

CURRICULUM VITAE

ZACHARY J. DEBRUINE

Van Andel Research Institute
333 Bostwick Ave., NE
Grand Rapids, MI 49503

Email: Zach.DeBruine@vai.org

Education

- 2011-2015 B.Sc., Biochemistry and Molecular Biology (ASBMB-accredited), Hope College, Holland, MI (minor, music)
- 2015- Ph.D. Candidate, Cellular and Molecular Biology, Van Andel Institute, Grand Rapids, MI
Anticipated graduation: Spring 2020

Publications

In preparation:

1. [DeBruine ZJ](#), Ma W, Wright S, Bowin CF, Harikumar KG, Miller LJ, Xu HE, Kirschner M, Choi HJ, Schulte G, Melcher K. Frizzled heterodimerization directs Wnt pathway specificity.

Published:

1. Yang S, Wu Y, Xu T, de Waal PW, He Y, Pu M, Chen Y, [DeBruine ZJ](#), Zhang B, Zaidi SA, Popov P, Guo Y, Won Han G, Lu Y, Suino-Powell K, Dong S, Harikumar KG, Miller LJ, Katritch V, Xu HE, Shui W, Stevens RC, Melcher K, Zhao S, Xu F. Crystal structure of Frizzled 4 receptor in ligand-free state. **Nature**. 2018
2. [DeBruine ZJ](#), Ke J, Harikumar KG, Gu X, Borowsky P, Williams BO, Xu W, Miller LJ, Xu HE, Melcher K. Wnt5a promotes Frizzled-4 signalosome assembly by stabilizing cysteine-rich domain dimerization. **Genes and Development**. 2017
3. [DeBruine ZJ](#), Xu HE, Melcher K. Assembly and Architecture of the Wnt/ β -Catenin Signalosome at the Membrane. **Brit J Pharm**. 2017
4. Kunkler B, Salamango D, [DeBruine ZJ](#), Ploch C, Dean S, Grossens D, Hledin MP, Marquez GA, Madden J, Schnell A, Short M, Burnatowska-Hledin MA. CUL5 is required for thalidomide-dependent inhibition of cellular proliferation. **PloS One**. 2018
5. Willis AN, Dean SE, Habbouche JA, Kempers BT, Ludwig ML, Sayfie AD, Lewis SP, Harrier S, [DeBruine ZJ](#), Garrett R, Burnatowska-Hledin MA. Nuclear localization signal sequence is required for VACM-1/CUL5-dependent regulation of cellular growth. **Cell Tissue Res**. 2017

Research Experience

- 2016- Ph.D. Candidate, Van Andel Research Institute, Laboratory of Biology and Biochemistry (Karsten Melcher, Advisor)
- 2016 Graduate Rotation Student, Van Andel Research Institute, Laboratory of Chromatin and Epigenetic Regulation (Scott Rothbart, Advisor)
- 2015 Graduate Rotation Student, Van Andel Research Institute, Laboratory of Biochemistry and Structural Biology (Karsten Melcher, Advisor)
- 2015 Graduate Rotation Student, Van Andel Research Institute, Laboratory of Cell Signaling and Carcinogenesis (Bart Williams, Advisor)
- 2015 Student Intern, Van Andel Research Institute, Laboratory of Structural Biology and

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| | Biochemistry (Karsten Melcher, Advisor) |
| 2013-2015 | Undergraduate Research Assistant, Hope College, Departments of Chemistry and Biology (Maria Burnatowska-Hledin, Advisor) |
| 2011-2012 | Undergraduate Research Assistant, Hope College, Department of Chemistry (Moses Lee, Advisor) |
| 2011 | High School Research Scholar, Hope College, Department of Chemistry (Moses Lee, Advisor) |

Teaching Experience

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| 2018 | Adjunct Professor, Biology Department, Grand Valley State University |
| 2016-2017 | Mentor, Summer Undergraduate Research Program, Van Andel Institute |
| 2014 | Teaching Assistant, Advanced Cell Biology Laboratory, Hope College |
| 2014 | Peer Workshop Leader, Ecology and Evolutionary Biology, Hope College |
| 2013-2014 | Teaching Assistant, General Biology I, Hope College |
| 2014 | Teaching Assistant, Regional Flora and Fauna Laboratory, Hope College |
| 2014 | Molecular Biology Private Tutor, Cardinal Scholar |
| 2013 | Teaching Assistant, Organismal Biology, Hope College |

Awards and Honors

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| 2017 | Van Andel Institute Graduate School Outstanding Student Publication Award |
| 2016 | Travel Award, Wnt2016 Conference |
| 2011-2015 | Presidential Scholarship Award, Hope College |
| 2011-2015 | Distinguished Artist Award, Hope College |
| 2011-2015 | Ruth Haidt Hughes Memorial Organ Scholarship, Hope College |
| 2011-2015 | Michigan Competitive Scholarship |
| 2013-2014 | Summer Research Program Award, Hope College |
| 2013 | Jaeger-Holleman Chemistry Award, Hope College |
| 2011 | High School Summer Research Intern Award, Hope College |

Professional Memberships

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| 2019- | American Society for Pharmaceutical and Experimental Therapeutics (ASPET) |
| 2019- | AAAS/Science Program for Excellence in Science |
| 2017-2018 | British Pharmacological Society (BPS) |
| 2011-2016 | American Society for Biochemistry and Molecular Biology (ASBMB) |

Leadership/Service

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| 2019 | Co-chair, Gordon Research Seminar, Molecular Pharmacology, Ventura, CA |
| 2018-2019 | Graduate Student Association Leadership Council, Van Andel Institute |
| 2018 | Origins of Cancer conference organizing committee, Van Andel Institute |

Oral Presentations

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| 2019 | GPCR Workshop Interactive Discussion, Kona, HI |
| 2019 | Van Andel Institute Graduate Student Seminar Series, Grand Rapids, MI |
| 2017 | Van Andel Institute Graduate Student Seminar Series, Grand Rapids, MI |
| 2016 | Wnt2016 Conference, Brno, Czech Republic (by invitation) |
| 2016 | Van Andel Institute Graduate Student Seminar Series, Grand Rapids, MI |
| 2017 | Aquinas College Biology Seminar, Grand Rapids, MI (by invitation) |
| 2017 | Van Andel Institute Scientific Retreat, Grand Rapids, MI (by invitation) |
| 2014 | Hope College Department of Biology Summer Seminar, Holland, MI |

2014 Hope College Department of Chemistry Summer Seminar, Holland, MI
2014 National Conference of Undergraduate Research, University of Kentucky, KY
2013 Hope College Department of Chemistry Summer Seminar, Holland, MI

Poster Presentations

2019 GPCR Workshop, Kona, HI
2019 Wnt Signaling Gordon Research Seminar and Conference, Mt. Snow, VT
2019 Van Andel Institute Scientific Retreat, Grand Rapids, MI
2019 Molecular Pharmacology Gordon Research Seminar and Conference, Ventura, CA
2017 Wnt Signaling Gordon Research Conference, Stowe, VT
2017 Van Andel Institute Scientific Retreat, Grand Rapids, MI
2017 Frontiers in Osteoporosis Research, Van Andel Research Institute, Grand Rapids, MI
2017 Molecular Pharmacology Gordon Research Seminar and Conference, Lucca, Italy
2016 EMBO Wnt Signaling Conference, Brno, Czech Republic
2016 Van Andel Institute Scientific Retreat, Grand Rapids, MI
2015 American Society for Biochemistry and Molecular Biology Conference, Boston, MA
2015 Hope College Celebration of Undergraduate Research, Holland, MI
2014 West Michigan Regional Undergraduate Research Conference, Grand Rapids, MI
2014 Department of Chemistry Research Symposium, Hope College, Holland, MI
2013 West Michigan Regional Undergraduate Research Conference, Grand Rapids, MI
2013 Department of Chemistry Research Symposium, Hope College, Holland, MI
2012 Hope College Celebration of Undergraduate Research, Holland, MI
2012 Hope College Celebration of Undergraduate Research, Holland, MI
2011 Department of Chemistry Research Symposium, Hope College, Holland, MI

Grant Submissions

NIH F31 Ruth L. Kirschstein Individual Predoctoral NRSA Fellowship Award (scored 16th percentile, impact score 24, not funded. Resubmitted, not funded.)