



Department of Chemistry
NMR Facilities
Director: Dr. Carlos A. Steren

NMR NEWS

July 2012

* To check on the [instrumental status](#) and [reservation system](#), and find tutorials, links and more, visit our website www.chem.utk.edu/nmr

* **New student operators.**

Josh Abbott and **Jon Horton** are graduating in a few weeks. They have been the student operators of the Bruker 400, Varian 400, Varian 300 and AC250, for the past 4-5 years. They will be missed very much. We wish them good luck in their careers.

The new student operators are **Chris Murdock**, in charge of the Varian 300 and AC250, and **Matt Dembo**, in charge of the Bruker 400 and Varian 400. We welcome them aboard.

* **^{15}N HMBC experiment.**

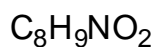
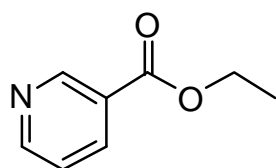
It is quite common to hear about 2D heteronuclear experiments. Still, most of the time, we are just referring to ^{13}C - ^1H experiments.

The software on some of our instruments (like the new Varian 500), allows us to run heteronuclear experiments involving nuclei other than ^{13}C .

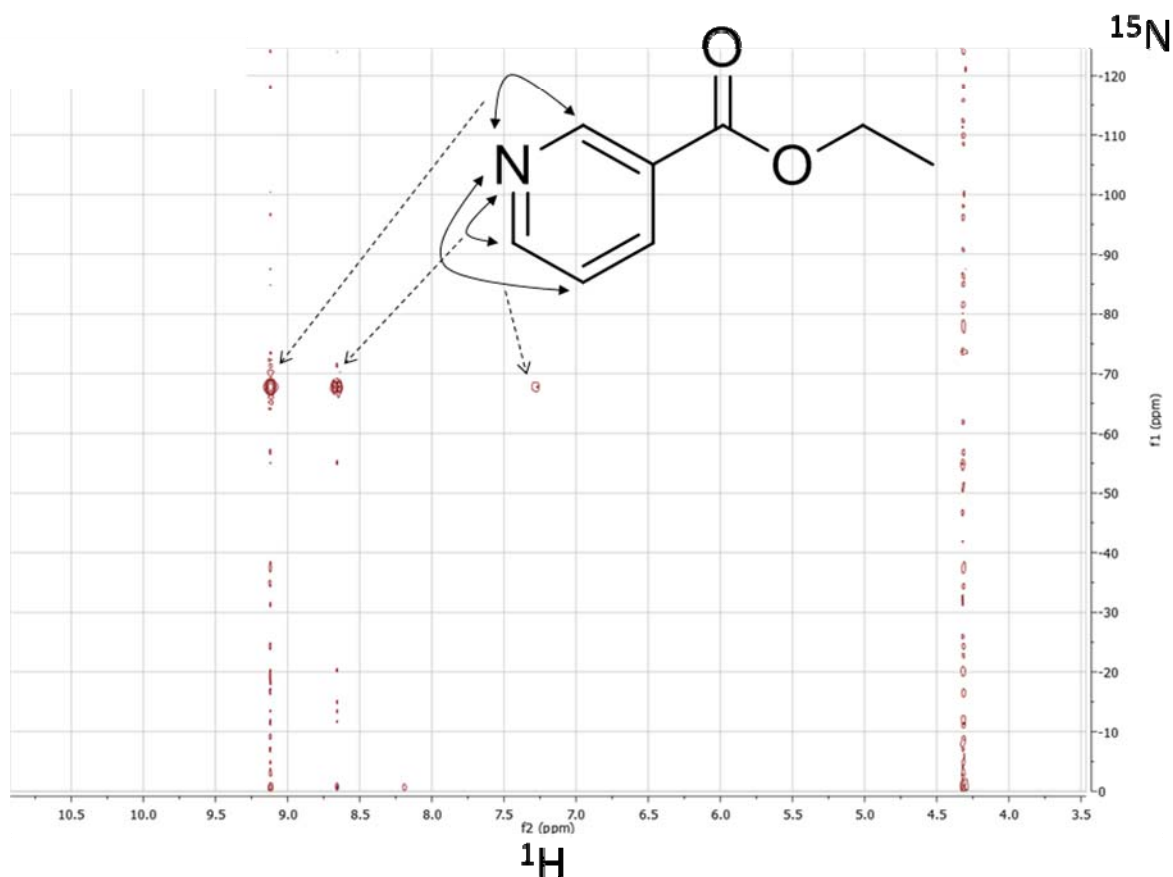
An experiment that could be quite useful for organic molecules is a ^{15}N HMBC. It provides long range correlations between nitrogen and hydrogen atoms.

The ^{15}N HMBC does not require labeled samples. It can detect the ^{15}N at natural abundance. Two examples follow,

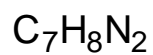
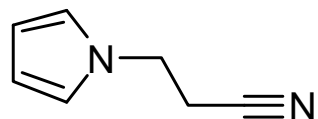
Example 1



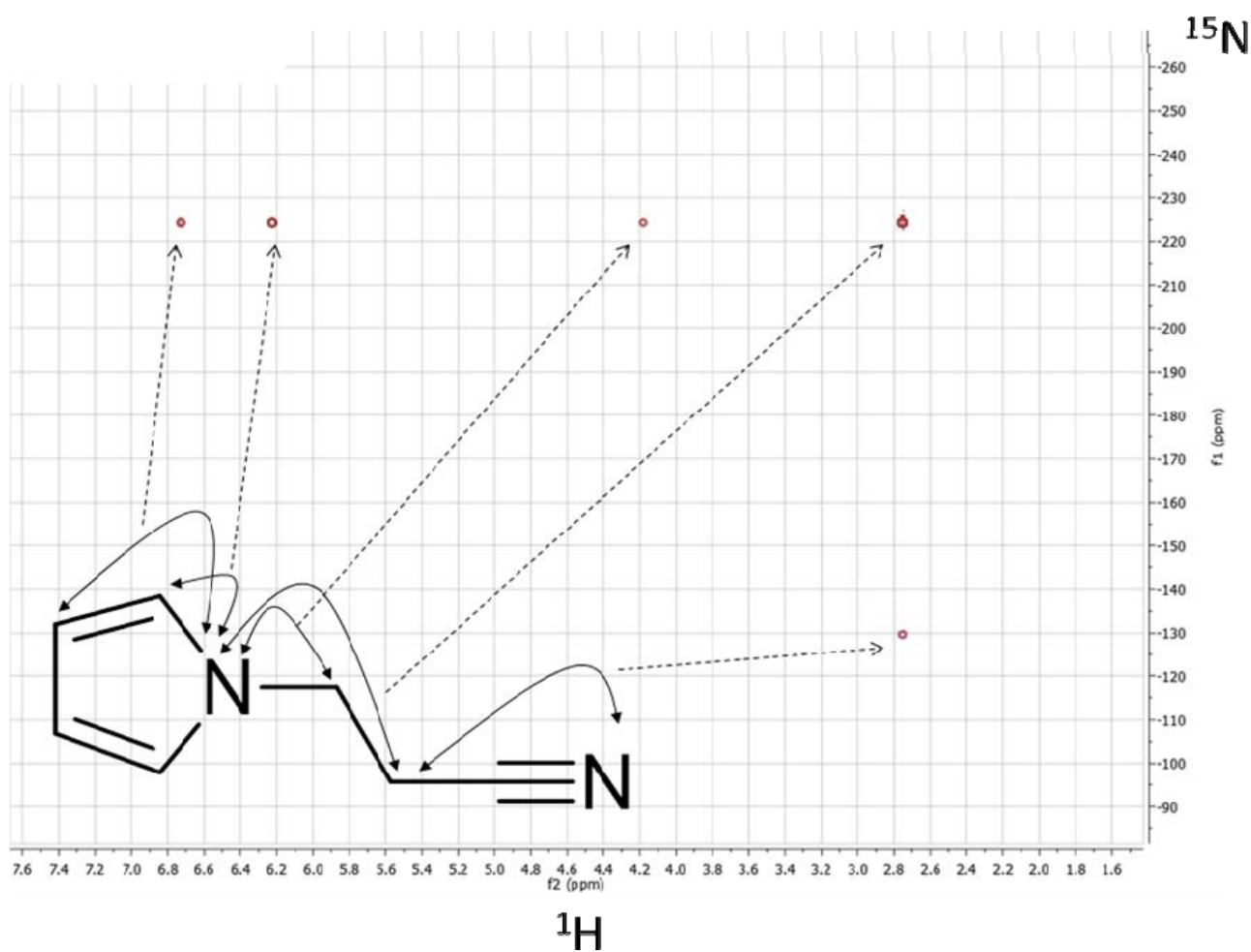
ethyl nicotinate



Example 2



3-(1*H*-pyrrol-1-yl)propanenitrile



Many thanks to Chad LeCroix for preparing the samples for these experiments.