

# MARYAM REZAEI

PhD Candidate

Current Position: PhD Candidate at McGill University  
Contact Information: Laboratory of Associate Professor Rima Slim

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Location: Montreal, Canada

## **Qualifications**

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PhD Candidate. Human Genetics, McGill University, Montreal, Canada,  
2017- Present

Master of Science- Human Genetics, Shiraz University of Medical Sciences,  
Shiraz, Iran, 2011-2014 (GPA: 3.6)

Bachelor of Science- Cellular and Molecular Biology-Genetics, Islamic  
Azad University, Arsenjan, Iran, 2007-2011 (GPA: 3.56)

## Laboratory Experience

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### **PhD Candidate-Human Genetics, McGill University, Montreal Canada**

Laboratory of Associate Professor Rima Slim.

*Thesis title:* Identification of new genes responsible for Recurrent Hydatidiform Moles using Whole Exome Sequencing and Targeted Sequencing techniques.

*Summary:* My PhD project focuses on identifying new genes which lead to the development of hydatidiform moles in humans. To date I have discovered three meiotic genes responsible for this phenotype. I am complementing this work with knock out mouse models to investigate the molecular roles of these genes and how their absence leads to the formation of Hydatidiform Moles

### **Master of Science- Human Genetics, Shiraz University of Medical Sciences, Shiraz, Iran.**

Laboratory of Associate Professor Majid Fardaei.

*Thesis title:* *NLRP7* and *KHDC3L* gene analysis in two separate families with familial recurrent hydatidiform moles

*Summary:* This project focused on elucidating the mutations which lead to the formation of recurrent hydatidiform mole in two families. I was able to determine that in one family this was due to a 10-kb deletion in the *NLRP7* gene due to the presence of ALU elements. I mapped these ALU elements in *NLRP7* and found that >50% of the gene contains these repetitive elements. In the second family I discovered a 2-bp deletion in the *KHDC3L* gene. I similarly mapped the small repetitive elements in this gene.

**1- Maryam Rezaei**, William Buckett, Eric Bareke, Urvashi Surti, Jacek Majewski, Rima Slim. A protein-truncating mutation in *CCNB3* in a patient with recurrent miscarriages and failure of meiosis I. (2021). *Journal of Medical Genetics*. 2021 May 21. doi:10.1136/jmedgenet-2021-107875

**2- Maryam Rezaei**, Beena Suresh Eric Bereke Zahra Hadipour Monica Aguinaga Jianhua Qian Rashmi Bagga Majid Fardaei Reda Hemida Sujatha Jagadeesh Jacek Majewski Rima Slim. Novel pathogenic variants in *NLRP7*, *NLRP5*, and *PADI6* in patients with recurrent hydatidiform moles and reproductive failure. (2021). *Clinical Genetics*. February 14. doi: 10.1111/cge.13941.

**3- Mónica Aguinaga, Maryam Rezaei**, Irma Monroy, Nawel Mechtouf, Javier Pérez, Elsa Moreno, Yolotzin Valdespino, Carolina Galaz, Guadalupe Razo, Daniela Medina, Raúl Piña, Rima Slim. The genetics of recurrent hydatidiform moles in Mexico: further evidence of a strong founder effect for one mutation in *NLRP7* and its widespread.(2021). *Journal of Assisted Reproduction and Genetics*. 2021 March 22. doi: 10.1007/s10815-021-02132-1.

**4- JianHua Qian, Ngoc Minh Phuong Nguyen, Maryam Rezaei**, Bo Huang, YongLing Tao, XiaoFei Zhang, Qi Cheng, HanJin Yang, AsanglaAo, Jacek Majewski, Rima Slim. Biallelic *PADI6* variants linking infertility, miscarriages, and hydatidiform moles. (2018) *European Journal of Human Genetics*. 2018 July;26(7):1007-1013. doi: 10.1038/s41431-018-0141-3.

5- Ngoc Minh Phuong Nguyen, Yassemine Khawajkie, Nawel Mechtouf, **Maryam Rezaei**, Magali Breguet, Elvira Kurvinen, Sujatha Jagadeesh, Asli Ece Solmaz, Monica Aguinaga, Mehmet Ibrahim Harma, Cécile Rittore, Kurosh Rahimi, Jocelyne Arseneau, Karine Hovanes, Ronald Clisham, Tiffanee Lenzi, Bonnie Scurry, Marie-Claude Addor, Rashmi Bagga, Genevieve Girardet Nendaz, Vildana Finci, Gemma Poke, Leslie Grimes, Nerine Gregersen, Kayla York, Pierre-Adrien Bolze, Chirag Patel, Hossein Mozdarani, Jacques Puechberty, Jessica Scotchie, Majid Fardaei, Muge Harma, R.J. McKinlay Gardner, Trilochan Sahoo, Tracy Dudding-Byth, Radhika Srinivasan, Philippe Sauthier, Rima Slim. The genetics of recurrent hydatidiform moles: new insights and lessons from a comprehensive analysis of 113 patients. (2018). *Modern Pathology*. 2018 July ;31(7):1116-1130. doi: 10.1038/s41379-018-0031-9

6- **Maryam Rezaei**, Ngoc Minh Phuong Nguyen, Leila Foroughinia, Pratima Dash, Fatemeh Ahmadpour, Ishwar Chandra Verma, Rima Slim, Majid Fardaei. Two novel mutations in the KHDC3L gene in Asian patients with recurrent hydatidiform mole. (2016) *Human Genome Variation*; 3, 16027; doi:10.1038/hgv.2016.27

7- Ramesh Reddy, Ngoc MP Nguyen, Guillaume Sarrabay, **Maryam Rezaei**, Mayra CG Rivas, Aysenur Kavasoglu, Hakan Berkil, Alaa Elshafey, Kristin P Nunez, H el ene Dreyfus, Merviel Philippe, Zahra Hadipour, Asude Durmaz, Erin E Eaton, Brittany Schubert, Volkan Ulker, Fatemeh Hadipour, Fatemeh Ahmadpour, Isabelle Toutilou, Majid Fardaei, Rima Slim. The genomic architecture of *NLRP7* is Alu rich and predisposes to disease-associated large deletions. (2016) *European Journal of Human Genetics*. 2016 Oct; 24(10):1445-52. doi: 10.1038/ejhg.2016.9.

## **Awards and Research Funding**

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2019: XX World Congress on Gestational Trophoblastic Diseases Travel Award  
(October) Toronto, Canada.

**Total Value:1500\$**

2017: Informatics on High-throughput Sequencing Data Workshop Travel Award  
(May) Toronto, Canada

**Total Value:1000\$**

## **Conference Proceedings**

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Maryam Rezaei and Rima Slim. ‘Investigating the Novel Genes for Recurrent Hydatidiform Moles and facing the related challenges’. (October 2019). XX World Congress on Gestational Trophoblastic Diseases, Toronto, Canada.

(Oral presentation)

## **Advanced Training**

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1. Three modules mouse husbandry trainings at McGill University Animal Care Committee (UACC)- December 2020
2. FireCloud and GATK workshop by the Broad Institute of Harvard and MIT- March 2018 (Genomic Analysis-Germline variant discovery-Somatic variant discovery-Pipelining).
3. Introduction to R Programming and Python-July 2021

## Software

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- Chromosome Analysis Suite 3.1 (ChAS) software to observe and interpret microarray analysis results
- Peak Scanner™ Software v1.0 to interpret the genotyping data

## Professional Memberships

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McGill Toastmaster Club since May 2018

## Language Skills

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- Persian (Native)
- English (IELTS band score 7)
- French Elementary

## Reference

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Dr Rima Slim

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Dr Majid Fardaei

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