

MSE SEMINAR

March 3, 2017
113 McBryde Hall, 3:30 – 4:30 PM
Refreshments at 3:00 PM

Cameron Crowell

**Graduate Student
Materials Science and Engineering, Virginia Tech**

“Bladesmithing and Characterization of a Han Dynasty style Dao (Sword)”

Abstract:

Many of the advancements in forged weaponry, such as composite blades and the popularization of single edged swords in the Asia-Pacific region, is attributed to the ancient Chinese bladesmiths. Before the introduction of smelting, early bladesmiths utilized meteoritic iron for forging high quality swords. As a tribute to both of these traditions, and for the TMS 2017 bladesmithing competition, a Damascus patterned Han Dynasty Dao was created from alloyed meteoritic iron. This undertaking included several metalworking steps, including transforming the original meteorite into alloyed blanks, forge welding the meteoritic alloy blanks with A36 steel blanks, patterning the forge welded bar, performing final blade shaping measures, and adding the necessary sword accoutrement. We will discuss the characterization via emission spectroscopy, optical microscopy, energy dispersive spectroscopy (EDS) and hardness tests.



Biography:

Cameron Crowell is a second year graduate student in Materials Science and Engineering at Virginia Tech. His undergraduate career involved aerospace and materials science, and he has been active in the private space industry, having worked for small space companies and volunteered for industry conferences. Cameron is active with many professional organizations, including Students for the Exploration and Development of Space, the Materials Engineering Professional Societies and the Space Frontier Foundation. He is also the Editor-in-Chief of the Journal for Undergraduate Materials Research. Cameron works on the weekends as a guitar technician, and in his free time enjoys running, playing music and blacksmithing.