

# Zachary L. Sebo

## Curriculum Vitae

### Contact Information

Email  
zachary.sebo@northwestern.edu

Laboratory Address  
303 E Superior St. Floor 5 room 300, Chicago, IL 60611

### Education

#### Graduate

Aug '14 – May '20

Yale University (New Haven, CT)  
PhD  
Molecular, Cellular and Developmental Biology  
Advisor: Matthew Rodeheffer, PhD

#### Thesis

"Embryonic patterning of adipose tissue and hormonal regulation of obesogenic fat mass expansion"

#### Undergraduate

Aug '10 – May '14

University of Missouri-Kansas City (Kansas City, MO)  
Bachelor of Science (*summa cum laude*)  
Major: Biology  
Minor: Chemistry

### Distinctions

NRSA Postdoctoral Fellowship (T32)	2020-present	National Cancer Institute
NSF Graduate Research Fellowship 3 years of funding in 5-year span	2014-2019	National Science Foundation (NSF)
Keystone Symposia Scholarship Symposium on Obesity and Adipose Tissue Biology	2017	Keystone Symposia
Cell and Mol. Biology Training Grant	2016	Yale University
Victoria Finnerty Travel Award	2014	Genetics Society of America
Mayo Clinic Summer Fellowship	2013	Mayo Clinic College of Medicine
Great Lakes National Scholarship	2013	Great Lakes Educational Loan Services
SEARCH Undergraduate Research Grant	2011,'12,'13	University of Missouri-Kansas City
Dean's List	2011-2014	University of Missouri-Kansas City
Chancellor's Scholarship renewed yearly according to academic performance	2010-2014	University of Missouri-Kansas City
Distinguished Scholar Athlete	2011	Summit League
Academic All-League Team	2011	Summit League
George Washington Carver Award	2010	Missouri Department of Education

### Laboratory and Research Experience

Yale University	2014 -present	Matthew Rodeheffer Laboratory
Stowers Institute for Medical Research	2011-2014	Cell Culture & Histology Laboratories
Mayo Clinic	Summer 2013	Yi Guo & Ying Peng Laboratory
University of Missouri-Kansas City	2011-2014	Leonard Dobens Laboratory

### Technical Experience

Insect and mammalian cell culture (including mouse ESCs and primary cells), viral transfection and recombinant plasmid misexpression, plasmid cloning, Western blot, microtome sectioning (paraffin and cryogenic), PCR, RT-qPCR, flow cytometry & FACS, immunohistochemistry, confocal and other forms of microscopy, tissue lipid extraction and quantification, ELISA, mouse and drosophila genetics, ImageJ, R programming.

### Other Experience

- Writing and editing reviews, research articles and grant applications
- Mentored two rotation students and co-mentored one summer undergraduate intern
- Teaching Fellow for MCDB210 Developmental Biology at Yale University (2016, '17)

## Publications

1. **Zachary L. Sebo** and Matthew S. Rodeheffer. "The level of progenitor cell seeding in nascent adipose determines adult fat distribution in androgen insensitive mice." Research article in preparation.
2. Jennifer Kaplan, Rocio Saavedra-Pena, Beatrice Bettozzi, Allison Wing, Jasper de Jong, **Zachary L. Sebo**, Zenan Wang, Brandon Holtrup, Mya King, Valeria Tosti, Nicola Veronese, Francesco Spelta, Edda Cava, Dayna Early, Florian Horenkamp, Luigi Fontana, Michael Rudolph, Matthew S. Rodeheffer. "Dietary linoleic acid drives glucose intolerance independent of obesity." *Nature Metabolism*. Under Revision
3. **Zachary L. Sebo** and Matthew S. Rodeheffer. "Testosterone metabolites differentially regulate obesogenesis and fat distribution." *Molecular Metabolism* Volume 44, February 2021, 101141
4. **Zachary L. Sebo**, Elizabeth Rendina-Ruedy, Gene P. Ables, Dieter M. Lindskog, Matthew S. Rodeheffer, Pouneh K. Fazeli, and Mark C. Horowitz. "Bone marrow adiposity: basic and clinical implications." *Endocrine reviews* 40, no. 5 (2019): 1187-1206.
5. **Zachary L. Sebo** and Matthew S. Rodeheffer. "Assembling the adipose organ: adipocyte lineage segregation and adipogenesis in vivo." *Development* 146, no. 7 (2019): dev172098
6. **Zachary L. Sebo**, Elise Jeffery, Brandon Holtrup, and Matthew S. Rodeheffer. "A mesodermal fate map for adipose tissue." *Development* 145, no. 17 (2018): dev166801.  
Highlighted article: "Mapping Out Adipose Development." *Development* 2018 145: e1701  
<http://dev.biologists.org/content/145/17/e1701>
7. Mark C. Horowitz, Ryan Berry, Brandon Holtrup, **Zachary Sebo**, Tracy Nelson, Jackie A. Fretz, Dieter Lindskog et al. "Bone marrow adipocytes." *Adipocyte* 6, no. 3 (2017): 193-204.
8. Jeffery, Elise, Allison Wing, Brandon Holtrup, **Zachary Sebo**, Jennifer L. Kaplan, Rocio Saavedra-Peña, Christopher D. Church, Laura Colman, Ryan Berry, and Matthew S. Rodeheffer. "The adipose tissue microenvironment regulates depot-specific adipogenesis in obesity." *Cell Metabolism* 24, no. 1 (2016): 142-150.
9. Han B. Lee, **Zachary L. Sebo**, Ying Peng, and Yi Guo. "An optimized TALEN application for mutagenesis and screening in *Drosophila melanogaster*." *Cellular logistics* 5, no. 1 (2015): e1023423.
10. Rahul Das, **Zachary Sebo**, Laramie Pence, and Leonard L. Dobens. "Drosophila tribbles antagonizes insulin signaling-mediated growth and metabolism via interactions with Akt kinase." *PloS one* 9, no. 10 (2014): e109530.
11. **Zachary L. Sebo**, Han B. Lee, Ying Peng, and Yi Guo. "A simplified and efficient germline-specific CRISPR/Cas9 system for *Drosophila* genomic engineering." *Fly* 8, no. 1 (2014): 52-57.

PubMed: <https://www.ncbi.nlm.nih.gov/pubmed/?term=Zachary+Sebo>

Google Scholar: <https://scholar.google.com/citations?user=-Ujzc8QAAAAJ&hl=en&oi=ao>

## Presentations

### Talks

1. **Zachary L. Sebo** and Matthew S. Rodeheffer. "Anti-obesogenic effects of androgen signaling in males." Molecular, Cellular and Developmental Biology Department Research in Progress Symposium. Yale University, New Haven, CT. October 2019.
2. **Zachary L. Sebo**, Elise Jeffery, Brandon Holtrup, and Matthew S. Rodeheffer. "A mesodermal fate map for adipose tissue." Molecular, Cellular and Developmental Biology Department Research in Progress Symposium. Yale University, New Haven, CT. November 2018.
3. **Zachary L. Sebo**, Elise Jeffery, Brandon Holtrup, and Matthew S. Rodeheffer. "A sexually dimorphic mesodermal fate map for adipose tissue." Keystone Symposium on Obesity and Adipose Tissue Biology. Keystone, CO. January 2017.
4. **Zachary L. Sebo** and Matthew Rodeheffer. "A molecular, cellular and tissue-scale analysis of adipose development." Program in Integrative Cell Signaling and Neurobiology of Metabolism Research in Progress Talks. Yale School of Medicine, New Haven, CT. January 2016.

### Posters

1. **Zachary L. Sebo**, Elise Jeffery, Brandon Holtrup, and Matthew S. Rodeheffer. "A sexually dimorphic mesodermal fate map for adipose tissue." Molecular, Cellular and Developmental Biology Departmental Retreat. Woods Hole, MA. November, 2017
2. **Zachary L. Sebo**, Elise Jeffery, Brandon Holtrup, and Matthew S. Rodeheffer. "A sexually dimorphic mesodermal fate map for adipose tissue." Keystone Symposium on Obesity and Adipose Tissue Biology. Keystone, CO. January 2017.
3. **Zachary L. Sebo**, Paige Radtke, Daryl Gohl, Yi Guo and Ying Peng. "Targeted engineering of the drosophila genome using Transcription Activator-Like Effector Nucleases." National Drosophila Research Conference. San Diego, CA. March, 2014.

4. **Zachary L. Sebo**, Paige Radtke, Daryl Gohl, Yi Guo and Ying Peng. "Genome-wide exploration of the epigenetic control mechanisms in development and metabolism using the drosophila InSITE collection." Midwest Drosophila Research Conference. Monticello, IL. November, 2013.
5. **Zachary L. Sebo**, Paige Radtke, Daryl Gohl, Yi Guo and Ying Peng. "Targeted engineering of the drosophila genome using Transcription Activator-Like Effector Nucleases." Mayo Clinic SURF Symposium. Rochester, MN. July, 2013.
6. **Zachary L. Sebo**, Rahul Das and Leonard Dobens. "Examining the role of the gene *tribbles* in insulin signaling using Drosophila as a model." SEARCH Symposium at the University of Missouri-Kansas City. Kansas City, MO. April, 2013.
7. **Zachary L. Sebo** and Leonard Dobens. "The Trbl pseudokinase domain is necessary for C/EBP transcription factor turnover." SEARCH Symposium at the University of Missouri-Kansas City. Kansas City, MO. April, 2012.