# Stephanie McCalla

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## EDUCATION

| | | |
|---|---|---|
| Ph.D. | Brown University, Biomedical Engineering, | July 2011 |
| B.S. | University of California San Diego, Bioengineering (Cum Laude) | June 2005 |

## PROFESSIONAL EXPERIENCE

**Assistant Professor, Chemical and Biological Engineering** — August 2014 to present
Montana State University, Bozeman MT

**Postdoctoral Scholar** — January 2012 to June 2014
California Institute of Technology, Pasadena CA

**Research and Teaching Assistant** — January 2006 to July 2011
Brown University, Providence RI

**Post Baccalaureate Student Researcher, Chemistry and Biology Division** — June 2005 to July 2006
Los Alamos National Laboratory, Los Alamos, New Mexico, USA

**Undergraduate Laboratory Research Assistant, Chemistry Division** — Summers 2001 to 2004
Los Alamos National Laboratory, Los Alamos, New Mexico, USA

**Undergraduate Student Researcher** — Jan. 2005 to June 2005
University of California San Diego, La Jolla, California, USA

## AWARDS AND PRIZES

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| Award for Best Thesis in Engineering, Brown University | May 2012 |
| NASA Rhode Island Space Grant Fellowship | August 2008 to August 2009 |
| Brown University Fellowship | September 2006 to May 2007 |
| Phi Beta Kappa Academic Honor Society Member | 2004 to present |
| UC San Diego Provost's Honors for 9 Academic Quarters | |
| LANL Foundation Bronze Scholar | 2001 |

## PEER-REVIEWED PUBLICATIONS

1. Achilli TM., McCalla S., Meyer J., Tripathi A., Morgan JR. "Multilayer Spheroids To Quantify Drug Uptake and Diffusion in 3D" *Molecular Pharmaceutics*, March **2014**
2. Sun, B., Shen, F., McCalla, S., Kreutz, J., Karymov, M., Ismagilov, R. "Mechanistic evaluation of the pros and cons of digital RT-LAMP for HIV-1 viral load quantification on a microfluidic device and improved efficiency via a two-step digital protocol" *Analytical Chemistry*, **2013**, *85*(3): 1540-1546
3. McCalla, S., Ong, C., Sarma, A., Opal, S., Artenstein, A., and Tripathi, A., "A Simple Method for Amplifying RNA targets (SMART)" Journal of Molecular Diagnostics, **2012**, *14*(4): 328-335, featured in the Nature Medicine blog (Spoonful of Medicine)

4. Achilli, TM., McCalla, S., Tripathi, A., Morgan, J., "Quantification of the Kinetics and Extent of Self-Sorting in Three Dimensional Spheroids" Tissue Engineering Part C: Methods, Dec. **2011**, *18*(4): 302-309
5. McCalla, S. and Tripathi, A. "Microfluidic Reactors for Diagnostic Applications" Annual Reviews of Biomedical Engineering, **2011**, *13*: 321-343
6. McCalla, S. and Tripathi, A. "Quantifying transcription of clinically relevant immobilized DNA within a microfluidic reactor" Langmuir, **2010**, *26*(17): 14372–14379.
7. McCalla, S., Luryi, A., and Tripathi, A. "Steric effects and mass transfer limitations surrounding amplification reactions on immobilized long and clinically relevant DNA templates" Langmuir, **2009**, *25*(11): 6168-6175.
8. Goff, G., Brodnax, L., Cisneros, M., Peper, S., **Field, S**., Scott, B., Runde, W. "First Identification and Thermodynamic Characterization of the Ternary U(VI) Species, $UO_2(O_2)(CO_3)_2^{4-}$, in $UO_2{-}H_2O_2{-}K_2CO_3$ Solutions" Inorganic Chemistry, **2008**, *47*(6) : 1984–1990
9. Pepper, S.; Brodnax, L.; **Field, S**.; Zehnder,R.A.; Valdez,S.N.; Runde,WH. "Kinetic study of the oxidation dissolution of $UO_2$ in aqueous carbonate media" *Industrial Engineering and Chemical Research.* **2004** *43*: 8188-8193

## RESEARCH AWARDS

**National Institute of Health**: 1 R21 AI 073808 - 01 A1 Influenza Microchip: Rapid Subtype Detection Using Isothermal Exponential Amplification (**awarded under the America Recovery Act 2009**). $250,000 + indirect (with Dr. Anubhav Tripathi and colleagues)

## PATENTS

1. "Differential effects of drugs on transport in a multilayer 3D spheroid model" JR Morgan, T Achilli, A Tripathi, S McCalla, US Patent 20,130,079,288
2. "Fluidic devices and systems for sample preparation or autonomous analysis" RF Ismagilov, F Shen, L Li, YH Hsu, S Begolo, M Karymov, D Selck, S McCalla, PJ Homewood, US Patent App. 13/868,028
3. "Magnetic bead separation apparatus and method" A Tripathi, SE Mccalla, J Lee, US Patent 20,130,137,108

## TEACHING AND ADVISING

### Graduate Teaching Assistant

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| Transport and Biotransport Properties | Spring 2007, Spring 2008 |
| Introduction to Fluid Mechanics | Fall 2007, Fall 2008, Fall 2009 |
| Biomedical Engineering Design, Research, and Modeling | Fall 2010 |

### Undergraduate Research Advisor

1. Aartik Sarma – Undergraduate thesis
2. Alexander Luryi - Undergraduate thesis
3. Felippa Fleetwood
4. Aishwarya Sharma
5. Andrea Jones – Undergraduate thesis
6. Allison Yorita – Undergraduate thesis
7. Carmichael Ong – Undergraduate thesis
8. Theresa Raimondo – Undergraduate thesis
9. Tom Erkers