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# Tracy Hamilton: Chemistry's very own Renaissance Man

## CHEMISTRY

### Alex Vaughn

General Chemistry Professor, Master Brewer, coffee connoisseur, thermodynamics expert, and researcher. All of these are terms that describe UAB associate professor Dr. Tracy Hamilton.

Hamilton discovered his love of learning at a young age. After graduating from the University of Arkansas at Little Rock in 1980, he saw graduate school as the next step in his pursuit of academics. It was during graduate school that he first became involved in scientific research, an endeavor which would pave the way for his future career. Dr. Hamilton received his Ph. D. from the University of Arkansas in 1987 and moved on to the University of Georgia to complete his postdoctoral studies.

In 1991, Hamilton made the practical decision to come to UAB, where he has worked for the past 16 years. Wanting to stay in the South, UAB was the perfect choice for Hamilton because his appointment offered opportunities to conduct research as well as to teach. His long term research interest is the development of methods for investigating quantum-mechanical calculations. Currently, one project is producing high-accuracy results for vibrational frequencies and geometry optimizations. These studies could provide scientists with valuable tools that may be used for high-accuracy calculations. A second project the Hamilton lab is involved with is working with retinoids, in collaboration with UAB biochemist Dr. Donald Muccio, in order to determine the relationship between the structure and energy of these compounds and how that might relate to drug design. For example, after understanding how a particular cancer prevention drug works, researchers will be better equipped to develop new ones.

Currently, Dr. Hamilton employs three scientists in his lab, and next year he is willing to welcome



**Dr. Tracy Hamilton, Associate Professor, Theoretical Chemistry**

another undergraduate student. For interested students, he suggests a strong background in math and some computer science. As advice to future researchers, he encourages them to be flexible in their view of what they think research should be. Full-time research is a major commitment and takes up a lot of time. For this reason, Hamilton is a major advocate of summer programs because it gives students a good idea of what research is and how much can be accomplished before they make a commitment to doing research full time. Commenting on research as a career, Hamilton admits that it isn't a "way to get rich." He says that, "It should be something you do because you've got to do it! It interests you, and you're willing to make the various sacrifices it takes."



Dr. Hamilton giving his annual lecture on “The Chemistry of Beer” at a UAB Student Affiliates of the American Chemical Society meeting.

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Spectroscopy. In addition to teaching, Hamilton is a member of the Birmingham Brewmasters and is a certified Beer judge. Each year, he gives a lecture entitled “The Chemistry of Beer,” which is always well attended by both faculty and students. Tracy Hamilton brings a wealth of knowledge and practical experience to the UAB community, and he is both willing and well prepared to inspire and educate undergraduates. I hope that

When Dr. Hamilton isn't in the lab, you may find him doing a variety of things. He teaches courses in General Chemistry I and II, as well as the upper level course Structure/Bonding and Molecular

every UAB student someday gets the chance to experience Chemistry's own “Renaissance Man”: Dr. Tracy Hamilton.