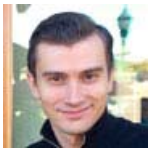
Genome Sciences Seminar

Wednesday, 1.4.17 | 3:30 | Foege Auditorium



Dr. Sergei Doulatov

Assistant Professor, Department of Medicine/Hematology
University of Washington
https://depts.washington.edu/hemeweb/research/doulatov.htm

"Modeling and drug discovery for blood disorders using pluripotent stem cells"

Doulatov Lab:

Hematopoietic stem cells (HSCs) can fully reconstitute the blood system following bone marrow transplantation. The bone marrow of compatible donors is presently the only source of HSCs, and there has been significant interest in alternative methods of obtaining these cells.

Induced pluripotent stem cells (iPSCs) can give rise to any cell type in the body. They can serve as a scalable source of autologous HSCs, red blood cells, platelets, and antigen-specific T cells. We are using genetic and reprogramming approaches to instruct iPSCs to create these clinically valuable blood cells. We are also using CRISPR-based gene targeting to uncover key regulators of HSC development.

Patient-specific primary cells are limited, especially in marrow failure and immunodeficiency syndromes. We are using iPSCs to model these disorders, and discover candidate therapeutics by combining reprogramming with chemical screens. Previous work has identified a small molecule inducer of autophagy as a therapeutic for Diamond Blackfan anemia. Ongoing projects are aimed at understanding the role of autophagy is normal erythroid development and anemias.

Refreshments served outside the Auditorium at 3:20pm
Questions? Contact Brian Giebel at bgiebel@uw.edu or visit the Seminar website at http://www.gs.washington.edu/news/seminars.htm