

# Stanford

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## Lucia Aronica

Casual - Non-Exempt, Medicine - Med/Stanford Prevention Research Center

### SUPERVISORS

- Christopher Gardner

### Bio

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#### BIO

Over the past ten years my research has focused on the field of epigenetics, which investigates how environmental factors can affect gene activity thereby impacting our health and predisposition to diseases. Unlike genetic factors, epigenetic modifications are flexible and can store cell memories of life exposures such as diet, stress or environmental toxins. As such, they hold great potential in personalized health as biomarkers for exposure-driven chronic diseases such as obesity, diabetes, cardiovascular disease, and cancer.

I am currently leading the epigenetic analysis of the largest study ever undertaken in personalized nutrition on low carb vs. low fat diets – the DIETFITS study by Prof Christopher Gardner. My primary goal is to understand how weight-loss affects gene activity through epigenetic modifications, and whether we can use these modifications to predict diet response for personalized weight-loss strategies.

I also teach Nutritional Genomics at Stanford Continuing Studies, Stanford Sport Medicine and at the Stanford Center for Professional Development. An award-winning science communicator, I use creative forms of communication such as digital drawings to explain complex topics from the world of epigenetics and science. Finally, I serve as an advisor for personal genomics companies, self-tracking technology businesses, and companies interested in investing in precision health research.

#### PROJECTS

- Epigenetic Biomarkers for Precision Medicine in Obesity - Stanford University
- Sex/Gender Differences in Diet Adherence and Weight Loss - Stanford University
- Nutrigenetic Analysis in the iPOP Study - Stanford University

#### LINKS

- HumBio Movies: Epigenomics and DIETFITS: <https://www.youtube.com/playlist?list=PLU7a7O4lr4QAtwQQKsxi0OYTdQ3Z-QSP6>
- Low carb diets and gene expression: [https://www.youtube.com/watch?list=PL0ovt\\_TbvVmYvrI48Tzs1vhe4o2eUn8qU&time\\_continue=89&v=v-6ONF\\_PZpc](https://www.youtube.com/watch?list=PL0ovt_TbvVmYvrI48Tzs1vhe4o2eUn8qU&time_continue=89&v=v-6ONF_PZpc)
- Science podcast Goggles Optional: <https://www.youtube.com/watch?list=PLU7a7O4lr4QBxglXYaxhyxGJNyRM-uIiZ&v=YP5jrM0aQQ8>
- Blackboard-style Epigenetics: <https://www.youtube.com/playlist?list=PLU7a7O4lr4QCnIMMyBxVT0aFsh812AzGQ>
- K12 Genetics: Draw it!: <https://stanfordbioscience2016.wordpress.com/draw-it-2/>
- Stanford Bioscience teaching webpage: <https://stanfordbioscience2016.wordpress.com/>

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## Professional

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### WORK EXPERIENCE

- Research Project Leader - Max F. Perutz Laboratories (MFPL) (2011 - 2014)
- Visiting Scholar - University of Oxford, UK (2013 - 2014)
- Visiting Scholar - University of Southern California (2011 - 2012)

## Publications

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### PUBLICATIONS

- **Changes in blood lipid concentrations associated with changes in intake of dietary saturated fat in the context of a healthy low-carbohydrate weight-loss diet: a secondary analysis of the Diet Intervention Examining The Factors Interacting with Treatment Success (DIETFITS) trial.** *The American journal of clinical nutrition*  
Shih, C. W., Hauser, M. E., Aronica, L., Rigdon, J., Gardner, C. D.  
2019
- **RW-2018-Research Workshop: The Effect of Nutrition on Epigenetic Status, Growth, and Health.** *JPEN. Journal of parenteral and enteral nutrition*  
Skinner, M., Lumey, L. H., Fleming, T. P., Sapienza, C., Hoyo, C., Aronica, L., Thompson, J., Nichol, P. F.  
2019
- **A systematic review of studies of DNA methylation in the context of a weight loss intervention** *EPIGENOMICS*  
Aronica, L., Levine, A. J., Brennan, K., Mi, J., Gardner, C., Haile, R. W., Hitchins, M. P.  
2017; 9 (5): 769-787
- **A systematic review of studies of DNA methylation in the context of a weight loss intervention** *Epigenomics*  
Aronica, L., et al  
2017
- **The spliceosome-associated protein Nrl1 suppresses homologous recombination-dependent R-loop formation in fission yeast.** *Nucleic acids research*  
Aronica, L., Kasperek, T., Ruchman, D., Marquez, Y., Cipak, L., Cipakova, I., Anrather, D., Mikolaskova, B., Radtke, M., Sarkar, S., Pai, C., Blaikley, E., Walker, et al  
2016; 44 (4): 1703-1717

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### PRESENTATIONS

- Diet and Gene Expression: From Honeybees to Humans - Nutrition 2018, American Society for Nutrition
- Research Workshop: The Effect of Nutrition on Epigenetic Status, Growth, and Health - ASPEN 2018 Nutrition Science & Practice Conference
- Diet and Gene Expression: The Epigenetics of Low-Carb and Low-Fat Diets - AHS Symposium 2017