

AFTERMATH

PLYMOUTH STATE COLLEGE MATH DEPARTMENT NEWS 2002

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Chairs Column

Jon Maatta

Greetings! Another year has past. Time once again to review the past year and to think fondly of the many students that have graced the halls of Hyde Hall.

Departmental Update

In the last AfterMath, I mentioned the experience of traveling with a group of Mathematics Educators from PSC to San Diego, CA. The Department again has a team going to participate in a grant workshop sponsored by the American Association of State Colleges and Universities. This is a follow up workshop to bring all the participants up-to-date with the activities of the last year. The project, to revise the twelve credits of mathematics that Early Childhood and Childhood Studies majors take, has been progressing and the first course (four credits) has been taught for two semesters. The second four credits is scheduled to be implemented this fall. Dick Evans and Jack Barry will represent PSC in San Diego this year.

The Department continues in our commitment to the proper use of technology. Computer algebra systems have been successfully integrated into the first two semesters of Calculus and both faculty and students seem to be happy with the results. This summer, ITS will be upgrading our computer lab in Hyde and for the first time the lab will be a PC lab. I'm hoping that this change will allow for an increased use of both the lab itself and facilitate the use of technology in the classroom as well.

The newly revised mathematics degree programs, described in the last issue, have passed all hurdles and now appear in the newest academic catalog. The revision gives the student more flexibility in their options and should allow for more students to declare a double major.

A continuing challenge facing the Department and PSC as well as many other colleges is the recruitment and retention of students. The Department and the College has renewed its efforts in this regard. One interesting initiative that took place during the past year was the offering of scholarships to the top finishers of the MathCounts competition that takes at PSC each spring. It will be four or more years before we see any potential gains in recruitment, but certainly the commitment to excellence is there. The Department, in conjunction with the Computer Science Department resubmitted the grant proposal for scholarships for students. Again, we wait with guarded optimism. 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.

More upgrades have been made on our Department's 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. E-mail us with your ideas or suggests or just to say hi.

The Department continues its strong outreach efforts by offering a number of workshops and institutes this summer in which educators can earn graduate credits or credit towards certification. See the Department's web page for more information.

The Fifth Annual MAP / Mathematics Department Banquet was held at the Tree House Restaurant. We again experienced an increase in attendance, giving students, faculty, and parents the opportunity to celebrate the successes of the year in a relaxed atmosphere. Laurie Boswell gave the keynote address on a topic of general interest and was warmly received. Donna Kelley was awarded faculty member of the year by the students and many students were recognized for their work throughout the year.

Since the last AfterMath, the Department has been planning for changes that were inevitable as our faculty age. Dr. Bernadette Russek has decided to opt for the early separation plan and will be leaving the Department for retirement with her husband Arnie. Dr. Normand Cote experienced poor health early in the fall semester and had to have open-heart surgery. He is now on long-term disability and is gradually regaining strength. Dr. Judy Buck submitted her resignation in early May due to another excellent professional opportunity and will be leaving PSC in late August. These three will be truly missed. Dr.

Paul Estes has also opted for the early separation plan but chose the gradual retirement option. Paul will be teaching half time for two years starting in the fall. As you can see, tremendous changes are around the corner for the Mathematics Department at Plymouth State College.

Math Association by Jocelyn Davison

The Math Association of Plymouth State College is an organization that coordinates activities and events for both professors and students interested in mathematics. In the past, the Math Association sponsored several different events. The group traveled to Boston to tour the Museum of Science, had lecturers enlighten the group, gone to Fun Spot, had a Christmas party, and gone on hikes up local mountains. 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. Another event included a faculty vs. student softball game with a cookout at one of the professors homes afterwards. The biggest event for the association occurs at the end of the year, when the Math Association hosts the Math Awards Banquet. This spring we held the Fifth Annual Math Banquet at the Treehouse Restaurant. Parents, students, faculty, staff and the president of the College all were present as a number of mathematics majors received awards for their academic excellence in the subject. At the banquet we annually honor one math professor that has shown qualities that go above and beyond those of an academic instructor. This award is voted on by all students with mathematics majors. This year's recipient was an outstanding professor and friend, Donna Kelley. The banquet also initiates the incoming officers for the following years Math Association.

Outgoing officers: Jocelyn Davison, president; Roberta Cooke, vice president and Treasurer; April Stone, treasurer, all but April graduated this year. The incoming officers are: Kristen Noblet, president; Joy Bowen, vice president; Phil Jones, treasurer; Jennifer Judson, secretary. I would like to wish the new years Math Association a great year, and a lot of fun and success in the future.

Softball game Wendy Burnham

As many of you know the Math Department holds a softball game each spring in which the faculty play against the math students. This year the game was held on a cold and windy Friday afternoon at D&M 2 and of course the faculty won. I must say that quite a few faculty "chickened out" due to weather, excuses that bones may get broken, loss of flexibility (age related of course) and non-love of the sport of softball. Those that did attend brought along friends and fun was had by all. Some participants had never even played softball let alone hit a ball but they did a fantastic job! As with any hard played game everyone was hungry afterwards and headed to Paul Estes house for a cookout to replenish those lost calories!

If you would like to view some of the pictures taken at the game you can go to the Aftermath 2002 at: <http://www.plymouth.edu/psc/math/aftermath/mainlink.html>

Awards 2002 by Paul Estes

Graduating Senior awards: This spring at Last Convocation the department honored four graduating math majors for outstanding achievement in their degree programs. Kudos went to the following:

Anthony Koschmann from Hudson NH, BS in Technical Management Mathematics
Robin Lubguban from Franconia NH, BS in Secondary Mathematics Education
Brooke Randall from Harrisville RI, BS in Actuarial Mathematics
Stephen Signor from Merrimack NH, BS in Middle/JHS Mathematics

Congratulations, all!

Mathematics Department Fellowship: The Mathematics Fellow for fall 2002 will be Jennifer Judson from Groveton NH. This fellowship involves working in the Math Activity Center helping students with problems in Calculus and Elementary Functions. As the recipient of this award, Jennifer will receive a stipend which is credited toward her tuition.

Mathematics Scholarships:

Wendy Szewczyk from Center Ossipee NH won the Barbara Dearborn Mathematics Scholarship, awarded to the continuing math major with the highest GPA. Professor Dearborn's daughter Mitzi Dearborn again returned from Wisconsin to make the presentation.

Geneva Smith Scholarships:

We were able to award four 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 **Joy Bowen** from Walpole NH, **Benjamin Hann** from Franklin NH, **Kristin Noblet** from Narragansett RI, and **Wendy Szewczyk**.

Mathematics Education Institutes by Dick Evans

We are gearing up for a very busy summer as the Mathematics Department and the NH-IMPACT Center will be co-hosting 12 institutes for teachers of mathematics. We will have three guest lecturers from Australia and one from New Zealand. I'm also leading a group of teachers from the US to study at Australian Catholic University in Melbourne, Australia. Many of the institutes will have PSC alumni in attendance as students, instructors, and more. The institutes are partially funded by the Dwight D. Eisenhower Education Act.

Programs Involving International Scholars

Developing Mathematically Promising Students: This grant will bring Choon Tan from New Zealand to the US to work with teachers from grades 1 - 8 and students, who have been identified as "mathematically promising" by local schools. In the first week, he will work with 10 or so promising students in the mornings with teachers observing and then work with the teachers directly in the afternoon. In the second week teachers will work with students in the morning followed by debriefing in the afternoon. Three graduate credits will be available for a \$75.00 registration fee. Dr. Richard Evans is the Director for the grant. **Dates are July 1, 2, 3, & 5 and 8 - 11, 2002.**

Teaching Mathematics to Primary Children: This grant is for teachers in grade K - 3. Drs. Doug and Barbara Clarke of the Australian Catholic University and Monash University, respectively, will share their research findings about teaching mathematics to primary students. Teachers participating can receive 2 graduate credits for a registration fee of \$50.00. Dr. Richard Evans is the Director for the grant. **Dates are July 8 - 12, 2002.**

Fostering Rich Mathematics Investigations - The Australian Way: This course will examine some of the new ideas and investigations coming from the Australian Task Centre. Charles Lovitt, the former Mathematics Director for the Curriculum Corporation of Australia and Dr. Richard Evans of PSC will be the instructors for the course. The course is designed for teachers of grades 3 - 10. The fee for the course is \$600.00 for 2 graduate credits. **Dates are July 8 - 12, 2002.**

Developing Algebraic Notions in Grades K - 8: This institute will examine how teachers in grades K - 8 can help students develop algebraic notions so that students can be successful in H. S. algebra. Newly developed materials will be explored as well as looking at how the standards- and research-based (SRB) math programs developed through NSF funding have incorporated algebraic activities into their programs. Charles Lovitt, the former Mathematics Director for the Curriculum Corporation of Australia, and Dr. Richard Evans will be the instructors for the week. Teachers participating may receive 2 graduate credits for a \$50.00 registration fee. **Dates are July 15 - 19, 2002.**

Trip to Australia: Dr. Richard Evans will be leading a group of educators to Australia to take a course entitled **Contemporary International Issues in Mathematics Education (K - 12)** at the Australian Catholic University. The course runs the weeks of July 29 - August 9. Most participants are leaving a week earlier to travel 3 days in Sydney and 3 days in Cairns (site of the Great Barrier Reef). Approximate costs for the three-week trip including housing and some meals, a 3-credit course, air flights, ground transportation, some social events and tours is about \$4400. For further information, contact Dick Evans at 535-2487 (w) or evans@mail.plymouth.edu. **Dates are July 19 - August 9.**

Mathematics Programs Designed for Secondary Teachers

Contemporary Mathematics in Context (Core-Plus): This weeklong institute will provide participants an in-depth look at one of the five NSF SRB secondary school mathematics programs. Teachers participating will receive 2 graduate credits for a registration fee of \$50.00. Dr. William Roberts is the Director of the grant. **Dates are June 24 - 28, 2002.**

McDougal Littell Algebra 1, Algebra 2, and Geometry Program: This institute will be a three-day overview of the popular series (co-authors include PSC alumni Laurie Boswell and Lee Stiff, President of the National Council of Teachers). The program is being partially underwritten by McDougal Littell. Dr. Richard Evans is the Director for the project. **The program will run July 15 - 17, 2002.**

Mathematics Programs for Middle and Elementary School Teachers

Developing Mathematical Ideas I: This institute is for teachers of grades K - 8. The purpose of this grant is to examine SRB programs with the ultimate objective of improving the mathematical understanding of the teacher with respect to operations and place value and to help them teach those ideas. Teachers will be involved in a one-day spring meeting, a week-long summer session in the summer of 2002 and some days of follow up in the fall of 2002. Teachers participating may receive 3 graduate credits for a \$75.00 registration fee. Dr. Ferd Prevost is the Co-Directors and he and Dr. Richard Evans are the instructors for the grant. **Dates are June 24 - 28, 2002.**

Graphing Calculator Institute: This institute is for teachers of grades 5 - 8 and will examine the use of the TI-73 Graphing Calculator in the middle school. All participants will receive a TI-73 overhead Graphing Calculator. Teachers participating can receive 2 graduate credits. There is \$200.00 fee for materials for the course, which teachers are encouraged to get from their local schools. Dr. Judy Buck is the Director and an instructor for the grant, and Dr. William Roberts will aid Judy as an instructor. **Dates are July 8 - 12, 2002.**

Exploring Elementary School Standards-Based Programs: This grant is for school districts that are new users of 'Everyday Mathematics.' Participants will be provided an overview of the Everyday Math program and how to use it. A fee of \$50 or \$75 will be charged for teachers receiving 2 or 3 graduate credits. Drs. Richard Evans and Ferd Prevost are the Directors for the grant. **Dates are July 22 - 26, 2002.**

Developing Mathematical Ideas II: This is similar to DMI I above, but is designed to strengthen the teacher's

background in geometry. Teachers participating can receive 3 graduate credits for a registration fee of \$75.00. Dr. Ferd Prevost is the Director for the grant and one of the instructors. Dr. Judy Buck will also serve as an instructor for the grant. **Dates are July 29 - August 2, 2002.**

Geometry and Measurement Institute: This grant is designed to examine the standards-based programs and to make teachers aware of the programs and the way in which geometry is approached in those programs. Teachers will receive approximately \$150.00 worth of materials. There is a \$150.00 materials and registration fee. Participants will receive 2 graduate credits. Dr. Judy Buck is the Director for the grant and an instructor for the grant, and Dr. Ferd Prevost will aid Judy as an instructor. **Dates are August 5 - 9, 2002.**

MathThematics Leadership Institute: This will be a two and a half day institute on the SRB program for middle schools. The dates for the institute are **August 5 - 7, 2002** and will cost \$75.00. This program is sponsored by the McDougall Littell Publishers.

Math and Science Partnership Grant by Dick Evans

Plymouth State College along with Keene State College, the University of New Hampshire, the College for Lifelong Learning, the NH Community and Technical Colleges, and the K - 12 public schools submitted a \$23 million Math and Science Partnership grant to the National Science Foundation. The grant would build on the work already begun at the IMPACT Centers at PSC and UNH. It would also establish three more centers around the state, and fund a campaign around the state to make citizens aware of the need for better mathematics and science education. There were over 300 grants submitted for what is expected to be 90 funded proposals.

The NH-IMPACT Center at PSC by Dick Evans

The NH-IMPACT Center at PSC is in its fourth year of operation. The Center's primary objective is to work with school districts in the fields of mathematics and science by helping them review, select, and implement standards- and research-based curricula. Among some of the districts we have worked with this year are:

Bedford: Dick Evans served as a mathematician in residence for the last two-years at the McKelvie Middle School helping them implement the Australian Task Centre concept. This was funded by a Toyota Time grant received by the Bedford school district.

Epping Elementary School: The Center has been helping the Epping Elementary School select and implement Everyday Mathematics. This began by offering the teachers the Developing Mathematical Ideas (DMI) course "Building A System of Tens" last August and then the next course in this sequence during the academic year. This relationship will continue through funding of Epping's Comprehensive School Reform Development grant. PSC staff involved in this project are Ferd Prevost, Jack Barry, Judy Buck, and Dick Evans.

High School Mentoring Programs: Dick Evans led mentoring sessions for new staff members as part of a grant received by the New Hampshire Teachers of Mathematics and for the Winnisquam Regional School District. Among the folks returning to the field of education that Dick worked with was Donna Dubey, class of 1987 and Cynthia Sanschagrin, class of 1998.

Kearsarge: Judy Buck continued her work with the Kearsarge teachers on another Toyota Time grant. In particular, Judy worked with the staff on issues relating to the Principles and Standards for School Mathematics.

Lebanon: Dr. Ferd Prevost offered the DMI course "Building A System of Tens" for elementary school teachers and has been asked to come back next year and offer the next DMI course. Dr. Dick Evans worked with a group of middle school teachers on adopting a middle school math program.

Moultonborough Elementary School: Dick Evans offered the DMI course "Building A System of Tens" for elementary school teachers and has been asked to come back next year to work with the teachers modeling and observing lessons.

Sanborn Middle School: Drs. Ferd Prevost, Judy Buck and Dick Evans worked with the middle school teachers of Sanborn Regional by providing them model lessons on topics chosen by the staff and then observed the staff doing lessons.

Shaker Regional School District: Dick Evans and Jack Barry offered a course and several workshops to the teachers at the Belmont Elementary and Middle School and at the Canterbury Elementary School. This was part of an Eisenhower Higher Education grant received by PSC.

Timberlane Regional: Dr. Judy Buck offered the DMI course "Building A System of Tens" for elementary school teachers first semester.

Title I Tutors: The IMPACT Center received a grant to offer a series of five daylong workshops to Title I Tutors. The workshops were offered twice, once in Concord and once at the seacoast. Topics included number sense, fractions, and geometry.

Roots By Keith Ferland

Whatever your profession you figuratively stand on the shoulders of those who came before you. As a

mathematician and a teacher of mathematics I certainly felt such a linkage all the way back to the famous ancient Greek Mathematicians. This past spring semester as a part of a sabbatical leave, I traveled to Greece and felt an even closer bond with the likes of Thales, Pythagoras, Plato, Euclid, et al by literally walking in their footsteps. It was truly a wonderfully rejuvenating experience, which will stay with me forever.

One of the most awe inspiring sites, although not related to any mathematical event, was visiting the ancient ruins of Delphi. Here the ancient Greeks built temples to Apollo and Athena because this site was considered to be the center (the navel) of the world. Supposedly two buds were released from opposite ends of the Greek empire and they converged at Delphi some two thousand feet up the side of a mountain and that is where the construction of these temples and sporting and theatrical arenas began. Now a mathematical question: Explain why Delphi is indeed the "center" of the surface of the earth.

Editor's note: Keith included a couple of pictures (to prove he was there). You can find them in his article on our website (click on Aftermath):

<http://www.plymouth.edu/psc/math/index.html>

MAA Short Course
by Paul Estes
Coming Soon to a College Near and Dear to You:

MAA SHORT COURSE: June 23 - 27, 2002
Integrating The Web Into Mathematics Instruction

The Northeast Section of the Mathematical Association of America (MAA) and the PSC Math Department are jointly sponsoring the above four-day course for secondary teachers and college faculty who wish to use the Web in teaching mathematics. Presenting the material will be Professors Cathy Frey, Gerard LaVarnway and Robert Poodiack of Norwich University.

To obtain a brochure with the complete program description, schedule of activities, and costs, simply e-mail or call Paul Estes at: ple@mail.plymouth.edu or (603) 535-2486

Alumni News
by Ted Giebutowski

Bob Hayden heard that the Boston Chapter of the American Statistical Association has elected Scott Evans '88 to serve as chapter president beginning January 1, 2003. Congratulations, Scott.

Dick Evans heard from Stan Smith '??'. He's teaching grade 9 – 12 mathematics at Pittsfield Middle-High School, and has obtained secondary certification from the state. He's teaching four sections of sophomore geometry, one of remedial math and one section of senior level statistics and probability.

Dick also got a card and letter from Janet Zerfas Spath (put an umlaut uber der last 'a') '88. She and husband Ralf celebrated their tenth year anniversary last July. 2001 was filled with celebrations, trips to the US to see Janet's parents, camping (Cap d'Agde, France), and hiking (the Alps in Austria, Switzerland, and Liechtenstein), and a family reunion in Loon, NH. Wow!

Dick also shared with me a copy of the NCTM February 'News Bulletin' with further news of another of our accomplished alums. Laurie Boswell '??' of Profile Junior/Senior High School in Bethlehem NH has been elected to the National Council of Teachers of Mathematics Board of Directors. As the article states, and I quote: "she has taught at Profile since 1977, has been an active participant in many of NCTM's regional conferences and annual meetings, serving on several program committees and as a speaker. She has coauthored a variety of textbook series as well as an article for the *Mathematics Teacher*, NCTM's journal for high school teachers."

Dick also heard from Laura Reynolds '??'. She's now teaching in Berlin, NH, and has just accepted a position teaching secondary mathematics at Hampden Academy, Hampden, ME. To quote from her e-mail: "I was so excited I forgot to ask many details, so I think I will be focusing on teaching Algebra 1 and Applied Geometry, two of my favorite subjects. It seems like a very talented and welcoming staff. I am looking forward to trying the high school level again. . . . The interview itself felt like I was sitting down with a group of people I had worked with before - very friendly."

Ed Wixson got an e-mail from Lynn Detscher Boyle '??' She's teaching H. S. mathematics in Loudon County. E-mail excerpts: "I sure hope this gets to you. It's been a long time. God bless you. It's thanks to you that I'm teaching. And I'm so lucky, because after being a stay at home mom for so long, I wondered if I still wanted to teach. I knew the first day back. I love going to work. It's just so much fun for me, every day. And I have developed a deep and daring 'bag of tricks' just like you said to do. I love sharing what I use with new teachers."

Paul Estes has this from Jim Lemaire '??' via an e-mail from Nate Mulherin, one of our math minors some of you may also remember. Quoted from Jim's e-mail (to Nate): "I am living in Carson City, NV, about 20 minutes from Lake Tahoe. I drive over Donner Pass a couple times a week, sometimes happy marveling at the view, sometimes grumbling because I have to chain up. I do computer network development and project management during the week, work on

remodeling some houses, occasionally build new ones, on the weekend."

Jon Maatta recently received an e-mail from Rob Cilley '?? with the following info: "I am working for a firm called Isaacson, Miller (an executive search firm) as a Senior Accountant. We, as a firm, have just been retained by Cornell to search for their new president."

And I heard from Paul Fazio. Paul was my grader and a tutor for Finite Mathematics a number of years ago; some of you may have shared the tutoring experience with him. He left PSC after three years and finished his education at Southern Illinois University, and is now teaching high school mathematics at his own high school, Monadnock Regional High School in Swanzey, NH. Here's a quote from his e-mail: ". . .as I conclude my second year of teaching I can say without hesitation that changing careers was the best decision that I have ever made! I truly love teaching and its joys (and frustrations)."

That's it! Hope I didn't leave anyone out. Keep those cards and letters (not to mention new students!) coming.

How Would You Rate Your PSC Education?

by Bob Hayden

Enclosed in this issue of AfterMath you will find a survey form. This is part of a program within the Department to survey our students on a regular basis. This follows a number of past surveys that did not become ongoing events. Several years ago, then-students Rob Cilley and Danielle Paturzo surveyed our graduates as a class project. (If you are reading this, Rob and Danielle, we would love to have a copy of your report, which left campus when you did!-)

Later, Bernadette Russek spent a sabbatical semester at the State University of New York campus at Potsdam where she surveyed their current students and brought back a survey their department sent to its graduates. A couple years ago we surveyed our own students on campus, and this spring we surveyed graduating seniors. For the future I hope we can have regular surveys of these and other student groups, including readers of AfterMath, and that we can share some of the findings with you. What is being contemplated at the moment are surveys of incoming students who declare a mathematics major, undergraduates about half way through their education here, graduating seniors, and those who have graduated in past years.

One finding I do recall from the survey Rob and Danielle did was that some of our graduates felt they did not have the technology skills that were expected of them in the workplace, and this year's survey of graduates focuses on that issue. A few of you studied survey research with me while you were here, and you may remember that the shorter the form, the more likely you are to get answers. Because of that, we will probably concentrate on one area for each annual AfterMath survey. Another finding from Rob and Danielle's study was that graduates regarded Calculus and Statistics as key courses from their years at PSC, and this spring's graduates seemed to agree. We also heard requests for better connections with business and industry and with non-teaching job opportunities. That's a challenge! I know my own consulting practice evaporated when I moved to Plymouth from a city the size of Concord. That's one of the prices we pay for our lovely setting among the lakes and mountains. It's also a problem with which you our graduates can be of assistance. If you work in an environment where student interns might play a role, please contact Ted G. If you might be willing to come back and visit PSC and talk to current students about what you did with your college degree, please contact Jon M or me. Our future teachers generally have a good idea of what they will be doing after graduation, but that is definitely not the case for the rest of our majors.

What are we going to do with the responses to all these surveys? Well, the overall goal is to improve the experience of our students.

The plea above for assistance from graduates in business and industry is one response to student concerns expressed through survey responses. Our recent efforts to build a comprehensive plan for developing technology skills in our students [can we reference a past AfterMath here?] was in part a response to the concerns that Rob and Danielle uncovered in their research.

Survey Topic: What technology do you use on a regular basis on your job?

(It would help us to know whether you are ___ or are not ___ a classroom teacher.)

Please send responses to Alumni Survey,
Mathematics Department,
Plymouth State College,
17 High Street, Plymouth, NH 03264.

If you would like to answer this survey on-line please go to: <http://www.plymouth.edu/psc/math/aftermath/mainlink.html> and select Survey

Responses will be separated from the envelope to ensure anonymity. Please do not identify yourself on the survey form. (Of course you may write us a non-anonymous letter about any subject whatever.)

Please read all the categories first. Then check each category that includes software you use in your job. Circle or

write in specific software or calculators.

___ Graphing calculator (TI-82, 83, 83+, 85, 86, 89, 92, 92+, Casio, HP)

___ A computer algebra system such as Maple, Derive, Mathematica, or the CAS capabilities of the TI-89 and 92 graphing calculators.

___ A general number crunching program such as Mathcad, Matlab or Octave.

___ A spreadsheet such as Excel, Quattro Pro or Lotus 1-2-3.

___ A Computer Assisted Design (CAD) package such as AutoCAD.

___ A word processor add-in, such as Math Type, for entering equations.

___ A mathematical word processor such as EXP, TeX, or Scientific Word.

Are there any other mathematically oriented software packages that you use on a regular basis or would like new hires to be familiar with?