Svetlana Lyalina

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1650 Owens St, San Francisco, CA 94158

Education:

2013 – present **University of California, San Francisco**

PhD in Biological and Medical Informatics.

Advisor: Katherine Pollard

2009 –2013 **Stanford University, Stanford, CA**

B.S. Bioengineering, B.S. Computer Science. Awarded with Distinction.

GPA: 3.74/4.00

Research Experience:

10/2013 – 06/2014 I completed three research rotations in the labs of Sergio Baranzini, Neil Risch, and Katherine Pollard. The topics of these rotations were:
1. Finding *de novo* mutations through exome analysis of a rare developmental eye disorder.
2. Using linear mixed effects models on a large cohort of patients in order to explore genetic effects on lipid profiles while taking into account patient demographic data.
3. Investigating the possibility of transmission disequilibrium in cases of congenital heart disease.

11/2011 – 08/2013

I conducted bioinformatics research using Natural Language Processing techniques to elucidate previously unexplored connections between genes, drugs, and diseases. I utilized publicly available biomedical text as well as electronic medical records to extract meaningful information via programming approaches. I used abstracts from PubMed to generate disease-specific lexicons that could be used for further text mining tasks. I also clustered diseases based on their textual descriptions in an attempt to create a hierarchical structure of diseases based on data rather than human design. During the summer, my work consisted of fitting a regression model to the intervals between specific word mentions in patients' records in order to discover temporal patterns in the text. During my senior year, the project shifted to examining word associations within specific diseases, and the possible commonality of such links across different disorders. This work led to a first-author paper that was published in JAMIA.

(PI: R.B. Altman)

11/2010 – 10/2011	I examined the viability of stem cell therapies for cardiovascular disease. In the process, I acquired skills in cell and tissue culture, animal handling techniques, multimodality *in vitro* and *in vivo* imaging (bioluminescence and MRI). I aided post-doctoral fellows in examining the role of apelin in cardiomyocyte differentiation. During the summer, I conducted independent research that examined the immunomodulatory properties of placenta derived stem cells. (PI: Phillip C. Yang)

Publications:

Lyalina, S. et al. "Identifying phenotypic signatures of neuropsychiatric disorders from electronic medical records." *JAMIA*. (2013). doi:10.1136/amiajnl-2013-001933

Slavotinek, A. et al. "Exome Sequencing in 32 Patients with Anophthalmia/Microphthalmia and Developmental Eye Defects: Genetic Heterogeneity and Expanding Phenotypic Spectra." *Clinical Genetics.* (2014) [Submitted for Initial Review]

Grants:

2012	Bio-X Undergraduate Summer Research Award
2011	American Heart Association Undergraduate Fellowship
	Bio-X Undergraduate Summer Research Award (declined)

Honors:	Tau Beta Pi Engineering Honor Society
Programming Languages:	Java, Python, C, MATLAB, C++, R, SQL, HTML/CSS/Javascript
Foreign Languages:	Russian (native), Spanish (proficient)