

# KYLE T HELZER, PH.D.

Experienced scientist interested in the analysis of large data sets to solve biological problems. I am passionate about computational biology and enjoy breaking down complex problems into solvable pieces as well as learning new technologies. I have a strong background and understanding of both dry lab (Linux, Python, R) and wet lab (molecular biology, CRISPR, cell culture, PCR) skill sets.



## RESEARCH EXPERIENCE

current  
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2019

### Postdoctoral Researcher

Proteovista LLC

📍 Madison, WI

- Lead and performed research and development on novel array-based technology
- Developed custom programs for DNA and protein array generation

2019  
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2013

### Graduate Student

Alarid Laboratory

📍 University of Wisconsin - Madison

- Analyzed the genome-wide binding profile of the phosphorylated estrogen receptor-alpha in the MCF-7 breast cancer cell line via ChIP-seq
- Built custom scripts in python and R for various data analyses and visualization

2013  
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2010

### Research Assistant

Olsen Laboratory

📍 University of Michigan

- Investigated peroxisomal protein import and processing in Arabidopsis thaliana. As an undergraduate, I planned and performed my own experiments and projects as well as analyzed the data.
- Trained and mentored new undergraduate researchers.



## EDUCATION

2019  
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2013

### Ph.D., Cancer Biology

University of Wisconsin - Madison

📍 Madison, WI

- Thesis: Effects of Phosphorylation on the DNA Binding Properties of Estrogen Receptor-alpha
- Advisor: Elaine T. Alarid, Ph.D.

2012  
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2008

### B.S. (with honors), Cellular and Molecular Biology

University of Michigan

📍 Ann Arbor, MI

- Honors Thesis: Processing of Citrate Synthase by the Peroxisomal Protease DEGI5 in Arabidopsis thaliana
- Advisor: Laura J. Olsen, Ph.D.
- Minor in music

## CONTACT

✉ [helzerk@gmail.com](mailto:helzerk@gmail.com)

🐦 [@kylehelzer](https://twitter.com/kylehelzer)

in [linkedin.com/in/kylehelzer](https://www.linkedin.com/in/kylehelzer)

## LANGUAGE SKILLS

Python

R

Bash

Visual Basic

*Last updated on 2020-07-13*



## PUBLICATIONS

- 2019 • **The phosphorylated estrogen receptor  $\alpha$  cistrome identifies a subset of active enhancers enriched for direct ER-DNA binding and the transcription factor GRHL2<sup>1</sup>**  
Molecular and Cellular Biology
- Helzer KT, Szatkowski Ozers M, Meyer MB, Benkusky NA, Solodin N, Reese RM, Warren CL, Pike JW, and Alarid, ET (2019). The Phosphorylated Estrogen Receptor  $\alpha$  (ER) Cistrome Identifies a Subset of Active Enhancers Enriched for Direct ER-DNA Binding and the Transcription Factor GRHL2. Mol. Cell. Biol. 39.
- 2018 • **17 $\beta$ -Estradiol and ICI182,780 Differentially Regulate STAT5 Isoforms in Female Mammary Epithelium, With Distinct Outcomes<sup>2</sup>**  
Journal of the Endocrine Society
- Jallow F, Brockman JL, Helzer KT, Rugowski DE, Goffin V, Alarid ET, and Schuler LA (2018). 17 $\beta$ -Estradiol and ICI182,780 Differentially Regulate STAT5 Isoforms in Female Mammary Epithelium, With Distinct Outcomes. J Endocr Soc 2, 293–309.
- 2015 • **Ubiquitylation of nuclear receptors: new linkages and therapeutic implications<sup>3</sup>**  
Journal of Molecular Endocrinology
- Helzer KT, Hooper C, Miyamoto S, and Alarid ET (2015). Ubiquitylation of nuclear receptors: new linkages and therapeutic implications. J. Mol. Endocrinol. 54, R151-167.







## TEACHING EXPERIENCE

- 2015 • **Oncology 675 - Readings in Cancer Biology**  
University of Wisconsin - Madison  Madison, WI
- Served as a TA for graduate level course on how to critically evaluate scientific literature
  - Course Instructor: Dr. Bill Sugden



## HONORS AND AWARDS

- 2017  
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2015 • **Cancer Biology Training Grant**  
NIH T32 award for training in cancer biology  UW-Madison
- 2012  
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2008 • **University Honors**  
For earning above a 3.5 GPA  University of Michigan
- 2011  
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2010 • **James B. Angell Scholar**  
For earning all As in a semester  University of Michigan
- 2008 • **Regents Scholarship**  
For outstanding academic achievement  University of Michigan



## PRESENTATIONS

- 2019 ● **Genome-Wide Binding Profile of Phosphorylated Estrogen Receptor Reveals Association with Direct DNA Binding**  
ENDO 2019 New Orleans, LA
- 2018 ● **Investigating the Effects of Phosphorylation on the DNA Binding Properties of ER $\alpha$**   
McArdle Student Seminar Series UW-Madison
- 2018 ● **Investigating the Effects of Phosphorylation on the DNA Binding Properties of ER $\alpha$**   
McArdle Student Seminar Series UW-Madison
- 2017 ● **Investigating the Effects of Phosphorylation on the DNA Binding Properties of ER $\alpha$**   
McArdle Student Seminar Series UW-Madison
- 2017 ● **Investigating the Effects of Phosphorylation on the DNA Binding Properties of ER $\alpha$**   
O'Brien Symposium Madison, WI
- 2016 ● **Investigating the Role of Phosphorylation on the DNA Binding Properties of ER $\alpha$**   
McArdle Student Seminar Series UW-Madison
- 2015 ● **Insights into Estrogen Receptor- $\alpha$  Phosphorylation**  
McArdle Student Seminar Series UW-Madison



## POSTERS

- 2017 ● **Defining the Phosphorylated ER $\alpha$  Cistrome**  
Gordon Research Conference on Hormone Dependent Cancers Newry, ME
- 2016 ● **Analysis of the Phosphorylated ER $\alpha$  Cistrome with Multiple pS118-ER Specific Antibodies**  
7th Great Lakes Nuclear Receptor Conference Cleveland, OH
- 2014 ● **The Elephant in the Room**  
McArdle 75th Anniversary Open House UW-Madison
- 2012 ● **Processing of the Peroxisomal Protease DEG15 in *Arabidopsis thaliana***  
MCDB Honors Research Symposium University of Michigan



## CONFERENCES ATTENDED

- 2019 ● **ENDO 2019**  
Morial Convention Center New Orleans, LA
- 2018 ● **8th Great Lakes Nuclear Receptor Conference**  
University of Minnesota Minneapolis, MN
- 2017 ● **Gordon Research Conference on Hormone Dependent Cancers**  
Sunday River Resort Newry, ME

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| 2017 | ● <b>O'Brien Symposium</b><br>University of Wisconsin - Madison                            | 📍 Madison, WI   |
| 2016 | ● <b>7th Great Lakes Nuclear Receptor Conference</b><br>Case Western Reserve University    | 📍 Cleveland, OH |
| 2015 | ● <b>McArdle 75th Anniversary Symposium on Cancer</b><br>University of Wisconsin - Madison | 📍 Madison, WI   |
| 2014 | ● <b>6th Great Lakes Nuclear Receptor Conference</b><br>University of Wisconsin - Madison  | 📍 Madison, WI   |

## LINKS

- 1: <https://pubmed.ncbi.nlm.nih.gov/30455249/>
- 2: <https://pubmed.ncbi.nlm.nih.gov/29594259/>
- 3: <https://pubmed.ncbi.nlm.nih.gov/25943391/>