

**SCOTT BERRY**

(608) 628-2326 - [scott.michael.berry@gmail.com](mailto:scott.michael.berry@gmail.com)

**EDUCATION**

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**Ph.D. in Mechanical Engineering**

**December 2008**

University of Louisville

Dissertation: *Characterization of a Direct Write Method for Fabricating 3D Polymer Microfibers and Construction of Microscale Platforms.*

Advisor: Dr. Robert S. Keynton

**Masters of Business Administration**

**May 2007**

University of Louisville

GPA: 3.95/4.0 – Graduated with Distinction

**Masters of Mechanical Engineering**

**December 2004**

University of Louisville

Thesis: *A Characterization of Micromanipulator Controlled Dry Spinning of Micro- and Nanoscale Polymer Fibers.*

Advisor: Dr. Robert S. Keynton

GPA: 3.96/4.0 – Graduated with Highest Honors

**B.S. in Mechanical Engineering**

**May 2003**

University of Louisville

Capstone Project: *Prototype Development of a Low Load Prolonged Stretch Device with Pneumatic Muscle Actuators.*

Advisor: Dr. Peter Quesada

GPA: 3.98/4.0 – Graduated with Highest Honors

**EXPERIENCE**

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**Chief Scientific Officer / Co-Founder**

**February 2013-Present**

Salus Discovery, LLC

- Led efforts to raise ~\$5M in non-dilutive funding through grants and industry partnerships
- Managed multiple research efforts in cancer, infectious disease, immunology, reproductive health, drug discovery, and biomarker development
- Oversaw clinical implementation of Salus HIV viral load assay in Ugandan clinics
- Led collaboration with Gilson Inc. to successfully launch and support commercial product, including assembly of voice-of-customer interviews, QA/QC processes, technical notes, launch materials, and other marketing materials
- Developed business strategies and value proposition for new application areas

- Developed collaborative research agreements with several multi-billion-dollar corporate partners in preparation for future licensing deals (company identities protected by non-disclosure agreements)

### **Associate Scientist**

**July 2011-Present**

Microtechnology Medicine Biology (MMB) Lab (Advisor: Dr. David Beebe)

University of Madison-Wisconsin, Department of Biomedical Engineering

- Developed new technologies for streamlined isolation of nucleic acids, cells, and protein and implementation of these technologies into clinical settings
- Served as PI for two grants, including R01 focused on circulating tumor cell analysis
- Direct mentoring and supervision of 10 graduate students, undergrads, technicians, and postdocs in academic setting
- Founded and led a group of students, postdocs, and technicians focused on global health
- Developed automated instrumentation for cancer and infectious disease analyses
- Coordinated fabrication, training, delivery, and support for 10,000 devices in 30+ labs throughout academic and industry network

### **Postdoctoral Fellow**

**February 2009-June 2011**

University of Madison-Wisconsin (Advisors: Dr. David J. Beebe, Dr. Elaine T. Alarid)

Departments of Biomedical Engineering and Oncology

- Development of microfluidic assays to study cancer / stromal interaction
- Development of microfluidic arrays for analyte isolation
- Development of technologies for rare cell isolation and analysis
- Grant writing and supervision of undergraduate students
- Reviewer for multiple scientific journals

### **Graduate Assistant**

**September 2003-February 2009**

Earl and Mary Lou Kohnhorst BioMEMS & Cardiovascular Mechanics Lab (Advisor: Dr. Robert S. Keynton)

University of Louisville

- Modeling of non-Newtonian fluid mechanics of polymer solutions
- Development of technique to produce oriented micro/nano fibers in 3D space
- Design of scaffold systems for tissue engineering and electroosmotic flow platforms
- Supervising of three undergraduate students

### **Graduate Assistant**

**May 2003-September 2003**

Biomechanics Lab

University of Louisville (Advisor: Dr. Peter M. Quesada)

- Design and testing of pneumatic brace for treatment of muscle atrophy and spasticity

## **Mechanical Engineering Co-op**

**Alternating Semesters Between May 2001-August 2002**

Louisville Gas & Electric

- Project supervision / management, with a focus on power plant maintenance and environmental controls
- Engineering analysis of pumps, systems, filters, boilers, tanks, condensers, and other power plant components

## **PROFESSIONAL ACTIVITIES, AWARDS, TEACHING, AND SERVICE**

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- Served on NIH NCI Review Panel (2015)
- Lecturer for several courses at University of Wisconsin, including Biofluidics, Separations in Chemical Analysis, and BioMEMS
- Development of lab/lecture module focused on HIV testing
- Served as conference chair for BMES Annual Meeting (2009)
- Instructor for Whitney Young Scholars Program (underprivileged 7<sup>th</sup> grade students interested in STEM careers)
- Invited DAIDS Workshop at NIAID (April 2016)
- Developer of CTC-focused Short Course at CHI conference (2016)
- Finalist for SLAS innovation award in 2013 and 2015
- Research Featured on SLAS Podcast Interview (2013)
- Research Featured on *Wisconsin In Business* (2018)
- Volunteer Outreach to Joint Clinical Research Centre Virology Lab (Uganda; 2011-Present)
- Louisville Habitat for Humanity (2000-2009)
- Founder of Global Health Subgroup within MMB Lab
- Dean's List at University of Louisville (1999 to 2008)
- Consultant for multiple organizations, including Tasso Inc. and Lynx Biosciences (2012-Present)
- Travel award to 2006 Hilton Head Sensors and Actuators Conference

## **MENTORING ACTIVITIES**

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- Jennifer Loeb – University of Wisconsin – Technician
- Peter Thomas – University of Wisconsin – Postdoc
- Lindsey Maccoux – University of Wisconsin and Salus Discovery – Postdoc
- Lindsay Strotman – University of Wisconsin – Graduate Student
- John Guckenberger - University of Wisconsin– Graduate Student
- Hannah Pezzi - University of Wisconsin– Graduate Student
- Rachel O'Connel - University of Wisconsin– Graduate Student
- Alex LaVanway - University of Wisconsin– Undergraduate Student
- Meghan Anderson - University of Wisconsin– Undergraduate Student
- Mohit Goel - University of Wisconsin – Undergraduate Student
- Sean Warren – University of Louisville – Undergraduate Student

- DeVonnah (Hilgart) Woodruff– University of Louisville – Undergraduate Student
- Adam Schworer – University of Louisville – Undergraduate Student

## **SOCIETY MEMBERSHIPS**

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- American Association for Cancer Research
- Biomedical Engineering Society
- Materials Research Society
- Society for Laboratory Automation and Screening
- American Chemical Society
- Sigma Xi
- Tau Beta Pi
- Society of Experimental Mechanics

## **GRANTS (PI Role)**

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### **NIH/NCI R01**

**April 2014-March 2019**

*VERSA: An Integrated, Multi-Endpoint Platform for Circulating Tumor Cell Analysis*

- Design and validation of a microfluidic chip to obtain multiple molecular endpoints from circulating tumor cells (CTCs) extracted from a liquid biopsy sample
- Perform a prospective clinical trial to validate new biomarkers discovered by microfluidic chip

**Role: PI**

**Total Direct Costs: \$1.03M**

### **Wisconsin Partnership Program Grant**

**December 2015-November 2018**

*Paradigm shifting, high throughput assay for serial quantification of HIV reservoirs*

- Development of novel assays to measure the latent reservoir in HIV patients
- Clinical testing of HIV-infected patients at the Madison VA Hospital

**Role: PI**

**Total Direct Costs: \$300,000**

### **NIH/NCI Fast Track SBIR (Phase 1 & Phase 2)**

**July 2016-August 2019**

*Getting More from Less: Multi-omic Capture and Analysis from Patient Samples*

- Develop automated instrument for multi-omic CTC analysis
- Perform clinical validation of platform
- Establish manufacturing and prepare for FDA filing
- Place instrument in CLIA-certified lab

**Role: PD/PI**

**Total Direct Costs: \$863,141**

### **NIAID SBIR Contract**

**August 2016-February 2018**

*The microVOA: Enhancing the Viral Outgrowth Assay with Microtechnology*

- Design of an assay to measure the HIV viral reservoir for use in HIV cure research

- Validation of assay using standardized samples

**Role: PD/PI**

**Total Direct Costs: \$200,221**

**NIH/ORIP Lab-to-Marketplace SBIR**

**August 2017-July 2019**

*Seeing the unseen: Enhancing purification of labile protein complexes and cells with low surface marker expression*

- Development of an instrument to efficiently isolate short-lived endogenous protein complexes
- Benchmarking of new method against conventional co-immunoprecipitation protocols
- Identification of new drug targets in NFkB pathway

**Role: PD/PI**

**Total Direct Costs: \$700,000**

**NIH Phase 1 SBIR**

**March 2018-August 2018**

*Development of a cell based assay to assess antigen specific tolerance*

- Measurement of antigen-specific tolerance in individuals with end stage organ dysfunction, those undergoing acute/chronic allo-graft rejection in addition to individuals with auto-immune pathologies resulting in loss of self-tolerance
- Comparison of multiple assay formats to further validate emerging biomarkers

**Role: PD/PI**

**Total Direct Costs: \$149,065**

**SBIR Advance**

**May 2018-May 2019**

*Marketing Strategy for a Liquid Biopsy Analysis Platform*

- Development of strategies for commercialization and financing of a multi-omic liquid biopsy platform
- Preparation for deployment of platform in a CLIA Lab setting

**Role: PD/PI**

**Total Direct Costs: \$75,000**

**GRANTS (Other Significant Non-PI Roles)**

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**Bill & Melinda Gates Foundation Grant OPP 1152864**

**March 2017-August 2019**

*Rapid diagnostic test for LAM in urine from patients with active TB disease*

- Manage multi-national consortium of stakeholders, including reagent manufacturers, contract research organizations, clinical partners, and funders
- Develop a low cost point-of-care tuberculosis test that can be applied to urine samples
- Pre-concentrate a TB glycolipid biomarker found in urine, such that TB can be diagnosed in a simple lateral flow assay

**Role: Chief Scientific Officer**

**Total Direct Costs: \$2,615,349**

**Bill & Melinda Gates Foundation Grant OPP1028788**

**June 2011-May 2014**

*Microfluidic Phase-Gate: Simplified Sample Preparation for POC Diagnostics in the Developing World*

- Develop and optimize microfluidic separations techniques to improve point-of-care molecular diagnostics in the developing world, with the goal of reducing cost and improving diagnostic accessibility

**Role: Key Personnel and Lead Proposal Writer**

**Total Direct Costs: \$2,358,668**

*Integrated Micro-scale Transcriptional Profiling of Cell Communication Networks*

Develop an integrated system to model nuclear receptor-based signaling in breast cancer combining microfluidic co-culture of breast cancer and stromal cells with a streamlined mechanism to extract mRNA

**Role: Key Personnel and Lead Proposal Writer**

**Total Direct Costs: \$900,000**

**NIH T32 Training Grant Subaward**

**Nov 2009-Sept 2011**

*The Stem Cell and Regenerative Medicine Center Postdoctoral Fellowship*

- Development of new technologies to evaluate differentiation in stem cell cultures
- Streamlining of gene expression analysis workflows

**Role: Postdoctoral Fellow**

**Total Direct Costs: \$100,000**

**PUBLICATIONS**

1. Juang DS, Li C, Lang JM, Beebe, DJ, **Berry SM**. Gravity-assisted immiscible fluid filtration for rapid analyte extraction. *In revision*.
2. Pezzi HM, Guckenberger DJ, Schehr J, Rothbauer J, Stahlfeld, C, Singh A, Schultz ZD, Horn S, Bade RM, Sperger J, **Berry SM**, Lang JM, Beebe DJ. Versatile exclusion-based sample preparation platform for integrated rare cell isolation and analyte extraction. *Lab Chip*. 18, 3446-3458, 2018.
3. Li C, Yu J, Paine P, Juang DS, **Berry SM**, Beebe DJ. Double Exclusive Liquid Repellency Enabled Underoil Sweep Patterning for Modular Applications in Cell Biology. *Lab Chip*. 18(18):2710-2719, 2018.
4. Li C, Yu J, Schehr J, **Berry SM**, Leal TA, Lang JM, Beebe DJ. Exclusive Liquid Repellency: An Open Multi-liquid-phase Technology for Rare Cell Culture and Single Cell Processing. *ACS Appl. Mater. Interfaces* 10 (20), 17065–17070, 2018.
5. Strong AMP, **Berry SM**, Beebe DJ, Li J-L, Spiegelman VS. miFAST: a novel and rapid microRNA target capture method. *Molecular Carcinogenesis*. 57(4):559-566, 2018.
6. Pezzi, HM, **Berry SM**, Beebe DJ, Striker R. RNA-mediated TILDA for Improved Cell Capacity and Enhanced Detection of Multiply-spliced HIV RNA. *Integr Biol (Camb)*. 9(11):876-884, 2017.
7. **Berry SM**, Pezzi HM, LaVanway AJ, Guckenberger DJ, Anderson MA, Beebe DJ. AirJump: Using Interfaces to Instantly Perform Simultaneous Extractions. *ACS Appl Mater Interfaces* 8(24), 15040–15045, 2016.
8. Sperger JM, Strotman LN, Welsh A, Casavant BP, Chalmers Z, Horn S, Heninger E, Thiede S, Tokar J, Gibbs BK, Guckenberger DJ, Carmichael L, Dehm SM, Stephens PJ, Beebe DJ, **Berry SM**, Lang JM. Integrated analysis of multiple biomarkers from circulating tumor cells enabled by exclusion-based analyte isolation. *Clin Cancer Res Off J Am Assoc Cancer Res* 2016.
9. Schehr JL, Schultz ZD, Warrick JW, Guckenberger DJ, Pezzi HM, Sperger JM, Heninger E, Saeed A, Leal T, Mattox K, Traynor AM, Campbell TC, **Berry SM**, Beebe DJ, Lang JM. High Specificity in Circulating Tumor Cell Identification Is Required for Accurate Evaluation of Programmed Death-Ligand 1. *PLoS ONE* 11(7), e0159397, 2016.
10. Regier MC, Maccoux LJ, Weinberger EM, Regehr KJ, **Berry SM**, Beebe DJ, Alarid ET. Transitions from mono- to co- to tri-culture uniquely affect gene expression in breast cancer, stromal, and immune compartments. *Biomed Microdevices* 18(4), 70, 2016. PMID: PMC5076020
11. Guckenberger DJ, Pezzi HM, Regier MC, **Berry SM**, Fawcett K, Barrett K, Beebe DJ. Magnetic System for Automated Manipulation of Paramagnetic Particles. *Anal Chem* 88(20), 9902–9907, 2016.
12. Hong WS, Pezzi HM, Schuster AR, **Berry SM**, Sung KE, Beebe DJ. Development of a Highly Sensitive Cell-Based Assay for Detecting Botulinum Neurotoxin Type A through Neural Culture Media Optimization. *J. Biomol. Screen*. Jan;21(1):65–73, 2016. PMID: 26420788

13. **Berry SM**, Pezzi HM, Williams ED, Loeb JM, Guckenberger DJ, Lavanway AJ, Puchalski AA, Kityo CM, Mugenyi PN, Graziano FM, Beebe DJ. Using Exclusion-Based Sample Preparation (ESP) to Reduce Viral Load Assay Cost. *PLoS ONE* 2015 Dec;10(12):e0143631.
14. **Berry SM**; LaVanway, AJ; Pezzi, HM; Guckenberger, DJ; Anderson, MA; Loeb, JM; Beebe, DJ. HIV Viral RNA Extraction in Was Immiscible Filtration Assisted by Surface Tension (IFAST) Devices. *Journal of Molecular Diagnostics*, 2014, 16(3) 297-304.
15. **Berry SM**, Chin EN, Jackson SS, Strotman LN, Goel M, Thompson NE, Alexander CM, Miyamoto S, Burgess RR, Beebe DJ. Weak protein–protein interactions revealed by immiscible filtration assisted by surface tension. *Anal. Biochem.* 2014 Feb; 447:133–140.
16. Casavant, BP, Guckenberger, DJ, Beebe, DJ, **Berry SM**. Rapid and efficient sample preparation from complex biological samples using a Sliding Lid for Immobilized Droplet Extractions (SLIDE). *Analytical Chemistry*, 2014, 86 (13), pp 6355–6362
17. Guckenberger DJ, Thomas PC, Rothbauer J, LaVanway AJ, Anderson M, Gilson D, Fawcett K, Berto T, Barrett K, Beebe DJ, **Berry SM**. A combined fabrication and instrumentation platform for sample preparation. *Journal of Lab Automation*. 2014 Jan 8;19(3):267-274.
18. **Berry SM**, Singh C, Lang JD, Strotman LN, Alarid ET, Beebe DJ. Streamlining Gene Expression Analysis: Integration of Co-Culture and mRNA Purification. *Integrative Biology* 2014, 6(2): 224-31.
19. Howard AL, Pezzi HM, Beebe DJ, **Berry SM**. Exclusion-Based Capture and Enumeration of CD4<sup>+</sup> T-Cells from Whole Blood for Low-Resource Settings. *Journal of Lab Automation*. 2013 Oct 18;19(3):313-321.
20. Strotman L, O'Connell R, Casavant BP, **Berry SM**, Sperger JM, Lang JM, Beebe DJ, Selective Nucleic Acid Removal via Exclusion (SNARE): Capturing mRNA and DNA from a Single Sample. *Anal. Chem.* 2013, 85 (20): 9764–9770.
21. Moussavi-Harami SF, Annis DS, Ma W, **Berry SM**, Coughlin EE, Strotman LN, Maurer LM, Westphall MS, Coon JJ, Mosher DF, Beebe DJ. Characterization of molecules binding to the 70K N-terminal region of fibronectin by IFAST purification coupled with mass spectrometry. *J Proteome Res.* 2013 Jul 5;12(7):3393-404. doi: 10.1021/pr400225p. Epub 2013 Jun 21.
22. Thomas PC, Strotman LN, Theberge AB, Berthier E, O'Connell R, Loeb JM, **Berry SM**, Beebe DJ. Nucleic Acid sample preparation using spontaneous biphasic plug flow. *Anal Chem.* 2013 Sep 17;85(18):8641-6. doi: 10.1021/ac4012914. Epub 2013 Sep 4.
23. Casavant BP, Mosher R, Warrick JW, Maccoux LJ, **Berry SM**, Becker JT, Chen V, Lang JM, McNeel DG, Beebe DJ. A negative selection methodology using a microfluidic platform for the isolation and enumeration of circulating tumor cells. *Methods.* 2013 Jun 24.
24. Lang JD, **Berry SM**, Powers GL, Beebe DJ, Alarid ET. Hormonally responsive breast cancer cells in a microfluidic co-culture model as a sensor of microenvironmental activity. *Integr Biol (Camb)*. 2013 May;5(5):807-16.
25. Casavant BP, Guckenberger DJ, **Berry SM**, Tokar JT, Lang JM, Beebe DJ. The Vertical IFAST: An integrated for cell isolation and extracellular/intracellular staining, *Lab Chip*, Vol. 13, pp. 391-396, 2013.
26. **Berry SM**, Casavant BP, Regehr KJ, Beebe DJ. Automated Operation of Immiscible Filtration Assisted by Surface Tension (IFAST) Arrays for Streamlined Analyte Isolation. *Journal of Lab Automation*. 2013 Jun;18(3):206-11.
27. **Berry SM**, Pabba S, Cohn RW, Keynton RS. Direct-Write Drawing of Carbon Nanotube/Polymer Composite Microfibers. *Journal of Nanomaterials*, 2012, Article ID 690301.
28. Strotman LN, Lin G. **Berry SM**, Johnson EA, Beebe DJ. Facile and rapid DNA extraction and purification from food matrices using IFAST (immiscible filtration assisted by surface tension). *Analyst.* 2012, 137(17):4023-8.

29. **Berry SM**, Maccoux LJ, Beebe DJ. Streamlining Immunoassays with Immiscible Filtrations Assisted by Surface Tension. *Anal. Chem.* 2012, 84(13):5518-23.
30. Goel S, Chin EN, Fakhraldeen SA, **Berry SM**, Beebe DJ, Alexander CM. Both LRP5 and LRP6 Receptors Are Required to Respond to Physiological Wnt Ligands in Mammary Epithelial Cells and Fibroblasts. *Journal of Biological Chemistry* 2012, 287, 16454-66.
31. **Berry SM**, Roussel TJ, Cambron SD, Cohn RW, Keynton RS. Fabrication of suspended electrokinetic microchannels from directly written sacrificial polymer fibers. *Microfluidics and Nanofluidics*, 2012, April Issue.
32. **Berry SM**, Strotman LN, Kueck JD, Alarid ET, Beebe DJ. Purification of Cell Subpopulations via Immiscible Filtration Assisted by Surface Tension (IFAST). *Biomedical Microdevices*, 2011, 13(6) 1033-42.
33. **Berry SM**, Alarid ET, Beebe DJ. One-Step Purification of Nucleic Acid for Gene Expression Analysis via Immiscible Filtration Assisted by Surface Tension (IFAST). *Lab on a Chip*, 2011, 11, 1747-53.
34. **Berry SM**, Cambron SD, Warren SP, Pabba S, Cohn RW, Keynton RS. Characterization and Modeling of Direct Write Fabrication of Microscale and Sub-Microscale Polymer Fibers. *Polymer*, 2011, 52(7) 1654-1661.
35. **Berry SM**, Warren SP, Hilgart DA, Pabba S, Gobin AS, Cohn RW, Keynton RS. Endothelial Cell Scaffolds Generated by 3D Direct Writing of Biodegradable Polymer Microfibers. *Biomaterials*, 2011, 32(7) 1872-1879.
36. Rathfon JM, AL-Badri ZM, Shunmugam R, Pabba S, **Berry SM**, Keynton RS, Cohn RW, Tew GN. Fluorimetric Nerve Gas Sensing Based on Pyrene Imines Incorporated into Films and Sub-micron Fibers. *Advanced Functional Materials*, 2009, 19 (5) 689-695.
37. Yazdanpanah MM, Hosseini M, Pabba S, **Berry SM**, Dobrokhoto VV, Safir A, Keynton RS, Cohn RW. Rheological measurements by AFM of the formation of polymer nanofibers. *Langmuir*, 2008, 24 (23), pp 13753–13764.
38. Pabba S, Sidorov AN, **Berry SM**, Yazdanpanah MM, Keynton RS, Sumanasekera GU, Cohn RW. Oriented nanomaterial air-bridges formed from suspended polymer-composite nanofibers, *ACS Nano* 1(1), 57-62. 2007.
39. **Berry SM**, Harfenist SA, Cohn RW, Keynton RS. Characterization of Micromanipulator-Controlled Dry Spinning of Micro- and Sub-Microscale Polymer Fibers. *J. Micromech. Microeng.* 16 (2006) 1825-1832.
40. Harfenist SA, Cambron SD, Nelson EW, **Berry SM**, Isham AW, Crain MM, Walsh KM, Keynton RS, Cohn RW. Direct Drawing of Suspended Filamentary Micro- and Nanostructures from Liquid Polymers. *Nano Letters* Vol. 4 No. 10 (2004) 1931-1937.

## **PATENTS**

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1. **US Patent 8,603,416 B2**. Beebe DJ, **Berry SM**. Device for and Method of Extracting a Fraction from a Biological Sample. Issued 12/10/13.
2. **US Patent 8,728,410 B2**. Beebe DJ, **Berry SM**, Burgess RR, Strotman LN. Device for and Method of Extracting a Fraction from a Biological Sample. Issued 05/20/14.
3. **US Patent 8,728,411 B2**. Beebe DJ, **Berry SM**, Guckenberger DJ, Casavant BP. Device for and Method of Isolating a Fraction in a Biological Sample. Issued 05/20/14.
4. **US Patent 8,993,243 B2**. Beebe DJ, Burgess RR, Strotman LN, **Berry SM**. Method for Isolating Weakly Interacting Molecules from a Fluidic Sample. Issued 03/31/15.
5. **US Patent 9,459,189 B2**. Beebe DJ, **Berry SM**, Guckenberger DJ, Casavant BP. Device for Isolating a Fraction in a Biological Sample. Issued 10/04/16.
6. **US Patent 9,470,611 B2**. Fawcett K, Robinson GJ, Guckenberger DJ, **Berry SM**. Sample Plate for Sliding Magnetic Particle Separation. Issued 10/18/16.



7. **US Patent 9,518,903 B2.** Fawcett K, Robinson, GJ, Guckenberger DJ, **Berry SM**, Beebe DJ. Adapter for Sliding Magnetic Particle Separation. Issued 12/13/16.
8. **US Patent 9,766,166 B2.** Beebe DJ, Casavant BP, Guckenberger DJ, **Berry SM**. Device and Method Incorporating a Slideable Lid for Extracting a Targeted Fraction from a Sample. Issued 9/19/17.
9. **US Patent Application 20130158240 A1.** Beebe DJ, Strotman LN, **Berry SM**. Method of Extracting a Fraction from a Biological Sample. Filed 12/15/11.
10. **US Patent Application 20140065622 A1.** Beebe DJ, Lang JM, Casavant BP, **Berry SM**, Strotman LN. Device for and Method of Isolating and Analyzing a Fraction in a Biological Sample. Filed 03/15/13.
11. **US Patent Application 20140273056 A1.** Beebe DJ, **Berry SM**. Device and Method for Extracting a Targeted Fraction from a Sample. Filed 03/14/13.
12. **US Patent Application 20150196907 A1.** Beebe DJ, Casavant BC, Guckenberger DJ, **Berry SM**. Device and Method for Transferring a Target Between Locations. Filed 01/14/14.
13. **Filed but Unpublished US Patent Application.** Beebe DJ, Guckenberger DJ, Berry SM, Pezzi HM. Method and Device for Containing Expanding Droplets. Filed 06/18/16.
14. **Filed but Unpublished US Patent Application.** Beebe DJ, Guckenberger DJ, Pezzi HM, Berry SM. Deformable Well and Method. Filed 08/22/16.
15. **Filed but Unpublished US Patent Application.** **Berry SM**, Guckenberger DJ. Magnetic Base for Collection and Release of Paramagnetic Particles. Filed 1/18/17.

#### **CONFERENCE PRESENTATIONS (Presenting Author Only)**

1. **Berry SM.** Innovative Assays to Quantify Latent HIV Reservoirs. NIAID Division of AIDS (DAIDS) Seminar Series. 2016, Rockville, MD.
2. **Berry SM.** Multi-Omic Analysis of Circulating Tumor Cells: A Case Study in Preparing for Clinical Trials. Cambridge Health Institute Short Course: Translating CTCs for Clinical Use. 2016, Washington DC.
3. **Berry SM**, Casavant BP, Thomas PC, Guckenberger DJ, Loeb J, Howard A, Strotman LN, Singh C, Anderson M, LaVanway AJ, Pezzi H, Theide S, Sperger K, Tokar J, Lang JM, Graziano F. Beebe DJ. Exclusion-Based Sample Prep (ESP): Improving Access to Molecular Diagnostics in the Developing World. NIH Cancer Detection, Diagnostic, and Treatment Technologies for Global Health Symposium. 2014, Bethesda, MD.
4. **Berry SM**, Thomas PC, Guckenberger DJ, Loeb J, Howard A, Strotman LN, Singh C, Anderson M, LaVanway AJ, Pezzi H, Graziano F, Beebe DJ. Streamlining Diagnostics with Microfluidic Exclusion---Based Sample Preparation (ESP). Gordon Conference. June 2013, Lucca, Italy.
5. **Berry SM** and Beebe DJ. Exclusion based sample preparation: Simpler, Faster, Better. AEIC Meeting. April 2013. Madison, WI.
6. **Berry SM**, Singh C, Kueck JM, Alarid ET, Beebe DJ. An Integrated Platform for Quantifying Gene Expression in Co-Cultured Cells. AACR. 2012, Chicago, IL.
7. **Berry SM.** Point-of-Care (POC) Diagnostics for HIV. Ugandan National Meeting on HIV. 2012, Kampala, Uganda.
8. **Berry SM**, Thomas PC, Gilson D, Fawcett K, Guckenberger DJ, Loeb J, Howard A, Singh C, Thompson NE, Anderson M, LaVanway AJ, Berto T, Barrett K, Graziano F, Burgess RR, Beebe DJ. OpenDX: An Open Platform to Enable Diagnostics in the Developing World. Bill and Melinda Gates Foundation Grand Challenges in Global Health Meeting. 2012, Ottawa, Canada.

9. **Berry SM**, Strotman LN, Chin E, Jackson S, Thompson NE, Miyamoto S, Alexander CM, Burgess RR, Beebe, DJ. One-Step Isolation of Transitory Protein Complexes with IFAST. MicroTAS 2012, Okinawa, Japan.
10. **Berry SM**, Loeb J, Thomas PC, Guckenberger DJ, Thompson NE, Burgess RR, Beebe DJ. Microfluidic Immiscible Phase Barrier: Simplified Sample Preparation. Bill and Melinda Gates Foundation Grand Challenges in Global Health Meeting. 2011, New Delhi, India.
11. **Berry SM**, Beebe DJ. Rapid Nucleic Acid Purification Via Microchannel Immiscible Phase Filtration. MicroTAS 2010, Groeningen, The Netherlands.
12. **Berry SM**, Cambron SD, Warren SP, Cohn RW, and Keynton RS. Direct Write Fabrication of Polymer Fibers for Microscale Applications. University Government Industry Micro/Nano Symposium. July 13-16, 2008, Louisville, KY.
13. **Berry SM**, Warren SP, Pabba S, Gobin AS, Cohn RW Keynton RS. Direct Write Fabrication of Microfibrous Endothelial Cell Scaffolds. 2008 BMES Annual Fall Meeting. October 2-4, 2008, St. Louis, MO.
14. **Berry SM**, Roussel TJ, Cambron SD, Cohn RW, and Keynton RS. Fabrication of Suspended Electroosmotic Microchannels from Sacrificial Polymer Fibers. MicroTAS 2007. October 7-11, 2007, Paris, France.
15. **Berry SM**, Pabba S, Fernandes JL, Rathfon JM, Tew GN, Gobin AS, Cohn RW, Keynton RS. Direct Fabrication by Manual Brushing of Suspended Microscale Fibers for Cell Culture Scaffolds. Society for Biomaterials 2007 Annual Meeting. April 18 - 21, 2007, Chicago, IL.
16. **Berry SM**, Roussel TJ, Cambron SD, Cohn RW, Keynton RS. Fabrication and Electroosmotic Flow Analysis of Freely-Suspended, Three-Dimensional Microchannels from Sacrificial Polymer Fibers. 2007 SEM Annual Conference & Exposition on Experimental and Applied Mechanics. 2007, Springfield, MA.
17. **Berry SM**, Pabba S, Fernandes JL, Rathfon JM, Tew GN, Gobin AS, Cohn RW, Keynton RS. Brush-On Fabrication of Suspended PLLA-PEO-PLLA Triblock Copolymer Microfibers for Cell Culture Scaffolds. 2007 SEM Annual Conference & Exposition on Experimental and Applied Mechanics. 2007, Springfield, MA.
18. **Berry SM**, Roussel TJ, Cambron SD, Harfenist SA, Cohn RW, Keynton RS. Micromanipulator Controlled Fabrication of Micro- and Nanoscale Polymer Fibers and Application as Sacrificial Structures in the Production of Microchannels. Hilton Head 2006: A Solid State Sensors, Actuators and Microsystems Workshop, June 4-8, 2006, Hilton Head, SC.
19. **Berry SM**, Roussel TJ, Cambron SD, Cohn RW, Keynton RS. Fabrication of Freely-Suspended, Three-Dimensional Microchannels from Sacrificial Polymer Fibers. International Conference on Microtechnologies in Medicine and Biology, May 9-12, 2006, Bankoku-Shinryokan, Okinawa, Japan.
20. **Berry SM**, Harfenist SA, Cohn RW, Keynton RS. Characterization of Micromanipulator Controlled Dry Spinning of Micro- and Nanoscale Polymer Fibers. International Conference on Microtechnologies in Medicine and Biology 2005 May 12-15, 2005, Oahu, Hawaii.

## **PARTICIPATION IN CLINICAL TRIALS**

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Sponsor: Dana Farber Cancer Institute

Project: Phase II clinical trial of enzalutamide for men with castration-resistant prostate cancer (CRPC) with correlative assessment of androgen receptor (AR) signaling and whole-exome and transcriptome sequencing

Role: Lead assay developer

Sponsor: Dana Farber Cancer Institute

Project: Phase II clinical trial of abiraterone acetate without exogenous glucocorticoids in men with castration-resistant prostate cancer with correlative assessment of hormone intermediates  
Role: Lead assay developer

Sponsor: Memorial Sloan Kettering, Prostate Cancer Foundation, Innocrin Pharmaceuticals  
Project: A Single-arm, Phase 2 Study to Evaluate the Safety and Efficacy of VT-464 in Patients with Castration-Resistant Prostate Cancer Progressing on Enzalutamide or Abiraterone  
Role: Lead assay developer

Sponsor: Medivation  
Project: MDV3100-18: An Open-Label Phase 2 Study of <sup>18</sup>F-Sodium Fluoride PET/CT Bone Imaging in Enzalutamide-Treated Chemotherapy-Naïve Patients With Metastatic Castration-Resistant Prostate Cancer  
Role: Lead assay developer

Sponsor: Big Ten Research Consortium  
Project: Phase Ib and Phase II Studies of anti-PD-1 Antibody Pembrolizumab (MK-3475) in Combination with Bevacizumab for the Treatment of Metastatic Renal Cell Carcinoma: Big Ten Cancer Research Consortium BTCRC-GU14-003  
Role: Lead assay developer

## **JOURNAL REVIEWER**

- ACS Applied Materials and Interfaces
- Advanced Materials
- IEEE Sensors
- The Journal of Laboratory Automation
- Angewandte Chemie
- Trends in Biotechnology
- Lab on a Chip
- PLOS ONE
- Journal of Colloid and Interface Science
- Proceedings of the National Academy of Sciences
- Analytical Chemistry
- Integrative Biology

## **TECHNICAL SKILLS**

- Nucleic acid analysis processes including DNA/RNA extraction, RT-PCR and qPCR, library prep, NGS, agarose gel analysis, and Bioanalyzer analysis
- Assay development processes including molecular assay optimization, clinical sample pre-processing, and liquid handler programming.

- Protein analysis techniques including immunocytochemistry, immunoprecipitation (IP), co-IP, ELISA, ICC, Luminex analysis, and Western blotting
- Cell culture/analysis techniques including sterile cell culture, co-culture of multiple cell types, flow cytometry, MACS, cell counting, viability assays, proliferation/apoptosis assays, migration assays
- Microfabrication techniques including photolithography, soft lithography, micromilling, 3D printing, CAD (Solidworks), CAM, and direct printing of polymer fibers
- Microscopy techniques including epi-fluorescence, confocal, and scanning electron microscopy as well as contact and non-contact surface analysis techniques
- Liquid analyses processes including viscometry, rheometry, surface energy/tension measurements, finite element analysis, and mass transfer analysis
- MS Office proficiency (Word, Powerpoint, Excel, Outlook, and Project), experience with statistical analysis software (R, MiniTab), and bioinformatics tools (BLAST, UCSC genome browser)

## **MANAGEMENT SKILLS**

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- Leadership of multi-disciplinary and multi-organizational teams in both academia and industry
- Clinical study development and oversight including statistical power calculations, IRB approvals, and new biomarker validation
- Experience building consensus on multiple organizational levels
- Market analysis, including SWOT analysis, voice-of-customer, and forecasting of key trends
- Product development, product launch, and post-launch support
- Risk assessment analysis / failure mode analysis
- Development and implementation of quality control processes
- Assay implementation activities including regulatory approval, CLIA lab deployment, and identification of clinical partners (particularly in the developing world)
- Generation and analysis of financial statements

## **REFERENCES AVAILABLE UPON REQUEST**