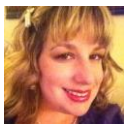


# Jennifer A. Pascal

---



Assistant Professor of Chemical Engineering

P.O. Box 5013

Cookeville, TN 38505

(931)-372-3606

jpascal@tntech.edu

---

## EDUCATION

---

### National Institutes of Health (NIH) Academic Science Education and Research Training

(ASERT) Postdoctoral Fellow, University of New Mexico, Department of Pathology, Center for Biomedical Engineering, Mentor: Dr. Vittorio Cristini, Sep. 2011 – Aug. 2013

A fellowship for those interested in pursuing a career focused on biomedical research and teaching. 75% of time devoted to research and 25% devoted to teaching at a local minority serving institution. My research was focused on modeling drug delivery to tumors and I taught at Southwestern Indian Polytechnic Institute (SIPI) in Albuquerque, NM

### Tennessee Technological University

PhD Chemical Engineering, Jan. 2007 - Aug. 2011

Dissertation Title: "Up-Scaling Electrical-based Separations by Electrokinetic Hydrodynamics (EKHD) and the Role of Scaling in Learning Transport Phenomena Concepts," Major

Advisor: Dr. Pedro E. Arce

## RESEARCH PROJECTS

---

Fundamental mathematical/computational models of electrical field processes in biological systems

- Nanoparticle-based drug delivery to tumors enhanced by applied fields
- Electrical field distributions in tumor tissues during hyperthermia treatment
- Dielectrophoretic separation of circulating tumor cells from whole blood
- Cellular response to alternating current (AC) applied electrical fields

## KEY PUBLICATIONS

---

1. **Pascal, Jennifer** and Carlee Ashley, Zihui Wang, Terisse Brocato, Joseph Butner, Eric Carnes, Eugene Koay and Jeff Brinker, Vittorio Cristini. "Mechanistic Modeling Identifies Drug-Uptake History as Predictor of Tumor Drug Resistance and Nano-Carrier-Mediated Response," *ACS Nano* (IF: **12.062**) 7 (2013): 11174-11182.
2. **Pascal, Jennifer**, Elaine Bearer, Zihui Wang, Steven A. Curley, and Vittorio Cristini. "Mechanistic Patient-Specific Predictive Correlation of Tumor Drug Response with Microenvironment and Perfusion Measurements." *PNAS* (IF: **9.737**), 110 (2013): 14266-14271.
3. Langner, Pamela, Michael Loewenberg, **Jennifer Pascal**, Arnaud Chauviere, Vittorio Cristini, Elaine Bearer. "Quantitative Measurements of Cargo-Motor Interactions During Axonal Transport." *Physical Biology*, 9 (2012): 055005 (**Cover of journal issue**).
4. **Pascal, Jennifer**, Mario Oyanader, Pedro Arce. "Effect of Capillary Geometry on Predicting Electroosmotic Volumetric Flowrates in Porous Media." *Journal of Colloid and Interface Science*, 378 (2012): 241.
5. **Pascal, Jennifer**, Oyanader, Mario and Arce, Pedro. "Optimal Separation Times for Biomacromolecules in a Couette-based/Electrophoretic Separation Device: Effect of Capillary Wall Velocities." *Canadian Journal of Chemical Engineering*, 88 (2010): 384.
6. **Pascal, Jennifer**, Ryan O'Hara, Mario Oyanader, Pedro Arce. "Optimal Separation Times for Electrical Field Flow Fractionation with Couette Flows." *Electrophoresis* 29 (2008): 4238.