



## Announcing the TIMS Facility in the Department of Earth Sciences at Boston University

The NSF funded BU-TIMS Facility is a regional center for high precision, thermal ionization mass spectrometry that primarily serves the academic Geosciences community. We are always interested in discussing potential measurements, user visits, technique development, and scientific collaborations. Please visit our website for more information:

<http://www.bu.edu/TIMS>

**History:** The Facility was funded by National Science Foundation Grant MRI EAR-0521266 in 2005. Installation of the Triton TIMS was completed in June 2006. With the hiring of our TIMS Facility Lab Manager in September 2006, the Facility was opened to outside use in January 2007. In May 2010, funding for the Lab Manager position was made permanent by joint commitments from NSF (Grant EAR-0949390) and Boston University. We will be sorry to lose current Lab Manager Dr. Jeremy Inglis in 2011. We are seeking applications now for a new Lab Manager to fill this position on May 1<sup>st</sup> 2011.



**Capabilities:** The Facility specializes in the collection & *high precision analysis of very small samples*. We are currently running Nd and Sr isotopic analyses (including all clean room sample preparation). In addition to routine samples, we have developed methods to microsample and analyze small (i.e. 1-10ng) samples of Nd and Sr. Best external precision of 4ng Nd loads is 10ppm (2 sigma RSD); 4ng Sr loads yield 32ppm (2 sigma RSD). <10ppm precision is attainable for larger samples. We are developing small sample common Pb analysis and double spike Ca isotope analysis as well.

**Users:** Since January 2007, the Facility has welcomed many users. These include both Boston University and external users from the Univ. of New Hampshire, Univ. of Rhode Island, Univ. of Maryland, Penn State, UC Santa Barbara, Univ. of Alabama, Woods Hole Oceanographic Institute, NASA-JSC, Boston College, Univ. of Western Washington, Rutgers, Univ. of Virginia, as well as collaborative projects with colleagues at Yale University, Rensselaer Polytechnic Institute, Ohio State, Skidmore, Stanford, Mainz (Germany) and others. With our emphasis on hands-on user training, the Facility has welcomed research conducted at BU by 19 graduate students, 8 undergraduates, and 14 senior academics.



**Facilities:** The BU TIMS Facility includes a **Triton TIMS** with a 9 faraday collector array and an axial SEM detector. The Facility is linked to a 1000 sq ft clean lab where all sample digestions, column extractions, and other chemistry are performed. In July 2009, a new 300 sq ft wing was completed which provides Class 100 workstations for ultra clean, small sample preparation. Finally, the Facility includes a sample preparation lab with a **New Wave MicroMill** device for fine spatially resolved microdrill sampling.

**Research:** The Facility is open to all applications requiring precise isotopic measurements. Research has included garnet geochronology of crustal evolution, chemistry of deep sea hydrothermal fluids, Nd model age constraints on tectonic evolution, continental and ocean island volcanism, isotopic tracers in river and soil samples for environmental and weathering studies, isotopic fractionation in experimental melts and glasses, dating of hydrothermal carbonate, and more. We would be happy to discuss your research ideas and challenges both with existing, and potential future TIMS methodologies.



**Outreach:** We have welcomed several undergraduate and high school student groups to visit and tour the TIMS Facility. These include classes from Boston University, Boston College, & Wellesley College as well as visits from several local high schools. If you are interested in arranging for a student visit & tour, please contact us.

**Contact Us:** We are currently welcoming new academic users to the Facility. We especially encourage hands-on student user training and collaborative research during visits to the Facility. Please contact us to discuss your research needs, costs of our services, potential collaborations, and your use of the Facility.

Prof. Ethan Baxter  
Dr. Jeremy Inglis

TIMS Facility Director  
TIMS Facility Manager (*until April 22, 2011*)

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