

Justification of Need (9 pages)

Name the requested instrument. Compare performance of the requested model with other similar instruments available on the market. Justify the need for specific features and special accessories of the requested instrument. Each such accessory must be utilized by at least three Major Users.

If the requested instrument is under a lease agreement, demonstrate that the instrument is considered state-of-the-art at the time of the application submission (see details in Section IV.6 Funding Restrictions).

Justify the need for software. All software supported by this program must be integrated in the operation of the instrument or be necessary for the generation of high-quality data from the instrument. Depending on the needs of research projects, different configurations of such software may be needed to ensure productive scientific use of the instrument. If such additional software modules are requested (e.g., software configuration for the acquisition of metabolomics data, microscope image acquisition, and control modules), they must be essential for the advancement of research projects of least three Major Users. As noted previously, stand-alone workstations, duplicate software items, and software licenses are not allowed.

Explain why the chosen model and its manufacturer are the most suitable for your user group. Preliminary data are not required, though if feasible, can be included to justify the choice of the instrument. Especially, if access to a demo instrument is practical, preliminary data are encouraged. Provide an inventory of similar instruments existing at your institution, neighboring research institutions, or otherwise accessible; describe why each similar instrument is unavailable or inappropriate for the proposed research. If similar instruments are listed as "unavailable," add a letter to the Letters of Support section from the instrument manager explaining why the instrument is not available to your user group. Include specific documentation on the current usage and downtime of each of these existing instruments in annual hours and a realistic estimate of the projected usage for the requested instrument. You may use tables to clarify the presentation. Tables included within this section will count towards the specified page limit.

Define and justify the Accessible User Time (AUT) for the requested instrument. The AUT is the number of annual hours the instrument can be practically used for biomedical research. AUT hours may be limited by the times an instrument operator is available (if an operator is required), site or building access schedules, scheduled maintenance, start-up and standardization, and any other factors that take time away from the use of the instrument for biomedical research. More importantly, AUT will be limited by the type of the technology requested; some instruments can be and are typically operated 24/7 while other technologies can be used only during regular hours. Therefore, justify the AUT based on the type of the technology requested and an individual managerial plan at your institution to make clear that the AUT corresponds to expected practical full-time use of the instrument at your institution.