

Planned Equipment Purchase - CEGS

Jay and I have decided the best approach is to purchase a new microscope that will be used for production sequencing (#1), and upgrade the current scope (#2) so that it has the same degree of sensitivity, and can function as a second production sequencer. Ben is also purchasing a scope (#3), which will be used for confocal imaging. #3 can also be used for general high-resolution microscopy, including epifluorescence.

I have obtained quotes for the following:

#1

Nikon TE2000E motorized inverted microscope	\$43,683.20
-motorized filter cubes, shutters, Z-axis (focus) control	
-Plan Fluor objectives, to match current equipment on #2	
-5 year warranty; we won't need a service contract	
Additional equipment for #1:	
Prior automated X-Y stage w/ encoders	\$17,925.00
Sutter 175W xenon fluorescent light source	\$7,330.00
Hamamatsu electron-multiplied CCD camera (low-light)	\$36,100.00
Chroma filter set (3 cubes)	\$2,850.00
Metamorph software	\$9,100.00
Computer for data acquisition	\$1,500.00

#2

Additional equipment for existing scope:	
Upgrade stage w/ encoders	\$4,925.00
Upgrade focus w/ encoders	\$3,325.00
Sutter 175W xenon fluorescent light source	\$7,330.00
Hamamatsu electron-multiplied CCD camera (low-light)	\$36,100.00

#3

Ben is taking care of the confocal attachment; quotes for scope, camera, and stage:

Nikon TE2000E motorized inverted microscope	\$43,683.20
-motorized filter cubes, shutters, Z-axis (focus) control	
-Plan Fluor objectives, to match current equipment on #2	
-5 year warranty; we won't need a service contract	
Additional equipment	
Prior automated X-Y stage w/ encoders	\$17,925.00
Hamamatsu Orca ER CCD camera	\$18,180.00
Chroma filter set (3 cubes)	\$2,850.00
Metamorph software	\$9,100.00
Computer for data acquisition	\$1,500.00

MJR PCR Machine:

PTC-0200 DNA Engine Chassis	\$3,995.00
Alpha Engine, 48/48 Dual Block Head	\$2,495.00
Shipping	\$60.00
TOTAL	\$269,956.40

Ben estimates the confocal attachment for scope #3 will be ~ \$100,000.00.
Presumably the remaining ~\$30,000 will be for data storage, backup, etc.

We will be demoing the CoolSnap camera this week, and are looking to purchase it ASAP for sequencing. The electron-multiplied cameras are in short supply, so the time-frame for getting these (even to demo) is several months. We plan to demo one as soon as possible to determine whether it provides a significant boost in S/N over the Orca ER. If so, we plan to use these on the sequencing scopes, and move the Orca ER to #3; otherwise, we will put Orca ERs on #1 and #2 (the Orca ER is a high-end camera for normal applications; the gain-multiplied camera is designed for extremely low-light applications).