

Curriculum Vitae

David Wendling Woessner

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Education

University of Utah, Salt Lake City, UT

- **Ph.D. Pharmacology and Toxicology** 2013
- **M.S. Clinical Investigation** 2013

Lewis & Clark College, Portland, OR

- **B.A. Biology and German Studies** 2004
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Employment History

Postdoctoral Fellow, St. Jude Children's Research Hospital, Memphis, TN

- 8/2013 – present

Mentor: Dr. Charles Mullighan, MBBS (Hons), MS.c., M.D. – Pathology

- Established and facilitated collaborations for new projects in the lab
- Developed assays for multiplexed library screening of potential tumor suppressors in pediatric acute leukemia models
- Designed genetically-faithful mouse modeling for childhood acute lymphoblastic leukemia

Graduate Research Assistant, University of Utah, Salt Lake City, UT

- 7/2008 – 8/2013

Primary Mentor: Dr. Carol Lim, Ph.D. – Pharmaceuticals and Pharmaceutical Chemistry

In collaboration with: Dr. Michael Deininger, M.D., Ph.D. – Hematology and Oncology

Thesis Title: New strategies for targeted chronic myeloid leukemia therapy: disrupting BCR-ABL1 dimerization and secondary leukemia-specific pathways.

- Developed and characterized a novel therapeutic mutant derived from the coiled-coil domain of Bcr-Abl for disruption of oncogenic signaling in chronic myeloid leukemia
- Investigated drug combinations targeting secondary pathways for synergistic or additive properties to enhance anticancer activity in vitro
- Determined efficiency and mechanism of action for the coiled-coil peptidomimetic in patient isolated CD34⁺ BCR-ABL1

Senior Research Assistant and Lab Manager, Oregon Health and Science University (OHSU), Portland, OR

- 1/2005 - 7/2008

With Dr. John Brigande, Ph.D. – Oregon Hearing Research Center

- Managed equipment, supplies, scheduling and training of laboratory personnel
- Designed lineage-tracing studies for the mammalian inner-ear in the beta-actin *tva* mouse using retroviral-mediated infection of a DNA variable repeat library
- Determined the developmental and functional effect following delivery of prosensory gene ATOH1 misexpression in the mouse inner ear by confocal and scanning electron microscopy

Research Assistant II, OHSU, Portland, OR

- 6/2004 - 1/2005

With Dr. Zhengfeng Zhou, M.D., Ph.D. – Molecular Medicine Department

- Used PCR and molecular cloning to isolate and study genetic mutations in the hERG voltage-gated potassium channel in vitro
- Investigated which hERG mutations lead to nonsense-mediated mRNA decay

Field Assistant in Hydrogeological Research, University of Montana

- 1/2002; Summers 1999; 2000

With Dr. Johnnie Moore, Ph.D. and William Woessner, Ph.D. – Department of Geology

- Assisted in GIS mapping and placement of; and recording from of shallow ground water monitoring wells

Publications

1. **Woessner DW***, Eiring AM* (*co-first authors), Bruno BJ, Zabriskie MS, Reynolds KR, Miller GD, O'Hare T, Deininger MW, Lim CS. *A coiled-coil mimetic intercepts BCR-ABL1 dimerization in native and kinase-mutant chronic myeloid leukemia*. Leukemia. 2015 Feb 27. doi: 10.1038/leu.2015.53. [Epub ahead of print] PubMed PMID: 25721898.
2. Miller GD, **Woessner DW**, Sirch MJ, Lim CS. *Multidomain Targeting of Bcr-Abl by Disruption of Oligomerization and Tyrosine Kinase Inhibition: Toward Eradication of CML*. Mol Pharm. 2013 Aug 20. [Epub ahead of print] PMID: 23915432.
3. **Woessner DW**, Lim CS. *Disrupting BCR-ABL in Combination with Secondary Leukemia-Specific Pathways in CML Cells Leads to Enhanced Apoptosis and Decreased Proliferation*. Mol Pharm. 2012 Dec 4. [Epub ahead of print]. dx.doi.org/10.1021/mp300405n PMID: 23211037.
4. Constance JE, **Woessner DW**, Matissek, KJ, Mossalam M, Lim CS. *Enhanced and Selective Killing of Chronic Myelogenous Leukemia Cells with an Engineered Bcr-Abl Binding Protein and Imatinib*. Mol Pharm. 2012 Sep 10. Mol Pharm. 2012 Nov 5;9(11):3318-29. PMID: 22957899
5. **Woessner DW**, Lim CS, Deininger, MW. *Development of an Effective Therapy for Chronic Myelogenous Leukemia*. Cancer J. 2011 Nov;17(6):477-86. PMID: 22157291
6. Dixon AS, Miller GD, Bruno BJ, Constance JE, **Woessner DW**, Fidler TP, Robertson JC, Cheatham TE, Lim CS. *Improved Coiled-Coil Design Enhances Interaction with Bcr-Abl and Induces Apoptosis*. Mol Pharm. 2012 Jan 1;9(1):187-95. [Erratum in: Mol Pharm. 2012 May 7;9(5):1535. PMID: 22136227]
7. Moos PJ, Olszewski K, Honeggar M, Cassidy P, Leachman S, **Woessner D**, Cutler NS, Veranth JM. *Responses of human cells to ZnO nanoparticles: a gene transcription study*. Metallomics. 2011 Nov;3(11):1199-211. PMID: 21769377

8. Dixon AS, Pendley SS, Bruno BJ, **Woessner DW**, Shimpi AS, Cheatham TE, Lim CS. *Disruption of Bcr-Abl Coiled-Coil Oligomerization by Design*. J Biol Chem. 2011 Aug 5;286(31):27751-60. PMID: 21659527
9. Moos PJ, Chung K, **Woessner D**, Honeggar M, Cutler NS, Veranth JM. *ZnO particulate matter requires cell contact for toxicity in human colon cancer cells*. Chem Res Toxicol. 2010 Apr 19;23(4):733-9. PMID: 20155942
10. Gubbels SP*, **Woessner DW*** (*co-first authors), Mitchell JC, Ricci AJ, Brigande JV. *Functional auditory hair cells produced in the mammalian cochlea by in utero gene transfer*. Nature. 2008 Sep 25;455(7212):537-41. PMID: 18754012

Book Chapters

1. **Woessner, DW**. *Blinatumomab: A CD19/CD3-Bispecific T-Cell Engaging (BiTE) Antibody for B-Cell Leukemia Immunotherapy – A First-in-Class Agent that Directs T Cells to Tumor Cell Targets*. In: Brunton LL, Chabner BA, Knollmann BC. eds. *Goodman & Gilman's: The Pharmacological Basis of Therapeutics*, 12e. New York, NY: McGraw-Hill; 2011.
<http://accessmedicine.mhmedical.com/content.aspx?bookid=1613&Sectionid=102165138>. Accessed January 11, 2016.
2. **Woessner, DW**. *Programmed Cell Death-1 (PD-1) Pathway Checkpoint Inhibition: Immuno-oncology for Advanced Melanoma*. Goodman & Gilman Online Updates. New York, NY: McGraw-Hill; 2011.
<http://accessmedicine.mhmedical.com/updatesContent.aspx?bookid=537&Sectionid=75622512>. Accessed March 16, 2015.
3. **Woessner DW**. *Ponatinib: Trials and tribulations of a fast-track drug*. Goodman & Gilman Online Updates. New York, NY: McGraw-Hill; 2011.
<http://accessmedicine.mhmedical.com/updatesContent.aspx?bookid=537&Sectionid=48997597>. Accessed March 31, 2014.
4. **Woessner DW**. *FDA Approves Ponatinib, a 3rd Generation Tyrosine Kinase Inhibitor*. Goodman & Gilman Online Updates. New York, NY: McGraw-Hill; 2011.
<http://accessmedicine.mhmedical.com/updatescontent.aspx?bookid=537&Sectionid=44338454>. Accessed March 31, 2014.
5. Brigande JV, Gubbels SP, **Woessner DW**, Jungwirth JJ, Bresee CS. *Electroporation-mediated gene transfer to the developing mouse inner ear*. Methods Mol Biol. 2009;493:125-40. PMID: 18839345

Abstracts (presenting author)

1. **Woessner DW**, Churchman ML, Chen T, Wei L, Zhang J, Zuber J, Mullighan CG. *Identifying novel drivers of childhood acute lymphoblastic leukemia disease and resistance*. Poster. Damon Runyon Fellows' Retreat. Beverly, MA. 10/2014
2. **Miller GM**, **Woessner DW**, Sirch M, Lim CS. *Development of a "dual-hit" combination therapy for CML*. Poster-abstract #2170. American Association for Cancer Research Annual Meeting. Washington D.C. 4/2013
3. **Woessner DW**, Dixon AS, Howard K, Miller GD, Gu Z, Eiring A, Deininger MW, Lim CS. *Synthetically Lethal Combinations for CML Therapy – Disrupting Dimerization of Bcr-Abl and Secondary Leukemia Specific Pathways*. Invited oral presentation. American Association of Pharmaceutical Scientists Annual Meeting and Exposition. Chicago, IL. 10/2012
4. **Woessner DW**, Dixon AS, Howard K, Miller GD, Gu Z, Eiring AE, Deininger MW, Lim CS. *Synthetically Lethal Combinations for CML Therapy – Disrupting Dimerization of Bcr-Abl and Secondary*

- Leukemia Specific Pathways*. Poster-abstract #1175. American Association of Pharmaceutical Scientists Annual Meeting and Exposition. Chicago, IL. 10/2012
5. **Woessner DW**, Miller GM, Dixon AS, Lim CS. *A Biomolecular Multi-Hit Strategy Targeted Against Bcr-Abl*. Invited oral presentation. LS Skaggs Biomedical Research Symposium. Denver, CO. 9/2012
 6. **Woessner DW**, Lim CS. *Combination therapy for chronic myelogenous leukemia: Targeting the BCR-ABL coiled-coil domain and other pathways for synthetic lethality*. Poster-abstract #5615. American Association for Cancer Research 103rd Annual Meeting. Chicago, IL. 4/2012
 7. **Woessner DW**, Dixon AS, Lim CS. *A Multiple Pathway Approach for CML*. Poster. Combined Research Trainee Symposium/17th Annual University of Utah Frank Tyler Fall Medical Student Research Symposium. Park City, UT. 9/2011
 8. **Woessner DW**. *Clinical Elements of the University of Utah HHMI Med into Grad Program-Brining Bedside Problems to the Bench*. Invited oral presentation. 4th Annual Post-Graduate Workshop, 31st Annual Meeting of the American Society for Reproductive Immunology. Salt Lake City, UT. 5/2011
 9. **Woessner DW**, Dixon AS, Lim CS. *Potentiating chronic myeloid leukaemia treatment using oligomeric disruption and RNAi*. Poster-abstract #1780. American Association for Cancer Research 102nd Annual Meeting. Orlando, FL. 4/2011
 10. **Woessner DW**, Dixon AS, Lim CS. *A Multiple Pathway Approach For Treating Chronic Myelogenous Leukemia*. Poster. From the RNA World to the Clinic. HHMI Janelia Farm Research Campus, Ashburn, VA. 9/2010.
 11. **Woessner DW**, Dixon AS, Bruno JB, Cheatham TE, Lim CS. *Pulling CML's Lynchpin*. Poster. Combined Research Trainee Symposium/16th Annual University of Utah Frank Tyler Fall Medical Student Research Symposium. Park City, UT. 9/2010
 12. **Woessner DW**, Honeggar M, Chung K, Veranth J, Moos PJ. *ZnO Nanoparticles: It's the contact that kills*. Poster. 26th Mountain West Regional Chapter of the Society of Toxicology Meeting. Salt Lake City, UT. 10/2009.
 13. Gubbels SP, **Woessner DW**, Mitchell JC, Ricci A, Brigande JV. *Experimental Embryology of the Developing Mammalian Inner Ear*. Invited oral presentation. 6th Molecular Biology of Hearing and Deafness Conference. Cambridge, UK. 7/2007.
 14. Gubbels SP, **Woessner DW**, Mitchell JC, Brigande JV. *In Vivo Electroporation of Mouse Atonal Homolog-1 Generates Supernumerary and Ectopic Hair Cells in the Developing Mouse Inner Ear*. Podium Presentation-abstract #866. 30th Annual Association for Research in Otolaryngology Meeting. Denver, CO, 2/2007

Teaching and Mentoring Experience

Instructor, Pharmacology and Toxicology, University of Utah College of Pharmacy

- *Antineoplastics PHTX 5221* - Pharmacology II, Spring 2012
- *Histamines and Antihistamines PHTX 5221* - Pharmacology II, Spring 2011

Instructor, Pharmaceutics and Pharmaceutical Chemistry, University of Utah College of Pharmacy

- *Polymerase Chain Reaction – Fundamentals and Applications; Workshop on PCR PHCEU 7010* - Molecular Biology, Fall 2011

Mentor, University of Utah

- Globalization of Pharmaceutics Education Network, Fall 2011 – Spring 2012 (Klara Howard); Fall 2012 – Spring 2013 (Monika Sirch)

- College of Pharmacy Summer Program with Juan Diego Catholic High School, Sponsored by the ALSAM Foundation, Summer 2008-2009 (Sam Depres).

Co-Mentor, Oregon Health and Science University

- Saturday Academy - Apprenticeship in Science and Engineering, Summers 2005 - 2007 (Michelle Sachet, Evthokia Hobbs, Ethan Bagley, Kendra Klag)

Volunteering and Service

Student Representative

- 6/2010 - 6/2011: Department of Pharmacology and Toxicology Graduate Training Committee, University of Utah

Steering Committee Member

- 1/2012 - present: Biomarkers in Translational Medicine Focus Group, American Association of Pharmaceutical Scientists

Alumni Relations Coordinator

- 2/2011 - Present: Department of Pharmacology and Toxicology, University of Utah

Chairman - Student Advisory Committee for Faculty Retention Promotion and Tenure

- Fall 2010, College of Pharmacy, University of Utah

Chart Reviewer - Clinical Study on Computerized Physician Order Entry

- 12/2006 - 2/ 2008 - Emergency Department, OHSU

Patient Enrolment Volunteer - Clinical Research Investigative Studies Program

- 9/2004 - 5/2005 - Emergency Department, OHSU

Secretary on the Board of Directors

- 1/2007 - 7/2008 - Silver Star Search and Rescue, Washougal, WA

Peer Reviewer

4/2011 Pharmaceutical Research

Awards and Honors

January 2015-2017: Cookies For Kids Cancer Sponsored Investigator (Mullighan, PI) {\$100,000 }

September 2014-2018: Damon Runyon-Sohn Pediatric Cancer Fellowship Award {\$208,000 }

October 2012: AAPS Graduate Student Symposium in Biotechnology Award

October 2012: Travel Award, University of Utah Graduate School

2012-2013: Graduate Research Fellowship, University of Utah Graduate School {\$15,000}

March 2012: Travel Award, University of Utah Graduate School

2001-2012: Med into Grad Scholar, Howard Hughes Medical Institute & University of Utah {\$21,000}

2010: AAAS Program for Excellence in Science Award Recipient

2002: Undergraduate Outstanding Poster, American Chemical Society Regional Meeting, Portland, OR.

2000 - 2004: Dean's Scholarship, Lewis & Clark College

1998: Eagle Scout, Boy Scouts of America