Register of Professional Archaeologists

CPE Program Certification Application

1. ***Educational Focus:*** *List the program's learning objectives. Explain how the program's format, length, venue, and manner of teaching are appropriate for the subject matter.*

The goal of this 2- hour online seminar is to introduce archaeologists to the benefits of using the statistical coding language R in various levels of field work and analysis. R is a very powerful free, open-source, and extensible coding language that has gained tremendous popularity in many scientific and humanities fields. This seminar will focus on introducing the capabilities of R, a brief run through the language syntax and conventions, provide an over view of the available packages, and review a number of real world applications.

Participants will learn about 1) the benefits of using computer code to achieve more efficient, repeatable, and open archaeological analysis; 2) the very basics of how to install R and get working on their own data; and 3) the great depth of analysis they can pursue as demonstrated through real world examples.

This seminar is intended for at least three different audiences. 1) students looking to get some insight into new techniques to help their research; 2) professionals who are new to coding, but want to see what it has to offer their work; and 3) those with some coding experience who want to see the benefits of a new language or new examples in a language in which they are familiar.

Course Outline:

- Start - Introductions
    - Author introduction
    - Course goals
    - Learning resources
- 0:10 - Introduction to R
    - History
    - Uses across many fields
- 0:20– R in archaeology
    - Existing examples in archaeology
- 0:30– continued with examples in archaeology
- 0:40 – Getting started with R
    - Installing
    - Rstudio

- o   Packages (extensions)
- 0:50 – "Hello World" example in R
  - o   Basic commands
- 0:60 – R Basics
  - o   Syntax and Conventions
- 1:00 – Introduction to examples
  - o   Objective
  - o   Scope of examples
- 1:10 – Data Entry
  - o   Data input
  - o   Summarizing data
  - o   Graphing data
- 1:20 – Data Management
  - o   Documents management
  - o   Automation & Consistency
- 1:30 – Data Analysis
  - o   Exploratory Data Analysis (EDA)
  - o   Modeling
- 1:40 – Data Visualization
  - o   Plotting
  - o   Presentation
- 1:50 – Reporting
  - o   Dissemination
  - o   Reproducibility
- 1:60 – Closing

2. ***Expert Instructors:*** *All instructors must be subject matter experts. An expert is defined by the Register as a professional who has mastery of the method and theory of the subject matter as demonstrated in practice, teaching, research, or publication. Instructors must also demonstrate proficiency in the specific principles of the activity being taught. In team –taught programs, instructors must be subject matter experts in the field(s) for which they are responsible.*

Matthew Harris M.A., RPA is a Sr. Archaeologist and Manager of GIS and Digital Media in the Cultural Resources Department at AECOM, Burlington, New Jersey. He has 16 years of experience applying technological solutions for cultural resources problems of all scales and complexity. Work experience in the Pennsylvania SHPO, private sector cultural resource management firms, and academia has led to Mr. Harris developing a multi-perspective approach to implementing technology where one size does not fit all. He specializes in data management work flows for large projects, spatial analysis, and statistical modeling.

3. CPE Credit: *CPE programs may range from short courses completed in hours, to intensive field, class, or laboratory training that take days or weeks to finish. The Register recognizes the value of documenting both successful CPE completion and the program scope and intensity. One hour of CPE credit will be given for each hour of program training, up to a maximum of eight hours per day and 40 hours per week. Successful completion of the program will be recognized with a certificate of completion.*

Two hours, 2 CPE credits