



Children's Hospital Boston
The Hospital for Children



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Dear Dr. Ayache,

I am writing this letter to express my strong support for the application for an "Equipes Associees" proposal.

I am the Director of the Computational Radiology Laboratory (CRL), which was founded in 2001 with the mission of improving our understanding of the structure and function of the brain and other organs of the human body, and improving our capacity to diagnose and treat disease. Members of the CRL achieve this by developing novel technologies and computational modeling strategies for understanding and interpreting radiological images. My research interests focus on methods for quantitative and real-time image analysis, enabled by high performance computing strategies. I am the principal investigator of research grants from both the National Institutes of Health and from the National Science Foundation.

I am delighted to act as coordinator for this proposal. It will be a pleasure to coordinate this study between INRIA, Massachusetts General Hospital, Brigham and Women's Hospital, MIT, CIMIT and Harvard, all of whom we have worked closely and successfully in the past. The CRL in Children's Hospital, Department of Radiology, has a very active research program developing medical image computing technologies for improved diagnosis and treatment of pediatric brain tumor patients. We currently utilize structural MRI and diffusion tensor MRI to visualize the brain tumor and critical white matter structures for preoperative surgical planning. Patients are also followed longitudinally, and we are interested in functional measures of tumor progression, derived from multimodality fusion of MRI and PET scans.

Children's Hospital has recently installed a 1.5T MRI scanner in a neurosurgical operating room, and we utilize real-time ultrasound imaging to guide intraoperative navigation. The simultaneous display of preoperatively acquired MRI with intraoperative ultrasound is expected to dramatically enhance the capacity of the neurosurgeons to resect brain tumor while avoiding postoperative neurological deficits. The technology development proposed in this proposal will be key in enabling these advances.

I am strongly convinced your proposed research will have a major impact upon our understanding of the early appearance and diagnosis of brain tumors, and will lead to objective assessment of improved interventions which will lead to enhanced quality of life for brain tumor patients.

Yours sincerely,

Simon K. Warfield, Ph.D.