

SUMMARY VITA – Frank Jones, Ph.D., P.E.

UC Foundation Professor

Years on Faculty: 9 (original appointment 08/01/00)

Degrees:

B.S. Chemical Engineering, University of Pennsylvania, 1973.

M.S. Chemical Engineering, Drexel University, 1986.

Ph. D. Chemical Engineering, Drexel University, 1991.

Other related experience:

Louisiana Tech University, Assistant Professor, 8/94 - 6/00.

Louisiana Tech University, Visiting Assistant Professor, 12/91 – 6/94.

Adjunct Assistant Professor, summers of 1992, 93.

State in which Registered: Tennessee, #108794

Consulting and Patents:

- *General Hydrogen* – current.
- *The Enterprise Center* – current.
- *King Power Corporation* – current.

Principal Publications of Last Five Years:

- R. T. Bailey, S. Ryan, F. Jones, S. Wilson, and J. Hiestand, “Effects of Packing and Aspect Ratio on Mixing and Heterogeneous Catalysis in Microchannels,” in *Proceedings of the 5th Joint ASME/JSME Fluids Engineering Conference*, San Diego, CA, July 2007.
- (Submitted) Jie Wen, Bill Elmore, and Frank Jones, “Enzyme Immobilization using Layer-by-Layer Self-Assembly in PDMS Biomicroreactors.” to *Biotechnology and Bioengineering*.
- Frank Jones, Rob Bailey, Stephanie Wilson, and Jim Hiestand, “The Effects of Engineering Design on Heterogeneous Biocatalysis in Microchannels.” *Applied Biochemistry and Biotechnology*, Vol. 136-140, 859-873 (2007).
- Stephanie Wilson and Frank Jones, “A Study of the Effects of Various Flow Obstructions on Heterogeneous Catalysis and Micromixing in Biocatalytic Microchannels,” *Analytical Sciences Digital Library, eUndergraduate Research Online Journal*, March 2007.
http://www.asdlib.org/eUGHUploads/45_eUGH_publication.pdf?PHPSESSID=63458ea223f63d9a15ee548ed6a3a01a.
- Alp, Neslihan; Jones, Frank; Bailey, Rob; and Hiestand, Jim; “Use of Taguchi Methods to Optimize the Design of Biomicroreactors,” *Institute of Industrial Engineers (IIE) Annual Conference (peer-reviewed) Proceedings*, pp. 108-113, May 20-24, 2006, Orlando, FL.
- Rob Bailey, Frank Jones, Ben Fisher, and Bill Elmore “Immobilized Enzymatic Microbioreactor Design Enhancement using Computational Simulation.” *Applied Biochemistry and Biotechnology*, Vols. 121-124, 639-652 (2005).
- Frank Jones, Scott Forrest, Jim Palmer, Zonghuan Lu, John Elmore, and Bill Elmore, “Immobilized Enzyme Studies in a Micro-Scale Bioreactor.” *Applied Biochemistry and Biotechnology*, Vols. 113-116, pp. 261-272 (2004).

Grant Funding:

- **Provost Student Research Award.** Funds granted in spring 2008 to support undergraduate student researcher Jason Frizzell to work on the biomicroreactors project. “A Parametric Study of Temperature Variations and Scale using Heterogeneous Micromixing in Catalytic Microchannels.” **Amount awarded = \$1,000.**
- **Riverbend Technology Institute.** Funds granted in spring 2008 to support undergraduate student researcher Jason Frizzell to work on the biomicroreactors project. **Amount awarded = \$2,500.**
- **CEACSE.** “Simulation of Biodiesel Production by Microreaction Systems.” PI. July 2007 – July 2008. **Amount awarded = \$25,000.**

- **Riverbend Technology Institute.** Funds granted in fall 2006 to support undergraduate student researcher Stephanie Wilson to work on the bioreactors project. **Amount awarded = \$1,200.**
- **CEACSE** (Center of Excellence in Applied Computational Science and Engineering). “Computational Studies of Microbioreactor Design.” PI. **Amount awarded = \$37,780.** January 2006 to June 2007.
- **Faculty Research Grant** for Spring 2005. Title: “Simulation Study of the Effect of Flow Patterns on Conversion in a Microbioreactor.” **Amount awarded = \$2,650.**
- **CECA Research/CCI Grant** for Summer 2004, “Microbioreactor Design Optimization via Supercomputer Simulation.” **Amount awarded = \$3,000.** With Rob Bailey.
- **Faculty Research Grant** for Spring 2004, “Simulation Studies of Microbioreactors.” **Amount awarded = \$3,000.** With Rob Bailey. This grant is awarded in conjunction with a Benwood award for unlimited parallel software appropriate for the supercomputer at Oak Ridge National Lab. **Amount awarded = \$2,000.**

Scientific and Professional Society Memberships:

American Institute of Chemical Engineers (AIChE), American Chemical Society (ACS), Sigma Xi, Phi Lambda Upsilon (an honorary chemical society), American Society for Engineering Education (ASEE), Council on Undergraduate Research (CUR).

Honors and Awards:

Media reports concerning my research:

- “Micromixing Creates a Stir,” by Claudia M. Caruana, *Chemical Engineering Progress*, Vol. 96/No. 5, pp. 9-10, 2000.
- Honors graduate Stephanie Wilson appeared on the UTC website and in *The Chattanooga Times Free Press* (headline: “UTC graduate Wilson earns research award,” December 30, 2006, page E-3) for winning a national research award from the AIChE for her work with my research group.

Awards:

- **Engineering Research Award.** Presented by the UTC College of Engineering and Computer Science, November 30, **2001** (Faculty Honors Day), November 21, **2003** and December 7, **2007**.
- **Exceptional Merit.** Awarded in **2005-06** and **2008-09**.
- **UC foundation Associate Professorship.** Awarded **08/06**.

Institutional Service in the Last Five Years (committee assignments, etc):

- Chair of ABET Accreditation Committee for Chemical Engineering Program. Obtained initial accreditation for the ChE Program in AY 2007-08.
- Engineering Petitions Committee. (College, 2001-present)
- Faculty Research Committee. (University, 2005-present)
- MS in Engineering Committee (College, 2001-05)
- Taught FE review courses in Mathematics, Chemical Processes and Municipal Water.

Professional Service in the Last Five Years:

I have been a *Peer Reviewer* for the following professional journals:

- *Environmental Science and Technology*
- *Separation Science and Technology*
- *International Journal of Heat and Mass Transfer*
- *Journal of Membrane Science*
- *Applied Biochemistry and Biotechnology*
- *American Society of Engineering Education*
- *Recent Patents in Engineering*

Professional Development Activities in the Last Five Years:

Attended numerous professional conferences and made over a dozen presentations since 2004 concerning my research and educational activities.