

## Meet Marisa Silveri, Ph.D.



Marisa Silveri, Ph.D., is assistant professor of psychiatry at Harvard Medical School, and director of the Neurodevelopmental Laboratory on Addictions and Mental Health at McLean Hospital, a Harvard Medical School affiliate. Dr. Silveri recently won the RSA Young Investigator Award at the Research Society on Alcoholism's annual meeting in June 2011 in Atlanta, Georgia.

*Writer Sherry Wasilow interviewed Dr. Silveri from her office at McLean Hospital.*

SW: When did you first suspect that science would be in your future?

MS: I have been interested in science since I was a child: through experiments conducted using my sister's Easy Bake Oven to designing LEGO mazes for my gerbils. It was my high school Advanced Placement biology course that truly inspired me to pursue a biology major in college.

SW: What did you study in college?

MS: During my sophomore year at Union College, I enrolled in a physiological psychology class – today it is referred to as neuroscience ([see book link below](#)) – and found my calling. What could be more fascinating to study than the biology of the brain? To me, nothing. From there, I enrolled in courses that led to graduating with a biology and psychology interdepartmental bachelor of sciences degree. I also completed a term abroad to study national health-care systems in Europe, took a hospital health-care practicum, and worked as an intern at a brain trauma center as an undergraduate student.

SW: How did your studies and these experiences help you in your research/career path?

MS: These health-care experiences opened my eyes to the fragilities of the human condition, and together with my coursework in biology and psychology, led to my realization that I could better serve the medical field indirectly – and less emotionally –

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through research than as a medical doctor. Having realized that graduate school was the means to my desired end, and given my longstanding interest in adolescence and substance abuse, I applied to work with Dr. Linda Spear at SUNY Binghamton.

I enjoyed designing experiments, developing hypotheses, and meticulous data collection. My graduate work demonstrated that adolescence is a period of relative insensitivity to alcohol, which I learned was extremely relevant given that alcohol use typically begins during this time, and that age of onset of use (<http://pubs.niaaa.nih.gov/publications/arh22-2/144-148.pdf>) is a significant predictor of later abuse and dependence. I also had several opportunities to teach courses as a graduate student, which I enjoyed as much as conducting research.

SW: What came after university?

MS: As I was wrapping up my dissertation research, I began searching for academic teaching jobs. Although I was headed away from research, serendipitously, a postdoctoral position became available in the Brain Imaging Center at McLean Hospital, a psychiatric teaching affiliate of Harvard Medical School, and similar to an inspiring private psychiatric hospital I visited in England during my term abroad.

Thus, I transitioned from preclinical rodent research to clinical research. This allowed me to utilize cutting edge, non-invasive magnetic resonance technology (<http://www.webmd.com/a-to-z-guides/magnetic-resonance-imaging-mri>) in order to investigate healthy adolescent brain development as a means to understand the neurobiological and neuropsychological consequences of substance abuse, and the manifestation of dependence and psychiatric illness.

SW: Please describe your current area of research.

MS: I am now in my 12th year of conducting brain-imaging research at McLean Hospital. Currently, I direct the Neurodevelopmental Laboratory on Addictions and Mental Health, within the Brain Imaging Center, which focuses on behavioral features of adolescent development, increased risk taking, poor decision-making, impulsivity, and reduced frontal lobe function, which overlap with features observed in substance abuse and psychiatric illness.

SW: What impact would you say your work has on people's day-to-day lives?

MS: At present, my work, and that of many colleagues conducting research in my area, has had its biggest impact through providing patient education and community outreach – locally, regionally, and nationally – to audiences that include teachers, guidance and adjustment counselors, psychologists, nurses, parents, and students.

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My presentations focus on neuroimaging research on the maturation of the adolescent brain and the consequences of early alcohol and drug use. Dissemination through community outreach has been a successful means of increasing public awareness about the vulnerability of the adolescent brain, as a prevention effort to discourage alcohol and drug use during

adolescence, but also, to educate the public on the importance of early identification of clinical and behavioral indicators of psychiatric illness in adolescents.

SW: What would you like to see happen with addiction research?

MS: At present, we can collect an abundance of information about the brain using magnetic resonance techniques, from brain structure, to brain function, to brain chemistry and more. Through the integration of data collected using multiple imaging modalities, and integration of brain data with neuropsychological and clinical assessments, a significant step forward for the field of addiction research would be in the area of diagnosis.

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The work currently being conducted in healthy adolescents is allowing for the understanding of normative brain development, so that we can begin to identify risk factors associated with the manifestations of addiction. It is the hope that one day these risk factors can be assessed on an individual basis, and perhaps become a routine assessment that begins in childhood. Given

the rapid rewiring of the adolescent brain, it is possible that changes occurring in the second decade of life are so important that they will have an influence on long-term health and well-being of the mind that will last into the final decades of life. Thus, the future of addiction can have an increased focus on prevention.

SW: Any words of advice for future addiction researchers?

MS: Follow your passion, follow your hunches, and don't give up no matter how challenging it may seem; you will make a difference. If you can help one person live a better life, it will be well worth your efforts.

Book Link:

[http://books.google.ca/books/about/The\\_Science\\_of\\_Addiction.html?id=81b9PRXDPIUC&redir\\_esc=y](http://books.google.ca/books/about/The_Science_of_Addiction.html?id=81b9PRXDPIUC&redir_esc=y)

Additional Links:

- <http://www.mclean.harvard.edu/about/bios/detail.php?username=msilveri>
- <http://www.union.edu/admissions/paths/marisa.html>