

2001 Aftermath Newsletter
Chair's Column
by Jon Maatta

Greetings! It's hard to believe that one whole year has passed since the last issue of *AfterMath*. "Time flies when you're having fun" is true!

In College related news: I'm just returning from San Diego, Cal., where a team of mathematics educators from Plymouth State College, including Judy Buck, Dick Evans, Irene Mosedale and myself took part in a project of the American Association of State Colleges and Universities. The project on "Improving the mathematics subject matter preparation of elementary school teachers" was a weeklong workshop and included 15 colleges and universities. Our team goals of revising the 12 credits that early childhood and childhood studies majors take were formulated during the week and the hard work of actually revising the materials begins in earnest this summer.

Departmental News

As mentioned in last year's *AfterMath*, the Department was discussing how we could consistently and appropriately incorporate technology into our curriculum. I am pleased to report that the Department passed and the Curriculum Committee approved the following additions to selected course descriptions:

MA 214 – Graphing calculators are required and used throughout the course.

MA 230 – A standard statistical software package will be used throughout the course.

MA 255/256 – A software package capable of doing symbolic mathematics will be used.

MA 340 – Calculators and spreadsheets will be used.

These changes will guarantee that our students will see a consistent presentation in these courses regardless of the instructor involved. This consistency was one item that many of our students mentioned, to the independent reviewer, was missing during their years at PSC. Now that we've made some changes in our course descriptions, we also have to keep up with the ever-changing technology environment. As a result the Department continues to write Computer Advisor Board (CAB) proposals for upgrades in computer equipment and software. Another major item considered during the year was a revision of the degrees offered in mathematics. In short, this revision creates two basic degrees in mathematics, the BS and the BA. Each of these will have at least one elective option. The BA will have an elective option in secondary teacher certification (7-12) and the BS will have elective options in actuarial mathematics, applied mathematics, middle school (5-8) teacher certification and secondary teacher certification (7-12). These changes keep the basic framework of our previous degrees but create additional flexibility by allowing students the possibility of a generic BA or BS degree (without option). Ed Wixson spent a great deal of his sabbatical leave working on this revision and the department met numerous times during the spring to iron out the many issues involved. Thanks to Ed for his efforts.

A continuing challenge facing the department as well as many other colleges is the recruitment and retention of students. The department continues its efforts in this regard.

Unfortunately, the talent grant in mathematics program as well as all other talent grants except for music and theatre was discontinued by the financial aid office. We hope that this cancellation is just a temporary setback. In this regard the department in conjunction with the computer science department submitted a grant to NSF for student scholarships and we are guardedly optimistic of receiving this grant. Hopefully, in next year's *AfterMath*, I'll have more to report.

The department continues to upgrade of our department Web page. Logon and connect to www.plymouth.edu and follow the links to the department page and see for yourselves all the activity that is occurring within mathematics and at PSC. Also e-mail the department with your ideas or suggests or just to say hi.

The department continues its strong outreach efforts by offering a number of workshops or institutes during the summer, and evening courses during the year. All of these can earn educators graduate credits or credit towards certification. Look at the department's Web page for more information.

Mathematics educators in New Hampshire, if you have potential mathematics majors, please keep us in mind and let your students know of all the wonderful opportunities available at PSC.

*The Fourth Annual Mathematics Association of Plymouth / Mathematics Department
Banquet*

The Fourth Annual MAP / Mathematics Department Banquet was held at the Italian Farmhouse. Based on the largest attendance yet, the event continues to grow and it gives everyone—students, faculty and parents—the opportunity to celebrate the successes of the year in a relaxed atmosphere. Dr. Richard Zang gave the keynote address on a topic of general interest and was warmly received. Paul Estes was voted by the students faculty member of the year and many students were recognized for their work through the year (See accompanying articles by Paul and Rachel).

**Math Association
by Rachel Armstrong**

The Math Association of Plymouth State College is an organization that provides activities for students interested in math. The association incorporates both math professors and students in these activities. In the past years, the Math Association sponsored several different events. The group traveled to Boston to tour the Museum of Science, had lecturers enlighten the group and even had outdoor and bowling activities. One event enjoyed by both students and faculty was “game night” held in the HUB on campus. This year we extended this event with a billiards tournament. Dr. Paul Estes claimed the winning prize. Other events included a faculty vs. student softball game and a hike up Mt. Welch and Dickey. The biggest event for the association occurs at the end of the year, when the Math Association hosts the Math Awards Banquet. This year we held the Fourth Annual Math Banquet at the Italian Farmhouse. Parents, students, faculty, staff and the president of the College all were present as 16 math majors received awards for their academic excellence. At the banquet we annually honor one math professor that has shown qualities that go above and beyond those of an academic instructor. The award is voted on by all students with mathematics majors. This year’s award went to an outstanding professor and friend, Dr. Paul Estes. The banquet also initiates the incoming officers for the following years Math Association. Outgoing officers: Rachel Armstrong, president; Jared Hoffman, vice president; Debbie Held, treasurer, all graduated this year. The incoming officers are: Jocelyn Davison, president; Roberta Cooke, vice president; Bob Comey, treasurer; April Stone, secretary. I would like to wish the new years Math Association a great year, and a lot of fun and success in the future.

Spring2001 Kudos

by Paul Estes

Graduating Senior Awards

This spring at Last Convocation the department honored **Brian Harrington** from Bennington, Vt., as its outstanding mathematics education graduate. Brian completed his student teaching in the fall and is now teaching at Winnisquam High School. **Rachel Lorenz-Armstrong** from Ossipee, N.H., was designated as the outstanding BA mathematics graduate. She also just completed a term as Math Club president during which she organized several fun activities for students and faculty.

Mathematics Department Fellowship

The mathematics fellow for fall 2001 will be **Jocelyn Davison** from Hillsboro, N.H. This fellowship involves working in the Math Activity Center helping students with problems in calculus and elementary functions. As the recipient of this award, Jocelyn will receive a stipend, which is credited toward her tuition.

Mathematics Scholarships

Stephen Signor from Merrimack, N.H., won the Barbara Dearborn Mathematics Scholarship. Stephen has a perfect 4.0 GPA. Professor Dearborn’s daughter Mitzi Dearborn again returned from Wisconsin to make the presentation to Stephen. The Hunter Baney Barton Memorial Scholarship alternates between our department and the natural science department. This year it was our turn to select the recipient. Our choice: **Scott Laine** from Spencer, Mass. This past year Scott has been our math fellow.

We were able to award four Geneva Smith Scholarships this year. These scholarships were endowed by Jessie Smith in memory of her sister Geneva Smith, Professor of Mathematics from 1925 to 1967. The four recipients were **Anthony Koschmann** from Hudson, N.H., **Robin Lubguban** from Franconia, N.H., **Brooke Randall** from Harrisville, R.I., and **Michael Severino** from Pike, N.H.

Mathematics Education

by **Dick Evans and Bill Roberts**

Two Mathematics Institutes for Secondary Teachers

Again this summer the department in conjunction with the NH-IMPACT Center is offering a number of institutes for New Hampshire teachers. These institutes have received support from a variety of sources including the Dwight D. Eisenhower Education Act via the competitive funding process. All of the institutes were designed using cooperative planning between the departmental staff and a host of New Hampshire school districts.

During the week of July 2nd one institute involving Connections between Algebra and Geometry will be offered. Some of the materials discussed in this institute will involve topics from some of the newly developed standards-based mathematics programs. Technology used during the week will include interactive geometry software and graphing calculators.

A second institute commencing on July 30th will consider Data and Chance for Secondary Teachers. Materials from a variety of sources will be shared. Technology for this institute will include graphing calculators and statistical software available for Mac and Windows operating systems.

Staffing for these institutes will involve PSC faculty and staff as well as colleagues from other institutions of higher education.

Summer Programs

We will be offering a number of summer programs for teachers of mathematics at various levels. They are offered in cooperation with the NH-IMPACT Center at PSC.

The **Developing Mathematical Ideas** workshop is designed to strengthen the mathematics background of elementary school teachers. We will use the highly acclaimed Developing Mathematical Ideas materials developed from funding from the National Science Foundation (NSF). The institute will run from 8:30 a.m. to 2:30 p.m. Monday through Thursday and from 8:30 to 1 p.m. on Friday. The institute also calls for follow-up meetings in the fall of 2001. The program is partially supported by a grant from the New Hampshire State Department of Education and the Dwight D. Eisenhower Higher Education Act. Participants will receive three graduate credits. Instructors for this institute will be Drs. Judy Buck and Richard Evans.

Project STREAM at PSC involves participants examining the five NSF-funded, standards-based programs at the secondary level. This program started last October and will wind up by having participants examine in-depth the SIMMS-IM (Systemic Initiative for Montana Mathematics and Science – Integrated Mathematics) program the week of July 9 – 13, 2001. If you are interested in participating in the weeklong summer session, you may still do that. The summer sessions will run 8:30 a.m. to 2:30 p.m. Monday through Thursday and from 8:30 to 1 p.m. on Friday. The program is partially supported by a grant from the New Hampshire State Department of Education and the Dwight D. Eisenhower Higher Education Act. Participants may receive two graduate credits for a fee of \$150.00. The instructor for this institute will be Jim Willis, a high school teacher from Vermont who is using the program and has in-depth training in the program.

The **Middle School Geometry & Measurement Institute** will run the week of July 9 – 13. The institute will look at several of the middle school NSF-funded, standards-based programs and the geometry strands within them. The sessions will run from 8:30 a.m. to 2:30 p.m. Monday through Thursday and from 8:30 to 1 p.m. on Friday. The program is partially supported by a grant from the New Hampshire State Department of Education and the Dwight D. Eisenhower Higher Education Act. Participants will receive two graduate credits. The cost of the program is \$150.00 with all other expenses being paid by the grant, including lunch and snacks. Instructors for the program will be Drs. Judy Buck, Richard Evans and Ferd Prevost.

The **Middle School Data and Chance Institute** runs the week of July 23 – 27, 2001. Materials will be drawn from the NSF-funded, standards-based programs for middle school mathematics. Sessions will run from 8:30 a.m. to 2:30 p.m. Monday through Thursday and from 8:30 to 1 p.m. on Friday. The program is partially supported by a grant from the New Hampshire State Department of Education and the Dwight D. Eisenhower Higher Education Act. The cost of the program is \$165.00 with all other expenses being paid by the grant. Participants will receive two graduate credits, lunch and snacks each day, a TI-73 graphing calculator, and curriculum materials. Instructors for the program will be Drs. Judy Buck, Richard Evans and Ferd Prevost.

Charles Lovitt, the former director of mathematics for the Curriculum Corporation of Australia will return again to host the **Australian Task Centre Approach to Learning**. This week-long institute will examine the highly acclaimed task centre approach to learning developed by Lovitt. Instructors for the course will be Mr. Lovitt and Dr. Richard Evans. Classes will be conducted daily from 8:30 a.m. to 2:30 p.m. Monday through Thursday and Friday from 8:30 to 1:00 p.m. The fee for the course is \$500.00 per person and includes two graduate credits and a continental breakfast, lunch and snacks each day. The course will run the week of August 6 – 10, 2001.

The **MathThematics Institute** will be a three-day overview of the middle school program *MathThematics* developed through NSF-funding and currently published by Houghton Mifflin. *MathThematics* was developed to meet the National Council of Teachers of Mathematics Standards. Classes will be held daily from 8:30 a.m. to 2:30 p.m. Monday through Wednesday. The fee for the course is \$230.00 per person if you want one graduate credit or \$150.00 per person with no graduate credit. The workshop includes continental breakfast, lunch and snacks each day. The three-day workshop will run July 30 – 31 and August 1, 2001. The primary instructor for the program will be Bill Setzer, a math teacher trained in the program.

Mathematics Department Receives Grant from AASCU

The PSC mathematics department received a grant from the American Association for State Colleges and Universities to revamp the mathematics courses currently taken by preservice elementary teachers. PSC was one of 18 schools who received the grant from over 90 schools that applied. PSC will be sending Drs. Judy Buck, Jon Maatta, Ed Wixson, and Dick Evans from the mathematics department and Dr. Irene Mosedale from the education department to San Diego for a week of study and curriculum writing. In the fall, two experimental sections of the first of three four-credit courses will be offered taught by Buck and Evans.

The new courses will integrate the mathematics content, rather than isolate topics or content strands. The courses will also make use of exemplary curricula materials for elementary teachers, including Developing Mathematical Ideas and the Australian Task Centre materials. The new courses will also be linked to the methods courses offered to preservice elementary education students and will incorporate literature books involving mathematics and math anxiety materials.

The NH-IMPACT Center

The NH-IMPACT Center is in our third year of operation. The Center's primary objective is to work with school districts in the fields of mathematics and science and help them review, select, and implement new standards-based curricula in mathematics and science. Among some of the school districts we have worked with are the following:

Bedford: Richard Evans served as a "mathematician in residence" at the McKelvie Middle School this year helping them implement the Australian Task Centre approach to learning. This was funded through a Toyota Time grant received by Bedford. Ferd Prevost worked with the elementary teachers in Bedford on Australian Tasks. This was funded through an Eisenhower higher education grant received by PSC.

Concord: Ferd Prevost worked with the elementary teachers on "Math Tuesdays" in the fall and on "Data Tuesdays" in the spring. The Math Tuesdays dealt with helping the teachers implement the Everyday Math program.

Epping: The Epping Elementary School contacted the Center about helping them improve their mathematics curriculum. The Center will be working with the staff this summer on Developing Mathematical Ideas and throughout the next year to strengthen their program and select a new mathematics program. This is part of a three-year grant received by the Epping Elementary School.

Kearsarge: Judy Buck worked with the teachers in the school district on implementing the Principles and Standards for School Mathematics. This, too, was funded from a Toyota Time grant and will continue next year.

Laconia: Jack Barry and Dick Evans worked this year with the Memorial Middle School teachers in Laconia on implementing the Australian Task Centre approach to learning mathematics and on using technology to teach mathematics.

SAU # 36: Dick Evans worked with the teachers in Lancaster and Whitefield on the new NCTM Principles and Standards for School Mathematics. This summer the Center will have Charles Lovitt working with the staff of SAU # 36 on the Australian Task Centre concept.

Timberlane Middle School: Judy Buck and Sally Jensen worked with the middle school math and science faculty, respectively. Both Judy and Sally worked with the faculty to help them implement standards-based programs.

PSC Grad Becomes National Representative for

It's About Time

by Bob Hayden

Sharon Fadden, class of 1998, will become a national mathematics representative for the publisher It's About Time, which publishes the innovative high school program *Math Connections*. *Math Connections* (for which I was one of the authors) is one of the five secondary school programs developed through funding from the National Science Foundation to implement the standards created by the National Council of Teachers of Mathematics. Sharon will be leading workshops for secondary teachers who will implement the program. It's About Time also publishes *Math in Context*, a middle school NSF funded program developed at the University of Wisconsin. Sharon is currently the mathematics coordinator of the Rivendell School District in Vermont.

Somebody's Gotta Do Math!

by Ted Giebutowski

I'm sure some of you have seen this before, but I hadn't and I thought you'd be amused. Item from May/June 01 *Focus* p. 7, article by Anant Godbole: Kaprekar number. Named after Indian mathematician D. R. Kaprekar, who discovered it in the mid 20th-century. Start with any four digit number having different digits. Re-arrange to get the largest and the smallest number, subtract the smallest from the largest, iterate. In seven or fewer steps, the sequence turns into the constant (K's number) $K = 6174$. So, e. g., $K = K_1 = 7641 - 1467 = 6174 (= K_2 = K_3 = \dots)$. Exercises: How many numbers do you need to test? Write a program to test the result. Fiddle with using adjacent integers, adjacent even numbers, etc. Generalizations?

Alumni News

by Ted Giebutowski

This was a banner year for responses! Mark Harris '75 came by last summer, found Paul Estes and me in our offices. He's teaching at Monroe Community College in Rochester, N.Y. Mark and I were "freshmen" together back in '71 as I recall; we've had considerable discussion via e-mail about our calculus courses. Good to see the face that goes with the e-mails, 30 or so years hasn't made much change, at least in Mark!

Andre Messier '90 e-mailed. He's now assistant principal at Lake Region UHS in Orleans, Vt. He and his wife Kim (also teaches math there) have two boys and live in North Troy. He raised the question whether the softball game is open to alumni. Of course! But somehow it didn't happen this year. Maybe if Keith or Dick got an e-mail near the end of the year it would jog their memory.

Alice Seward Mandeville '88 e-mailed Dick Evans. She's teaching grades 6 – 8 math at Villa Augustina, a K – 8 Catholic school in Goffstown, N.H., and loves it. Her five-year-old daughter is keeping her busy as well.

Dick also heard from Kirsten Carter Drosdowski '85. She's working in Information Technology at Banner Health Arizona (a hospital chain) and is director of a new department that's doing project management, business development and quality management. She says that she's using the logical thinking skills she learned here. She's been married to a co-worker, Steve, for five years; they have a "terrific" one-and-a-half-year-old son, Cory.

We also had a letter from Kimberly Newman Santos '90 who lives in Seekonk, Mass., with husband Joe and their two kids. She's teaching Geometry at Coyle and Cassidy High School.

Keith saw Gary Holden '87 last summer, he was in Plymouth and stopped at Hyde to see who was around. Ed also bumped into Gary in an airport in North Carolina earlier that year!

Gary Lowe '92 came by in October, took Paul and me to lunch (normally a dangerous undertaking, but Paul managed to restrain himself) and saw some of the rest of the faculty as well. He's at State Street Bank in Boston working in institutional investing and lives in Arlington with his Dalmatian. Gary has a master's in statistics (U. Mass.) and is working toward his certificate in financial accounting.

Kristin Wilson '95 e-mailed Dick. She's at Mascoma (N.H.) High School, teaching college prep algebra, honors algebra 2, trig, AP calculus and life math 2 (which she particularly likes). She loves her job and volunteered to host one of our student teachers.

Pat Seymour '79 e-mailed Keith Ferland. He's back at Liberty Mutual (in Portsmouth) and has also worked at Blue Cross/Blue Shield, Seabrook Station, as well as his first position with Liberty Mutual in Boston. He writes that the logic solving skills picked up at PSC come into play on a daily basis.

And Bob Hayden heard from Matt Ward '98. He's teaching high school (algebra I and pre-calculus) in

Canandaigua, N.Y., at Canandaigua Academy. He, his wife and children are all doing "very well."

That's it! I think I maybe got you all this time, if I missed any of you, that's just an excuse to e-mail/write us again. Be warned: we post the messages. Then comes the discussion: "Oh, yeah, I remember her/him, . . . (rest is censored) . . ." Take care.

Editor's Column

by Ted Giebutowski

Another issue (pun intended)! There's some discussion going on here about publishing this newsletter on-line only. Currently, we put it up on our website when it is sent out by "snail-mail" or shortly thereafter. Given the access our readers have to the Web, and given the difference in cost (zero vs. lots) between posting on the Web and mailing *AfterMath*, publishing on-line only may be best.

There are other reasons as well. The items in *AfterMath* addressing math-ed are often out of date by the time we get to publishing the newsletter; of necessity because of secretarial and faculty time constraints, *AfterMath* gets done in the summer when many of the math-ed workshops/classes are offered.

If you want to expeditiously weigh in on the issue of on-line only publishing vs. on-line plus mailings drop me an e-mail; otherwise, the U.S. mail still delivers.