**NIH Equipment**

*In addition to describing the environment in which the project will take place (in the Facilities & Other Resources document), your application must include a list of equipment available for your research. There is no specific page limit for this document, but it should be concise.*

*List major items of equipment already available for this project and, if appropriate, identify the equipment's location and pertinent capabilities.*

*Note: Do not quantify the value of any equipment listed.*

*Questions to consider as you begin listing your sources of equipment:*

* *What resources are directly applicable or required to complete the Specific Aims of the proposed research?*
  + *Office: Where is your office located? Do you have a laptop/desktop/both in your office? What capabilities does it have? What software is necessary to carry out your research?*
  + *Lab: Where is your lab located? Do you share lab space or lab equipment with other faculty? What major pieces of equipment are in your lab?*
  + *What major pieces of equipment do you share with other researchers that is necessary to the research described? Are there other departmental resources that you will need to conduct your research?*

*[[1]](#endnote-1)Example language is provided below as a prompt to help you get started.*

**Example 1**

**Equipment Available at John Doe University (PI X’s Primary Site)**

**Basement labs:**

(A) Shielded Varian INOVA 500 MHz NMR spectrometer equipped with pulsed field gradients and both inverse (TTR/PFG 5mm 1H (13C, 15N-31P)) and tunable broadband probes. To enable high throughput NMR-based screening (in 96 well plates), it is also equipped with a VAST accessory with Gilson liquid handler and Varian Microflow triple resonance probe (inverse).

(B) Organic synthesis lab equipped with two chemical hoods, and a microwave synthesizer (Biotage Initiator™).

**Third floor labs (adjacent to PI’s office)**:

(C) Analytic lab equipped with HPLC’s, GC/MS (Thermo Saturn 2000 GC coupled to 3800 MS with autosampler) and Applied Biosystems 4000 Qtrap LC/MS/MS triple quad (coupled to Dionex RSL 3000).

(D) Eppendorf epiMotion 5075 liquid handler to prepare Mother-Daughter plates as well as assay plates for screening (in NMR, fluorescence and UV-Vis assays).

(E) Autoclaves (tabletop in lab & larger autoclave in basement)

(F) Biochemistry/Molecular Biology equipment: Sorvall centrifuge and ultracentrifuge (WX80), incubator/shaker (5°–40°), tissue culture/CO2 incubator, BMG Polarstar plate reader (Vis, fluorescence, FP), lyophilizer, rotary evaporator, pH meters, microscopes (fluorescent & inverted), PCR thermocycler, balances, ice machine, Revco −80 C freezer, −20 C freezer, Savant SpeedVac, UVP Transilluminator, 2 Spectrophotometers, and a glass-door deli style refrigerator for protein purification.

**Example 2**

**Equipment: Main University (PI X’s Secondary site-10 miles away; the PI spends 1 day per week at Main University, where he has an appointment.)**

(A) A facility in the basement of Chemistry building houses a state of the art NMR I magnet lab with three spectrometers. This is the best equipped facility in the region for NMR structure and NMR-based screening of protein-ligand interactions, with $1.3 million in equipment (magnets, robotics, etc.). Varian 300 MHz Mercury Plus NMR Spectrometer, 1H/19F/X (30-122MHz) PFG probe and inverse probe (Z-axis gradient); equipped with 50-sample changer for automation.

* Varian 400 MHz (9.4 Tesla) NMR spectrometer with microimaging capability. Equipped with broadband and inverse triple resonance (triple axis gradient) probes; 2 channels. Uniquely equipped with Protasis microflow probe with liquid handler for robotic automation of screening from 96-well plates, using only μg sample quantities - because of capillary microcoil sensitivity.
* Varian 600 MHz (14 Tesla) NMR spectrometer (4 channel; Z-gradients) with HCN cryoprobe with a cryocooled 13C preamplifier for maximum 13C sensitivity.

(B) New (NSF grant: [number 08345984]; X was a co-PI on this grant) high performance computing resources at Main: Main recently acquired a computational cluster consisting of 10242.6 GHz Intel Nehalem cores, 3 GB of RAM per core, and 50 TB of disk space. This cluster has Gaussian (for quantum mechanics calculations), Autodock (protein docking), CYANA (protein structure calculation) and Amber (molecular mechanics and dynamics calculations) software installed.

(C) Organic and peptide synthesis: Three chemical fume hoods, automated peptide synthesizer (Advanced ChemTech, model 90), HPLC system (Waters 510 pump with tunable absorbance detector), rotary evaporator, and extensive glassware for chromatography, distillation, refluxing, etc.

(D) Located in the adjacent Biology building, there is a confocal microscope: Nikon A1 laser scanning microscope with high speed resonance scanning feature. Includes 408, 488, 543, and 638 nm laser lines. It also includes Nikon Ti-E motorized inverted research microscope with perfect focus technology, wide field fluorescence, phase contrast, DIC, temperature controlled plate, and Nikon Elements acquisition analysis software.

1. Norins, L., & Matheson, S. (2014). *NIH R15 Grant Application Mentor: An Educational How-to Manual, (2nd edition)*. Bonita Springs, FL: Principal Investigators Association. [↑](#endnote-ref-1)