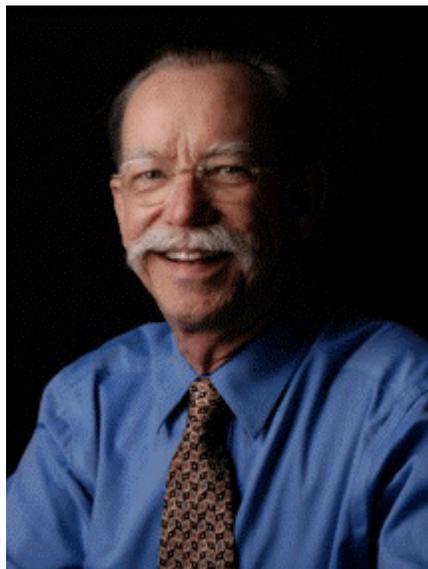


Meet R. Adron Harris, Ph.D.



Writer Sherry Wasilow interviewed Dr. Harris from his director's office in the Waggoner Center for Alcohol and Addiction Research at The University of Texas.

SW: What do you see as key challenges in addiction research today?

RAH: The two major problems are that, one, addiction is usually not diagnosed until it has progressed to a stage that is difficult to treat and two, that most people with drug dependence are not treated - in part because the treatments are not highly efficacious. Thus, we need better diagnostic approaches, particularly biomarkers for alcohol dependence, and we need effective pharmacotherapies.

SW: How do you hope to achieve this?

RAH: By understanding how alcohol changes brain chemistry (<http://www.chemcases.com/alcohol/alc-07.htm>), we hope to design better medications and other treatments for alcohol dependence - this is the hope and goal. Our work shows the extensive reprogramming of the brain that occurs during alcoholism, providing a scientific basis for clinical observations of the effects of alcoholism on many cognitive and physiological processes.

SW: How did you begin your career in alcohol research?

RAH: My career began in chemistry - asking how do atoms and molecules combine to make the materials of our world? I was not particularly interested in biology until I realized that the brain is a chemical machine. I then became fascinated with how basic chemical processes could result in behavior. I next made the connection that drugs, as chemicals, can give insight regarding how changes in brain chemistry can result in brain problems (<http://drugabuse.gov/scienceofaddiction/brain.html>).

SW: How did you progress from chemistry to addiction?

RAH: Some of my first studies were with opiate drugs and the tolerance and dependence that occur with their use. My interest in addiction led me to realize in the early 1980s that alcoholism is a much larger economic and societal problem than opiate addiction, yet there was very little research. Thus, I shifted my research effort to understanding the effects of alcohol on brain chemistry.

"Our work shows the extensive reprogramming of the brain that occurs during alcoholism..."

One challenge was to understand where and how alcohol acts on the brain to produce its many effects, including intoxication, tolerance, physical dependence, and craving. This was difficult because alcohol is much smaller than other drugs and can potentially find a lot of places in the brain to affect function. This led to an analysis of potential sites of alcohol action on key brain machinery - namely the proteins. Starting with a very simple cellular system (<http://www.chemcases.com/alcohol/alc-13.htm>), we showed how alcohol can affect function of specific brain proteins, and we have since extended this to looking at animal models of excessive drinking and human alcoholics.

SW: Any final words of wisdom?

RAH: All of therapeutics, all of medicine, is built on basic science research. Understanding brain function and drug action remains a huge challenge and basic science does not bring results quickly, but is essential for long-term progress. It is important that the United States continue to lead in this area.

Website: <http://www.utexas.edu/research/wcaar>
<http://www.biosci.utexas.edu/Neuro/faculty>