the homegrown test immediately following the results of COMPASS. I believe communication with everyone involved in the process is the key to successful implementation of the process. [dhatcher@mccneb.edu](mailto:dhatcher@mccneb.edu)



## ***xyAlgebra: Free Software for Developmental Math Placement—and Partial Credit on Assessment!***

**xyAlgebra: a free program that can be used for placement into Algebra I and also for step-by-step solutions and partial credit on tests during and/or at the end of the term, given to AMATYC by its author, John C. Miller, The City College of The City University of New York. [xyalgebra@mindspring.com](mailto:xyalgebra@mindspring.com)**

The latest version of the free algebra program xyAlgebra includes:

- (1) A configurable adaptive randomized placement test. It's intended for initial placement within xyAlgebra, but can easily be used for individually-paced instruction with any standard Algebra I book or syllabus.
- (2) Highly configurable randomized testing for use during and/or at the end of the term. On these tests, xyAlgebra awards part credit by accepting and intelligently evaluating step-by-step solutions to all multi-step problems.

Briefly, the instructor runs xyManager (the instructor program) and configures the tests offered by xyAlgebra (the student program) by specifying numerous parameters for each test. Students then take the tests by running the configured student program at appropriate times.

The placement and assessment capabilities of the xyAlgebra package can be used independently of whether the program is also used for algebra instruction, practice or homework.

The entire xyAlgebra package is available free -- no strings attached -- at [www.xyalgebra.org](http://www.xyalgebra.org). Its author is AMATYC member John C. Miller of The City College of The City University of New York



## *Periodically Assessing What We Teach, and Why*

Letter from Robert Kimball, AMATYC Principal Investigator, "The Right Stuff"  
[rkimball@waketech.edu](mailto:rkimball@waketech.edu)

Discussion is fruitful as it allows us to look at other perspectives but also requires us to structure and support our own thoughts before sharing them - usually ;)

That message should not be lost in your methodology used in the classroom - the more you can get students to talk to one another (about mathematics) the more learning takes place.

That message should also be important to departments - faculty need to talk to one another about methods, content, technology, and assessment.

BUT, let me say this: It is NOT about making every item we teach connected to an application. It is about using applications to make every item we teach meaningful and ensure that students understand the items deeply enough to apply them effectively.

I am more convinced than ever (30 + years of teaching HS, college and university as well as working in industry and owning businesses) that for many of our students, high school math is about memorizing algorithmic procedures that they cannot apply in a realistic context. The useful math from the 7th and 8th grades (applied arithmetic, percents, measurement, ratios, practical geometry...), what some may say is a large part of numeracy, has long since been forgotten. Students are used to sitting passively and watching examples of what they need to do and then replicating those procedures.

Briefly, I'd say that the message needs to be that whatever we teach we must teach it well and deeply. We must decrease the number of topics we consider so that we require students to use those topics in many different scenarios. Just consider how many times your int alg (or coll alg) student has seen linear functions. And then consider how deeply they understand that slope is really a rate of change and can describe slope in terms of a meaningful units.

It is like weeding a garden. If you take care on each plant to dig deeply around the plant the first time, you don't have to come back to that plant as often.

I welcome you to visit [www.amatyc.org](http://www.amatyc.org) to see more from the 'right stuff'. But, I \_\_encourage\_\_ you to read the CRAFTY report from the MAA to see what other disciplines have said about the mathematics we 'should' be teaching. Make that an assignment in your department - have each faculty member read a portion of the "Voices of the Partner Disciplines" and then discuss that in a meeting. Discussions can be beneficial.

Rob Kimball [rkimball@waketech.edu](mailto:rkimball@waketech.edu)  
AMATYC PI - the Right Stuff

<http://mathandphysics.waketech.edu/>



## *An Assessment Strategy That Helps Students Face Misconceptions*

**An Assessment Strategy That Helps Students Face Misconceptions Article by PAC Southwest liaison, Julie DePree , [jdepree@unm.edu](mailto:jdepree@unm.edu)**

I have been experimenting with various forms of assessment the past few years. I tried a new strategy this year that seems to have promising results. It actively engages all students and gives the instructor and students instant feedback.

First, the instructor must establish a classroom environment in which students are comfortable sharing solutions and learning from peers. Then, the instructor begins by posing a problem to assess student understanding of a concept. Students work in groups, solve the problem and then post their answers on the board. This technique is similar to using clickers but more open-ended. Then students “make a case” as to why their solution is correct. On occasion, everyone will get the correct solution, so the instructor knows that the class is ready to move on to other concepts. What I have also found useful is that as students explain to the class how they arrived at their solutions, many students may begin to recognize that they hold misconceptions that lead them to incorrect solutions. As the instructor, I was also better able to identify misconceptions when the students actually explained how they arrived at their solutions.

One example of this occurred when the problem of finding the surface area of a cylinder was posed to a group of pre-service teachers, a common misconception was revealed. There were five groups and four different solutions were posted on the board. As students made their case, it became evident that more than half of the class believed that the length of the rectangle formed by the cylinder was twice the diameter of the circle, even after the class had witnessed repeated demonstrations of peeling a label off of a can to show that the length would be the circumference. When the students presented the idea of the length being twice the diameter, all the students were able to actually verify that this was not true by actually laying the cylinder along the length. Many students were surprised to discover that they had been incorrect. In fact, the two groups who had the same solution were both using the twice the diameter idea. When the group that actually did use the circumference of the circle as the length presented, all the students were more ready to see the correct solution since they had already confronted their own misconceptions.

I plan to do an analysis on the final exam to see if this had a long-term impact on the students. Article by Southwest PAC liaison, Julie DePree, [jdepree@unm.edu](mailto:jdepree@unm.edu)



## *In Memoriam: Beverly Joy Parnell*

YAKIMA, WA-Beverly Parnell, 64, passed away Saturday, October 11, 2008 at the University of Washington Medical Center. She was born January 15, 1944 in Nevada, MO to Harold and Viola (Stokesberry) Huckaby. Beverly was a 1961 graduate of Nevada High School and proceeded to achieve her Educational Specialist Degree. She worked as a math professor for Yakima Valley Community College and was a member of Kappa Mu Epsilon.

Beverly was an active member of PAC, serving as Placement subcommittee chair until the time of her death.



## *Let's Participate in Solutions!*

- **on-line resource links**—Interested in upgrading/reviewing/renewing on-line resources? Volunteer(s) needed to check out resources posted on [www.amatyc.org](http://www.amatyc.org) If interested, please contact the Online Resource Director, George Alexander, [galexander@matcmadison.edu](mailto:galexander@matcmadison.edu)
- **SUBMIT links to your college's PROGRAM REVIEW—with the new requirements of accreditation associations, it is good to see what others have done. If your college has recently participated in accreditation, please submit links, particularly on the program review parts to [jaham@delta.edu](mailto:jaham@delta.edu).** These are public documents, but at the 2008 PAC committee meeting, members suggested that it would be helpful to have access to these documents located in a common place. If your college is participating now in the accreditation process, the *Beyond Crossroads* document on the AMATYC website [www.amatyc.org](http://www.amatyc.org) has been a good resource for many.



## *PAC Committee Regions and Liaisons*

- **Northeast:** Lucio Prado, Borough Manhattan CC, CUNY, [lprado@bmcc.cuny.edu](mailto:lprado@bmcc.cuny.edu)
- **Mid-Atlantic:** Sharon Gott, Eastern WV U, WV, [sgott@eastern.wvnet.edu](mailto:sgott@eastern.wvnet.edu)
- **Southwest:** Julie DePree, UNM Valencia Campus, NM, [jdepree@unm.edu](mailto:jdepree@unm.edu)
- **Midwest:** Marie Hipple, U of Cincinnati, OH, [hipplem@uc.edu](mailto:hipplem@uc.edu)
- **Central:** Darlene Hatcher, Metropolitan CC, Omaha, NE, [DHatcher@mccneb.edu](mailto:DHatcher@mccneb.edu)
- **Southeast:** Patty Amick, Greenville Tech C, SC, [Patty.amick@gvltec.edu](mailto:Patty.amick@gvltec.edu)
- **Northwest:** Laura Bracken, Lewis-Clark State College, Lewiston, ID [bracken@lcsc.edu](mailto:bracken@lcsc.edu)
- **West:** MaryAnne Anthony, Santa Ana C, CA, [Anthony\\_Maryanne@sac.edu](mailto:Anthony_Maryanne@sac.edu)

Final Note: If you wish to be taken off the mailing list, please e-mail [cbuller@mccneb.edu](mailto:cbuller@mccneb.edu) and let me know.