Curriculum Vitae – Kenneth A. Christensen

CONTACT INFORMATION

Professor and Associate Chair
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EDUCATION

Ph.D., University of Michigan, 1997, Chemistry
B.S., Brigham Young University, 1992, Chemistry

PROFESSIONAL APPOINTMENTS

Brigham Young University, 2024-present, Professor of Chemistry and Biochemistry
Brigham Young University, 2015-2024, Associate Professor of Chemistry and Biochemistry with Continuing Faculty Status (tenure)
Clemson University, 2015-2018, Adjunct Professor of Chemistry
Clemson University, 2011-2015, Associate Professor of Chemistry with Tenure
Clemson University, 2004-2011, Assistant Professor of Chemistry
Harvard Medical School, 2002-2004, Research Fellow (Microbiology and Molecular Genetics)
University of Michigan Medical School, 1998-2002, Research Fellow (Microbiology and Immunology)
University of Michigan, 1997-1998, Lecturer II (Chemistry)

PUBLICATIONS

h-index (as of September 16, 2024; Google Scholar) = 30

i-10 index (as of September 16, 2024; Google Scholar) = 40

Refereed Journal Publications

1. Christensen, K.A., Bradley, N.L., Morris, M.D., and Morrison, R.V., "Raman Imaging Using a Tunable Dual-Stage Liquid Crystal Fabry-Perot Interferometer", *Applied Spectroscopy*, **49**, 1120-1125 (1995)
2. Shaver, J.M., Christensen, K.A., Pezzuti, J.A, and Morris, M.D., "Structure of Dihydrogen Phosphate Ion Aggregates by Raman-Monitored Serial Dilution", *Applied Spectroscopy*, ***52***, 259-264 (1998)
3. Christensen, K.A. and Morris, M.D., "Hyperspectral Raman Line-Imaging Using Powell Lens Illumination", *Applied Spectroscopy*, **52**, 1145-1147 (1998)
4. Savvate'ev, V., Friedl, J.H., Zou, L., Shinar, J., Christensen, K., Oldham, W., Rothberg, L.J., Chen-Esterlit, Z., and Kopelman, R., "Nanosecond Transients in the Electroluminescence from Multilayer Blue Organic Light-Emitting Devices Based on 4,4'-bis(2,2' diphenyl vinyl)-1,1'-biphenyl", *Applied Physics Lett*ers, **76**, 1501-1503 (2000)
5. Savvate'ev, V., Friedl, J. H., Zou, L., Christensen, K., Oldham, W., Rothberg, L. J., Chen-Esterlit, Z., Kopelman, R., and Shinar, J., "Nanosecond electroluminescence (EL) spikes at the voltage turn-off from a small molecular organic light-emitting device (OLED)" *Synthetic Metals,* **121**, 1713-1714 (2001)
6. Savvate'ev, V., Friedl, J. H., Zou, L., Shinar, J., Christensen, K., Oldham, W., Rothberg, L. J., Chen-Esterlit, Z., and Kopelman, R., "Nanosecond electroluminescence spikes from multilayer blue 4,4 '-bis(2,2 '-diphenyl vinyl)-1,1 '-biphenyl (DPVBi) organic light-emitting devices", *Materials Science and Engineering B-Solid State Materials for Advanced Technology,* **85**, 224-227 (2001)
7. Christensen, K.A., Myers, J.T., Swanson, J.A., "pH-dependent Regulation of Lysosomal Calcium in Macrophages", *Journal of Cell Science*, **115**, 599-607 (2002)
8. Hoppe, A., Christensen, K., and Swanson, J.A., "Fluorescence Resonance Energy Transfer-Based Stoichiometry in Living Cells", *Biophysical Journal*, **83**, 3652-3664 (2002)
9. Wigelsworth, D.J.*, Krantz, B.A.*, Christensen, K.A., Lacy, D.B., Juris, S.J., and Collier, R.J., "Binding Stoichiometry and Kinetics of the

Interaction of a Human Anthrax Toxin Receptor, CMG2, with Protective Antigen", *Journal of Biological Chemistry*, **279**, 23349-23356 (2004)

10. Pimental, R-A.L.*, Christensen, K.A.*, Krantz, B.A., Collier, R.J., "Anthrax toxin complexes: heptameric protective antigen can bind lethal factor and edema factor simultaneously", *Biochemical and Biophysical Research Communications*, **322**, 258–262 (2004)
11. Krantz, B.A., Trivedi, A.D., Cunningham, K., Christensen, K.A., and Collier, R.J., "Acid-induced Unfolding of the Amino-terminal Domains of the Lethal and Edema Factors of Anthrax Toxin", *Journal of Molecular Biology*, **344**, 739-756 (2004)
12. Christensen, K.A.*, Krantz, B.A.*, and Collier, R.J., "Interaction of the 20 kDa and 63 kDa Fragments of Anthrax Protective Antigen: Kinetics and Thermodynamics", *Biochemistry*, **44**, 1047-1053 (2005)
13. Qa'dan, M., Christensen, K.A., Zhang, L., Roberts, T.M., and Collier, R.J., "Membrane Insertion by Anthrax Protective Antigen in Cultured Cells", *Molecular and Cellular Biology*, **25**, 5492-5498 (2005)
14. Christensen, K.A., Krantz, B.A., and Collier, R.J., "The assembly and disassembly kinetics of anthrax toxin complexes", *Biochemistry*, **45**, 2380-2386 (2006)
15. Shaughnessy, L.M., Hoppe, A.D., Christensen, K.A., and Swanson, J.A., "Membrane perforations inhibit lysosome fusion by altering pH and calcium in *Listeria monocytogenes* vacuoles", *Cellular Microbiology*, **8**, 781–792 (2006)
16. Daniels, J.K., Caldwell, T.P., Christensen, K.A., and Chumanov, G., "Monitoring the Kinetics of *Bacillus subtilis* Endospore Germination via Surface-Enhanced Raman Scattering Spectroscopy", *Analytical Chemistry*, **78**, 1724-1729 (2006)
17. Evanoff, D.D. Jr., Heckel, J., Caldwell, T.P., Christensen, K.A., and Chumanov, G., "Monitoring DPA Release from a Single Germinating Bacillus subtilis Endospore via Surface-Enhanced Raman Scattering Microscopy", *Journal of the American Chemical Society*, **128**, 12618-12619 (2006)
18. Rogers, M.S., Christensen, K.A., Wigelsworth, D.J., Collier, R.J., and D'Amato, R.J., "Mutant Anthrax Toxin B-moiety (Protective Antigen) Inhibits Angiogenesis and Tumor Growth", *Cancer Research*, **67**, 9980-9985 (2007)

19. Wu, C., Bull B., Szymanski, C., Christensen, K., and McNeill, J., "Multicolor Conjugated Polymer Dots for Biological Fluorescence Imaging", *ACS Nano*, **2**, 2415–2423 (2008)

20. Wu, C., Bull, B., Christensen, K. and McNeill, J., "Ratiometric Single-Nanoparticle Oxygen Sensors for Biological Imaging", *Angewandte Chemie International Edition*, **48**, 2741-2745 (2009)

21. Luo, P.J.G., Wang, H.F., Gu, L.R., Lu, F.S., Lin, Y., Christensen, K.A., Yang, S.T., Sun, Y-P, "Selective Interactions of Sugar-Functionalized Single-Walled Carbon Nanotubes with Bacillus Spores", *ACS Nano*, **3**, 3909-3916 (2009)

22. Bhut, B.V., Christensen, K.A., and Husson, S.M., "Membrane chromatography: Protein purification from E. coli lysate using newly designed and commercial anion-exchange stationary phases", *Journal of Chromatography A*, **1217**, 4946-4957 (2010)

23. Fernando, L.P., Kandel, P.K., Yu, J., McNeill, J., Ackroyd, P.C., and Christensen, K.A., "Mechanism of cellular uptake of highly fluorescent conjugated polymer nanoparticles", *Biomacromolecules*, **11**, 2675-2682 (2010)

24. Chaurra, A., Gutzman, B.M., Taylor, E., Ackroyd, P.C., and Christensen, K.A., "Lucifer Yellow as a live cell fluorescent probe for imaging water transport in subcellular organelles", *Applied Spectroscopy*, **65**, 20-25 (2011)

25. Dodson, H.C., Lyda, T.L., Chambers, J.W., Morris, M.T., Christensen, K.A., Morris, J., "Quercetin, a fluorescent bioflavanoid, inhibits Trypanosoma brucei hexokinase 1" *Experimental Parasitology*, **127**, 423-428 (2011)

26. Kandel, P.K., Fernando, L.P., Ackroyd, P.C., and Christensen, K.A., "Incorporating Functionalized Polyethylene Glycol Lipids into Reprecipitated Conjugated Polymer Nanoparticles for Bioconjugation and Targeted Labeling of Cells" *Nanoscale*, **3**, 1037-1045 (2011)

27. Yang, Z., Nguyen, K.T., Chen, H., Qian, H., Fernando, L.P., Christensen, K.A., and Anker, J.N., "Plasmonic Silver Nanobelts via Citrate Reduction in the Presence of HCl and their Orientation-Dependent Scattering Properties" *Journal of Physical Chemistry Letters*, **2**, 1742-1746 (2011)

28. Cracowski, J.-M., Sharma, B., Brown, D.K., Christensen, K., Lund, B.R., and Smith, D.W., "Perfluorocyclopentenyl (PFCP) Aryl Ether Polymers via Polycondensation of Octafluorocyclopentene with Bisphenols" *Macromolecules*, **45**, 766-771 (2012)

29. Wang, F.; Widejko, R.; Yang Z.; Nguyen, K.V.T.; Chen, H; Fernando L.P.; Christensen, K.A.; Anker, J.N. "Surface-enhanced Raman scattering detection of pH with silica-encapsulated 4-mercaptobenzoic acid-functionalized silver nanoparticles." *Analytical Chemistry* **84**, 8013-8019 (2012) DOI: 10.1021/ac3018179
30. Rogers, M.S., Cryan, L.M., Habeshian, K.A., Bazinet, L., Caldwell, T.P., Ackroyd, P.C., and Christensen, K.A., "A FRET-based High Throughput Screening Assay to Identify Inhibitors of Anthrax Protective Antigen Binding to Capillary Morphogenesis Gene 2 Protein" *PLOS One*, **7**(6): e39911 (2012).
31. Fernando, L.P., Kandel, P.K., Ackroyd, P.C., and Christensen, K.A., "The Relative Brightness of PEG Lipid-Conjugated Polymer Nanoparticles as Fluid-phase Markers in Live Cells" *Analytical and Bioanalytical Chemistry*, DOI: 10.1007/s00216-012-6441-5, **404**, 3003-3014 (2012)
32. Cryan, L.M., Habeshian, K.A., Caldwell, T.P., Morris, M.T., Ackroyd, P.C., and Christensen, K.A., D'Amato, R., Rogers, M.S. "Identification of Small Molecules that Inhibit the Interaction of TEM8 with Anthrax Protective Antigen using a FRET Assay" *Journal of Biomolecular Screening,* **18**, 714-725 (2013), DOI: 10.1177/1087057113478655
33. Cryan, L.; Bazinet, L.; Habeshian, K.; Cao, S.; Clardy, J.; Christensen, K.; Rogers, M., "1,2,3,4,6-Penta-O-galloyl-β-D-glucopyranose inhibits angiogenesis via inhibition of capillary morphogenesis gene 2", *Journal of Medicinal Chemistry*, **56**, 1940-1945 (2013), DOI: 10.1021/jm301558t
34. Lin, S., Morris, M.T., Ackroyd, P.C., Morris, J.C., Christensen, K.A., "Peptide targeted delivery of pH sensor for quantitative measurements of intraglycosomal pH in live Trypanosoma brucei" *Biochemistry*, **52**, 3629-3637 (2013), DOI: 10.1021/bi400029m
35. Schadock-Hewitt, A.J., Pittman, J.J., Christensen, K.A., and Marcus, R.K., "Head group-functionalized poly(ethyleneglycol)–lipid (PEG–lipid) surface modification for highly selective analyte extractions on capillary channeled polymer (C-CP) fibers" *Analyst*, **139**, 2108-2113 (2014), DOI: 10.1039/c3an01899g; Featured on the inside cover of the journal issue.
36. Dukes, K.D., Christensen, K.A., and Chumanov, G., "Core-Shell Silver Nanoparticles for Optical Labeling of Cells" *Analytical Biochemistry*,**458,** 43–48 (2014), DOI: 10.1016/j.ab.2014.04.015
37. Brown, D.K., Cracowski, J.-M., Iacono, S.T., Christensen, K., and Smith, D.W. Jr., "Preparation of segmented semifluorinated poly(aryl ether)s from

aromatic trifluorovinyl ethers and oligo(ethylene glycol)s" *Journal of Applied Polymer Science,* (2015), DOI: 10.1002/app.41798

38. Brown, D.K., Cracowski, J.M., Iacono, S.T., Christensen, K., and Smith, D.W., "Preparation of biphenyl perfluorocyclobutyl (BP-PFCB) polyethylene glycol (PEG) copolymers by the formation of fluorinated arylene vinylene ether (FAVE)" *Polymer Bulletin*, **72,** 1393-1405 (2015), DOI:10.1007/s00289-015-1344-1

39. Brown, D.K., Iacono, S.T., Cracowski, J.M., Christensen, K., and Smith, D.W., "Synthesis and characterization of a biphenyl perfluorocyclobutyl (BP-PFCB) polyethylene glycol (PEG) blend compatibilizer" *Polymers Advanced Technologies,* **27**, 1389-1396 (2016)*,* DOI: 10.1002/pat.3808

40. Jia, Z., Ackroyd, C., Han, T., Agrawal, V., Liu, Yinling; Christensen, K., Dominy, B.,
"Effects from Metal Ion in Tumor Endothelial Marker 8 and Anthrax Protective Antigen: BioLayer Interferometry Experiment and Molecular Dynamics Simulation Study", *Journal of Computational Chemistry*, **38**, 1183-1190 (2017), DOI: 10.1002/jcc.24768

41. Lin, S., Voyton, C., Morris, M.T., Ackroyd, P.C., Morris, J.C., and Christensen, K.A., "pH Regulation in Glycosomes of Procyclic Form *Trypanosoma brucei*", *Journal of Biological Chemistry*, **292**, 7795-7805 (2017), DOI: 10.1074/jbc.M117.784173

42. Gordhan, H., Milanes, J., Qiu, Y., Golden, J., Christensen, K., Morris, J., and Whitehead, D., "A targeted delivery strategy for the development of potent trypanocides", *Chemical Communications,* **53**, 8735-8738 (2017), DOI: 10.1039/C7CC03378H

43. Voyton, C.M., Morris, M.T., Ackroyd, P.C., Morris, J.C., and Christensen, K.A., "A FRET Flow Cytometry-Based High Throughput Screening Assay to Identify Disrupters of Glucose Levels in *Trypanosoma brucei*", *ACS Infectious Disease,* **4**, 1058-1066 (2018), DOI: 10.1021/acsinfecdis.8b00058

44. Voyton, C.M., Morris, M.T., Ackroyd, P.C., Suryadi, J., Crowe, L., Morris, J.C., and Christensen, K.A., "A FRET flow cytometry method for monitoring cytosolic and glycosomal glucose in living kinetoplastid parasites", *PLOS Neglected Tropical Disease*, **12**, e0006523 (2018), DOI: 10.1371/journal.pntd.0006523

45. Voyton, C.M., Choi, J., Qiu, Y., Morris, M.T., Ackroyd, P.C., Morris, J.C., and Christensen, K.A., "A microfluidic-based microscopy platform for continuous interrogation of *Trypanosoma brucei* during environmental

perturbation", *Biochemistry*, **58**, 875-882 (2019), DOI: 10.1021/acs.biochem.8b01269

46. Doyagüez, E., Carrero, P., Madrona, A., Martínez-Gualda, P., Martínez-Gualda, B., Camarasa, M-J., Jimeno, M.L., Bennallack, P., Finnell, J., Tsang, T., Christensen, K., San-Felix, A., Rogers, M., "Galloyl carbohydrates with antiangiogenic activity mediated by Capillary Morphogenesis Gene 2 (CMG2) protein binding" *Journal of Medicinal Chemistry*, **62**, 3958-3970 (2019), DOI: 10.1021/acs.jmedchem.8b01988
47. Hernández, E., Ortega-Villarreal, A., Jensen, C., Valdivia-Berroeta, G., Garrard, S., López, I., Smith, S., Christensen, K., Reyes-González, M., Michaelis, D., "Synthesis and characterization of ethyl benzotriazolyl acrylate-based D–π–A fluorophores for live cell-based imaging applications", *RSC Advances*, **9**, 8759-8767 (2019), DOI: 10.1039/C9RA00108E
48. Finnell, J.G.*, Tsang, T.-M.*, Cryan, L., Garrard, S., Lee, S.-L., Ackroyd, P.C., Rogers, M.S., Christensen, K.A., "A canstatin-derived peptide provides insight into the role of Capillary Morphogenesis Gene 2 in angiogenic regulation and matrix uptake", *ACS Chemical Biology*, **15**, 587-596 (2020). DOI: 10.1021/acschembio.0c00064
49. Warr, C., Valdoz, J.C., Bickham, B.P., Knight, C.J., Franks, N.A., Chartrand, N., Van Ry, P.M., Christensen, K.A., Nordin, G.P., Cook, A.D., "Biocompatible PEGDA Resin for 3D Printing", *ACS Applied Bio Materials*, **3**, 2239-2244 (2020), DOI: 10.1021/acsabm.0c00055
50. Johnson, D.K., Magoffin, W., Myers, S.J., Finnell, J.G., Hancock, J.C., Orton, T.S., Persaud, S.P., Christensen, K.A., and Weber, K.S, "CD4 Inhibits Helper T-cell Activation at a Lower Affinity Threshold for Full-length T-cell Receptors than Single Chain Signaling Constructs", *Frontiers in Immunology,* (2020), DOI: 10.3389/fimmu.2020.561889
51. Hernández-Fernández, E., Ortega-Villarreal, A.S., García-López, Ma.C. Chan-Navarro, R., Garrard, S., Valdivia-Berroeta, G.A., Smith, S.J., Christensen, K.A., Michaelis, D.J., "Synthesis and Characterization of Benzotriazolyl Acrylonitrile Analogs-based Donor-acceptor Molecules: Optical Properties, in vitro Cytotoxicity, and Cellular Imaging", *Dyes and Pigments*, **189**, 109251, (2021), DOI: 10.1016/j.dyepig.2021.109251
52. Ost, K.S., O'Meara, T.R., Stephens, W.Z., Chiaro, T., Zhou, H., Penman, J., Bell, R., Catanzaro, J.R., Song, D., Singh, S., Call, D.H., Hwang-Wong, E., Hanson, K.E., Valentine, J.F., Christensen, K.A., O'Connell, R.M., Cormack, B., Ibrahim, A.S., Palm, N.W., Noble, S.M., Round, J.L., "Adaptive Immunity Induces Mutualism between Commensal Eukaryotes",

Nature, **596**, 114-118 (2021), DOI: https://doi.org/10.1038/s41586-021-03722-w

53. Chan,T.-Y., Egbert, C.M., Maxson, J.E., Siddiqui, A., Larsen, L.J., Kohler, K., Balasooriya, E.R., Pennington, K.L. Tsang, T.-M., Frey, M., Soderblom, E.J., Geng, H., Müschen, M., Forostyan, T.V., Free, S., Mercenne, G., Banks, C.J., Valdoz, J., Whatcott, C.J., Foulks, J.M., Bearss, D.J., O'Hare, T., Huang, D., Christensen, K.A., Moody, J., Warner, S.L., Tyner, J.W., Andersen, J.L., "TNK1 is a Ubiquitin-binding and 14-3-3-regulated Kinase that can be Targeted to Block Tumor Growth", *Nature Communications*, **12**, 1-17 (2021), DOI: https://doi.org/10.1038/s41467-021-25622-3

54. Sanchez-Noriega, J., Chartrand, N., Corpuz-Valdoz, J., Cribbs, C., Jacobs, D., Poulson, D., Viglione, M., Woolley, A., Van Ry, P., Christensen, K., Nordin, G., "Spatially and Optically Tailored 3D Printing for Highly Miniaturized and Integrated Microfluidics", *Nature Communications*, **12**, 5509 (2021), DOI: https://doi.org/10.1038/s41467-021-25788-w

55. Cryan, L.M.*, Tsang, T.-M.*, Stiles, J. Bazinet, L., Lee, S.L., Garrard, S., Madrian, E., Roberts, C., Payne, J., Jensen, A., Frankel, A.E., Ackroyd, P.C., Christensen, K.A., Rogers, M.S., "Capillary morphogenesis gene 2 (CMG2) mediates growth factor-induced angiogenesis by regulating endothelial cell chemotaxis" *Angiogenesis*, **25**, 397-410 (2022) DOI: 10.1007/s10456-022-09833-w

56. Valdoz, J.C., Franks, N.A., Cribbs, C.G., Jacobs, D.J., Dodson, E.L., Knoght, C.J., Poulson, P.D., Garfield, S.R., Johnson, B.C., Hemeyer, B.M., Sudo, MiT., Saunooke, J.A., Kartchner, B.C., Saxton, A., Vallecillo-Zuniga, M.L., Santos, M., Chamberlain, B., Christensen, K.A., Nordin, G.P., Narayanan, A.S., Van Ry, P.M., "Soluble ECM promotes organotypic formation in lung alveolar model" *Biomaterials*, **283**, 121464 (2022), DOI: 10.1016/j.biomaterials.2022.121464

57. Boaks, M., Roper, C., Viglione, M., Hooper, K., Woolley, A.T., Christensen, K.A., Nordin, G.P., "Biocompatible High-Resolution 3D-Printed Microfluidic Devices: Integrated Cell Chemotaxis Demonstration" *Micromachines*, **14**, 1589 (2023), DOI: 10.3390/mi14081589

58. Viglione, M.S., Saxton, A., Downs, D., Woolley, A.T., Christensen, K.A., Van Ry, P.M., Nordin, G.P. "Integrated biocompatible 3D printed isoporous membranes with 7 μm pores" *Lab on a Chip* **24**, 2202-2207 (2024)

59. Call, D.*, Pizarro, S. S.*, Tovey, E., Knight, E., Baumgardner, C., Christensen, K. A., Morris, J. C. "Measuring Dynamic Glycosomal pH

Changes in Living *Trypanosoma brucei*" *J. Vis. Exp.* **203,** e66279 (2024), DOI:10.3791/66279

60. Roden, R.K., Zuniga, N., Wright, J.C., Parkinson, D.H., Jiang, F., Patil, L.M., Burlett, R.S., Nitz, A.A., Rogers, J.J., Pittman, J.T., Virgin, K.L., Ackroyd, P.C., Payne, S.H., Price, J.C., Christensen, K.A. "Human Tear Film Protein Sampling Using Soft Contact Lenses" *Clinical Proteomics* **21**, 23 (2024)

61. Call, D.H., Adjei, J.A., Pilgrim, R., Jeong, J.W., Willis, E.V., Zegarra, R.A., Tapia, N.L., Madalyn Osterhaus, M., Vance, J.A., Voyton, C.M., Call, J.A., Pizarro, S.S., Morris, J.C., Kenneth A Christensen, K.A. "A multiplexed high throughput screening assay using flow cytometry identifies glycolytic molecular probes in bloodstream form *Trypanosoma brucei*" *International Journal for Parasitology: Drugs and Drug Resistance* **26**, 100557 (2024)

Pre-Prints

1. Roden, R.K., Jiang, F., Nitz, A., Zuniga, N., Burlett, R.S., Patil, L.M., Holly Farnsworth, H., Ackroyd, P.C., Payne, S.H., Price, J.C. Christensen, K.A., "Discovery and Detection of Dry Eye Disease Protein Biomarkers Using Soft Contact Lens Tear Sampling" DOI: 10.1101/2023.05.18.23290182
2. Roden, R.K., Jiang, F., Zuniga, N., Alyssa Nitz, A., Burlett, R.S., Wright, J.C., Shelton, C., Reed, A., Latham,S., Roper, C.O., Patil, L.M., Ackroyd, P.C., Payne, S.H., John C. Price, J.C., Christensen, K.A., "Proteomic Specificity of Soft Contact Lenses for Tear Protein Sampling" DOI: 10.1101/2023.05.17.23290135

**Contributed equally to the work*

Other Scholarly Publications

Christensen, K.A., Milne, E.A., and Morris, M.D., "Raman Spectroscopy", *Kirk-Othmer Encyclopedia of Chemical Technology* (1995) 4th ed., vol. 14, 416-430, John Wiley & Sons, New York, NY

PRESENTATIONS

1. Morris, M.D., Christensen, K.A., and Bradley, N.L., "Raman Imaging in the Real World", an invited talk at the Microscopy & Microanalysis '96 Meeting, Minneapolis, MN (August 11-15, 1996)

2. Morris, M.D., Shaver, J.M., Christensen, K.A. and Bradley, N.L., "Getting the Most Out of the Least: Data Transformation in Raman Microspectroscopy and Imaging," an invited talk at the FACSS XXIII Meeting, Kansas City, MO (September 29-October 4, 1996)
3. Christensen, K.A., Shaver, J.M. and Morris, M.D., "Visualizing Dynamic Processes in Two- and Three-dimensions" an invited talk at the FACSS XXIII Meeting, Kansas City, MO (September 29-October 4, 1996)
4. Christensen, K.A., "Multivariate Analysis for Raman Spectroscopy and Imaging" an invited lecture for the Mid-Michigan chapter of the Society for Applied Spectroscopy, Midland, MI (December 4, 1996)
5. Morris, M.D., Jestel, N.L., Christensen, K.A., and Shaver, J.M., "Full Spectrum Raman Imaging of Glasses and Other Materials" an invited talk at the Microscopy and Microanalysis '97 meeting, Cleveland, OH (August 10-14, 1997)
6. Christensen, K.A., Cunningham, K., Lacy, D.B., Collier, R.J., "Resonance Energy Transfer Studies of Anthrax Lethal Toxin Complex" a platform presentation at the Biophysical Society Annual Meeting, San Antonio, TX (March 1-5, 2003)
7. McAbee, J.A. and Christensen, K.A., "Optimization of a Bacillus anthracis Protective Antigen receptor binding assay for high-throughput screening of potential Anthrax and cancer therapies" a poster presented at the 231st ACS National Meeting, Atlanta, GA, March 26-30, 2006
8. Chaurra, A.M. and Christensen, K.A., "Ratiometric Fluorescence Imaging of Water Transport in Subcellular Organelles of Live Cells Using D_2O as a Contrast Agent" a poster presented at the 2006 FACSS National Meeting, Orlando, FL (September 24-28, 2006)
9. Christensen, K.A., Smith, N.E., and Caldwell, T.P., "Monitoring Conformational Rearrangements in *Bacillus anthracis* Protective Antigen Using FRET Microscopy" a poster presented at the 2006 FACSS National Meeting, September 24-28, 2006, Orlando, FL
10. Chumanov, G., Daniels, J., Evanoff, D., Caldwell, T., and Christensen, K., "Sandwich SERS Substrates for Monitoring Germination of Bacillus Spores", a talk presented at the 2006 FACSS National Meeting, Orlando, FL (September 24-28, 2006)
11. Madera, S., Caldwell, T.P., Smith, N.E., and Christensen, K.A., "Monitoring conformational rearrangements in Bacillus anthracis Protective Antigen

using FRET microscopy" a poster presented at the 233rd ACS national meeting, in Chicago, IL, March 25-29, 2007

12. Evanoff, D.D. Jr., Heckel, J., Caldwell, T.P., Christensen, K.A., and Chumanov, G. "Monitoring DPA release from a single germinating *Bacillus subtilis* endospore via surface-enhanced Raman scattering microscopy" a poster presented at the 234th ACS National Meeting, Boston, MA, August 19-23, 2007
13. Christensen, K.A., Rogers, M.S., He, J., and Animula, N., "Homogenous Fluorescence Resonance Energy Transfer Assays for Identification of Inhibitors of Angiogenesis and Anthrax Toxin Receptors Using High Throughput Screening", a poster presented at the FACSS National Meeting, Memphis, TN, October 14-18, 2007.
14. Christensen, K.A., Rogers, M.S., and Caldwell, T.P, "Assays for Identification of Inhibitors of Angiogenesis and Anthrax Toxin Receptors Using High Throughput Screening" an invited talk presented at the Southeastern Regional Meeting of the American Chemical Society (SERMACS), Greenville, SC, October 24-27, 2007.
15. Animula, N., Marcus, R.K., and Christensen, K.A., "Qualitative and Semi Quantitative Micro-Volume Lateral Flow Assays Using Capillary-Channeled Films" a poster presented at the Southeastern Regional Meeting of the American Chemical Society (SERMACS), Greenville, SC, October 24–27, 2007.
16. Date, M.S., Dominy, B.N., and Christensen, K.A., "Flexibility in Polyproline II and Calibration Tool for Förster Resonance Energy Transfer Experiments" a poster presented at the Southeastern Regional Meeting of the American Chemical Society (SERMACS), Greenville, SC, October 24–27, 2007.
17. Bull, B.J., Caldwell, T.P., and Christensen, K.A., "Development of a High-Throughput Screening Assay to Identify Inhibitors of Tumor Endothelial Marker 8 TEM8 and Angiogenesis" a poster presented at the Southeastern Regional Meeting of the American Chemical Society (SERMACS), Greenville, SC, October 24–27, 2007.
18. He, J., Caldwell, T.P., and Christensen, K.A., "Screening for Inhibitors of Capillary Morphogenesis Gene Protein 2 CMG2 and Angiogenesis" a poster presented at the Southeastern Regional Meeting of the American Chemical Society (SERMACS), Greenville, SC, October 24–27, 2007.

19. Chaurra, A., Gutzman, B., and Christensen, K.A., "Measuring Water Transport across Endocytic Organelle Membranes in Living Cells Using Ratiometric Fluorescence Imaging" a talk given at Pittcon 2008, New Orleans, LA, March 2-7, 2008.
20. Bull, B.J., Caldwell, T.P., and Christensen, K.A., "Quantifying Affinities of Membrane Associated Protein-Protein Interactions Using Ratiometric and Fluorescence Resonance Energy Transfer Imaging" a talk given at Pittcon 2008, New Orleans, LA, March 2-7, 2008.
21. Everett, A., Marcus, R.K., Brown, P., Christensen, K.A., and Kornev, K., "Hydrodynamic Study in Capillary-Channeled Polymer (C-CP) Films Using Fluorescently Labeled THP-1 Cells" a talk given at Pittcon 2008, New Orleans, LA, March 2-7, 2008.
22. Christensen, K.A., Bull, B.J., and Caldwell, T.P., "Quantification of Affinity and Kinetics of Membrane Associated Proteins by Ratiometric Imaging and Flow Cytometry" a poster presented at FACSS 2008, Reno, NV, September 28-October 2, 2008.
23. Christensen, K.A., Kandel, P., Fernando, L., and McNeill, J., "Intracellular Delivery and Localization of Luminescent Conjugated Polymer Nanoparticles" a poster presented at FACSS 2008, Reno, NV, September 28-October 2, 2008.
24. Christensen, K.A., "Capillary-Channeled Polymer Films as a Platform for Cellular Analysis" an invited talk presented at FACSS 2008, Reno, NV, September 28-October 2, 2008.
25. Christensen, K.A. and Chaurra, A., "A Mechanism for Water Transport across Endocytic Organelle Membranes in Living Cells" a poster presented at FACSS 2008, Reno, NV, September 28-October 2, 2008.
26. Chaurra, A. and Christensen, K.A., "Measuring Water Transport across Organelle Membranes to Probe the pH-Dependent Function of Aquaporins in Endocytic Compartments" an oral presentation presented at Pittcon 2009, Chicago, IL, March 8-13, 2009.
27. Kandel, P., Zheng, Y., Fernando, L., McNeill, J., and Christensen K.A., "Bioconjugation of π-Conjugated Polymer Nanoparticles as Targeted Probes for Fluorescence Microscopy of Living Cells" an oral presentation presented at Pittcon 2009, Chicago, IL, March 8-13, 2009.
28. Bull, B.J., Fernando, L., McNeill, J., and Christensen, K.A., "Determining the Cytotoxicity and Phototoxicity of Fluorescent π-Conjugated Polymer

Nanoparticles" an oral presentation presented at Pittcon 2009, Chicago, IL, March 8-13, 2009.

29. Christensen, K.A., "Capillary-Channeled Polymer Films as a Platform for Cellular Analysis and Ultra-Sensitive Bioassays" an oral presentation presented at Pittcon 2009, Chicago, IL, March 8-13, 2009.
30. Christensen, K.A., "Polymer Fiber-Based Platforms for Measuring Gene Expression" a poster presented at FACSS 2010, Raleigh, NC, October 17-21, 2010.
31. Kandel, P.K. and Christensen, K.A., "Highly Fluorescent Conjugated Polymer Nanoparticle for Measuring pH in Acidic Compartments of Living Cells" a poster presented at FACSS 2010, Raleigh, NC, October 17-21, 2010.
32. Kandel, P.K., Fernando, L.P., and Christensen, K.A., "Conjugated Polymer Nanoparticles for Sensitive Fluorescence Detection of mRNA", an oral presentation to be presented at Pittcon 2011, Atlanta, GA, March 13-18, 2011.
33. Lin, S., Kandel, P.K., Fernando, L.P, and Christensen, K.A., "Cellular Imaging with Sugar-Coated Conjugated Polymer Nanoparticles", an oral presentation to be presented at Pittcon 2011, Atlanta, GA, March 13-18, 2011.
34. Obondi, C.O., Bostic, R.T., and Christensen, K.A., "Capillary-channeled Polymer Fibers as a Platform for Detection of Disease Biomarkers", a poster presentation to be presented at Pittcon 2011, Atlanta, GA, March 13-18, 2011.
35. Nguyen, K.T., Yang, Z., Fernando, L.P., Christensen, K.A., Moeller, W., and Anker, J.N., "Rotational Tracking of Single Plasmonic and Fluorescent Particles in Living Macrophages" a poster presentation to be presented at Pittcon 2011, Atlanta, GA, March 13-18, 2011.
36. Pittman, J.J., Christensen, K.A., and Marcus, R.K., "Functionalization of Capillary-channeled Polymer (C-CP) Fibers Using Adsorption of Polyethylene Gylcol (PEG) for High Performance Liquid Chromatography (HPLC) Stationary Phases" a poster presentation to be presented at Pittcon 2011, Atlanta, GA, March 13-18, 2011.
37. Cryan, L.M, Habeshian, K., Christensen, K., and Rogers M., "A high-throughput assay for tumor endothelial marker-8 (TEM8/ANTXR1) inhibitors" an oral presentation to be presented at AACR 2011, Orlando, FL, April 2-6, 2011

38. Fernando, L.P., Obondi, C.O., Bostic, R.T., Kornev, K.G., and Christensen, K.A., "Micro- and nano-fiber bundles as a platform for sensitive detection of biomacromolecules" an oral presentation to be presented at the International Symposium on New Frontiers in Fiber Materials Science; Charleston, SC, October 11-13, 2011
39. Lin, S., Christensen, K.A., Morris, M., Morris, J., "Ratiometric Sensing in Trypanosoma Burcei Glycosomes" an oral presentation at Pittcon 2012, Orlando, FL, March 11-15, 2012
40. Khan, N., Marcus, R.K., Christensen, K.A., " Capturing Affinity-Tagged Cells Using Capillary-Channeled Polymer (C-CP) Fiber Devices" an oral presentation at Pittcon 2012, Orlando, FL, March 11-15, 2012
41. Kandel, P.K., Latham, P., Fernando, L.P, and Christensen, K.A., " Passivation of Conjugated Polymer Nanoparticles for Sensitive Detection of Biomarkers" an oral presentation at Pittcon 2012, Orlando, FL, March 11-15, 2012
42. Christensen, K.A., "Capillary-channeled polymer fibers and nanofiber yarns as a platform for detection of biomolecular interactions" an invited presentation at the 2012 Summer Workshop of the Biomolecular Interaction Technologies Center at the University of New Hampshire, Durham, NH, July 16, 2012
43. Christensen, K.A., "Capillary-channeled polymer fibers and nanofiber yarns for detection of biomolecular interactions" an invited presentation at Georgia Southern University, Department of Chemistry, Statesboro, GA, October 11, 2012
44. Christensen, K.A., "Spectroscopic Probes and Sensors for Analysis of Live Cells" an invited presentation at North Dakota State University, Department of Chemistry and Biochemistry, Fargo, ND, January 31, 2013
45. Christensen, K.A., "Conjugated Polymer Nanoparticles for Cell Labeling and Sensing" an invited presentation at the University of North Carolina—Charlotte, Charlotte, NC, March 14, 2013
46. Christensen, K.A., "Targeting Anthrax Toxin Receptors to Inhibit Angiogenesis" an invited presentation at Clemson University, Department of Genetics and Biochemistry, Clemson, SC, March 29, 2013
47. Khan, N., Ackroyd, P.C., and Christensen, K.A., "Rapid pull-down assay using capillary-channeled polymer fiber stationary phases" a poster presented at the Fiber Society's Fall Symposium, Clemson, SC, October 23-25, 2013

48. Lin, S., Morris, M.T., Morris, J.C., Christensen, K.A., "ATP dependence of Glycosomal pH Regulation in *T. brucei*" an oral presentation at the Cell Biology of Eukaryotic Pathogens Symposium, Clemson, SC, October 25, 2013
49. Christensen, K.A., "Peptide targeting of pH sensors to Trypanosome glycosomes" an invited presentation at Brigham Young University, Provo, UT, January 14, 2014
50. Lin, S., Morris, M.T., Morris, J.C., Christensen, K.A., "Peptide-mediated Ratiometric Sensing of pH Regulation in *Trypanosoma brucei* Glycosomes" an oral presentation to be presented at Pittcon 2014, Chicago, IL, March 2-6, 2014
51. Lin, S., Morris, M.T., Morris, J.C., Christensen, K.A., "Acidification of the *T. brucei* Glycosome during Starvation" a poster presentation at the 24th Annual Molecular Parasitology and Vector Biology Symposium, Athens, GA, April 29, 2014
52. Christensen, K.A., "Targeting Anthrax Toxin Receptors to Inhibit Pathological Vessel Growth" an invited presentation at Idaho State University, Department of Chemistry, September 11, 2015
53. Christensen, K.A., "Targeting Anthrax Toxin Receptors to Inhibit Pathological Vessel Growth" an invited presentation at Brigham Young University-Idaho, Department of Chemistry, December 10, 2015
54. Christensen, K.A., "Targeting Anthrax Toxin Receptors to Inhibit Pathological Vessel Growth by Blocking Interactions with Extracellular Matrix Proteins" an invited presentation at Utah Valley University, February 22, 2016
55. Voyton, C.M., Ackroyd, P.C., Morris, J.C., Morris, M.T., and Christensen, K.A., "FRET Cytometric Method for High Throughput Screening of Potential Metabolic Inhibitors in *Trypanosoma brucei*" a poster presentation at the ASBMB 2016 Annual Meeting, San Diego, CA, April 2-6, 2016
56. Finnell, J., Tsang, T.M., Rogers, M.S., and Christensen, K.A., "Using bio-layer interferometry to identify CMG2/ANTXR2 as a novel receptor for the anti-angiogenic collagen IV NC1 fragments" a poster session at the ForteBio Users Meeting, South San Francisco, CA, April 21, 2016
57. Christensen, K.A., "Understanding Glycosome Function from Biology to Therapeutic Targeting in *Trypanosoma brucei*" an invited presentation at Southern Virginia University, November 16, 2016

58. Tsang, T.M., Lefler, J., Voyton, C., and Christensen, K., "Utilizing Microfluidics Devices to Monitor Endothelial Cell Migration" an oral and poster presentation at the Inaugural Biomedical Engineering Western Regional Conference, Provo, UT, January 19-20, 2017
59. Voyton, C., Evans, P., and Christensen, K. "Using FRET Flow Cytometry for analyzing glucose metabolism in *Trypanosoma brucei*" an oral presentation at the Utah Conference for Undergraduate Research, Orem, UT, February 17, 2017
60. Voyton, C., Ackroyd, P.C., Morris, M.T., Morris, J.C., and Christensen, K.A., "A FRET Cytometry High Throughput Screen to Identify Specific Inhibitors of Glucose Uptake and Distribution in *Trypanosoma brucei*" a platform presentation at the 2017 Kinetoplastid Cell and Molecular Biology—An International Conference, Woods Hole, MA, April 22-26, 2017
61. Christensen, K.A., Voyton, C., Ackroyd, P.C., Morris, M.T., Morris, J.C., "FRET Flow Cytometry and Microscopy for Monitoring Glucose in *Trypanosoma brucei*", a platform and poster presentation at the 2017 Kinetoplastid Cell and Molecular Biology—An International Conference, Woods Hole, MA, April 22-26, 2017
62. Christensen, K.A., Voyton, C., Choi, J., Biggs, C., Qiu, Y., Morris, M.T., Ackroyd, P.C., and Morris, J.C., "Using FRET Flow Cytometry to Measure Cytosolic and Glycosomal Glucose and Screen for Inhibitors of Glucose Uptake and Metabolism in *Trypanosoma brucei*", a poster presentation at the 2017 Cell Biology of Eukaryotic Pathogens, Anderson, SC, October 19-20, 2017
63. Christensen, K.A., "Targeting Anthrax Toxin Receptor 2 with Fragments of Collagen IV to Inhibit Pathological Vessel Growth" and invited presentation at Weber State University Department of Chemistry and Biochemistry, Ogden, UT
64. Voyton, C., Vance, J., Call, D., Ackroyd, C., Morris, J., and Christensen, K., "Application of metabolite-specific fluorescent protein biosensors for multiplexed high-throughput screening of compounds active against *Trypanosoma brucei* and other kinetoplastid parasites" a poster presentation at the Keystone Symposia on Molecular and Cellular Biology-- 21st-Century Drug Discovery and Development for Global Health in Berlin, Germany, October 17-20, 2018.
65. Voyton, C., Vance, J., Call, D., Ackroyd, C., Morris, J., and Christensen, K., "A Cellular Barcoding Method for the Simultaneous Interrogation of

Multiple Metabolically Relevant Analytes in *Trypanosoma brucei* " a poster presentation at the Cellular Biology of Eukaryotic Pathogens, Anderson, SC October 24-26, 2018.

66. Christensen, K.A. "Fluorescent protein biosensors for drug discovery and metabonomics in the eukaryotic parasite *Trypanosoma brucei*" an invited presentation at Brigham Young University, Department of Microbiology and Molecular Biology, October 25, 2018.
67. Garrard, S.R., Gold, M., Tsang, T.M., Lee, S.-L., Fogg, D., Dannenberg, R., Rogers, M.S., Christensen, K.A., "CMG2 Regulates Angiogenesis Through Interactions with Extracellular Matrix", a poster presented at the 2019 Association of Cancer Researchers, Atlanta, GA, April 2019.
68. Vance, J., Voyton, C., Call, D., Christensen, K., "Flow Cytometry-Assisted Fluorescent Barcoding for Simultaneous Interrogation of Multiple Analytes in Live Kinetoplastid Parasites" a poster presented at the 2019 Kinetoplastid Cell and Molecular Biology—An International Conference, Woods Hole, MA, April 2019
69. Call, D.H., Vance, J.A., Voyton, C.M., Choi, J., Parker, G., Ackroyd, P.C., Morris, M.T., Werbovetz, K., Golden, J., Morris, J.C., Christensen, K.A., "Using FRET metabolite sensors to develop Trypanosoma brucei Glucose Uptake and Glycolysis Inhibitors" a poster presented at the 2019 Kinetoplastid Cell and Molecular Biology—An International Conference, Woods Hole, MA, April 2019
70. Garrard, S., Rogers, M.S., Christensen, K.A., "Capillary Morphogenesis gene 2 mediates multiple pathways of growth factor-induced angiogenesis through regulation of endothelial cell chemotaxis" a poster presented at the 2019 Gordon Research Conference on Angiogenesis, Newport, RI, August 2019.
71. Chartrand, N.A.*, Sanchez, J.*, Valdoz, J.*, Boaks, M., Chamberlain, B., Silva, E., Knight, C.J., Franks, N.A., Nordin, G., Van Ry, P.M. and Christensen, K.A., "High Resolution 3D-Printed Microfluidics for In Vitro Co-Culture and Dose-Response Testing of Sphereoids" a poster presented at the 2019 Chemical and Biological Defense Science & Technology conference, Cincinatti, OH, November 2019.
72. Christensen, K.A., "Anthrax Toxin Receptor 2 Mediates Pathological Blood Vessel Growth by Regulating Endothelial Cell Chemotaxis" an invited presentation at Brigham Young University-Hawaii Department of Natural Sciences, Laie, HI, November 2019.

73. Christensen, K.A., "Anthrax Toxin Receptor 2 Mediates Pathological Blood Vessel Growth by Regulating Endothelial Cell Chemotaxis" an invited presentation at Hawaii Pacific University Department of Natural Science,Kaneohe, HI, November 2019.
74. Christensen, K.A., "Anthrax Toxin Receptor 2 Mediates Pathological Blood Vessel Growth by Regulating Endothelial Cell Chemotaxis" an invited presentation at the University of Hawaii-Manoa, Department of Chemistry, Honolulu, HI, November 2019.
75. Christensen, K.A., "Anthrax Toxin Receptor 2 Mediates Pathological Blood Vessel Growth by Regulating Endothelial Cell Chemotaxis" an invited presentation at the University of Hawaii-Hilo Department of Chemistry, Hilo, HI, November 2019.
76. Call, D.H., Lin, H.J., Patil, L., Price, J.C., Christensen, K.A., "Determining Drug Targets in *Trypanosoma brucei* by Thermal Proteome Profiling" a poster presented at the 2021 Experimental Biology meeting, Hosted virtually due to the COVID-19 pandemic, April 2021.
77. Nordin, G.P., Sanchez Noriega, J.L., Corpuz Valdoz, J., Chartrand, N.A., Viglione, M.S., Woolley, A.T., Van Ry, P.M., Christensen, K.A., "Reenvisioned 3D Printing as an Enabler for Extreme Microfluidic Component Miniaturization and Integration" an invited keynote presentation at the μTAS 2021 conference, Palm Springs, CA, October 2021.
78. Viglione, M.S., Miner, D.S., Christensen, K.A., Woolley, A.T., Nordin, G.P., "Integrated 3D Printed Isoporous Membranes with 7μm Pores" a poster presented at the μTAS 2021 conference, Palm Springs, CA, October 2021.
79. Boaks, M., Chartrand, N.A., Viglione, M.S., Woolley, A.T., Christensen, K.A., Nordin, G.P., "The Rest of the Story: High Resolution 3D Printing with a Biocompatible Resin for Microfluidics" a poster presented at the μTAS 2021 conference, Palm Springs, CA, October 2021.
80. Call, D.H.*, Tovey, E.*, Eggers, L., Knight, E., Hyer, M., Morris, J., Christensen, K.A., "Glucose Regulates Glycosomal pH in *Trypanosoma brucei* Bloodstream Form", a poster and invited talk at the Cellular Biology of Eukaryotic Pathogens conference, Clemson, SC, October 13-14, 2022.
81. Tovey, E., Call, D.H., Eggers, L., Knoght, E., Morris, J., Christensen, K.A., "Glucose levels signal glycosomal acidification in bloodstream-form Trypanosoma brucei", a poster at the 32nd Molecular Parasitology and Vector Biology Symposium, Athens, GA, May 2, 2023.

82. Boaks, M., Roper, C., Woolley, A.T., Christensen, K.A., Nordin, G.P. "High Resolution, Biocompatible 3D Printing for Microfluidic Cell-Based Assays," 2023 IEEE BioSensors Conference (BioSensors), London, United Kingdom, DOI: 10.1109/BioSensors58001.2023.10280959
83. Truman, J., Jiang, F., Hardy, E., Fowler, J., Christensen, K. "Antagonist-Induced Post-Translational Modifications Result in ANTXR2/CMG2 Degradation and Angiogenesis Inhibition", a poster presented at the 2024 DiscoverBMB meeting, San Antonio, TX, March 23-26, 2024. *This poster won 1st place in an Undergraduate Poster Session*
84. Jiang, F., Fowler, J., Truman, J., Christensen, K. "CMG2 interaction with actin is required for growth factor-induced chemotaxis in endothelial cells", a poster presented at the 2024 DiscoverBMB meeting, San Antonio, TX, March 23-26, 2024.

Presenting author is underlined

**Contributed equally to the work*

PATENTS

1. U.S. Patent # 9,827,552 Marcus, R.K. and Christensen, K.A. "Functionalized Lipid Modification of Polymer Surfaces to Affect Chemical Reactivity/Selectivity" (2017).

SPONSORED RESEARCH

The amount in parentheses is the spendable portion credited to the Christensen Lab

"Understanding anthrax toxin assembly and delivery *in vivo*" Clemson University Research Grant Committee, Principal Investigator, $3,418.80, ($3,418.80), 2004-2005--Completed

"Quantitative FRET microscopy measurement of protein-protein interactions *in vivo*" University of New Hampshire--Biomolecular Interaction Technologies Center, Principal Investigator, $69,705 ($69,705), 2005-2008--Completed

"Assay for Molecules that Inhibit Anthrax Intoxication and Pathologic Angiogenesis" National Institutes of Health, Principal Investigator, $88,207 ($88,207), 2005-2007--Completed

"Assay for Inhibitors of Angiogenesis and Anthrax Toxin Receptor 1" National Institutes of Health, Sub-award Principal Investigator, $216,788 ($84,325), 2007-2009--Completed

"Polymer Dot Nanoparticles for Detection of Single Molecules in Live Cells" National Institutes of Health, Co-Investigator, $960,000 ($480,000), 2007-2012--Completed

"Novel Angiogenesis Inhibitors Targeting the Anthrax Toxin Receptors" National Institutes of Health, Sub-award Principal Investigator, $1,841,854 ($546,315), 2008-2014--Completed

"Antiangiogenic Natural Products Targeting Anthrax Toxin Receptor 2" Department of Defense—Breast Cancer Research Program Synergistic Idea Award Program, Sub-award Principal Investigator, $520,498 ($86,611), 2008-2010--Completed

"Bioconjugation of Carbon Nanoparticles for Cell-Based Imaging and Flow Cytometry" a small restricted receipt project with SELAH Technologies, Inc., Principal Investigator, $7,000 ($7,000), 9/2008-12/2008--Completed

"Functional fiber-based platforms for cell and biopolymer probes, analyses, and disease diagnostics" Center for Advanced Engineering Fibers and Films, Co-Principal Investigator, $54,480 ($11,875), 9/2008-6/2009--Completed

"Advanced Functional Membranes for Protein Chromatography" Center for Advanced Engineering Fibers and Films, Co-Principal Investigator, $26,508 ($0), 9/2008-6/2009--Completed.

"Selective Protein Separations Using Modified C-CP Fibers as Stationary Phase" Center for Advanced Engineering Fibers and Films, Co-Principal Investigator, $27,333, ($2,106), 9/2008-6/2009--Completed.

"EFRI-BSBA: Multifunctional Materials and Devices for Distributed Actuation and Sensing" National Science Foundation, Co-Principal Investigator, $1,999,878, ($400,000), 2009-2014--Completed

Supplemental funding for "Novel Angiogenesis Inhibitors Targeting Anthrax Toxin Receptors" National Institutes of Health, Sub-award Principal Investigator, $241,374 ($241,374), 2010-2014--Completed

"pH and glucose sensing in Trypanosoma brucei glycosomes" National Institutes of Health, Principal Investigator (MPI), $381,956 ($220,110), 2013-2016--Completed

"Phage Display Selection of Antiangiogenic CMG2 Cyclic Peptide Antagonists" National Institutes of Health, Principal Investigator, $416,226 ($221,556); 2014-2017--Completed

"Larger-scale results-oriented mentoring" Brigham Young University, Principal Investigator, $40,284 ($40,284); 2016-2017--Completed

"College High-Impact Teaching Support (H.I.T.S): A Revised Approach for Teaching the Advanced Biochemistry Laboratory Classes Emphasizing Procedural, Conditional Thinking, and Conceptual Competencies using a Decision-based Learning Approach" Brigham Young University, Principal Investigator, $7,770 ($7,770); 2016-2017--Completed

"Small molecule and peptide CMG2 antagonists for antiangiogenic therapy" Brigham Young University Translational Medicine Fund, Principal Investigator, $31,500 ($31,500); 2017--Completed

"Identification of kinetoplastid parasite glucose uptake and subcellular localization inhibitors as therapeutic leads" National Institutes of Health, Principal Investigator (MPI), $453,324 ($182,873); 2016-2019--Completed

"High Density 3D Printed Microfluidics With Open Source Resins for Biomedical Applications" National Institutes of Health, Co-Investigator, $426,750 ($54,212); 2017-2020--Completed

"Beckman Scholars" (competitive undergraduate research awards for exceptional undergraduates), Arnold and Mabel Beckman Foundation, Co-investigator and faculty administrator, $143,000 ($0); 2017-2020--Completed

"Kinetoplastid parasites negatively affect health" Faculty-Student Collaboration Grant (FAST), College of Physical and Mathematical Sciences (BYU), $24,620 ($24,620); 2019-2020--Completed

"Cellular targeting of protein biosensors for multiple metabolic pathways as a platform for multiplexed pan-metabolic drug screening" Earl Woolley Faculty Innovation Award, Department of Chemistry and Biochemistry (BYU), $33,609 ($33,609) 2019-2020--Completed

"College High-Impact Teaching Support (H.I.T.S): Introducing Laboratory Automation into the Advanced Biochemistry Laboratory Curriculum" Brigham Young University, College of Physical and Mathematical Sciences, $10,250 ($10,250); 2019-2020--Completed

"High Density 3D Printed Microfluidics for Cell-Based Biomedical Applications" National Institutes of Health, Co-Investigator, $422,234 ($24,529); 2020-2023--Completed

"Development of a Multiplexed Assay in Kinetoplastid Parasites to Identify Probes for Glycolysis" National Institutes of Health, Multi-Principal Investigator, $1,264,009 ($605,586); 2021-2025

"CHIRP: Identifying Biomarkers of Neovascular Eye Diseases in Tear Film" Brigham Young University, College of Physical and Mathematical Sciences, $19,174 ($19,174); 2022

"Functional Requirement of CMG2 for Endothelial Cell Chemotaxis and Resulting Angiogenesis" National Institutes of Health, Subaward Principal Investigator, $2,050,000 ($731,186); 2022-2027

"CMG2 as a target for safe and effective treatment of endometriosis-associate pain" National Institutes of Health, Subaward Principal Investigator, $1,758,450 ($379,628); 2022-2025

"Enolase Inhibitors as Therapeutic Leads for Naegleria fowleri Infections" National Institutes of Health, Subaward Principal Investigator, $467,877 ($5,304); 2023-2025

"High Density 3D Printed Microfluidics for Cell-Based Biomedical Applications" National Institutes of Health, Co-Investigator, $436,967 ($25,771); 2023-2026

GRADUATE STUDENT ADVISING

Past Graduate Advising

Chaurra, A.M. (PhD), "DEVELOPMENT OF A FLUORESCENT PROBE FOR DETERMINATION OF WATER TRANSPORT IN SUBCELLULAR ORGANELLES" December 2009. She is currently in an academic research position in her native Columbia (Universidad del Valle).

Brown, D.K. (PhD), "INCORPORATION OF POLYETHYLENE GLYCOL TO AROMATIC TRIFLURORVINYL ETHER" August 2011. Current employment status unknown.

Khan, N. (MS), "A FLUIDIC FIBER PLATFORM MODIFIED FOR THE SELECTIVE EXTRACTION AND ON FIBER FLUORESCENCE DETECTION OF PROTEINS AND NUCLEIC ACIDS" August 2014. Currently employed at IM Flash in Lehi, UT.

Kandel, P.K. (PhD), "PASSIVATION AND FUNCTIONALIZATION OF CONJUGATED POLYMER NANOPARTICLES WITH HEAD GROUP MODIFIED PHOSPHOLIPIDS AND PROTEINS" August 2014. Currently employed at IRIX Pharmaceuticals in Greenville, SC.

Lin, S. (PhD), "FLUORESCENT METHODS FOR INVESTIGATING METABOLIC PROCESSES IN TRYPANOSOMA BRUCEI" May 2015. Currently a Research Scientist at the Environmental Protection Agency.

Finnell, J. (MS), "ANTHRAX, MATRIX BIOLOGY, AND ANGIOGENESIS: CAPILLARY MORPHOGENESIS GENE 2 MEDIATES ACTIVITY AND UPTAKE OF TYPE IV COLLAGEN-DERIVED ANTI-ANGIOGENIC PEPTIDES" August 2017. Currently employed at Recursion Pharmaceuticals.

Voyton, C. (PhD), "NOVEL METHODS FOR MONITORING GLUCOSE METABOLISM IN *TRYPANOSOMA BRUCEI* USING FLUORESCENT BIOSENSORS" April 2018. Currently a Clinical Scientist at Median Technologies.

Choi, J. (MS), "ENDOCYTOSIS AS AN ADDITIONAL MECHANISM OF GLUCOSE TRANSPORT TO THE HEXOSE TRANSPORTER IN *TRYPANOSOMA BRUCEI*" August 2018. Currently a PhD student at Baylor University (Medical School).

Tsang, T.-M. (PhD), "CAPILLARY MORPHOGENESIS GENE PROTEIN 2 (CMG2) MEDIATES MATRIX PROTEIN UPTAKE AND IS REQUIRED FOR ENDOTHELIAL CELL CHEMOTAXIS IN RESPONSE TO MULTIPLE VASCULAR GROWTH FACTORS" April 2020. Currently a postdoctoral fellow in Dr. Joshua Andersen's laboratory at the Huntsman Cancer Institute, University of Utah.

Lee, S.L. (MS), "INHIBITION OF CELL ADHESION AND ACTIN LOCALIZATION DURING MIGRATION UPON PROTECTIVE ANTIGEN MUTANT LIGAND BINDING TO THE CAPILLARY MORPHOGENESIS GENE 2" April 2022. Currently a Research Associate at Bluerock Therapeutics.

Roden, R. (PhD), "SOFT CONTACT LENS TEAR FILM PROTEOMICS FOR CLINICAL DIAGNOSTIC BIOMARKER DISCOVERY" June 2023. Currently an Assistant Professor at the Rocky Mountain University School of Optometry.

Call, D.H. "DISSECTING TRYPANOSOME METABOLISM BY DISCOVERING GLYCOLYTIC INHIBITORS, DRUG TARGETS, AND GLYCOSOMAL PH REGULATION" April 2024. Currently a postdoctoral fellow at the Pacific Northwest National Laboratory.

Current Graduate Advising

Jiang, F. (Fangfang; PhD)

Asafo Adjei, J. (John; PhD)

Henadeera Achchige, R. (Rashini; PhD)

UNDERGRADUATE STUDENT ADVISING

Past Undergraduate Advising (Only Honors Thesis Students)

Smith, N.E. (B.S. Biochemistry, Honors), "USING FRET TO MEASURE STRUCTURAL CHANGES DURING THE PREPORE TO PORE TRANSITION OF ANTHRAX PROTECTIVE ANTIGEN IN LIVING CELLS", (May 2006)

Simpkins, L. (B.A. Chemistry, Honors), "A NEW QUANTITATIVE FLOW CYTOMETRY ASSAY FOR MEASURING EFFECTS OF SMALL MOLECULE INHIBITORS ON ANTHRAX INTOXICATION USING LF_N-DTA" (December 2009).

Godshaw, B.A. (B.A. Chemistry, Honors), "THERMODYNAMICS AND KINETIC ANALYSIS OF ANTHRAX PROTECTIVE ANTIGEN BINDING THE CELL-SURFACE RECEPTOR TUMOR ENDOTHELIAL MARKER 8" (May 2010).

Morgan, P.F. (B.S. Chemistry, Honors), "ASSESSING NOVEL INHIBITORS OF THE CAPILLARY MORPHOGENESIS GENE-2 PROTEIN" (May 2011).

Zegarra, R.A. (B.S. Biochemistry, Honors), "A FRET FLOW CYTOMETRY-BASED SCREENING ASSAY FOR MULTIPLEX ANALYSIS OF METABOLITES IN T. BRUCEI" (April 2021)

Rogers, R.E. (B.S. Molecular Biology, Honors), "DEVELOPMENT OF A FRET-BASED SCREENING ASSAY TO IDENTIFY SMALL MOLECULE DRUG TARGETS OF LRP1" (April 2021)

Weatherford, J. (B.S. Biochemistry, Honors), "TRACTOR BEAMS AND DISEASE: PROBING REPEAT RNA STRUCTURE THROUGH SINGLE MOLECULE TECHNIQUES" (Expected April 2024)

Current Brigham Young University Undergraduate Mentoring (12)

Name	Major
Cook, Lauren	Biochemistry
Fowler, James	Biochemistry
Gale, Kendon	Mech. Engineering
Hardy, Elliot	Molecular Biology
Hardy, Ethan	Biochemistry
Hess, Troy	Biochemistry
Knabb, Dylan	Biochemistry

Mattingley, Jackson	Biochemistry
Pendley, Caitlin	Biochemistry
Rose, Zac	Biochemistry

Tapia, Cole	Biochemistry
Truman, Jacob	Molecular Biology

Past Brigham Young University Undergraduate Advising (61)

Amaya, F. (Chemistry and Biochemistry), Beck, L. (Chemistry and Biochemistry), Biggs, C. (Chemistry and Biochemistry), Chartrand, N. (Chemistry and Biochemistry), Despain, R. (Chemistry and Biochemistry), Edmunds, A. (Chemistry and Biochemistry), Ekpo, I. (Chemistry and Biochemistry), Ellis, A. (Chemistry and Biochemistry), Enkhzaya Nyam-Ochir (Chemistry and Biochemistry), Evans, P. (Biology), Frost, E. (Electrical & Computer Engineering), Garrard, S. (Chemistry and Biochemistry), Gold, M. (Chemistry and Biochemistry), Halterman, A. (Chemistry and Biochemistry), Hamilton, Z. (Exercise Science), Herrod, S. (Exercise Science), Hicken, T. (Neuroscience), Holladay, A. (Manufacturing Engineering), Hoopes, C. (Chemistry and Biochemistry), Hoopes, J. (Chemistry and Biochemistry), Hughes, Z. (Chemistry and Biochemistry), Hyer, M. (Molecular Biology), Jacobs, Dallin (Electrical Engineering), Jensen, A. (Molecular Biology), Jeong, J. (Chemistry and Biochemistry), Jo, Y. (Chemistry and Biochemistry), Jones, M. (Chemistry and Biochemistry), Larrea, M., (Chemistry and Biochemistry), Latham, S. (Chemistry and Biochemistry), Lefler, J. (Chemistry and Biochemistry), McMullin, P. (Strategic Management), Osterhaus, M. (Molecular Biology), Parker, G. (Chemistry and Biochemistry), Payne, J. (Chemistry and Biochemistry), Pilgrim, R., (Chemistry and Biochemistry), Pittman, J. (Biology), Reed, A. (Finance), Roberts, C. (Chemistry and Biochemistry), Rogers, J. (Exercise Science), Rogers, R. (Molecular Biology), Roper, C. (Biochemistry), Shelton, C., (Chemistry and Biochemistry), Silva, E. (Chemistry and Biochemistry), Simmons, J. (Chemistry and Biochemistry), Smith, K. (Molecular Biology), Stenquist, R. (Chemistry and Biochemistry), Stephens, I. (Exercise Science), Tague, E. (Chemistry and Biochemistry), Taylor, J. (Strategy), Tovey, E. (Neuroscience), Tracey, E. (Chemistry and Biochemistry), Tripp, D. (Chemistry and Biochemistry), Vance, J. (Chemistry and Biochemistry), Wallace, A. (French), Weatherford, J. (Chemistry and Biochemistry), Wheelwright, C. (Exercise Science), Willis, V. (Chemistry and Biochemistry), Wood, E. (Strategy), Wood, T. (Biochemistry), Wright, J. (Molecular Biology), Zegarra, A. (Chemistry and Biochemistry)

TEACHING

Courses Taught

CH 910, Special Topics: Bioanalytical Chemistry (Currently CH 414/614), S05

CH 851, Physical/Analytical Chemistry Student Seminar, S05, F05, S06, F06, S07, F07, S08, F08, S09, F09, S10, F10

CH 313, Quantitative Analysis, F05, F06, F07

CH 414/614, Bioanalytical Chemistry, S06, F07, S11, S13

CH 315/317, Quantitative Analysis Laboratory, F08, F09, F10, F11, F12

CH 1010, Chemistry, Life, the Universe and Everything, F13

CH 1020, Chemistry, Life, the Universe and Everything, S12, S14

CH 105, General Chemistry, F15, F16, F17, SP2019

CH 391, Technical Writing, F19, W21

CH 384, Introductory Biochemistry Laboratory, W22, W23, W24

CH495, Senior Seminar, F22, W23

CH 586, Nucleic Acid Methods, W16

CH 584, Advanced Biochemistry Laboratory I, F16, F17, F18, F19, F20, F21, F22

CH 586, Advanced Biochemistry Laboratory II, F16, W17, W18, W19, W20

CH594R, General Seminar, F22, W23

CH692R, Current Topics, F23, F24

New Course Development

CH 910/CH 414/614, Bioanalytical Chemistry

CH 315/317, Quantitative Analysis Laboratory Curriculum Revision

CH 584/CH 586, Advanced Biochemistry Laboratory I/II (Revision and Integration)

CH 384, Introductory Biochemistry Laboratory (New course)

ADDITIONAL ACTIVITIES

Federation for Analytical Chemistry and Spectroscopy Societies, National Section Chair for Bioanalytical Chemistry for the 2008 FACSS Meeting in Reno, NV

American Chemical Society, Symposium co-chair for the 2007 Southeastern Regional Meeting of the American Chemical Society (SERMACS) in Greenville, SC

Ad hoc reviewer for: *ACS Sensors, Acta Biomaterialla, Advanced Functional Materials, Analytical Chemistry, Analyst, Bioconjugate Chemistry, Biomacromolecule, BMC Infectious Diseases, Chemistry - A European Journal, ChemBioChem, ChemComm, Journal of the American Chemical Society, Langmuir, Micromachines, Regulatory Toxicology and Pharmacology, Army Corp of Engineers, National Institutes of Health, National Science Foundation*

Ad hoc member of the NCI Site-Visit Team that reviewed the NCI Mouse Cancer Genetics Program and associated laboratories, May 2022

Ad hoc member of NIH Study Section ZRG1 IDM-V (12): Non-HIV Infectious Agent Detection/Diagnostics, Food Safety, Sterilization/Disinfection and Bioremediation from 2011-2018.

Alternate Chair of NIH Study Section ZRG1 IDM-V (12): Non-HIV Infectious Agent Detection/Diagnostics, Food Safety, Sterilization/Disinfection and Bioremediation from 2013-2015

Ad hoc member of NIH Study Section ZRG1 IMST-G (10) B: Biological Chemistry, Biophysics, and Drug Discovery from 2012-2013.

Chair of NIH Study Section ZRG1 IDM-V (12): Non-HIV Infectious Agent Detection/Diagnostics, Food Safety, Sterilization/Disinfection and Bioremediation from 2015-2018

UNIVERSITY AND PUBLIC SERVICE

Continuing Education

"What I've Learned about the Case Method" Developer and Lecturer for the Office of Teaching Effectiveness and Innovation (Nov/Dec 2005)

Committees

Clemson University

Department:
Member, Physical/Analytical Chemistry Student Seminar (2004-2006, 2010-2012)
Chair, Physical/Analytical Chemistry Student Seminar (2006-2010)
Member, Chemistry Department Newsletter (2005-2006)
Chair, Chemistry Department Newsletter (2006-2007)
Member, Bio-organic Faculty Search Committee (2005-2006)
Member, *ad hoc* Core Curriculum Committee (2007-2008)
Member, Analytical Search Committee (2007-2008)
Member, Undergraduate Curriculum Committee (2010-2015)
Member, *ad hoc* Department Instrumentation Committee (2011-2012)
Member, Safety Committee (2011-2102)
Chair, Graduate Admissions Committee (2013-2015)

University:
Elected Member, CoES Representative to the Clemson Research Council (2011-2014)
Member, *ad hoc* Committee to evaluate the role of the Institutional Biosafety Committee in approving protocols with chemical hazards (2009)
Member, Institutional Biosafety Committee (2013-2015)

Brigham Young University

Department:	Member, Graduate Admissions Committee (2015-2017) Member (Ex officio), Graduate Recruiting Committee (2017-2022) Chair, Graduate Admissions Committee (2017-2022) Chair, Waivers Committee (2017-2022) **Member, Waivers Committee (2022-present)** Graduate Coordinator (2017-2022) Member, Curriculum Committee (2016-2018) **Associate Department Chair (2022-present)**
College:	Member, MEG Review Committee (2015-2017) Member, ORCA Review Committee (2017-2018) Member, Teaching Committee (2016-2017) Chair, Teaching Committee (2017-2020)
University:	None

Public Service

Board of Directors, Administrative Vice-Chair, South Carolina Swimming (2012-2014)

Board of Directors, General Chair, South Carolina Swimming (2014-2015)

Updated September 16, 2024