

Biomedical and Health Informatics Lecture Series

Tuesday, February 26, 2008
12:00 - 12:50 p.m., Room RR-134

**Roger Bumgarner, PhD, Associate Professor and
Director of the Center for Array Technology,
Department of Microbiology, University of Washington**

“Next generation sequencing technologies and their application to bacterial genomics”

In brief, this talk will consist of:

- 1) An introduction to the next gen sequencing technologies.
- 2) A discussion of the unique bioinformatics challenges that this technology creates.
- 3) Application of the technologies to sequencing clinical isolates of bacterial genomes
- 4) Comparative genomics challenges.

Dr. Bumgarner obtained a B.S. and M.S. in chemistry at Eastern Illinois University in 1982 and 1984 respectively. His primary interests at the time were high-resolution molecular spectroscopy and quantum mechanics, and his M.S. thesis was entitled "Microwave Spectrum of Propyne-HF." Roger left Eastern Illinois University to pursue a Ph.D. in chemistry at the University of Arizona in Tucson. His Ph.D. work was focused on high-resolution spectroscopy of weakly-bound complexes, i.e. measurements of small molecules sticking to one another. After completing his Ph.D. in 1988, Dr. Bumgarner received a Bantrell Postdoctoral Fellowship award from the California Institute of Technology. At Caltech, Dr. Bumgarner worked in the Department of Geology and Planetary Science in the laboratory of Geoffrey Blake.

It was at Caltech that he first became interested in biology after meeting a scientist in Dr. Leroy Hood's group through the Caltech baby-sitting co-op. This chance meeting led to accepting a position in Dr. Leroy Hood's group, the focus of which was to develop a new technology for DNA sequencing and genotyping. Shortly after joining Dr. Hood's group, the entire lab moved to the University of Washington in 1992 establishing the new Department of Molecular Biotechnology (MBT). In MBT, Dr. Bumgarner helped to develop the SAGA genotyping system now sold by LiCor Biotechnology, managed Dr. Hood's sequencing group for 1-2 years, and established both macro and microarray technologies in the lab. In 1998, he accepted a position as Research Assistant Professor in the Department of Microbiology at the University of Washington. Since that time, he has established his own research group, created and directs the UW Center for Expression Arrays, and has been promoted to Associate Professor.

**Podcasts from MEBI 590 Lecture Series talks from earlier this quarter
are available at <http://courses.washington.edu/mebi590/schedule.htm>**

**Podcasts from Fall Quarter 2007 are available at
<http://courses.washington.edu/mebi590/2007.Q4.Fall.htm>**