

Zachary L. Sebo

Curriculum Vitae

Contact Information

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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

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| 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

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| 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, Northern 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, exposure to RNA-Seq analysis and relevant programming in Python, Ingenuity Pathway Analysis.

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.