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
- Hammamatsu 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
- Hammamatsu 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
- Hammamatsu 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:
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 timeframe 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).