

Bi-State Math Colloquium

Who: Dave Boyles

When: Thursday, February 9, 4:00 pm

Where: Ottensman 124, UW-Platteville

Mathematics in the House of Wisdom

The golden age of Islamic Mathematics began with the inauguration of the *Bayt al-Hikma* (House of Wisdom) in Baghdad in 762, where scholars were mandated to gather the classical world's knowledge. It is said to have ended with the Mongol invasions and the siege of Baghdad in 1258, although there were many scholars after the sack of the House of Wisdom, up to al-Kāshī, who died in 1429. And there was the incomparable Persian poet/mathematician, Omar Khayyām, who solved the first (non-trivial) cubic equation ever solved, in 1078.

In the early Renaissance, Europe slowly absorbed the fruits of centuries of creative productivity from the East. By the 13th century, traffic bringing Arabic texts into the West helped Europe seize the initiative while political conditions to the East brought about a decline in Muslim scholarship.

Islamic mathematicians did not invent trigonometry, or Arabic numbers. However, they did take the theory that existed in rudimentary form, and developed it into the mathematical subject that we teach today in our college pre-calculus classes. And they actually did invent the algebra (named it too). The talk is about all this and more.

Dave Boyles received the Ph.D. from the UW in 1986 and has taught at UWP since 1990. His dissertation concerned computations on fundamental groups of 3-manifolds; he now he thinks a lot about the algebra of parametrizing rational plane curves (so his research seems to have lost a dimension). Last year, he grew a lot of flowers, put a lot of miles on his car driving to and from work, watched the Cubs win the World Series, celebrated Bob Dylan's 75th birthday at the Mother Church of Country Music in Nashville, and welcomed a third grandchild into the family.