

TO: ALL POTENTIAL OFFERORS

SUBJECT: REQUEST FOR INFORMATION – CONFOCAL MICROSCOPE WITH FREQUENCY-DOMAIN FLUORESCENT LIFETIME IMAGING

Pacific Northwest National Laboratory (PNNL) has funds available to purchase a system composed of an inverted confocal microscope with an attachment for frequency domain measurement of fluorescent lifetimes in the microsecond range.

The combined system must have the following capabilities:

- Adequate ports for illumination and cameras to operate in the following ways, with minimal switching of instrument elements:
 - Confocal microscopy
 - Epifluorescence microscopy
 - Frequency domain measurement of fluorescent lifetimes in epifluorescent mode
 - Frequency domain measurement of fluorescent lifetimes in confocal mode
 - Dual (integrated) epifluorescence microscopy and frequency domain measurement of fluorescent lifetimes.
 - Dual (integrated) confocal microscopy and confocal frequency domain measurement of fluorescent lifetimes.
- The hardware and software of the combined system must be integrated to include a data handling environment that allows users to efficiently and precisely overlay confocal microscope x-y images with fluorescent lifetime x-y images, to include overlay of confocal microscope z-stacks with fluorescent lifetime z-stacks.
- The combined system must have illumination sources for frequency domain measurement of fluorescent lifetimes of the following metal complexes (excitation/emission): 365/750 for Molybdenum cluster fluorophores, 395/650 for Platinum porphyrin fluorophores, 460/600 for Ruthenium complex fluorophores, and 635/800 for Palladium porphyrin fluorophores.
- The combined system must have multiple illumination sources for imaging up to six different categories of fluorescent dyes (ranging from DAPI to Alexa 647), with the capability to image many dyes simultaneously.
- The microscope stage must precisely position the sample (micromodel) and have a method for re-zeroing the fiduciary markers within the micromodel sample in x-y directions and theta (rotational) direction.
- The microscope must have an automatic mechanism for maintaining constant focus on the micromodel sample.
- The microscope must be outfitted with an environmental chamber that provides for monitoring and maintenance of a constant temperature around the micromodel sample.

- Working distances with 40x and 60x/63x objectives must be at least 150 microns from the coverslip/specimen interface.

Other General Information:

PNNL currently plans to issue a request for proposal (RFP) late March 2012, with proposals due Late April early May 2012. PNNL plans on posting this RFP on FedBizOpps.gov and [PNNL's Advertised Solicitations](#).

The proposal evaluation period will include site visits/demonstrations in mid-May, in which vendors address the capabilities listed above with special attention to: "The hardware and software of the combined system must be integrated to include a data handling environment that allows users to efficiently and precisely overlay confocal microscope x-y images with fluorescent lifetime x-y images, to include overlay of confocal microscope z-stacks with fluorescent lifetime z-stacks."

PNNL expects to award the contract in early August.

Award is contingent upon written guarantee from vendor that it can delivery, set-up, and complete training within 4-6 weeks of contract award.

If you are interested in receiving the RFP (which will be an open posting), please contact PNNL before March 28, 2012 using the contact information at the bottom of this correspondence. We look forward to hearing from you.

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