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

AWARDS AND PRIZES

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
LANL Foundation Bronze Scholar	2001

PEER-REVIEWED PUBLICATIONS

1. Schlappi, T.*, McCalla, S.*, Schoepp, N., Ismagilov, R., "Flow-through capture and in situ amplification can enable rapid detection of a few single molecules of nucleic acids from several milliliters of solution" *Analytical Chemistry*, **2016**, *88 (15)*: 7647–7653
2. Achilli TM., McCalla S., Meyer J., Tripathi A., Morgan JR. "Multilayer Spheroids To Quantify Drug Uptake and Diffusion in 3D" *Molecular Pharmaceutics*, **2014**, *11(7)*: 2071–2081
3. 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
4. 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)
5. 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
6. McCalla, S. and Tripathi, A. "Microfluidic Reactors for Diagnostic Applications" Annual Reviews of Biomedical Engineering, **2011**, *13*: 321-343

7. McCalla, S. and Tripathi, A. "Quantifying transcription of clinically relevant immobilized DNA within a microfluidic reactor" Langmuir, **2010**, *26*(17): 14372–14379.
8. 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.
9. 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
10. 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

PATENTS

1. Ismagilov, R.F., McCalla, S.E., Schlappi, T., Huynh, T., Rolando, J., Liu, W., Ge, S., and Kreutz, J.E., Digital assay for quantifying and concentrating analytes. Application PCT/US2014/047092.
2. Ismagilov, R.F., Shen, F., Li, L., Hsu, Y.H., Begolo, S., Karymov, M., Selck, D., McCalla, S. and Homewood, P.J., Fluidic devices and systems for sample preparation or autonomous analysis. U.S. Patent Application 13/868,028.
3. Morgan, J.R., Achilli, T.M., Tripathi, A. and McCalla, S., Differential effects of drugs on transport in a multi-layer 3d spheroid model. U.S. Patent Application 13/623,599.
4. Tripathi, A., McCalla, S.E. and Lee, J., Magnetic bead separation apparatus and method. U.S. Patent Application 13/731,338.

FUNDING

Rising Stars Career Development Program June 2015-May 2017

TEACHING

EBIO 324: Bioengineering Transport	Fall 2015
EBIO 491: Introduction to Biomedical Engineering	Spring 2015
EBIO 461: Principles of Biomedical Engineering	Spring 2016