DIVISION OF NATURAL SCIENCES AND MATHEMATICS
2009-2010 ANNUAL DEPARTMENTAL REPORT

I. EXECUTIVE SUMMARY

College Algebra, MTH 111, was once again taught primarily by the tenure-track members of the department. This was one of our goals from our departmental self-assessment from 2007. We introduced a new textbook in this course as well, which again focused on modeling. With this new textbook, students are able to have online homework which allowed more immediate feedback. The department feels this was a great benefit to their learning. We supplemented the online homework with written homework since we realized early on that the online homework did not quite cover all the content covered in class. A similar approach with online homework was used in MTH 70, MTH 95, MTH 112, and the calculus sequence. We have begun to assess the effectiveness of the online homework system, both by checking student learning and student opinions of the system.

This was a great year for the mathematics majors. We had the highest enrollment in our senior project course since its creation. There were seventeen oral presentations about mathematics given at the 2010 Academic Excellence Showcase, given by mathematics majors and pre-service teachers with a mathematics focus. There were also twelve posters by eighteen students in the same event. We also had students present at the 2009 MathFest (the annual national summer meeting of the Mathematical Association of America (MAA)) in Portland, the annual meeting of the Pacific Northwest Section of the MAA in Seattle, and the Northwest Undergraduate Mathematics Symposium in Corvallis. We will also have students present at the 2010 MathFest in Pittsburgh, PA this August. They will be partially funded by the MAA and Pi Mu Epsilon (the honorary national mathematics society).

The Mathematics Department worked closely with SEP to help their students with MTH 70 and MTH 95. We have introduced Supplemental Instruction Tutors, where a mathematics major meets twice a week for one hour with the SEP students to help them understand the material in the courses, create better study habits, and adjust to college life more easily.

The Mathematics Department was excited this year to have a new tenure-track faculty member, Mary Beisiegel, of the University of Alberta. She was to fill the position vacated by Maria Fung, who left to teach at Worcester State College. Unfortunately, Dr. Beisiegel decided to pursue other interests after completing one year of work at WOU. She left to work at Harvard University as a research assistant as part of a former colleague's NSF grant. We hope to hire someone for the 2011 – 2012 academic year. In the meantime, we will use non-tenure-track faculty to cover Mary's classes.

II. ENROLLMENT TRENDS

In the Mathematics Department, the courses serve four types of clientele: our courses for mathematics majors, the service courses (mostly MTH 70, MTH 95, MTH 105 and MTH 111) satisfy the general population; MTH 211 – 213 and MTH 396 serve pre-service K – 8 teachers, and MTH 392 – MTH 398 and MTH 492 – 495 are for preservice K – 8 teachers wishing to teach mathematics. The hope is students do not delay taking mathematics courses until their junior or senior years. All this does is make the situation worse for those who fear mathematics.

The number of students pursuing a mathematics major had remained steady in the mid-30's over the previous years, but it seems we have more mathematics majors coming up. This year, we had the highest number of graduating seniors (10) in a long time. Our introduction to proofs class, which is taken by mathematics majors early in their time here, has increased from an enrollment of 20 students to almost 30 students in the past couple of years. With the result of the credit switch (from three to four credit) of upper level mathematics courses, students need to take less upper division electives. Although we used to offer three electives per quarter, we are down to offering at most two per quarter because of this reduction in required electives. The reduction in the number of electives required and the increase in the number of mathematics majors / minors may counteract each other, but we still feel we will only be offering at most two electives each quarter. This reduction in electives offered will allow the department to reallocate its resources to help with cover issues with other enrollment trends.

There has been a significant increase over the years of students in the general service courses. Because of this and the desire for students to take mathematics their freshman or sophomore year, the number of sections of MTH 70, MTH 95, and MTH 111 has increased greatly in the past couple of years. For the 2010 – 2011 academic year, we have increased the number of sections of MTH 105 offered each quarter because the two sections of this course filled up so quickly each quarter.

As a result of changes in degree requirements for students in the natural sciences, the enrollment in the calculus sequence has increased as well. This has not quite been handled completely yet. In the past students who placed into MTH 112 had to wait until the winter to begin taking mathematics. This also delayed these students from taking MTH 251. With the reallocation of resources due to the reduction of upper division mathematics electives offered, the department will offer another sequence of MTH 112 (fall), MTH 251 (winter) and MTH 252 (spring). We also do not know what the effect of the nursing program will be on the enrollment in MTH 243.

The enrollment in the introductory mathematics courses for preservice K-8 teachers has been steady, but we plan to offer a different trailer sequence of the foundations sequence (MTH 211 – 213) beginning in the spring 2011 to help students who miss one course in the sequence. We will still offer five sections of these courses each quarter (Fall 2011: 2 sections of MTH 211, 1 section of MTH 212, and 2 sections of MTH 213). The department continually encourages students who excel in the foundations sequence to pursue a focus in mathematics, as the world can always use more qualified and enthusiastic mathematics teachers in the classroom. This push has increased the numbers in the courses specifically designed for middle school teachers. We do not yet know the effect of the change in the degree requirements for pre-service K – 8 teachers put forth by the College of Education this year. All pre-service early childhood / elementary teachers will have to take one more mathematics class, but they will no longer choose two focus areas. This could increase the number of mathematics "focus" classes offered.

Even with the increase in sections in our general education courses, the numbers for July indicate we may need to add a section of each of these general education classes since MTH 70, MTH 95, MTH 111, MTH 211, MTH 243, and MTH 251 each have at most one seat remaining

III. SUMMARY OF PROGRAM CURRICULUM CHANGES

Please provide a BULLET summary of program curriculum changes that were initiated this past year. In your summary, provide a brief short title/description of the change, the status of the change (options: proposed, final approval pending, approved, in new catalog), and a list of program outcomes to which the change is linked.

We only had a few minor course changes.

- We had a new course **approved**: MTH 805 Math Professional Development Seminar. The course meets the needs of the Professional community for advanced or continuing education in comparatively narrow specialty areas. This will enhance WOU's presence in the Salem professional community and meet WOU's goal to increase community outreach and service beyond Monmouth.

- We had the following course numbering changes **approved**. In the past, MTH 403 Senior Project (2) was offered in the winter and spring quarters for a total of 4 credits. To make it clearer for the registrar's office, we have renamed the courses MTH 403 Senior Project I and MTH 404 Senior Project II. We combined the original MTH 404 and MTH 409 to create a new course MTH 409 Practicum; Work Experience; Internship.

- We had a prerequisite change **approved** for MTH 416: Complex Analysis. We changed it from MTH 312 (a senior level course) to MTH 344 (a junior level course) to give all mathematics majors the opportunity to take this course (since this course is offered every two years).

IV. PROGRAM ASSESSMENT ACTIVITIES AND RESULTS

Provide a BULLET summary of program assessment activities and results from the past year, include evidence that the assessment activities are leading to the improvement of teaching and learning. Include Embedded Assessment Results, Other embedded approaches, and Exit and Proficiency Exams.

- **Major Field Test in Mathematics given to seniors (Finished in 90th percentile in the nation)**: For the past four springs, the graduating mathematics majors have been given (at least a partial version of) the Mathematics Major Field Test (MFT), put out by ETS. In 2009, the mathematics majors as a whole finished in the 95th percentile in the nation on the MFT. The results from the 2010 MFT are again exciting. This year, the mathematics majors finished in the 90th percentile in the nation. The math majors have always been good students, as evident by their participation in local conferences and their attendance in graduate school, but to finish that high two years in a row is really surprising. The results show that the WOU Mathematics Department is very effective compared with mathematics departments nationwide.

  The department first administered the full Mathematics Major Field Test (MFT) in 2008. The students took it very near the end of spring term in the afternoon of a school day. The test score did not count toward any grade and the students did not do well in general. In 2009

and 2010, the students took the exam on a Saturday during spring term. The test score counted for 10% of the grade in MTH 403 (Senior Project). The use and significance of the test were explained. Sample questions from the MFT and from the Mathematics GRE were available to use as practice problems.

The department conjectures that the 2008 students simply did not take the test very seriously. The hope is the 2009 and 2010 results are a more accurate assessment of the program. Obviously, more data is needed.

- **Exit Interview for graduating seniors:** An exit interview is given to graduating seniors as well. The interviewer records the student's spoken answers to the questions below and saves them onto the network (the student's name is never recorded). The exit interview's questions focus on student involvement in activities and program involving mathematics both inside and outside the department, plans after graduation, advising (academically and for a career path), and comparing their experience to their friends' experiences in other departments. The department plans to compile the data in the future. Below, you will find the actual questions asked in the exit interview:

WESTERN OREGON UNIVERSITY
MATHEMATICS DEPARTMENT EXIT INTERVIEW

What led you to become a mathematics major?

What do you hope to do after graduation?

Did you know about or participate in these activities:

1.	**giving a math talk outside class:**	KnewAbout	Participated
2.	**Math Club math talks:**	KnewAbout	Participated
3.	**Math Club career/grad school talks**	KnewAbout	Participated
4.	**COMAP modeling competition:**	KnewAbout	Participated
5.	**attending a math talk not at WOU:**	KnewAbout	Participated
6.	**mathematics conferences:**	KnewAbout	Participated
7.	**an REU or summer math program:**	KnewAbout	Participated
8.	**internships or practica**	KnewAbout	Participated
9.	**tutoring, paper grading, course TA**	KnewAbout	Participated

If you participated, were those valuable experiences? If not, why not?

What did you like and/or dislike about your experience as a mathematics major?

Were you advised well within the Mathematics Department, both academically and for your career path?

When comparing your experiences as a mathematics major with that of friends with other majors, have you heard of things that other departments do that you wish we did?

When comparing your experiences as a mathematics major with that of friends with other majors, are there things that we do that your friends wish their major's department would do?

Anything else you would like to add?

- **Senior Project:** Scott Beaver supervised the Senior Project (MTH 403) last year. This course includes writing a capstone paper, which in most cases would be an expository paper based on a published mathematics paper. The students in this course also present their papers in two one-hour lectures to their fellow classmates and the rest of the department. This year, we even had a junior Dania Morales create a senior project. These presentations are video taped and archived as part of the mathematics department assessment plan. They also present a summary of their paper at the Academic Excellence Showcase. Copies of the rubric for senior paper and presentations are available upon request. Each year, the faculty who is in charge of Senior Project (MTH 403) is also responsible for archiving the documentation.

- **Embedded Assessment**: The Mathematics Department has an embedded assessment plan in place. Each faculty carries out parts of the plan relevant to his/her department teaching and assignments (archiving samples of student writing and exams, conducting exit interviews, etc.) During the fall, the department will compile the data from the spring. Copies of embedded assessment ideas acquired during the spring can be found in Appendix 2.

- **Assessment of the Effectiveness of Online Homework**: We have just begun assessing the value of online homework, which is given in MTH 70, 95, 111, 112 and the calculus sequence. This is still in its initial stages, so there is no true data yet, only anecdotal evidence that students find the online homework system effective.

V. SWOT ANALYSIS

a. Strengths *(Key words: capabilities, resources, assets, marketing, innovative aspects, value, quality)*

One of the biggest strengths of the department is the senior project, required of all mathematics majors. Although sometimes these projects do not contain original research, we continually send mathematics majors to local and national conferences to give talks. Frequently, our students win awards for their presentations. As evident by the results on the Major Field Test and the awards won at local and national conferences, we have effective degree requirements for our mathematics major. Our majors go into teaching, graduate school, and industry after graduation.

The mathematics preparation of pre-service K – 8 teachers at Western has been recognized by the National Council on Teacher Quality. We have a fairly unique program for the preparation of middle school mathematics teachers as well, since the majority of middle school mathematics teachers outside of WOU are trained as K – 8 teachers (not enough mathematics content) or as high school teachers (not the appropriate content and not enough pedagogy). We have the perfect blend of content and pedagogy for these future middle school mathematics teachers. Because of our involvement at national conferences on the preparation of middle school

mathematics, three members of our department and a former member (Maria Fung, now of Worcester State College) were asked by the Mathematical Association of America to compile a volume of articles on this subject.

The department instills a confidence with the mathematics majors when they take MTH 311 – 312 (Advanced Calculus I – II), which is taught using the Moore Method (a deductive manner of instruction used in advanced mathematics courses). This course, usually taken during a major's senior year, requires students to prove theorems and present their proofs in front of the class at the board. We feel this method has helped students become quite comfortable at the board, which presumably serves them well once they are in the high school classroom, where the majority of our students end up. Also, in their senior year, and at various places prior, students are offered the opportunity to learn LaTeX (a typesetting program for scientific work) to help make their work look professional. This too will presumably serve them well in their future teaching.

The department, as a whole, is involved in the local and national mathematics community. Cheryl Beaver is the current president of TOTOM (Teachers of Teachers of Mathematics), which is an Oregon organization. Klay Kruczek is the current president of OMEC (Oregon Mathematics Education Council), the current communications office of the Pacific Northwest Section NExT, and will be the chair of the Pacific Northwest Section of the MAA beginning in June of 2011. We also give talks and chair sessions at local and national conferences.

The department serves in a number of leadership positions on campus as well. Laurie Burton served as the chair of the Curriculum Committee this year; Scott Beaver will begin his term as chair of the Collective Bargaining Team in the fall. He served as the Faculty Union the past couple of years and as the vice president of Faculty Senate this year. Klay Kruczek will serve as the secretary of the Academic Requirements Committee beginning in the fall. We also run a couple each of oral presentation sessions and poster sessions at WOU's annual Academic Excellence Showcase.

We have the rare feature of a department in that we all get along famously. Even with our minor disagreements on issues, we feel we are a collegial department who respect each other and stand by any departmental decision. Even though Cheryl Beaver and Laurie Burton are the organizers of the annual Sonia Kovalevsky Day held at WOU for high school girls interested in mathematics, the other members participate by either organizing a session or helping with set up. This is just one example of how our department works as a team. My friends at other universities are always amazed when I tell them we all get along, do not have factions, and share the workload evenly.

One of the biggest strengths for our students is our building, the Marc "Ted" Winters Building. Our mathematics majors use the two study lounges frequently to work with each other on homework and for studying for exams. It is also great to have four SMART classrooms, with one being a 40 station computer lab. We really feel these are selling points when talking to students at the variety of recruitment events we offer at WOU. The building also contains an on-site testing center, which works really well for administering make up exams, placement exams, and the numerous skill tests we offer throughout the quarter.

While talking to other colleagues across the country, I have learned we are fairly unique in that

the tenure-track faculty teach a good number of the sections of MTH 111 College Algebra. This is a great opportunity for us to learn what sort of background these students might be lacking. We then try to discuss this with our graduates who teach high school to see if they can help with these issues.

b. Opportunities *(Key words: market developments, industry trends, nice markets, innovation, partnerships)*

With the addition of Rachel Harrington to the College of Education a couple of years ago, we have an opportunity to collaborate with her on teaching a few more courses for in-service middle school mathematics teachers. These courses are usually primarily offered in the summer, and we have had low enrollment for these courses in the last few years. We are hoping with Rachel's involvement in the local schools, we can offer these courses more often during the regular portion of the academic year and offer courses that may appeal to the needs of these in-service teachers.

Dean David McDonald has asked the department about our interest in participating in outreach and professional development with the mathematics teachers at McKay High School to offer a section of MTH 111 College Algebra for college credit. This is still in the early stages of planning, so we are not sure what will happen yet. It would be nice for the department to get more involved with the local community, but we have not figured out how this can work out logistically.

We also have the potential to assist Adele Schepige with her work with PrISM Oregon. PrISM, Preparation for Instruction of Science & Math, is interested in "developing a set of exciting, inquiry-based, integrated math and science courses that feature accessibility to teachers throughout Oregon." This is still in the early stages of development, but we are looking into possibly creating new courses and / or offering online classes in mathematics for in-service teachers or trying other alternative methods of delivery of our current classes.

The department would like to see more outreach locally. It would be great if the department had regular meaningful contact with the public schools (Central High School, Talmadge Middle School, and Ash Creek Elementary School) beyond sporadic student teaching.

c. Challenges *(Key words: market demand, sustainability, obstacles, weaknesses)*

The department could really use another tenure-track faculty member who could teach courses in mathematics education. A few members of the department (Cheryl Beaver, Laurie Burton, and Klay Kruczek) have been the primary instructors of these classes, but they wish to have a more diverse teaching schedule. They are all trained as Ph.D. mathematicians, who enjoy teaching mathematics education classes, but would prefer to also teach any number of the service courses, calculus courses, and or courses for mathematics majors. We were hoping the addition of Mary Beisiegel would alleviate this issue, but she left us after this year. Even with Mary's help, among the four of us, we would only teach six classes that were not specifically designed for pre-service K – 8 teachers. As previously mentioned, these three faculty members would excel and help our programs expand and grow if they are not teaching only mathematics education courses.

Over the years, we have noticed we need to offer more and more sections of MTH 70, MTH 95,

and MTH 111. We cannot continue to increase the number of sections of each of these courses for a variety of reasons. First, we just do not have the classroom space on campus to increase the number of sections of each course. We have already begun to offer evening classes to free up classroom space during the day. Increasing the number of sections offered also requires the hiring of more non-tenure-track faculty members. Office space for non-tenure-track faculty is an issue in our department. The offices for these faculty members are already small. Putting two full-time faculty members in an office just does not seem appropriate, although we did do it last year because one of the faculty members was willing to conduct office hours outside of his office when possible.

In spite of limited time for the immersion required by mathematical research, we have worked hard as a department to stay active in our specific areas. In particular, as a department, each of us averages over one publication per year. What makes this even more impressive is that there is a turnaround time of over a year per submitted paper for some of the mathematics journals we publish in.

We encourage our students to take an introduction to proofs class (MTH 280) during spring quarter of their freshman year. The next time they see a proof-intensive course (MTH 344) is usually during their junior year. We might consider a bit more continuity in the sense of reducing the lull in proof-based courses.

d. Vulnerabilities (*Key words: gaps in capabilities, financials, cash flow, supply chain, disadvantages)*

We currently lack a tenure-track member of the department who can teach the statistics courses needed for a student to go into actuarial sciences or graduate school in statistics. We were hoping Mary Beisiegel would be that person, since she has a M.S. Statistics, but alas she left to pursue other interests.

In the next few years, we expect the departure of a few of our non-tenure-track faculty members. In particular, we need another experienced teacher of MTH 105, since the only person who teaches this course (Dennis Spencer) plans on retiring in the next couple of years. If we were to add another tenure line, this new hire could fill one of our major gaps in mathematics education, statistics, and mathematics for liberal arts majors.

VI. PROGRAM PLANNING AND INITIATIVES

Please provide a BULLET summary of any program plans or development initiatives that are in the works.

- We are looking into slightly modifying our Applied Mathematics major because we feel that there are not enough proof-based classes in it currently.
- If we were to get an additional hire with a specialty in statistics, we would look into creating a program to train future actuaries and statisticians.

VII. OTHER ITEMS

VIII. PUBLIC RELATIONS ITEMS FOR PROGRAM PROMOTION

List any notable faculty, student, or program accomplishments that you would like to showcase in public relations outreach.

- **Sonia Kovalevsky Day**: The Math Dept sponsored its 6th annual Sonia Kovalevsky Day this past February. SK Day is a program of hands-on workshops and talks for high school women students and their teachers, both women and men. The purpose of the day is to encourage young women to continue their study of mathematics and to assist the teachers of women mathematics students.

- **Major Field Test**: In 2009 and 2010, the mathematics majors scored in the 90% percentile on the Mathematics Major Field Test, put out by ETS.

- **Student talks and awards**: Since August 2009, our mathematics majors have given talks at MathFest 2009 and MathFest 2010 (the annual summer conference of the MAA), the annual meeting of the Pacific Northwest section of the MAA, and the Northwest Undergraduate Mathematics Symposium.

  At MathFest 2009, Masaki Ikeda (BS 2009) won an award funded by the **American Mathematical Society** for excellence in student exposition and research.

  At the Second Annual Northwest Undergraduate Mathematics Symposium, held at Oregon State in April 2010, L**aura Waight** (BS Math 2010) won the Best Short Talk Award, **Nick Gard** (BS Math 2010) won the Pi Mu Epsilon Award, and **Mitch Staehle** (BS Math 2010) won the SIAM Award.

- Klay Kruczek is the chair of the Oregon Mathematics Education Council and is chair-elect of the Pacific Northwest Section of the Mathematical Association of America.

- Laurie Burton is the co-author for the eighth edition of the **Mathematics for Elementary Teachers: A Conceptual Approach** textbook and the eighth edition of the **Mathematics for Elementary Teachers: Activity Approach** workbook published by McGraw Hill January 2010. The ninth edition has a publication date of January 2012.

- Two mathematics majors, **Jason Bathke and Heather Johnston**, have been accepted to the 2010 Pre-REU on Signal and Image Analysis at the Texas A&M University.

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APPENDIX 1. FACULTY AND STUDENT ACCOMPLISHMENTS

I. FACULTY AND STAFF ROSTER

Cathy Aune	Non-tenure-track faculty member
Cheryl Beaver	Associate Professor
Scott Beaver	Associate Professor
Hamid Behmard	Professor
Laurie Burton	Professor
Avery Cotton	Non-tenure-track faculty member
Nicholas Husen	Non-tenure-track faculty member
Klay Kruczek	Associate Professor
Stanley Leung	Non-tenure-track faculty member
Sharyne Ryals	Office Specialist
Dennis Spencer	Non-tenure-track faculty member
Mike Ward	Professor

II. FACULTY HIGHLIGHTS

a. Teaching

- Scott Beaver worked with senior mathematics majors on their research projects in MTH 403 (Senior Project). Although a portion of the project does not involve original research, there usually is some part of the senior project where students perform original research.

- Scott Beaver, Cheryl Beaver, and Klay Kruczek attended the annual meeting of the Pacific Northwest Section of the Mathematical Association of America (MAA) (in Seattle, WA during April 2010) with two mathematics majors (Dania Morales and Danny Corliss), who each presented a talk at the conference.

- Cheryl Beaver and Klay Kruczek, along with members of the Biology Department, made a presentation at New Student Week entitled How to Succeed in Mathematics and Science.

b. Scholarship

Publications:

C. Beaver, Burton, Kruczek and Fung (Worchester State College)

MAA Notes Volume

Based on work offering and leading sessions on the mathematical education of middle school mathematics teachers, the Mathematics Association of America invited us (C. Beaver, Burton, Fung and Kruczek) to submit a proposal to compile and edit a collection of articles and resources, "Programs, Courses and Resources for Training Preservice Middle School Mathematics Teachers" as a volume in the MAA Notes Series. We continue to work on this volume; work summer 2010 will include our third review of submitted articles and overall design of manuscript.

C. Beaver and Kruczek

"The Mathematics for Middle School Teachers Program at Western Oregon University**,"**

In progress as part of MAA Notes book. This paper has been extensively peer reviewed by the MAA Notes board, in addition to the Burton, Beaver, Kruczek and Fung work.

C. Beaver

"Identification of Error Types in Preservice Teachers' Attempts to Create Fraction Story Problems for Specified Operations" accepted to School Science and Mathematics. (co-authored with Cheryl McAllister, Southeast Missouri State University)

Burton and Kruczek

"Visual College Algebra for Teachers"
In progress as part of MAA Notes book. This paper has been extensively peer reviewed by the MAA Notes board, in addition to the Burton, Beaver, Kruczek and Fung work.

Burton

"Mathematics for Elementary Teachers: A Conceptual Approach," ninth edition
Burton co-author 8e (2010) and 9e (2012)
9e will be published January, 2011 with a publication date of 2012.

"Mathematics for Elementary Teachers: An Activity Approach," ninth edition
Burton co-author 7e (2007), 8e (2010) and (9e 2012)
9e will be published January, 2011 with a publication date of 2012.

Kruczek

"Potential-Based Strategies for Tic-Tac-Toe on the Integer Lattice with Numerous Directions," *The Electronic Journal of Combinatorics*, 17(1), 2010 (co-author Eric Sundberg, Occidental College)

Ward

"On Minimal Non-p-closed Groups and Related properties," to appear in *Publicationes Mathematicae Debrecen*, 2011. (with L. C. Kappe, G. Mendoza, and M. Mazur)

"Cosets and Cayley-Sudoku Tables," *Mathematics Magazine*, April 2010. (with WOU math major graduates Jen Carmichael '06 and Keith Schloeman '07)

Presentations:

C. Beaver, Burton, and Kruczek

Active Learning Approaches for the Foundational Mathematics for Elementary Teachers Courses
Four hour "minicourse", AMS/MAA Joint Mathematics Meetings, San Francisco, CA, January 15 (two hours) and January 16 (two hours), 2010

C. Beaver, S. Beaver

The Natural Role of the Sequences and Series Calculus Course, MAA MathFest, Portland, OR, August 2009

C. Beaver

Breaking the STEM Barrier: Sonia Kovalevsky Day, invited presentation to the American Association for University Women (AAUM), Salem, OR, September 2009

(Invited) Panel member on Panel for Outreach, Regional MAA Conference, Seattle, WA, April 2010

S. Beaver

Does Peer Assessment Help Improve Mathematical Writing for Pre-Service Elementary and Middle School Teachers? (with Cheryl Beaver), AMS/MAA Joint Mathematics Meetings, San Francisco, CA, January 2010

The Fourier Transform, $L^2(R)$, and The Riemann-Lebesgue Lemma, at the PNW-MAA Regional Meeting, Seattle, WA, April 2010

Beisiegel

Rethinking teacher education for mathematics graduate students, AMS/MAA Joint Mathematics Meetings, San Francisco, CA, January 2010

Being (almost) a mathemtician: Teacher identity in post-secondary mathematics, Canadian Mathematics Education Study Group conference at Simon Fraser University, Burnaby, British Columbia,. May 2010

Burton

Mathematics for Elementary Teachers: Using Virtual Manipulatives
Mathfest MAA Conference, Portland, Oregon, August 2009

Kruczek

Mathematics Teacher Development through Virtual Fieldwork, Association of Mathematics Teacher Educators Conference, Irvine, CA, January 2010

Potential-Based Strategies for Breaker for Maker-Breaker Tic-Tac-Toe on the Integer Lattice with Numerous Directions, AMS/MAA Joint Mathematics Meetings, San Francisco, CA, January 2010

Ward

On solvable minimal non-p-closed and non-p-exponent closed groups, Joint Mathematics Meetings, San Francisco, CA, January 2010

Cayley-Sudoku Tables, Willamette University Colloquium, April 2010

A Question on Transversals Arising from Cayley-Sudoku Tables, XXXth Ohio State-Denison Mathematics Conference, Columbus, OH, May 2010

c. Service

Scott Beaver

- Vice-President, WOU Faculty Senate
- Treasurer, WOUFT (AFT-OR Local 2278)
- WOUFT Collective Bargaining Team Chair-Elect
- Awarded Treasurer of the Year for AFT-Oregon, 2009-2010

Laurie Burton

- Curriculum Committee Chair, 2009 – 2010 (Included move from paper to online process for WOU faculty)

Klay Kruczek

- President, Oregon Mathematics Education Council, November 2008 – Present
- Communications Officer, Pacific Northwest NExT Section, April 2007 - Present
- Proctor, Judge, and Problem creator for the Oregon Invitational Mathematics Tournament, Portland State University, May 2010.
  (The OIMT is the annual statewide high school math competition.)
- Chair-elect, Pacific Northwest Section of the Mathematical Association of America

Departmental

- Cheryl Beaver and Laurie Burton, with the support of Mary Beisiegel, Scott Beaver, Klay Kruczek, and Mike Ward, organized the Sixth Annual Sonia Kovalevsky Day in February of 2009. The above mentioned faculty and several of the Mathematics Department students participated in the activities for that day. Sonia Kovalevsky Day is a program of hands-on workshops, talks and a problem-solving contest for high school women students and their teachers, both women and men. The purpose of the day is to encourage young women to continue their study of mathematics and to assist the teachers of women mathematics students.
- Cheryl Beaver, Laurie Burton, and Klay Kruczek
  Co-organized session "Active and Innovative Learning Approaches for Pre-service Mathematics Teachers at the K-12 and University Levels," MathFest, Portland, OR, August 2009

III. STUDENT ACHIEVEMENTS

- **Major Field Test**: In 2009 and 2010, the mathematics majors scored in the 90% percentile on the Mathematics Major Field Test, put out by ETS.

- **Student talks and awards**: Since August 2009, our mathematics majors have given talks at MathFest 2009 and MathFest 2010 (the annual summer conference of the MAA), the annual meeting of the Pacific Northwest section of the MAA, and the Northwest Undergraduate Mathematics Symposium.

  At MathFest 2009, Masaki Ikeda (BS 2009) won an award funded by the **American Mathematical Society** for excellence in student exposition and research.

  At the Second Annual Northwest Undergraduate Mathematics Symposium, held at Oregon State in April 2010, L**aura Waight** (BS Math 2010) won the Best Short Talk Award, **Nick Gard** (BS Math 2010) won the Pi Mu Epsilon Award, and **Mitch Staehle** (BS Math 2010) won the SIAM Award.

- **Kady Hossner**, mathematics major, attended the 2010 Nebraska Conference for Undergraduate Women in Mathematics.

- **Matt Schmidgall,** BS Math 2010, has been accepted to the2010 Bridge Program for Entering Graduate Students at Texas A&M University.

- Two mathematics majors, **Jason Bathke and Heather Johnston**, have been accepted to the 2010 Pre-REU on Signal and Image Analysis at the Texas A&M University.

- Six students who graduated with a degree in mathematics in 2010 (Emily Trigg, Anne Sanders, Danny Corliss, Laura Waight, and Nick Gard) have been accepted into the WOU MAT program.