

## **Paul R. Hosking, MD**

Assistant Professor

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School of Medicine and Dentistry

Department of Pathology and Laboratory Medicine

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### **Appointments:**

- Assistant Professor, University of Rochester Medical Center  
Rochester, New York  
6/1/2021-present
- Western New York BloodCare Laboratory Director  
Buffalo, New York  
10/2021-8/2022
- Clinical Assistant Professor, University at Buffalo Pathology, Inc.  
Buffalo, New York  
5/2018-6/2021  
Associate Staff Physician, University at Buffalo Pathology, Inc.  
Buffalo, New York  
12/2017-4/30/2018
- Research Scientist, Departments of Medicine and Pathology  
Roswell Park Cancer Institute  
Buffalo, New York  
5/2017-11/2017
- Assistant Professor, Division of Hematopathology  
Medical College of Wisconsin, Froedtert Memorial Lutheran Hospital  
Milwaukee, Wisconsin  
7/17/2013-3/31/2017

### **Administrative/Educational Appointments:**

- Medical Director of University of Rochester Medical Center Central Laboratory, West Henrietta, New York, 8/2022-present
- Medical Director of the Hemostasis Thrombosis Lab of WNY at Western New York BloodCare, Buffalo, New York, 10/2021-8/2022.
- Medical Director and Chief of Service of Laboratory Medicine, Erie County Medical Center, Buffalo, New York, 1/2019-present.

- Medical Director of Sections of Laboratory Hematology and Transfusion Services, Erie County Medical Center, Buffalo, New York, 1/2018-present.
- Medical Director of Laboratory Hematology, Kaleida Health, University at Buffalo Pathologists, Inc., Buffalo, New York, 5/2018-present.
- Transfusion Committee Chairman, Erie County Medical Center, 5/2019-present.
- Associate residency training program director (Clinical Pathology), University at Buffalo, Buffalo, New York, 12/2017-present
- Curriculum Committee Member, Jacob's School of Medicine and Biomedical Sciences, 2/2020-present
- Curriculum Advising Task Force, Jacob's School of Medicine and Biomedical Sciences, 2/2020-present
- Pathologist Recertification Individualized Self-Assessment Examination (PRISE)/Resident Question Bank (RQB) Committee, Section of Hematopathology, American Society of Clinical Pathology, 2015-present
- Director of resident hematopathology rotation, University at Buffalo, Buffalo, New York, 12/2017-present.
- Laboratory Medicine medical student clerkship director for 3<sup>rd</sup> and 4<sup>th</sup> year students, University at Buffalo, Buffalo, NY, 9/2018-present.
- Resident coagulation rotation director, Department of Pathology, Medical College of Wisconsin, Milwaukee WI, 7/2014-3/31/2017.
- Clinical pathology medical student clerkship director for 3<sup>rd</sup> and 4<sup>th</sup> year students, Medical College of Wisconsin, Milwaukee WI, 7/2015-3/31/2017.

#### **Resident and Fellow Didactic Lectures:**

- Adverse Reactions to Transfusion (2022)
- Therapeutic Apheresis (2021-present)
- Lecture series on laboratory hemostasis testing (5 lectures, 2017-present)
- Introduction to Hemoglobinopathies (2017-present)
- Molecular testing in acute myeloid leukemia and myelodysplastic syndromes (2013-present)
- Introduction to myeloproliferative neoplasms (2017-present)
- Introduction to Quality Control (2016-present)
- Biannual unknown conference (2013-2017)
- Lymphoma Classification (2015-2017)

#### **Undergraduate Medical Lectures**

- Introduction to Laboratory Medicine, Jacob's School of Medicine and Biomedical Sciences, 2019
- Introduction to Lymphoma (Lymphoma I/Lymphoma II), Jacob's School of Medicine and Biomedical Sciences, 2020-2021

- Histology of the Immune System, Jacob's School of Medicine and Biomedical Sciences, 2019-2021
- Histology of the Spleen and Thymus, Jacob's School of Medicine and Biomedical Sciences, 2019-2021
- Introduction to Hematology, University at Buffalo School of Dental Medicine, 2018-2021
- Lymphomas/Leukemias, University at Buffalo School of Dental Medicine, 2018-present
- Plasma Cell Disorders, University at Buffalo School of Dental Medicine, 2018-present
- Pathology Laboratory Small Group Moderator, all organ systems, Jacob's School of Medicine and Biomedical Sciences, 2018-2020

#### **Other Awards/Accomplishments:**

- Siegel Award, Honorable Mention, for Excellence in Teaching, Jacob's School of Medicine and Biomedical Sciences
- Faculty teacher of the year award in recognition of outstanding educational contributions to the Department of Pathology, Medical College of Wisconsin, 2015-2016
- Honors for Excellence in Research, University of Buffalo School of Medicine and Biomedical Sciences, 2008.
- Gold Humanism Honor Society member, Gold Humanism Honor Society Richard Sarkin/Emeritus Chapter, 2007
- I was a founding member and secretary of the Kappa Mu Epsilon National Honor Society of Mathematics during my undergraduate education.
- I received the "Excellence in Mathematics" award upon graduation from Buffalo State College.

#### **Undergraduate Education:**

- Post-baccalaureate undergraduate  
State University of New York University at Buffalo  
Buffalo, New York  
9/2000-6/2003  
Fulfilling medical prerequisites
- Undergraduate:  
State University of New York College at Buffalo  
Buffalo, New York  
8/1995-5/1999  
Bachelors of Science, Mathematics
- Undergraduate:  
State University of New York College at Fredonia  
Fredonia, New York  
8/1994-12/1994

#### **Medical Education:**

- Fellowship, Hematopathology  
Columbia University Medical Center, New York Presbyterian Hospital  
New York, New York  
7/1/2012-6/30/2013
- Post-doctoral Fellowship  
Columbia University Medical Center  
New York, New York  
7/1/2011-6/30/2012
- Post-graduate Training Program, Clinical Pathology Residency  
Columbia University Medical Center, New York Presbyterian Hospital  
New York, New York  
7/1/2008-6/30/2011
- Medical Student, Doctorate of Medicine  
State University of New York at Buffalo  
Buffalo, New York  
8/2004-5/2008

#### **Licensure and Certifications:**

- Board Certification, Clinical Pathology, 2012
- Medical License, New York State, 2012
- Board Certification, Hematology, 2013
- Medical License, Wisconsin State, 2013
- New York State Certificate of Qualification, Hematology, Transfusion Services, Bacteriology, General Histopathology, Immunohematology, Blood pH and Gases, Clinical Chemistry, Clinical Toxicology, Diagnostic Immunology, Endocrinology, Therapeutic Substance/Quantitative Toxicology, and Virology

#### **Examinations:**

- USMLE Step I, 2006
- USMLE Step II, Clinical Skills, 2008
- USMLE Step II Clinical Knowledge, 2008
- USMLE Step III, 2010
- Clinical Pathology, Board Certification, 2012
- Hematology, Board Certification, 2013

#### **Research Experience:**

- Roswell Park Cancer Institute  
Research Scientist, 5/2017-11/2017  
Under the direction of Dr. Francisco Hernandez, I studied the anti-cancer therapies in mantle cell lymphoma cell lines with the purpose of characterizing the effects on viability as well as the underlying molecular changes which occur. Viability assays, western

blotting, real time polymerase chain reaction, and flow cytometry are currently being used. In addition, we are in the process of developing a mouse model for *in vivo* analysis. In addition, I am currently reviewing cases and collecting data on patients with relapsed/refractory diffuse large B-cell lymphoma with the purposes of studying the relationship between several molecules and clinical outcomes.

- Columbia University Medical Center

Post-doctoral Fellow, 7/2011-6/2012

Under the direction of Dr. Raphael Clynes I worked on identifying the presence of BCR oligomers and their molecular constituents in human samples (paraffin embedded tissue blocks, fresh frozen tissue, fresh lymphoid tissue, and peripheral blood from patients with chronic lymphocytic leukemia). Immortalized lymphoma cell lines were used as well. In culture, we investigated the effects of oxidative and reducing stimuli on these molecular BCR components and on survival. Co-immunoprecipitation with non-reducing Western blotting and flow cytometry were used for these purposes.

- SUNY at Buffalo Research Foundation, Buffalo, New York

Research Technician, 6/2001-5/2008

Under the direction of Dr. Noreen Williams I investigated the ways in which the parasitic protozoan, *Trypanosoma brucei*, accomplishes energy production and mitochondrial function between stages in its life cycle. Experience included cell culture, gene cloning, PCR, transfection, western/northern/Southern blotting analysis, fluorescence microscopy, and biochemical assays.

Average hours per week: 40 (additional time spent in the laboratory as allowed during medical school)

- Roswell Park Cancer Institute, Buffalo, New York

Summer Oncology Research Program participant, 5/2005-8/2005

Under the direction of Dr. Francisco Hernandez I investigated the molecular mechanisms by which Burkitt lymphoma cell lines attain resistance to Rituximab and the effect of the BH3 mimetic obatoclax on these mechanisms. This involved cell culture, RT-PCR, gene cloning, co-immunoprecipitation, and survival analysis. Additional research was performed as elective time during medical school.

Average hours per week: 40

- SUNY at Buffalo Research Foundation, Buffalo, New York

Research Technician, 5/2001-6/2001

Under the direction of Dr. Randall Rasmusson I developed a mathematical model for the cardiac ion channel Kv4.1 and its interaction with quinidine, which was subsequently published (*J Physiol.* (2003), 546.2. pp. 387-401).

### **Publications:**

- Ronen, Shira; Kroft, Steven H.; Olteanu, Horatiu; Hosking, Paul R.; Harrington, Alexandra M. Carcinocythemia: A rare entity becoming more common? A 3-year, single institution series of seven cases and literature review. *International Journal of Laboratory Hematology*, Volume 41, Number 1, 1 February 2019, pp. 69-79(11)

- Robert Schneidewend; **Paul Hosking**; Ruta Brazauskas; Jess Peterson; Carlie Beaudin; Laura Michaelis; Ehab Atallah; Parameswaran Hari; Karen Carlson. Early Fluorescence in situ Hybridization Assessment during Acute Myeloid Leukemia Induction Chemotherapy.
- Christopher Hartley, James W Vaughan, Jason Jarzembowski, Steven H Kroft, Paul Hosking, Alexandra M Harrington, Horatiu Olteanu. CD30 Expression in Monomorphic Posttransplant Lymphoproliferative Disorder, Diffuse Large B-Cell Lymphoma Correlates With Greater Regulatory T-Cell Infiltration. *Acta Haematol* 2018;139:171–175. *Am J Clin Pathol*. 2017 Nov 20;148(6):485-493
- Batdorf B, Kroft S, Hosking P, Harrington A, MacKinnon, AC, and Olteanu, H. Evaluation of CD43 expression in non-hematopoietic malignancies. *Annals of Diagnostic Pathology*, 2017 August;29:23-27.
- Harrington A, Schelling L, Ordobazari A, Olteanu H, **Hosking P**, and Kroft S. Immunophenotypes of chronic myelomonocytic leukemia (CMML) subtypes by flow cytometry: A comparison of CMML-1 vs. CMML-2, myeloproliferative vs. dysplastic, de novo vs. therapy-related, and CMML-specific cytogenetic risk subtypes. *Am J Clin Pathol*. 2016 Aug;146(2):170-81
- Dhakal B, Fenske TS, Ramalingam S, Shuff J, Epperla N, **Hosking P**, Rein L, Banerjee A, Hari P, D'Souza A, Shah N, Siker M, Griepentrog GJ, Harris GJ, Wells TS, Erickson BA, Hamadani M. Local Disease Control in Ocular Adnexal Lymphoproliferative Disorders: Comparative Outcomes of MALT Versus Non-MALT Histologies. *Clin Lymphoma Myeloma Leuk*. 2017 May;17(5)305-311.
- Saleh J, Lee L, Schieke S, **Hosking P**, and Hwang S. Methotrexate-induced CD30+ T-cell lymphoproliferative disorder of the oral cavity. *JAAD Case Reports*. 2016;2:354-6
- Li H, Hasserjian R, Kroft S, Harrington A, Wheaton SE, Pildain A, Ewalt M, Gratzinder D, **Hosking P**, and Olteanu H. Pure erythroid leukemia and erythroblastic sarcoma evolving from chronic myeloid neoplasms, *Am J Clin Pathol*. 2016;145:538-551.
- M Ewalt, **P Hosking**, A Colovai, J Jhang, "Hematology: White Blood Cells, Lymph Nodes, and Flow Cytometry" in *Clinical Pathology Board Review*, S Spitalnik and J Jhang Eds., Philadelphia, Saunders, 2015.
- Brem EA, Thudium K, Khubchandani S, Tsai PC, Olejniczak SH, Bhat S, Riaz W, Gu J, Iqbal A, Campagna R, Knight J, Mavis C, **Hosking P**, Deeb G, Gibbs JF, Fetterly G, Czuczman MS, and Hernandez-Ilizaliturri FJ. Distinct cellular and therapeutic effects of obatoclax in rituximab-sensitive and -resistant lymphomas. *Br J Haematol.*, 2011 Jun;153(5):599-611.
- Brown SV, **Hosking P**, and Williams N. The ATP synthase is responsible for maintaining mitochondrial membrane potential in bloodstream form *Trypanosoma brucei*, *Eukaryotic Cell*. 2006; Jan;5(1):45-53.

#### Invited Lecture/Presentation:

- Bone marrow myeloid malignancies: Diagnostic challenges and Updates to Diagnoses, Aplastic anemia and MDS International Foundation Bone Marrow Failure Disease Symposium, Milwaukee WI, 2016.

- The spectrum of EBV-associated lymphoproliferations, The Midwestern Conference: Update Course in Surgical Pathology, Milwaukee, WI, 2016.
- Gastric MALT Lymphoma: Overview and Approaches to Diagnosis, The Midwestern Conference: Update Course in Surgical Pathology, Milwaukee, WI, 2014.

## Posters

- Batdorf B, Gheorghe G, Kroft S, Harrington A, Olteanu H, and **Hosking P**. Correlation of CD79a expression with additional B-cell markers and Bruton's tyrosine kinase expression in T-cell lymphoblastic leukemia/lymphoma. United States and Canadian Academy of Pathology Annual Meeting, Seattle WA, March 2016
- Olteanu H, Wadzanai PM, Tarakanova V, **Hosking P**, Harrington A, and Kroft S. Tumor suppressor IRF-1 expression is decreased in post-transplant lymphoproliferative disorders. United States and Canadian Academy of Pathology Annual Meeting, Seattle WA, March 2016
- Olteanu H, **Hosking P**, Harrington A, Kroft S. PD-L1 expression correlates with EBV status in post-transplant lymphoproliferative disorders. United States and Canadian Academy of Pathology Annual Meeting, Seattle WA, March 2016
- Kroft SH, Harrington A, Olteanu H, **Hosking P**, Hintzke M. Bone Marrow Monocytosis: A Survey of 150 Cases. Poster presentation, ASCP Annual Meeting, Long Beach CA, October 2015.
- Harrington A, Shewmake A, **Hosking P**, Olteanu H, and Kroft S. CD3 staining on myeloid elements in acute myeloid leukemia bone marrows. United States and Canadian Academy of Pathology Annual Meeting, Boston MA, March 2015.
- Harrington A, **Hosking P**, Olteanu H, and Kroft S. Unique aberrant myeloblast immunophenotype associated with azathioprine therapy. United States and Canadian Academy of Pathology Annual Meeting, Boston MA, March 2015.
- Hartley C, Hintzke M, Vaughan J, **Hosking P**, Harrington A, Kroft S, and Olteanu H. CD30 expression in post-transplant lymphoproliferative disorders. United States and Canadian Academy of Pathology Annual Meeting, Boston MA, March 2015.
- Li H, Kroft S, **Hosking P**, Harrington A, and Olteanu H. CD38 expression in follicular lymphoma correlates with histologic grade. United States and Canadian Academy of Pathology Annual Meeting, Boston MA, March 2015.
- Robin A, Kroft S, Harrington A, **Hosking P**, and Olteanu H. Evaluation of proliferation index in tissue biopsies with CLL/SLL. United States and Canadian Academy of Pathology Annual Meeting, Boston MA, March 2015.
- Olteanu H, Parsons L, Harrington A, **Hosking P**, Kroft S. Flow Cytometric Analysis of CD23 and FM-7 Expression in Diffuse Large B-Cell Lymphoma. International Clinical Cytometry Society, Seattle WA, October 2014.
- Batdorf B, Kroft S, **Hosking P**, Harrington A, Mackinnon A, and Olteanu H. Evaluation of CD443 expression in non-hematologic malignancies. United States and Canadian Academy of Pathology Annual Meeting, San Diego CA, March 2014



- Li H, Kroft S, Harrington A, **Hosking P**, and Olteanu H. Pure erythroid leukemia evolving from chronic myeloid neoplasms: A report of 3 cases. United States and Canadian Academy of Pathology Annual Meeting, San Diego CA, March 2014.
- **Hosking P**, Hoehn D, Vundavalli M, Alobeid B, and Bhagat G, Morphologic and Phenotypic Analysis of Cytogenetic Subsets of Follicular Lymphoma, 102<sup>nd</sup> United States and Canadian Academy of Pathology Annual Meeting, Baltimore MD, March 2013.
- **Hosking P**, Li J, and Williams N, A functional analysis of the ATP synthase in bloodstream form trypanosomes, Wood's Hole Molecular Parasitology Meeting, Wood's Hole, MA, July 2005.

### Other Abstracts

- *Workshop Case*, **Hosking P**, Olteanu H, Harrington A, and Kroft S. A patient with a mediastinal mass with features of primary mediastinal B-cell lymphoma and as aggressive clinical course, Society for Hematopathology/European Association for Haematopathology Workshop, Basel, Switzerland, September 3-8, 2016.
- *Workshop Case*, **Hosking P**, Bhagat G, Hoehn D, Alobeid B. T-ALL transformed/trans-differentiated to a histiocytic proliferation/disorder, Society for Hematopathology/European Association for Haematopathology Workshop, Houston, Texas, October 24-26, 2013.
- *Workshop Case*, **Hosking P**, Alobeid B, Bhagat G, Hoehn D. JMML-like MPN in a patient with Noonan syndrome, PTPN11 mutation and prolonged monocytosis, Society for Hematopathology/European Association for Haematopathology Workshop, Houston, Texas, October 24-26, 2013.
- *Workshop Case*, **Hosking P**, Alobeid B, Bhagat G, Hoehn D. Asymptomatic child with multifocal involvement by MLL positive AML with monocytic differentiation; Primary presentation as cervical soft tissue mass, Society for Hematopathology/European Association for Haematopathology Workshop, Houston, Texas, October 24-26, 2013.
- *Workshop Case*, **Hosking P**, Alobeid B, Bhagat G, Hoehn D. MDS associated cytogenetic abnormality in a refractory *de novo* acute leukemia, Society for Hematopathology/European Association for Haematopathology Workshop, Houston, Texas, October 24-26, 2013.

### Membership and Honorary/Professional Societies:

- American Society for Clinical Pathology
- American Association for Blood Banks

### Work Experience:

- Mercy Hospital, Buffalo New York  
Transporter, Nurse's Aid, Immediate Treatment Assistant, 5/1999-2/2001



I worked in various positions in Mercy Hospital of Buffalo including patient transport in radiology and surgery, a nurse's aid in the intensive care unit, and an EKG technician/nurse's aid in the emergency room.

Average hours per week: 28-32

**Volunteer Experience:**

- Roswell Park Cancer Institute, Buffalo, New York  
Medical Student Preceptorship, 1/2005-5/2005

Under the direction of Dr. Francisco Hernandez I attended clinic where I had the opportunity to obtain histories and conduct physical examinations on patients with lymphoma.

**Hobbies/Interests:**

- I enjoy camping and hiking, biking, and gardening. I am also a tap dancer and practice Toaist T'ai Chi.