

**Luther Alexander Liggett**  
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**Education**                      **University of Colorado School of Medicine** Aurora, CO  
Ph.D. in Cell, Stem Cell, and Developmental Biology, 2012-Present

**Case Western Reserve University** Cleveland, OH  
M.S. in Biology May 2012

**Case Western Reserve University** Cleveland, OH  
B.S. in Biomedical Engineering May 2009

**Dublin Coffman HS** Dublin, OH  
May 2005

## **Experience**

*Research Assistant University Hospitals of Cleveland at Case Western Reserve University 2005-2007*

- Responsible for the creation and execution of certain lab protocols involving the study of rat metabolism under dynamic conditions
- Induced cancer in rats to determine certain effects of metabolic stresses on the growth and metastasis of tumor cells
- Performed hindlimb suspension studies of atrophy in reduced gravity environment

*Research Assistant Center for Global Health and Diseases, Case Western Reserve University 2007-2008*

- Isolated and cultured Schistosoma bacteria
- Performed drug screens to identify Schistosoma susceptibilities

*Co-Founder/Director of Technology for CREATE 2006-2008*

- Worked with the Chief of Colorectal Surgery at University Hospitals of Cleveland in order to design assistant technology for use during surgery
- Designed electronic autonomous interface for endoscopic surgery
- Responsible for documentation of individual research
- Maintained the website ([www.case.edu/orgs/create](http://www.case.edu/orgs/create)), and Official documentations for research groups

*Research Assistant Center for Imaging Research, Case Western Reserve University 2008*

- Responsible for the planning and design of a novel handheld Optical Coherence Tomography scanner to be used in oral cancer imaging

*Laboratory Assistant University Hospitals Radiology, NCFR Case Center for Imaging 2008-2009*

- Responsible for the growth and excise of tumor tissue in small animals
- Responsible for synthesis, purification and testing of enzyme-antibody targeting complex

*Research Assistant Cleveland Clinic Lerner Research Institute 2009-2012*

- Investigation of Ezrin/Moesin protein responsibilities in B cell activation
- Investigation of the role the MAPK signaling pathway plays in B cell activation

## **Publications**

L. Alexander Liggett, Anchal Sharma, Subhajyoti De, James DeGregori (2019). FERMI: A novel method for sensitive detection of rare mutations in somatic tissue. **bioRxiv**

Liggett, L.A., and DeGregori, J. (2017). Changing mutational and adaptive landscapes and the genesis of cancer. **Biochim. Biophys. Acta**.

Aivazidis, S., Coughlan, C.M., Rauniyar, A.K., Jiang, H., Liggett, L.A., Maclean, K.N., and Roede, J.R. (2017). The burden of trisomy 21 disrupts the proteostasis network in Down syndrome. **PLoS One** 12, e0176307.

Sullivan, K.D., Lewis, H.C., Hill, A.A., Pandey, A., Jackson, L.P., Cabral, J.M., Smith, K.P., Liggett, L.A., Gomez, E.B., Galbraith, M.D., et al. (2016). Trisomy 21 consistently activates the interferon response. **Elife** 5.

Broome, A.-M., Ramamurthy, G., Lavik, K., Liggett, A., Kinstlinger, I., and Babilion, J. (2015). Optical imaging of targeted  $\beta$ -galactosidase in brain tumors to detect EGFR levels. **Bioconjug. Chem.** 26, 660–668.

Parameswaran, N., Enyindah-Asonye, G., Liggett, L., Shah, N., Bagheri, N., and Gupta, N. 2013. Spatial coupling of JNK activation to the B cell antigen receptor by tyrosine-phosphorylated ezrin. **J. Immunol.** 190:2017-2026.

Broome, A.-M., Lavik, K., Ramamurthy, G., Liggett, L.A., Agnes, R.S., and Babilion, J.P. (2010). Abstract 4341: Tumor imaging via  $\beta$ -galactosidase fragment complementation with a multifunctional targeted-reporter complex. **Cancer Res.** 70, 4341–4341.

Silva, F., Bederman, I., Liggett, A., and Cabrera, M. (2008). Effects of unloading (HS) and loading (exercise training) on overall work capacity in rats. **The FASEB Journal** 22, 121–121.

## **Activities**

- Guest Instructor Cell, Stem Cell, and Developmental Biology 2013-2018
- Co-Reviewed Nucleic Acids Research Manuscript 2016
- Teaching Assistant UCSC Genome Browser Workshop 2014
- Teaching Assistant Core Paper Discussions University of Colorado 2014-2016
- Teaching Assistant Human Physiology at Case Western Reserve University 2012
- Teaching Assistant Human Anatomy at Case Western Reserve University 2011
- Co-Founder and Director of Technology for Case's Rising Engineers and Technological Entrepreneurs (CREATE) 2006-2012

- Biomedical Engineers Society 2005-2012
- Varsity Cross Country 2005-2007
- Varsity Track/Field 2005-2007

#### **Honors/Awards**

- Biochemistry and Molecular Genetics CU SOM Symposium Best Poster Award
- National Research Service Award F31 2015
- Hagerman Travel Award 2014
- Linda Crnic Down Syndrome Grant 2014
- Case Western President's Scholarship 2005-2009
- Silber Cancer Research Grant Candidate 2008
- NASA Transdisciplinary Research on Energetics and Cancer (TREC) 2007-2008
- Armed Forces Health Professions Scholarship (HPSP) 2008
- Cross Country/Track Academic Honors 2005-2009
- Dean's High Honors List 2005-2009

#### **Computational Skills**

- Python
- Go
- Bash
- Linux
- C++

#### **References**

**-James DeGregori Ph.D.** University of Colorado School of Medicine, Department of Biochemistry and Molecular Genetics.

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**-Michael McMurray Ph.D.** University of Colorado School of Medicine, Department of Cell, Stem Cell, and Developmental Biology. Associate Professor of Cell and Developmental Biology.

303-724-6569, [michael.mcmurray@ucdenver.edu](mailto:michael.mcmurray@ucdenver.edu)

**-Lee Niswander Ph.D.** University of Colorado School of Medicine, Department of Cell, Stem Cell, and Developmental Biology. Associate Professor of Cell and Developmental Biology.

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**-Emily Bates Ph.D.** University of Colorado School of Medicine, Department of Cell, Stem Cell, and Developmental Biology, Assistant Professor.

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**-Jay Hesselberth Ph.D.** University of Colorado School of Medicine, Department of Biochemistry and Molecular Genetics, Associate Professor.

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**-Ron Oldfield Ph.D.** Case Western Reserve University, Department of Biology, Instructor of Biology.  
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