



Newsletter of the  
Northeast  
Georgia  
Section of the  
American  
Chemical Society



**ACS**  
Chemistry for Life®

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**Monthly Meeting: [Tuesday, February 12, 2013](#)**

**(Note location: Buffalo's Café)**

**“The Chemistry Between Us: The Neurobiology of Social Relationships”**

**Prof. Larry J. Young**

Center for Translational Social Neuroscience, Department of Psychiatry and Behavioral Sciences, Yerkes National Primate Research Center, Emory University School of Medicine, Atlanta GA, USA.

The neuropeptides oxytocin and vasopressin play important roles in several aspects of social cognition and behavior in animal models, including social bonding in monogamous species. A series of studies in voles demonstrate that variation in oxytocin and vasopressin receptor systems contributes to both species differences and individual variation in social behavior. Oxytocin and vasopressin receptor activation in the mesolimbic dopamine reward pathway plays an important role in social bond formation. We have identified genetic polymorphisms that robustly predict neuropeptide receptor expression in the brain, which in turn predicts social behaviors, including susceptibility to the impact of early social stressors on later life social attachment. There are remarkable parallels between those studies in voles and recent studies in humans which suggest that these mechanisms are highly conserved from rodent to man, providing insights into the chemical foundation of love and bonding. Furthermore, several studies suggest that the oxytocin system may be a viable target for novel pharmacological strategies for improving social functioning in subjects with autism spectrum disorder. Thus insights into the neurochemistry of love and attachment may lead to new treatments for autism.

**Dinner & Social start at 6:00 PM**

Each NEGS ACS member and chemistry major college student will receive a \$5.00 credit for his/her meal.

**Buffalo's Café**  
Beechwood Shopping Center  
196 Alps Road - Suite 49  
Athens, GA 30606

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## Speaker's Biographical Sketch

Dr. Larry J. Young, PhD is Founding Director of the Center for Translational Social Neuroscience and William P. Timmie Professor in the Department of Psychiatry and Behavioral Sciences at the Emory University School of Medicine in Atlanta. Dr. Young is also Chief of the Division of Behavioral Neuroscience and Psychiatric Disorders at Yerkes National Primate Research Center. Dr. Young received his undergraduate degree in biochemistry at the University of Georgia and earned his Ph.D. in the Department of Zoology at the University of Texas in Austin. Dr. Young has published in top tier journals including *Science*, *Nature*, *Nature Neuroscience*, *Nature Genetics* and *Nature Reviews Drug Discovery*.



The goal of Dr. Young's own research is to understand how genetic, cellular and neurobiological mechanisms regulate complex social behavior, including social cognition and social bonding. His research focuses heavily on the roles of the neuropeptides oxytocin and vasopressin in regulating the neural processing of social signals and social attachment. Dr. Young has developed behavioral paradigms that are useful for screening drugs that enhance social cognition, and is developing novel strategies for drug discovery for treating social deficits in psychiatric disorders such as autism spectrum disorder and schizophrenia. Dr. Young established the Center for Translational Social Neuroscience (CTSN), which brings together basic scientists and clinicians in the Atlanta area who are focused on understanding and healing the social brain. The mission of the CTSN is to discover the neurobiological mechanisms regulating the social brain, and to translate these discoveries to novel therapeutic approaches to treat psychiatric disorders characterized by disruption in social behavior, including autism, schizophrenia and other psychiatric disorders.

Young's new book, *The Chemistry Between Us: Love, Sex, and the Science of Attraction* (2012) explores the latest discoveries of how brain chemistry influences all aspects of our relationships with others.

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## Chair's Corner

I was happy to see everyone who made it to our annual banquet at the Athens Country Club. Professors Richard (Chemistry) and Margaret (Art) Morrison of UGA gave a very entertaining presentation on the chemistry of frescoes (right).



As we move more and more toward electronic distribution of section news and materials, it is increasingly important for us to have your correct e-mail addresses. So, **please update your e-mail address with our secretary**, Samantha Hawkins ([samantha.hawkins@ars.usda.gov](mailto:samantha.hawkins@ars.usda.gov)), if you moved recently, changed e-mail addresses or simply haven't been getting the monthly newsletter.

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