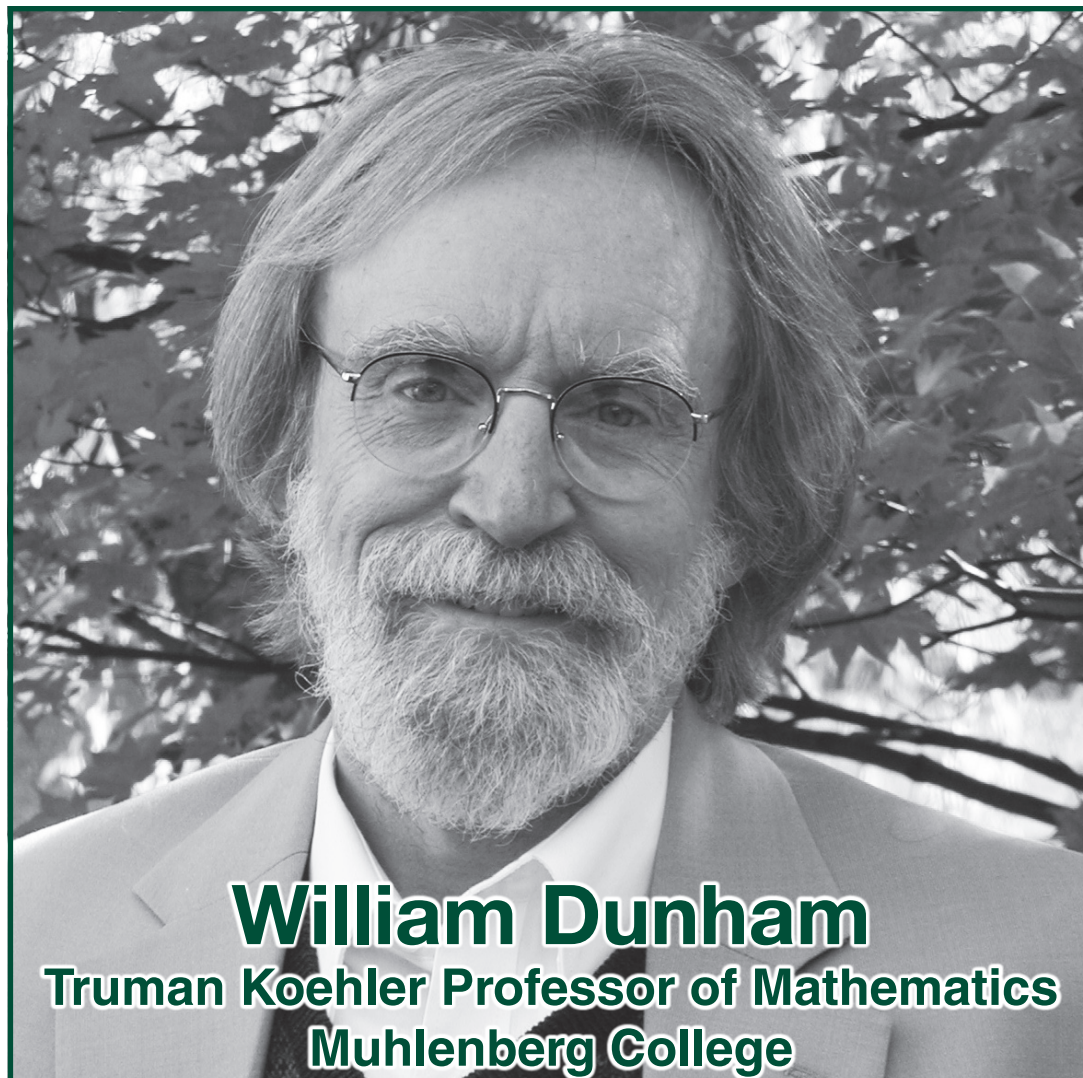# Baylor Undergraduate Lecture Series
in
Mathematics
Third Annual Lectures

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Newton and Leibniz: Mathematicians at War

Monday, October 18, 2010 - 4:00 p.m.
Baylor Sciences Building, D109

In this talk, we trace the careers of England's Isaac Newton and Germany's Gottfried Wilhelm Leibniz, the extraordinary geniuses who independently created calculus in the late seventeenth century. As their work led them down similar paths, vague suspicions of impropriety became explicit accusations of plagiarism. The bitter charges that were hurled back and forth across the English Channel, although perhaps amusing in retrospect, certainly do *not* represent one of mathematics' finest hours. We shall describe their priority dispute and one of its most memorable skirmishes – the challenge problem of the brachistochrone – which produced as dramatic an outcome as the history of mathematics is likely to see. NOTE: This talk is intended for a general audience.

Euler's Amicable Numbers

Tuesday, October 19, 2010 - 4:00 p.m.
Sid Richardson Building, SR 344

In this talk, we first sketch the life and work of Leonhard Euler (1707 – 1783), one of the great figures from the long and glorious history of mathematics. We then consider a specific problem from number theory: the construction of amicable pairs (recall that two whole numbers are *amicable* if each is the sum of the proper whole number divisors of the other). The Greeks knew the amicable pair 220 and 284, and two other pairs were found prior to the 18th century, when Euler arrived on the scene. In an awesome display of mathematical power, he found 58 new ones! Our mission is to show how he did it – i.e., how he single-handedly increased the world's supply of amicable numbers twenty-fold. His argument is extremely clever yet so easy to follow that we will generate a "new" amicable pair right before your eyes. This provides another reminder, if another is necessary, of why Euler is such a towering figure in the history of mathematics. NOTE: Any mathematics major (or minor) should find the talk easily accessible.

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