

USC Stem Cell NEWS

Meet three students from the stem cell master's program

The 34 students in USC's master's program in stem cell biology and regenerative medicine have at least two things in common. First, they're smart, with an average incoming GPA of 3.4. And second, they all seemed to enjoy the boba tea served at this year's Student Orientation at the Eli and Edythe Broad CIRM Center for Regenerative Medicine and Stem Cell Research at USC.

Beyond that, the Class of 2020 is a diverse bunch. Here, three master's students share their backgrounds, their experiences at USC and their future plans.



Sevana Harotoonian

Where are you from?

I was born and raised in Iran. I first moved to the United States in 2016 and lived in Iowa. I moved back to Iran and then came back to live with my uncle in Indiana and then finally

moved to California to complete my master's at USC.

What made you choose the program?

I started my graduate studies in Human Genetics at Iran's top university, where I focused on cancer case studies. I stopped after one semester and decided to move to the US. Research facilities in Iran were deteriorating due to political sanctions, and I felt that the technology, curriculum and overall experience would be more rewarding in the US.

I became particularly interested in stem cell research when my uncle was diagnosed with thyroid cancer. They

From Dr. Francesca Mariani, Master's Program Director:

Welcome to a special edition of our newsletter highlighting the master's program in Stem Cell Biology and Regenerative Medicine!

Join me in celebrating our newest students and successful alumni thriving in graduate and professional arenas. We are in our sixth year with 150 alumni.

Our application portal is open for applicants, and we are happy to announce that, due to a donor's generosity, scholarships are available for highly qualified students.

For more information, visit scrm.usc.edu.



removed sections of his gland, and I became very curious and wanted to know the science behind that. It motivated me to pursue my graduate studies. Additionally, my brother has been a great help in my decision to go to graduate school. He is also in the STEM field and has helped me along in the process. I am very grateful to have his guidance.

How is life in Los Angeles?

I am happy that I have more work and research opportunities here than I had in Iran. I also have extended family living here in LA, so it has been good to be close to them.

Where do you see yourself after the program?

I love the academic world and the academic setting. I am considering staying in academia to pursue my PhD and/or MD. So far, I have been volunteering in Dr. Min Yu's lab, where I have gotten to learn more about cancer and cancer studies. I am hoping to continue learning more.



Nima Adhami

Where are you from?

I was born and raised in Los Angeles and went to UCLA for my undergrad.

What made you choose the program?

Growing up, I thought

I wanted to be a doctor. After shadowing doctors in the clinical setting, I realized I was more interested in research-based medicine, particularly stem cells. I feel like we are at the ground floor of a major breakthrough in the stem cell/science community, and I want to learn from the best of the best and be a part of these advancements.

I always wanted to pursue science, and felt motivated by the fact that both of my parents are engineers. I wanted to do well for them and make them proud.

What about the program stands out to you the most?

I was surprised by the caliber of the faculty members and their extensive achievements. The discoveries that are being made here are happening at such a fast rate that there seems to be a large capacity for rapid discovery. I feel that I can put what I learn in class to use in real time. It's cool to see the curriculum translate to work in the lab.

Here at USC, since our cohort is small, I feel I get more personalized attention, and I am able to fire off as many questions as I need without having to wait for 50 other people to get their questions answered. The discussion-based learning is the best way to go for this type of curriculum, and the other students and I thrive off that.

How is life in Los Angeles?

I am a die-hard Angeleno, born and raised. To me, LA is the place to be when it comes to advancements in science and modernization. USC is the quintessential LA school, because it is such a melting pot and is an accurate reflection of the city.

Where do you see yourself after the program?

I hope to pursue my PhD, ideally with the PIBBS program here at USC. My ultimate goal is to make a lasting contribution to the stem cell field or research medicine. Hopefully, one day, I can come up with some discovery that clinicians can use to treat their patients.

Axel Hidalgo

*Progressive Degree Student
(simultaneously completing
bachelor's and master's)*



Where are you from?

I am from Ciudad Juarez, Mexico, and came to USC four years ago as an undergrad. For the first two years, I commuted from Ciudad Juarez to USC.

What made you choose the program?

As an undergrad, I began volunteering in Dr. Michael Bonaguidi's lab, studying neural stem cells. Having this exposure early on really motivated me to pursue my master's in the same department. As a progressive degree student, I have multiple advantages: I have an easier transition to life at USC, I have the flexibility to space out my classes and take as much or as little time as I want to complete both my bachelor's and master's, and I already knew some faculty, the department and its resources. It was a no brainer to pursue my master's at USC.

What about the program stands out to you the most?

Being a part of this program has been the biggest learning experience of my life! There is an overwhelming amount of information, and there is something new to learn every day. I enjoy the exposure to all the faculty and their research, and being a part of the department. All the professors have been helpful, and I enjoy the tight-knit classes. I can have all my questions answered, and it is cool to see everyone growing in their own ways. The learning feels more personalized in this setting.

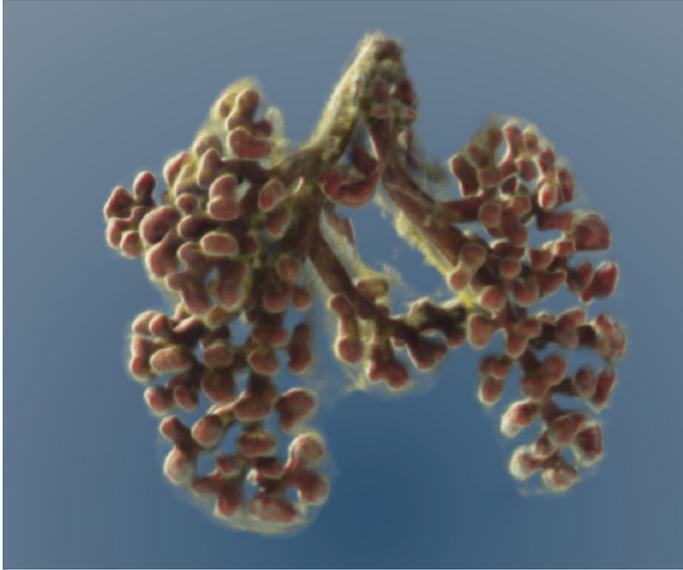
How is life in Los Angeles?

I love that LA is a big, busy, and colorful city. There is always something to do. Also, through my research and volunteer experiences, I've connected with the Spanish-speaking community in the LA area. Having someone speak the language and understand the culture goes a long way with connecting people in health and science.

Where do you see yourself after the program?

I am hoping to start applying to medical school this year. During my gap year and all through medical school, I intend to pursue full-time research. After medical school, I hope to obtain my postdoc. I am interested in both clinical work and research.

Research highlights: Master's program co-authors



Embryonic mouse lung (Image by Riana Parvez, Seth Ruffins, and Elisabeth Rutledge)

Forthcoming

Charles Bramlett (Lu Lab): “Clonal tracking using embedded viral barcoding and high-throughput sequencing,” *Nature Protocols*

2019

Joseph Elphingstone (Evseenko Lab): “Lentiviral gene therapy for bone repair using human umbilical cord blood-derived mesenchymal stem cells,” *Human Gene Therapy*

Neel Hegde (Mariani Lab): “Sox9+ messenger cells orchestrate large-scale skeletal regeneration in the mammalian rib,” *Elife*

Kevin Liu, Matthew MacKay (Yu Lab): “Circulating tumor cells exhibit metastatic tropism and reveal brain metastasis drivers,” *Cancer Discovery*

Riana Parvez (McMahon Lab): “Cellular recruitment by podocyte-derived pro-migratory factors in assembly of the human renal filter,” *iScience*

Riana Parvez (McMahon Lab): “Morphogenesis of the kidney and lung requires branch-tip directed activity of the Adamts18 metalloprotease,” *Developmental Biology*

Gabriel Rocha, Carina Seah (Ichida Lab): “Identification and therapeutic rescue of autophagosome and glutamate receptor defects in C9ORF72 and sporadic ALS neurons,” *JCI Insight*

2018

Nicholas Banks (Evseenko Lab): “Genetic ablation of adenosine receptor A3 results in articular cartilage degeneration,” *Journal of Molecular Medicine*. 2018.

Nicholas Banks, Mila Scheinberg (Evseenko Lab): “Drug-induced modulation of gp130 signaling prevents articular cartilage degeneration,” *Annals of Rheumatic Disease*

Nicholas Banks, Joseph Elphingstone, Mila Scheinberg (Evseenko Lab): “Mapping molecular landmarks of human skeletal ontogeny and pluripotent stem cell-derived articular chondrocytes,” *Nature Communications*

Joseph Elphingstone (Evseenko Lab): “CaMKII inhibition in human primary and pluripotent stem cell-derived chondrocytes modulates effects of TGF-beta and BMP through SMAD signaling,” *Osteoarthritis and Cartilage*

2017

Jean-Paul Chadarevian (Ying Lab): “A chemical-genetic approach reveals the opposing roles of GSK3-alpha and GSK3-beta in regulating embryonic stem cell fate,” *Developmental Cell*

Jean-Paul Chadarevian, Bryan Ruiz-Juarez (Ying Lab): “Cytoplasmic and nuclear TAZ exert distinct functions in regulating primed pluripotency,” *Stem Cell Reports*

2016

Sankalp Srivastava (Ying Lab): “Induction of site-specific chromosomal translocations in embryonic stem cells by CRISPR/Cas9,” *Scientific Reports*

Edward Trope (Ying Lab): “Metabolism of pluripotent stem cells,” *Frontiers in Biology*.

Class notes: Master's program alumni

Class of 2019

Saket Bhargava, Research Associate,
Cellular Analytics Flow team, Juno Therapeutics
(Celgene)

Kevin Liu, Life Science Research Professional,
Stanford

Bryan Ruiz-Juarez, Lab Technician, Ichida Lab,
USC

Caitlin Zellers, Associate, L.E.K. Consulting

Class of 2018

Anal Bhatt, Research Associate, Therapeutics
Development group, Applied StemCell, Inc.

Mohamed El-Farra, medical student, University of
California, Riverside

Stephanie Gold, Oak Ridge Institute for Science
and Education (ORISE) Fellow, Hursh Lab, U.S.
Federal Drug Administration

Class of 2017

Sahil Joshi, Research Associate,
Regenerative Medicine department,
Crispr Therapeutics

Daniel Trinh, Cell Therapy Specialist,
Kite Pharma

Class of 2016

David Chirikian, medical student, California
Northstate University College of Medicine

Sangeeta Susan Thomas, PhD student,
Interdisciplinary Graduate program, Nanyang
Technological University, Singapore

Class of 2015

Susan Chong, Senior Associate, Regulatory Affairs,
Amgen

Lauren Ishida, Resident Physician, University of
Hawaii Pediatrics Residency Program

Rekha Prakash, LAUSD biotech instructor,
Theodore Roosevelt High School

Class of 2020



Photo by Sergio Bianco

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