

Stanford



Lucia Aronica

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

SUPERVISORS

- Christopher Gardner

Bio

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
- 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/>
- Soul Food Salon Seminars: <https://vimeo.com/168283136>

Professional

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

PUBLICATIONS

- **Identification of Nrl1 Domains Responsible for Interactions with RNA-Processing Factors and Regulation of Nrl1 Function by Phosphorylation.** *International journal of molecular sciences*
Mikolaskova, B., Jurcik, M., Cipakova, I., Selicky, T., Jurcik, J., Polakova, S. B., Stupenova, E., Dudas, A., Sivakova, B., Bellova, J., Barath, P., Aronica, L., Gregan, et al
2021; 22 (13)
- **Associations of Changes in Blood Lipid Concentrations with Changes in Dietary Cholesterol Intake in the Context of a Healthy Low-Carbohydrate Weight Loss Diet: A Secondary Analysis of the DIETFITS Trial.** *Nutrients*
Vergara, M., Hauser, M. E., Aronica, L., Rigdon, J., Fielding-Singh, P., Shih, C. W., Gardner, C. D.
2021; 13 (6)
- **Adherence to Ketogenic and Mediterranean Study Diets in a Crossover Trial: The Keto-Med Randomized Trial.** *Nutrients*
Landry, M. J., Crimarco, A. n., Perelman, D. n., Durand, L. R., Petlura, C. n., Aronica, L. n., Robinson, J. L., Kim, S. H., Gardner, C. D.
2021; 13 (3)
- **Genetic variants for personalised management of very low carbohydrate ketogenic diets.** *BMJ nutrition, prevention & health*
Aronica, L., Volek, J., Poff, A., D'agostino, D. P.
2020; 3 (2): 363–73
- **Examining differences between overweight women and men in 12-month weight loss study comparing healthy low-carbohydrate vs. low-fat diets.** *International journal of obesity (2005)*
Aronica, L., Rigdon, J., Offringa, L. C., Stefanick, M. L., Gardner, C. D.
2020
- **RW-2018-Research Workshop: The Effect of Nutrition on Epigenetic Status, Growth, and Health**
Skinner, M., Lumey, L. H., Fleming, T. P., Sapienza, C., Hoyo, C., Aronica, L., Thompson, J., Nichol, P. F.
WILEY.2019: 627–37
- **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** *AMERICAN JOURNAL OF CLINICAL NUTRITION*
Shih, C. W., Hauser, M. E., Aronica, L., Rigdon, J., Gardner, C. D.
2019; 109 (2): 433–41
- **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. n., Lumey, L. H., Fleming, T. P., Sapienza, C. n., Hoyo, C. n., Aronica, L. n., Thompson, J. n., 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
- **A Tetrahymena Hsp90 co-chaperone promotes siRNA loading by ATP-dependent and ATP-independent mechanisms** *EMBO JOURNAL*
Woehrer, S. L., Aronica, L., Suhren, J. H., Busch, C. J., Noto, T., Mochizuki, K.
2015; 34 (4): 559-577
- **How Healthy Eating Could Starve Out Cancer**
Aronica, L.
Europe PubMed Central.
2014
- **The Tetrahymena Argonaute-Binding Protein Giw1p Directs a Mature Argonaute-siRNA Complex to the Nucleus** *CELL*
Noto, T., Kurth, H. M., Kataoka, K., Aronica, L., DeSouza, L. V., Siu, K. W., Pearlman, R. E., Gorovsky, M. A., Mochizuki, K.
2010; 140 (5): 692-703
- **Study of an RNA helicase implicates small RNA-noncoding RNA interactions in programmed DNA elimination in Tetrahymena** *GENES & DEVELOPMENT*
Aronica, L., Bednenko, J., Noto, T., DeSouza, L. V., Siu, K. W., Loidl, J., Pearlman, R. E., Gorovsky, M. A., Mochizuki, K.
2008; 22 (16): 2228-2241

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