



# Harrison Specht

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Graduate Student, Bioengineering, Northeastern University

360 Huntington Ave, Boston, MA 02110

✉ [specht.h@husky.neu.edu](mailto:specht.h@husky.neu.edu)  [hspekt](https://github.com/hspekt)  [hspekt.github.io](https://github.com/hspekt) | Updated: March 13, 2019

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## EDUCATION

Northeastern University, Ph.D. Bioengineering, Graduate Student expected 2021

Cornell University, B.A. Chemistry, *magna cum laude* 2014

## EXPERIENCE

*Northeastern University*

Slavov Lab, Bioengineering & Barnett Institute, Graduate Student 2016–

*Broad Institute of MIT and Harvard*

Proteomics Platform, Research Associate 2014–2016

*Cornell University, Ithaca, NY*

Petersen Lab, Department of Chemistry, Research Assistant 2012–2014

Zinder Lab, Department of Microbiology, Research Assistant 2010–2011

The Triple Helix, magazine, Executive Editor-in-chief 2013 – 2014

*Bermuda Institute for Ocean Sciences*

National Science Foundation REU Fellow 2013

*Vertex Pharmaceuticals, Boston, MA*

Drug Metabolism and Pharmacokinetics, Internship 2013

## PUBLICATIONS

### *Journal Articles*

Gray Huffman, **Harrison Specht**, Albert Tian Chen, Nikolai Slavov. “DO-MS: Data-Driven Optimization of Mass Spectrometry Methods.” bioRxiv. 2019. doi: <https://doi.org/10.1101/512152>. Submitted to Journal of Proteome Research.

**Harrison Specht**, Guillaume Harmange, David H Perlman, Edward Emmott, Zachary Niziolek, Bogdan Budnik, Nikolai Slavov. “Automated sample preparation for high-throughput single-cell proteomics.” bioRxiv. 2018. doi:<https://doi.org/10.1101/399774>

**Harrison Specht**, Nikolai Slavov. “Transformative Opportunities for Single-Cell Proteomics.” *Journal of Proteome Research*. 2018. doi:[10.1021/acs.jproteome.8b00257](https://doi.org/10.1021/acs.jproteome.8b00257)

Rajiv K. Khajuria, Mathias Munschauer, Jacob C. Ulirsch, Claudia Fiorini, Leif S. Ludwig, Sean K. McFarland, Nour J. Abdulhay, **Harrison Specht**, Hasmik Keshishian, D.R. Mani, Marko Jovanovic,

Steven R. Ellis, Charles P. Fulco, Jesse M. Engreitz, Sabina Schetz, John Lian, Karen W. Gripp, Olga K. Weinberg, Geraldine S. Pinkus, Lee Gehrke, Aviv Regev, Eric S. Lander, Hanna T. Gazda, Winston Y. Lee, Vikram G. Panse, Steven A. Carr, Vijay G. Sankaran. "Ribosome Levels Selectively Regulate Translation and Lineage Commitment in Human Hematopoiesis." *Cell*. 2018.

Hasmik Keshishian, Michael W. Burgess, **Harrison Specht**, Luke Wallace, Karl R. Clauser, Michael A. Gillette, Stephen A. Carr. "Quantitative, Multiplexed Workflow for Deep Analysis of Human Blood Plasma and Biomarker Discovery by Mass Spectrometry." *Nature Protocols*. 2017 Jul 27. doi:10.1038/nprot.2017.054

## PRESENTATIONS

**2019. Harrison Specht.** "Automated sample preparation for high-throughput single-cell proteomics." Royal Society of Chemistry Twitter Poster Conference. *Twitter poster presenter* Awarded 2nd place in Chemical Biology category.

**2019. Harrison Specht.** Quantifying proteins by mass spectrometry. Models, Inference, and Algorithms Seminar. Broad Institute of MIT and Harvard. *Chalk-talk presentation*

**2018. Harrison Specht,** Guillaume Harmange, David H Perlman, Edward Emmott, Zachary Niziolek, Bogdan Budnik, Nikolai Slavov. "Automated sample preparation for high-throughput single-cell proteomics." HUPO 2018. *Oral Presenter*

**2018. Harrison Specht,** Guillaume Harmange, David H Perlman, Edward Emmott, Zachary Niziolek, Bogdan Budnik, Nikolai Slavov. "Automated sample preparation for high-throughput single-cell proteomics." Single Cell Proteomics Conference. Boston, MA. 2018. *Oral Presenter*

**2018.** Hasmik Keshishian, Luke Wallace, **Harrison Specht**, Judit Janz-Valbuena, Rob McDonald, Dale Petterson, Eric Kuhn, Michael Burgess, D. R. Mani, Tomas Rejtar, Javad Golji, Karen Wang, William Sellers, Steven A. Carr. "SigPath300: A high throughput MS-based assay to quantify over 300 phosphosites of known biological relevance in cells and tissues." American Society for Mass Spectrometry Annual Meeting. *Contributor*

**2017. Bogdan Budnik, Ezra Levy, Harrison Specht, Nikolai Slavov.** "Exploring cell division dynamics across single cell proteomes." Cold Spring Harbor Laboratories: Single Cell Analyses. *Poster Presenter*

**2017. Harrison Specht, Ezra Levy, Bogdan Budnik, Nikolai Slavov.** "Mass-spectrometry of single mammalian cells quantifies proteome heterogeneity during cell differentiation." American Society for Mass Spectrometry Annual Meeting. *Poster Presenter*

**2015. Harrison Specht, Hasmik Keshishian, Rajiv K. Khajuria, et al.** "Addressing the challenge of ribosomal protein stoichiometry by proteomics." Broad Institute of MIT and Harvard Retreat. *Oral Presenter*

**2013. Harrison Specht and Andrew Peters** "Investigating North Atlantic Tar in Bermuda: the hydrocarbon composition of North Atlantic pelagic tar and their hydrocarbon leaching into seawater." BIOS NEF REU Program. *Oral Presenter*

## FELLOWSHIPS AND AWARDS

**2019** 2nd place, Chemical Biology, Royal Society of Chemistry Twitter Poster Conference

**2016**– *College of Engineering Dean’s Distinguished Fellowship*, Northeastern University

**2013** *National Science Foundation REU Fellowship*, Bermuda Institute for Ocean Sciences

**2013** *Best Oral Presentation*, Bermuda Institute for Ocean Science NSF REU Program

## PROFESSIONAL AFFILIATIONS & TRAINING

- Barnett Institute for Chemical and Biological Analysis
- Northeastern University Graduate Student Liason, 2018-2019
- eLife Ambassador, Class of 2018
- American Society for Mass Spectrometry
- May Institute on computation and statistics for mass spectrometry and proteomics, 2016
- Lab preprint journal club founder

## TECHNIQUES

**Coding and Software:** R, perl, MaxQuant, Skyline, MatLab

**Experimental:** Triple-quad and orbitrap-based mass spectrometry proteomics, antibody and chemical enrichment of proteins and peptides, liquid chromatography, robotic sample preparation, cell culture, single-cell proteomics, flow cytometry and FACS

## REFERENCES

Available upon request