Mississippi State University
Notice of Proposed Sole Source Purchase

190-41

Mississippi State University anticipates purchasing the item(s) listed below as a sole source purchase. Anyone objecting to this purchase shall follow the procedures outlined below.

1. Commodity or commodities to be purchased (make, model, description):

Leica THUNDER Imager 3D Cell Culture

Inverted microscope that provides wide-field imaging as well as real-time computational clearing of thin and thick tissues to remove out-of-focus light.

Provides objectives and filters that are compatible and automatically recognizable with existing departmental Leica SPE confocal microscope.

2. Explanation of the need to be fulfilled by this item(s), how is it unique from all other options, and why it is the only one that can meet the specific needs of the department:

The Leica Thunder Imager system is unique in many aspects and meets multiple needs of the department that no other system can:

Thunder Station 3D DCV (Computational Clearing)

Need: instant computational clearing – ICC - (removing of out-of-focus light) to support high quality images and quantitative analysis in

thin section tissues

thick culture tissues

Unique: No other source currently offers instantaneous/real-time computational clearing. Computational clearing is much faster, gentler to the sample, and much more cost effective than other methods to remove out-of-focus light such as Structured Illumination Microscopy or Confocal Microscopy. Images can be processed as acquired or in batches after acquisition. In all cases the raw data is saved and available for analysis.

This clearing system is the only one that will meet the departments needs in providing standard brightfield imaging as well as real-time high-speed acquisition of large tile-scanned and z-stack images at without the blur of out-of-focus light to support quantitative analysis.

HC FLUOTAR L 25x/0.95 W VISIR

Need: long-distance objective with a working distance of 2mm to allow for slice culture imaging and thick tissue imaging. The water objective and high numerical aperture (0.95) are necessary for imaging in murine brain slice culture.

required to be used on both the Leica Thunder Microscope and the existing departmental Leica SPE confocal to provide new functionality to the existing equipment.

Must be automatically software recognizable with both systems

Unique: No other source provides an objective that is automatically software recognizable with existing departmental equipment

This objective is the only one that meets the needs of the department in providing the ability to carry out slice-culture imaging and thick-tissue imaging on both the Leica Thunder Microscope as well as the existing departmental Leica SPE confocal.

LAS X Premium software
Need: Software to support:
Tile scans (setting focus points, aligning, and stitching)
spiral navigation
vessel types preset and ability to add custom carriers
z-stack
autofocus
time-lapse imaging
multichannel overlay
3D rendering in real time
Existing faculty, staff and student expertise
Unique: The LAS X software is the only one on the market that provides seamless integration with THUNDER and Computational Clearing technology for processing during acquisition or after. In each case raw images are saved in parallel with the cleared image or image stacks.

This software provides for the needs of the department because:

This software is already in place on the current Leica SPE Confocal microscope. Therefore, faculty, staff and students are already trained in software operations and procedures, and images collected on the current and proposed instruments would be cross-compatible in their original format.

This software allows an unlimited number of overview images of any shape can be generated

This software can perform a spiral scan for quick searches of the sample

This software can define an unlimited number of regions and positions of any size.

This software allows the use of many predefined sample carrier formats including many vessel types including slides, petri dishes, and well plates from different suppliers.

This software allows Z-Focus, closed loop Focus + AFC for reproducible z-stack and time-lapse images

This software allows user to set fixed focal positions or an autofocus for all imaging points

3. Name of company/individual selling the item and why that source is the only possible source that can provide the required item(s):

Leica Microsystems Inc is the only source of the required:

THUNDER Technology and Instant Computation Clearing (ICC). In the proposed system these allow for both large and small volume processing either instantly (during acquisition) or after acquisition.

Instant Computational Clearing (ICC) for instantaneous removal of out of focus background

o Small Volume Computational Clearing (SVCC) combines Instant Computational Clearing and Decision Mask based 3D deconvolution dedicated to thin specimen (i.e. mono cell layer)

o Large Volume Computational Clearing (LVCC) combines Instant Computational Clearing and Decision Mask based 3D deconvolution dedicated to thick specimen (i.e. organoids)

(Real-time computational clearing of both thin and thick tissues to remove out-of-focus light)

25x long distance objective automatically software recognizable with existing departmental Leica SPE confocal.

4. Estimated cost of item(s) and an explanation why the amount to be expended is considered reasonable:

The quoted cost is $173,761, including delivery. This is the only system that meets the specific requirements described above. However, we judge this expense to be reasonable since quotes obtained in April 2019 during bid process 19-25 for the purchase of a confocal microscope by the Biological Sciences department ranged from $164,341 to $297,989.

5. Explanation of the efforts taken by the department to determine this is the only source and the efforts used to obtain the best possible price:

The department has taken time to research both the need of the department and the providers of microscope systems.

Nikon
Olympus
Zeiss
Meiji
Leica is the only company that currently offers the products that meet the needs of the department including the THUNDER technology and ICC as well as compatibility with existing departmental equipment.

Any person or entity that objects and proposes that the commodity listed is not sole source and can be provided by another person or entity shall submit a written notice to:

Don Buffum, CPPO
Director of Procurement & Contracts
dbuffum@procurement.msstate.edu
Subject Line must read "Sole Source Objection"

The notice shall contain a detailed explanation of why the commodity is not a sole source procurement. Appropriate documentation shall also be submitted if applicable.

If after a review of the submitted notice and documents, MSU determines that the commodity in the proposed sole source request can be provided by another person or entity, then MSU will withdraw the sole source request publication from the procurement portal website and submit the procurement of the commodity to an advertised competitive bid or selection process.

If MSU determines after review that there is only one (1) source for the required commodity, then MSU will appeal to the Public Procurement Review Board. MSU will have the burden of proving that the commodity is only provided by one (1) source.