

# BioNMR Spectroscopy Core Facility University of Virginia

## Links

BioNMR Spectroscopy Core  
[ernst.chem.virginia.edu/biomagresfac](http://ernst.chem.virginia.edu/biomagresfac)

Bryant lab  
[www.virginia.edu/chem/people/faculty/bryant](http://www.virginia.edu/chem/people/faculty/bryant)

Bushweller lab  
[people.virginia.edu/~jhb4v/](http://people.virginia.edu/~jhb4v/)

Cafiso lab  
[ernst.chem.virginia.edu/dsclab/](http://ernst.chem.virginia.edu/dsclab/)

Columbus lab  
[www.columbuslabs.org/](http://www.columbuslabs.org/)

Khorasanizadeh lab  
[www.faculty.virginia.edu/khorasan/](http://www.faculty.virginia.edu/khorasan/)

Tamm lab  
[www.faculty.virginia.edu/tamm/](http://www.faculty.virginia.edu/tamm/)

## University of Virginia BioNMR Spectroscopy Core Facility

### Contacts

Jeff Ellena  
[jfe@virginia.edu](mailto:jfe@virginia.edu)  
434-924-3163

John Bushweller  
[jhb4v@virginia.edu](mailto:jhb4v@virginia.edu)  
434-243-6409



800 MHz NMR with cryoprobe



600 MHz NMR with auto sample changer

## Services Offered

500, 600, and 800 MHz NMR spectrometer time.

Consultation on all aspects of using NMR spectroscopy for elucidation of molecular structure and dynamics.

## Expertise Available

The laboratories of John Bushweller and Lukas Tamm in Molecular Physiology and Biological Physics, Sepideh Khorasanizadeh in Biochemistry and Molecular Genetics, and Robert Bryant, David Cafiso, and Linda Columbus in Chemistry have considerable experience with the application of NMR spectroscopy to biologically interesting molecules (primarily proteins and nucleic acids).

The manager and only staff member of the BioNMR Core, Jeffrey Ellena, has 25 years of experience in the application of NMR spectroscopy to molecular structure determination.

## Instrumentation

State of the art 500, 600 (3), and 800 MHz NMR spectrometers. All spectrometers will perform the wide range of experiments typically used for elucidation of protein and nucleic acid structure and dynamics. Two of the 600 and the 800 MHz spectrometers are equipped with cryogenically cooled probes for optimum sensitivity. Two spectrometers (the 500 and one 600) have automated sample changers for unattended data collection from multiple (up to 50) samples. All spectrometers are located in the Chemistry Building on McCormick Rd.

## Recent Publications

Allosteric inhibition of the protein-protein interaction between the leukemia-associated proteins Runx1 and CBF beta, Gorczynski MJ, Grembecka J, Zhou YP, et al. *CHEMISTRY & BIOLOGY* **14**, 1186-1197 (2007)

Structural basis for recognition of SMRT/N-CoR by the MYND domain and its contribution to AML1/ETO's activity, Liu YZ, Chen W, Gaudet J, et al. *CANCER CELL*, **11**, 483-497 (2007)

NMR Solution Structure of the Integral Membrane Enzyme DsbB: Functional Insights into DsbB-Catalyzed Disulfide Bond Formation, Zhou Y., Cierpicki T., Flores Jimenez RH., et al. *MOLECULAR CELL*, **31**, 896-908 (2008)

Structure of outer membrane protein G by solution NMR spectroscopy, Liang BY, Tamm LK, *PNAS (USA)*, **104**, 16140-16145 (2007)

Structure and plasticity of the human immunodeficiency virus gp41 fusion domain in lipid micelles and bilayers, Li YL, Tamm LK, *BIOPHYS J*, **93**, 876-885 (2007)

Structure and ligand binding of the soluble domain of a *Thermotoga maritima* membrane protein of unknown function TM1634, McCleverty CJ, Columbus L, Kreuzsch A, et al. *PROTEIN SCI*, **17**, 869 – 877 (2008)