



# BIRN Portal

Collaborative Environment

Biomedical Applications

Collaborative Projects



Membership Management

Data Spaces

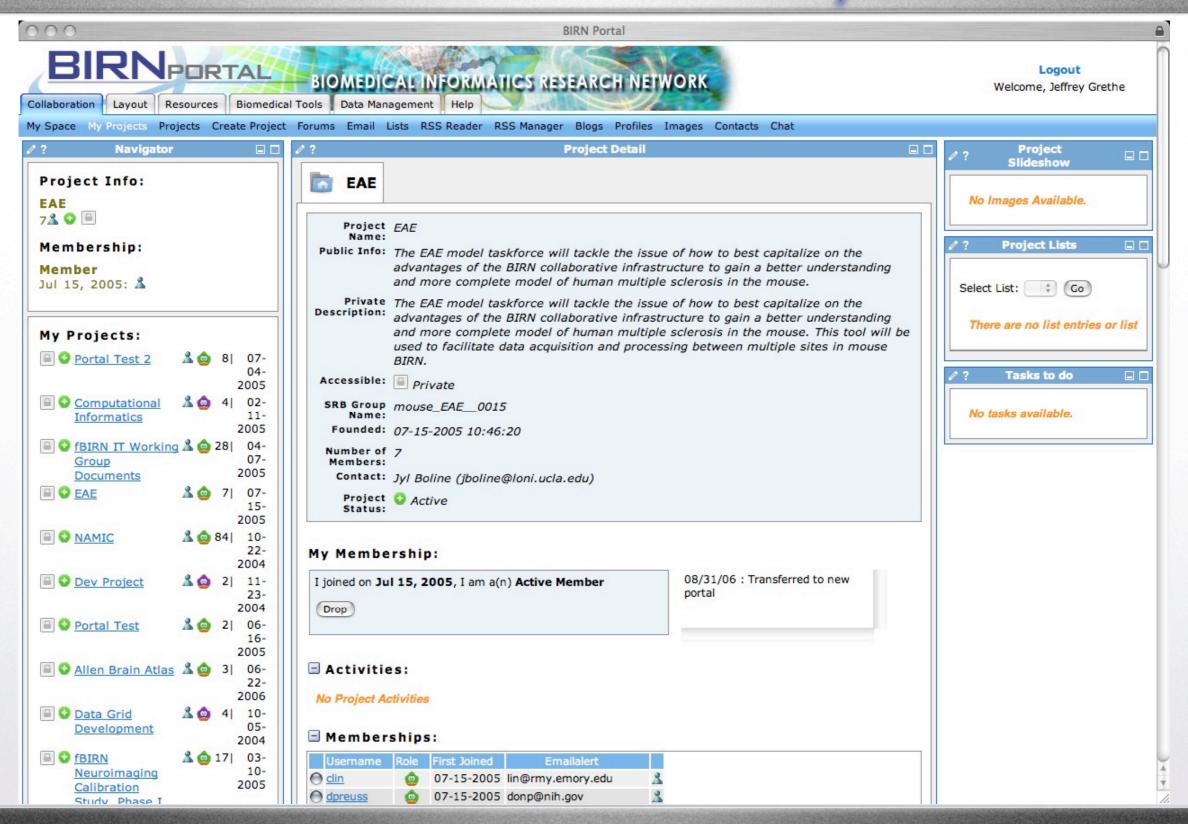
Integrated Mailing Lists

Collaborative Tools

Information Feeds

### Collaborative Projects





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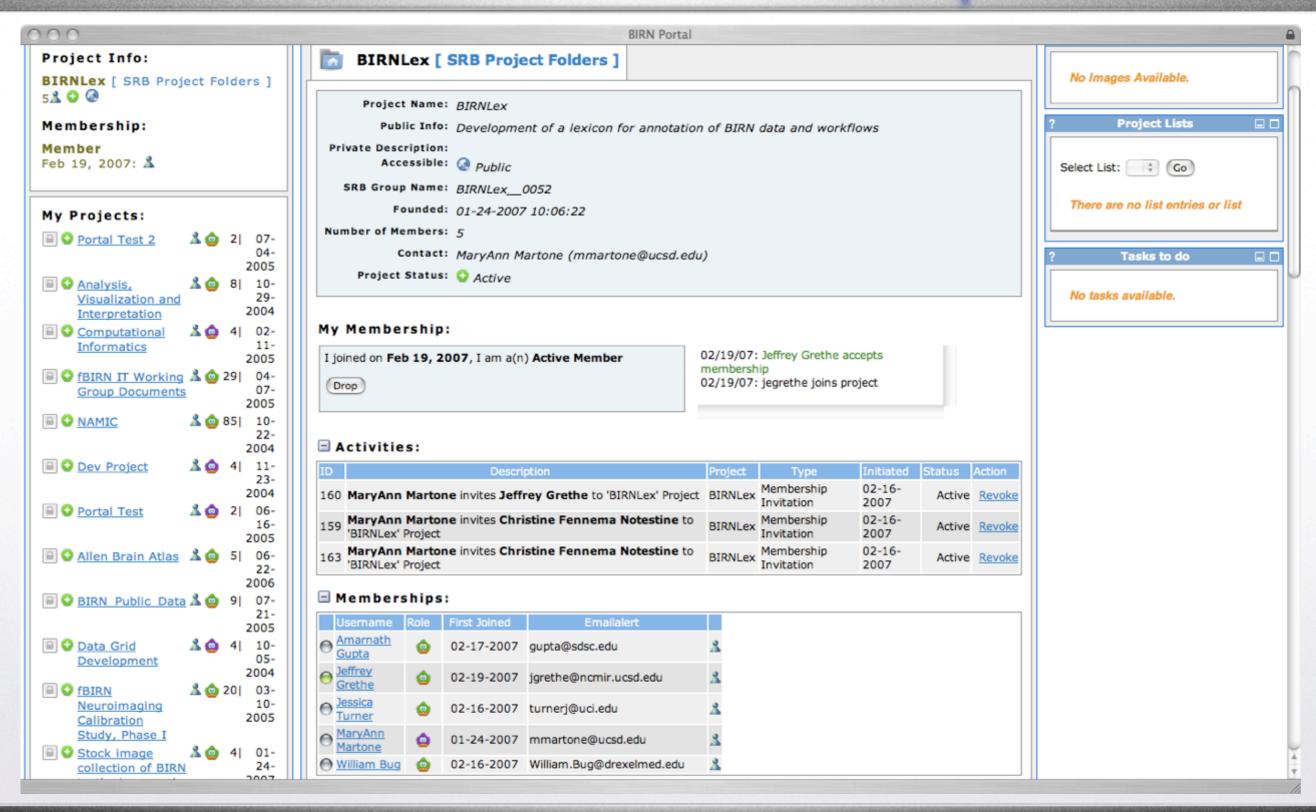
Data Spaces



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#### Collaborative Workspace (+ 1 ->

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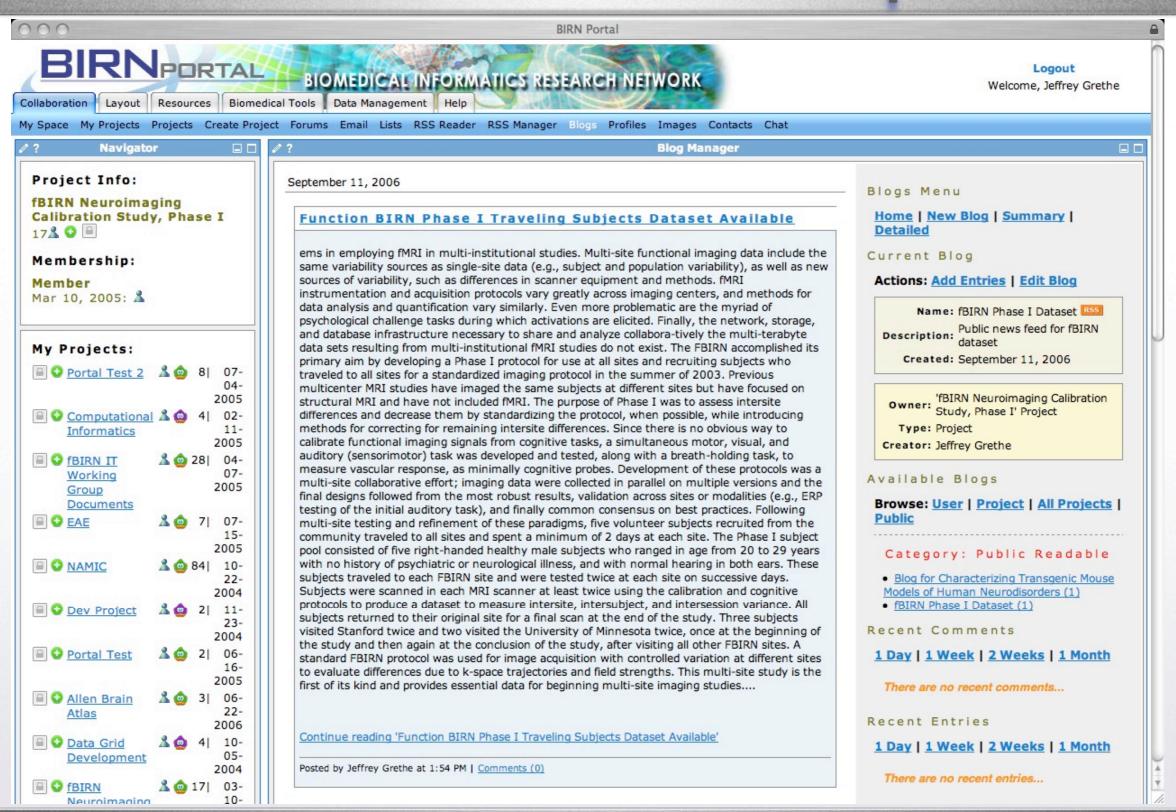
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#### Collaborative Workspace (+ 1 +)



#### Collaborative Workspace (+ 1 +)

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'fBIRN Phase I Dataset' Blog

#### 'fBIRN Phase I Dataset' Blog

2 Total

#### Function BIRN Phase I Traveling Subjects Dataset Available Today, 01:54 PM

The FBIRN has as its aim to develop initial multi-site, imaging calibration methods and the shared data storage infrastructure. Despite its great potential value, there are significant problems in employing fMRI in multi-institutional studies. Multi-site functional imaging data include the same variability sources as single-site data (e.g., subject and population variability), as well as new sources of variability, such as differences in scanner equipment and methods. fMRI instrumentation and acquisition protocols vary greatly across imaging centers, and methods for data analysis and quantification vary similarly. Even more problematic are the myriad of psychological challenge tasks during which activations are elicited. Finally, the network, storage, and database infrastructure necessary to share and analyze collabora-tively the multi-terabyte data sets resulting from multi-institutional fMRI studies do not exist. The FBIRN accomplished its primary aim by developing a Phase I protocol for use at all sites and recruiting subjects who traveled to all sites for a standardized imaging protocol in the summer of 2003. Previous multicenter MRI studies have imaged the same subjects at different sites but have focused on structural MRI and have not included fMRI. The purpose of Phase I was to assess intersite differences and decrease them by standardizing the protocol, when possible, while introducing methods for correcting for remaining intersite differences. Since there is no obvious way to calibrate functional imaging signals from cognitive tasks, a simultaneous motor, visual, and auditory (sensorimotor) task was developed and tested, along with a breath-holding task, to measure vascular response, as minimally cognitive probes. Development of these protocols was a multi-site collaborative effort; imaging data were collected in parallel on multiple versions and the final designs followed from the most robust results, validation across sites or modalities (e.g., ERP testing of the initial auditory task), and finally common consensus on best practices. Following multi-site testing and refinement of these paradigms, five volunteer subjects recruited from the community traveled to all sites and spent a minimum of 2 days at each site. The Phase I subject pool consisted of five right-handed healthy male subjects who ranged in age from 20 to 29 years with no history of psychiatric or neurological illness, and with normal hearing in both ears. These subjects traveled to each FBIRN site and were tested twice at each site on successive days. Subjects were scanned in each MRI scanner at least twice using the callbration and cognitive protocols to produce a dataset to measure intersite, intersubject, and intersession variance. All subjects returned to their original site for a final scan at the end of the study. Three subjects visited Stanford twice and two visited the University of Minnesota twice, once at the beginning of the study and then again at the conclusion of the study, after visiting all other FBIRN sites. A standard FBIRN protocol was used for image acquisition with controlled variation at different sites to evaluate differences due to k-space trajectories and field strengths. This multi-site study is the first of its kind and provides essential data for beginning multi-site imaging studies.

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Collaborative Tools

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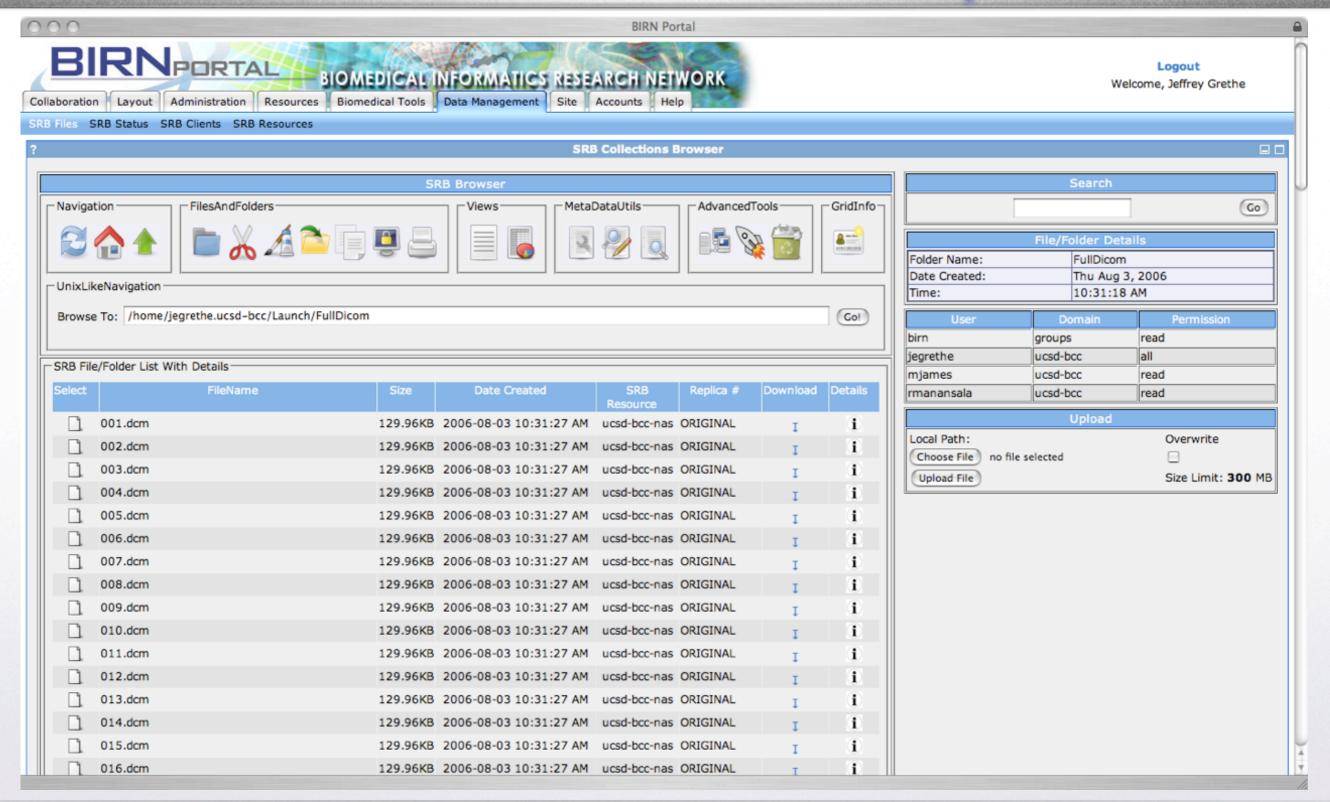
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Collaborative Tools

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Membership Management

Data Spaces



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- Project Services
   provide a foundation for building customized
   applications
  - e.g. The BIRN Data Repository can treat each contribution as a "project"

Applications / BDR

Data Services

Project Services

Authentication / User Management

GridSphere

**GAMA**