MATHEMATICS RESEARCH FORUM

Date: January 31, 2008
Time: 7 to 9:30 p.m.
Location: Sunset High School Auditorium
Moderator: Dr. Edith Gummer, NWREL
Panelists: Bill Bogley (Uof O), Barbara Edwards (OSU), Frank Goulard (PCC), Shlomo Libeskind (UofO), Hal Sadofsky (UofO)

Purpose: Provide Math Project Team members and the community with an opportunity to learn more about key questions related to research into mathematics education to better inform decisions concerning mathematics in the Beaverton School District.

Structure: The District will post any readings recommended by the panelists for audience members to read prior to the event.

The Math Project Team provided the panelists with the following four questions ahead of time (tentative; still being finalized by Project Team) to prepare to address at the event:

1. When it comes to the conflicts around mathematics education today, what is the heart of the matter to you?

2. What does the evidence suggest about how well students have been prepared for college level mathematics? Are there trends over the past decade?

3. What are the elements of an ideal mathematics program? What is the appropriate role of constructivism (students discovering concepts, rather than concepts and algorithms modeled and explained)? What "basics", both at a K-8 level, and high school level are needed for success in mathematics? What is the appropriate use of technology?

4. How much does the mathematical experience of a child at the elementary level impact later interest and ability in mathematics? Please discuss the role of the teacher, at all levels, in the success for students in mathematics. Could one argue that the quality of teaching is at least as important as curriculum or pedagogy?

Thirty minutes has been allocated for each question. Panelists will have up to 5 minutes to respond. For questions 2, 3, and 4, the remainder of the thirty minutes will be used to entertain questions related to the question at hand by audience members. Such follow up questions will be directed to a specific panel member.

The moderator will guide the question and answer process and keep all participants within the time guidelines.

At the conclusion of the four prepared questions, audience members will have an additional thirty minutes to address specific questions to a specific member of the panel.

Bill Bogley
Bill Bogley is Professor of Mathematics and Associate Dean of the University Honors College at Oregon State University. As a research mathematician working in algebra and topology, Bogley has taught college-level mathematics for over 25 years, including undergraduate and Honors courses and graduate student supervision at the University of Oregon, Portland State University, Tufts University, Dartmouth College and Oregon State University. Bogley co-authored and taught what may have been the world's first fully-developed online calculus course in 1996. He is the winner of multiple teaching awards at OSU and was named the first Eminent Professor of the University Honors College in 2001.

Barbara Edwards
Has a PhD from Penn State University and has been with the Mathematics Department at Oregon State University since 1997. One of her research interests is in the teaching and learning of College Algebra which has course content similar to the traditional Algebra II high school course. Nationally, approximately 50% of the students who take College Algebra fail to get an A, B, or C the first time they take the course. Since 2005, she has been collecting and analyzing data for a National Science Foundation sponsored eleven-institution study of a curricular and pedagogical reform effort in College Algebra. Last year she became involved in an effort to reform the College Algebra course at Oregon State. She is active in the Mathematical Association of America. From 2000 to 2005 she was a member of the Oregon Mathematics Education Council (a group representing mathematics teachers K-16, administrators and members of the business community) and she is a member of the National Council of Teachers of Mathematics (NCTM) and Teachers of Teachers of Mathematics (TOTOM).

Frank Goulard
Frank Goulard earned a Bachelors degree in Statistics from Colorado State University, a Bachelors in Education from Purdue University, and a Masters in Education from Oregon State University. He began his teaching career in 1978 where he taught math, grades K-8. He has taught mathematics at Portland Community College since 1982, and in addition to his teaching duties has also been mathematics department chair since 1997. Frank's students at PCC represent a broad range of ages and abilities, many of whom are Beaverton School District graduates. In 1995, Frank participated in PCC's math department team who undertook a thorough five-year Title III federal grant in researching methods to improve retention and success rates. Frank has been president, and continues to serve on the board, of the Oregon Mathematics Association of Two-Year Colleges (ORMATYC). This group represents one of the critical links in Oregon's K-16 mathematics education system. Community colleges typically receive high school graduates and returning adults, and supply transfer students to universities for their final two years of study towards a bachelor's degree.

Shlomo Libeskind
Shlomo Libeskind is a professor in the mathematics at the University of Oregon specializing in Mathematics Education. His primary interest is the education of prospective high school and middle school teachers and the improvement of high school mathematics curriculum. Many of his former students are currently teaching mathematics in Oregon and in the Portland area specifically. His textbook Euclidean and Transformational Geometry: a deductive inquiry intended for pre-service and in-service high school and middle school teachers has just been published by Jones and Bartlett publishers. The textbook emphasizes his approach to building a successful mathematics school curriculum: consistent introduction of challenging problems and discussion of strategies and heuristics of problem solving, how students can know where to begin and how to proceed, which approach is more promising and why, and whether there are different possible solutions to a given problem.

Hal Sadofsky
Hal Sadofsky is a math professor at University of Oregon. He has an undergraduate degree in math and music from the University of Rochester, and a Ph.D. in mathematics from M.I.T. His research is in an area of pure mathematics called algebraic topology. Professor Sadofsky teaches everything from introductory calculus and statistics courses through advanced graduate courses and supervising Ph.D. students on their own research projects. For the last several years, he has been the Director of Undergraduate Studies in Mathematics, and the head undergraduate adviser. Although he has no expertise in the K-12 curriculum, he

has experience with the outcome of the K-12 system and an interest in learning how these outcomes can be improved. He has been involved for the last year in the ODE's revision of the state's K-12 mathematics content standards, and is on Board of Education's "Assessment" task force charged with making recommendations about how the new "essential skills" for high school graduation should be assessed.