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Dr. Jack Collins,
Director, Advanced Biomedical Computing Center,
SAIC – Frederick Inc. / NCI – Frederick

I am writing this letter to offer my most enthusiastic support. The Optical Microscopy and Analysis Laboratory (OMAL) and the Advanced Biomedical Computing Center (ABCC) have been collaborating on multiple projects over the past seven years. These collaborations have resulted in new software tools and algorithms for image analysis and visualization. Based on the success of this collaboration, ABCC and OMAL proposed to the NCI's Office of Scientific Operations to form a new group, the Imaging and Visualization Group (IVG) that is dedicated to bringing the imaging community at NCI – Frederick together to leverage mutual expertise, software and infrastructure and to foster collaborations with external institutions. As part of this effort, the IVG has established "SLICER3" as a common software platform for medical and microscopic imaging. SLICER3 is highly-advanced, free software developed and distributed by the National Library of Medicine, NIH for image analysis and visualization. Furthermore, the IVG enabled the Small Animal Imaging Program (SAIP) to leverage this community as it has come into full production during the past year. As a result of IVG efforts, several significant achievements have resulted such as: new technologies in image analysis; segmentation; data integration of multiple imaging modalities, and quantitative analysis of 2D and 3D angiogenesis images. 2D angiogenesis results were published and orally presented at a scientific conference earlier this year. The study of angiogenesis by microscopy includes several collaborators from within and outside the NCI and this investigation has been broadened to cover quantitative analysis of collective cell migration using optical microscopy.

The OMAL looks forward to continuing its collaboration with the ABCC, particularly in the area of super-resolution optical microscopy. These new techniques, coupled with a spectrum of other advanced fluorescence microscopy, will evolve into multi-functional microscopy, which will provide the cancer and HIV biologist with far more information about the molecular properties and behavior of living cell samples. The ABCC will play multiple, crucial, roles to bring this to fruition. Specifically, the IVG will be involved with segmenting, quantifying and mining the data, and mathematically modeling the data to derive a deeper understanding of the underlying molecular mechanisms driving cell and tissue activities. OMAL is working with bioinformaticists at the ABCC to establish a laboratory information management system tailored to microscopy that will in due course facilitate association across disparate information sources, such as optical microscope images, mass spectroscopy protein data and genomics data. OMAL has received outstanding support from the system administrators at the ABCC, specifically regarding the maintenance and back up of a file server, FDCC security issues, provision of windows servers and provision of software.

In summary, the ABCC is integral to the success of OMAL therefore I strongly encourage continued and expanding support of the ABCC. Please feel free to contact me for further information.

Sincerely,

A handwritten signature in black ink that reads "Stephen J. Lockett". The signature is written in a cursive, slightly slanted style.

Stephen Lockett, PhD,
Principal Scientist,
Director, Optical Microscopy and Analysis Laboratory.