



## **MURR Archaeometry Lab Graduate Internship Application**

The MURR Archaeometry Laboratory is pleased to announce **TWO** Graduate Internship positions for the 2022-2023 cycle: one of each in the areas of (A) **provenance or compositional analysis of archaeological materials (NAA, LA-ICP-MS, XRF, Raman Spectroscopy)**, and (B) **migration studies using strontium isotopic analyses (MC-ICP-MS)**. The expected start date is at the beginning of Fall 2022 semester, although earlier or later dates can be accommodated on a case-by-case basis.

The interns will have the opportunity to conduct analyses on their own archaeological materials for their thesis research under the supervision of MURR Archaeometry Lab mentors. It is expected that the intern will participate in ongoing lab activities, including sample preparation and analysis, and statistical interpretation of data on a half-time basis, while spending the remainder of their time completing their own projects. The laboratory supports NAA, XRF, (LA)-ICP-MS, and MC-ICP-MS research, and interns will have access to the techniques for the duration of their residency.

The residency periods typically range from 6-8 months depending on the project needs, with a minimum requirement of a 4-month stay. The intern is expected to maintain residence in Columbia (MO) for the duration of the term, and will be provided a minimum monthly stipend of \$1,800. The applications will be reviewed by an internal panel. Applications will be assessed on the basis of project feasibility, strength of research proposal and design, and intellectual merit.

There are **FOUR** parts to the Internship Application:

**Part 1:** Please provide a 3-5 page statement on your intended program of research. This should include an outline of the research questions, a description of the samples to be analyzed (including numbers, types, sampling strategy), analytical techniques to be used, a brief statement on why the Archaeometry Lab is the ideal location to conduct this research, and a statement on funding support for your project. Be as specific about your research goals as possible, including the number of samples you would like to analyze, which elements / isotopes are of interest for analysis, and by which methods, and why. Include a summary table including site names, material type, number of samples, maps, and dates / temporal periods as relevant. This is essential as it will help us define a timeline of achievable outcomes for your project. Include a statement about your intended dissemination of results (i.e. thesis chapters, publication, conference presentations, seminar series).

**Part 2:** Complete the application form below to the best of your ability. Ensure that all signatures are provided at the end of the form. Scan and send in .pdf format.

**Part 3:** Please include a CV in your application package.

**Part 4:** Include a brief letter of support from your Graduate Advisor. This does not need to be a letter of recommendation, rather an acknowledgement that the Advisor understands the terms of the program and supports the candidate's application. The support letter can be delivered by the Advisor via email.

For more info on the Archaeometry Lab Graduate Internship Program check out our [FAQ page!](#)

Please refer any questions or your completed application package via email to Dr. Brandi L. MacDonald ([MacDonaldB@Missouri.edu](mailto:MacDonaldB@Missouri.edu)) for compositional analysis applications and Dr. Virginie Renson ([RensonV@Missouri.edu](mailto:RensonV@Missouri.edu)) for isotopic analysis applications. A review of applications will begin April 1<sup>st</sup> 2022 and will remain open until the positions have been filled.

**Part 1: Applicant Information**

1. Full Name	
2. Current Address (mailing & email)	
3. Nationality (for work permit purposes)	
4. Are you legally eligible to work in the USA?	
5. Current Graduate Program and status (University, Department, Year)	
6. Thesis Supervisor Name and Contact Information	
7. Project Timeline: please provide tentative dates for your residency. We encourage a 6-8 month period. The minimum requirement is 4 months.	

*\*While we will aim to accommodate your timeline as much as possible, please note that we may need to make minor schedule adjustments to ensure faculty availability.*

**Part 2: Previous Laboratory Experience and Research Residency Goals:** briefly describe any previous student, employment, or volunteer experience you have in a laboratory setting. Be specific about tasks you are comfortable doing. Include a statement of what skills you hope to acquire during your time at MURR.

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**Part 3: Project Budget:** while the MURR Archaeometry Laboratory is able to support hands-on research opportunities for graduate interns through this program, the applicants will still be responsible for securing funds to cover minor lab consumable costs that will arise. The table below outlines the per-sample costs for consumables for each analysis type. These rates are only applicable to applicants who are accepted to the program and only for the duration of the internship residency. We strongly encourage applicants to seek external funding to support their research costs in advance of their internship application (e.g. NSF Doctoral Dissertation Improvement Grant, Wenner-Gren, support from thesis supervisor, internal grants from host institution, etc.). Do not hesitate to contact us for consultation on your project budget as you prepare your application.

**Project Budget Summary:** please fill out the number of samples and costs relevant to your project.

Analysis, consumables and materials required	Cost per sample	N= of samples	Total
<b>Neutron Activation Analysis:</b> polyethylene vials, quartz tubing, NIST standard reference materials, irradiation fees, radioactive waste disposal, HPGe usage fees, etc.	\$25*		
<b>XRF:</b> as part of an approved research project these can be analyzed by the intern at no cost per sample.	\$0		
<b>LA-ICP-MS:</b> \$500 - \$1,000 daily rate to be determined upon consultation with technical staff	TBD upon consultation		
<b>MC-ICP-MS:</b> project rate determined upon consultation with technical staff	TBD upon consultation		
<b>Raman Spectroscopy:</b> as part of an approved research project these can be analyzed by the intern at no cost per sample.	\$0		

*\*Our regular subsidized rate of \$40 per sample for NAA will be further reduced to \$25 per sample only for the duration of the internship residency.*

**Supplementary Budget Information**

1. Have you applied (or do you intend to) to other funding sources to cover minor laboratory and/or travel costs in support of your project? If so, please describe any other sources of aid (e.g. funding source, application deadline, funds granted).	
2. Has your Graduate Advisor agreed to provide support to cover some or all of the costs associated with your laboratory fees and/or travel to and from MURR Archaeometry Laboratory? If so, please describe.	

**Signatures:**

*By signing this form you understand the terms and conditions of the MURR Graduate Internship program and agree to the residency requirements as stated. You also agree to abide by MURR Archaeometry Laboratory Data Management Policies as described below (also found at [Archaeometry.missouri.edu/data\\_management\\_policy.html](http://Archaeometry.missouri.edu/data_management_policy.html))*

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Applicant Signature

Date

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Applicant Graduate Advisor Signature

Date

**MURR Archaeometry Data Management and Sharing Plan**

The Archaeometry Laboratory respects intellectual property and acknowledgment of individuals' contributions towards scientific research, and encourages dissemination and sharing of primary-source data with the broader scientific community. Our position on data-sharing is in-line with obligations laid out by the Society for American Archaeology's Principles of Archaeological Ethics, the Register of Professional Archaeologists' Code of Conduct, and the Archaeological Institute of America's Code of Professional Standards. That is, that archaeologists are stewards of the archaeological record and have an ethical obligation to make their data available to other scholars within a reasonable time period. The data management and sharing plan outlined here is intended to emphasize the importance of these ethical obligations and to meet requirements of major funding entities such as the National Science Foundation (NSF) and the National Endowment for the Humanities (NEH).

**Data Management and Use**

Geochemical research of archaeological materials benefits greatly from the existence of comparative databases. Therefore, data generated at the Archaeometry Laboratory are retained by the laboratory and are available for comparative use in future projects at the discretion of the laboratory staff. Any use of data by the laboratory will fully acknowledge the source and contributor of these data. Should a situation arise in which a contributor's unpublished data are to be used in a significant manner in a journal or book publication, this contributor will be viewed as a collaborator on the overall project. If this contributor declines the role as collaborator, use of these data will follow the Data Sharing guidelines below. In all cases, the role of the contributor will be fully acknowledged and the source of these data will be given.

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**Data Sharing**

We offer data hosting services for compositional data at no additional charge for all of our clients in order to make these data available to the broader scientific community. Our policy on data-sharing is as follows:

**Standard Analyses**

Investigators submitting projects at our Standard Rate (i.e., those not participating in our NSF-subsidy program) are strongly encouraged to share, and/or allow us to share the results of their analyses following publication. With the consent of the Principal Investigator, compositional data from a project will be made available on our Web site's data-sharing portal following a reasonable amount of time from the issuance of the technical report for a project. Typically, this equates to a period of no less than two years, or coinciding with publication of a professional document presenting the results and/or data from a project, whichever comes first. The Archaeometry Laboratory realizes that many research and

compliance/regulatory projects extend for prolonged periods of time. As such, Principal Investigators have the option of specifying a suitable timeframe for posting of data at the outset of a project.

### **NSF-Subsidized Analyses**

As an NSF-supported laboratory, and in accordance with NSF requirements for dissemination and sharing of results (AAG VI.D.4) and data management plans (GPG II.C.2.j), the Archaeometry Laboratory carries an obligation to share and to maintain a formal data-management plan for data generated using NSF funding, including data generated by laboratory staff and by investigators participating in our collaborative NSF-subsidy program. Collaboration with the Archaeometry Laboratory under our NSF-subsidy program involves acceptance of a moving two-year window for public dissemination of results in a book, journal, Web resource, thesis, dissertation, or other document (either printed or on-line) accessible to the archaeological community. After two years following MURR's issuance of a technical report detailing the analytical results of NSF-subsidized projects, the Archaeometry Laboratory will provide public access to these data via its data-download Web portal or similar data-sharing portal. If, at the end of the first period of two years, additional time is required by the Principal Investigator(s) for completion of an NSF-subsidized project, the Principal Investigator(s) may solicit an extension by submitting a short (one-page) progress report to the Archaeometry Laboratory for review by the NSF-subsidy program review committee. In the event that the committee finds that an investigator has made no progress towards completion of the project during the previous two-year window, the Archaeometry Laboratory reserves the post data generated under that project on-line.

### **Storage and Use of Archived Specimens**

Archived specimens, unless explicitly requested to be destroyed or to be returned to the PI, will be maintained by the Archaeometry Laboratory and made available for future research. Archival specimens are viewed as data in this context, and are subject to identical policies for the compositional data as outlined above.