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2020 – 2022 ACTIVITY REPORT

SCIENTIFIC PUBLICATIONS


Jackson, M. D., 2020, Petrographic and material observations of basaltic lapilli tuff, 1979 and 2017 Surtsey drill cores, Iceland: Surtsey Research, 14, 47-62.

INVITED PRESENTATIONS

Jackson, M. D., 2022, Self-sustaining cementitious systems in archaeological, geological and

**Jackson, M. D.,** 2022, Reactive Volcanic Tephra and Cementing Processes: From Young Surtsey Tuff to Ancient Roman Concrete: **Advanced Light Source Colloquium**, Lawrence Berkeley National Laboratory, Berkeley, California, 27 April, 2022 (remote).

**Jackson, M. D.,** 2021, New Insights into the Reactive Aggregate and Binding Phase of Ancient Roman Architectural Concretes: **Henry L. Pierce Laboratory Seminar Series**, Department of Civil and Environmental Engineering,, Massachusetts Institute of Technology, Boston, 27 October, 2021 (remote).

**Jackson, M. D.,** 2020, Roman Marine Concrete: What Modern Construction Can Learn from the Romans: **American Concrete Institute Webinar: Seawater-Mixed Concrete — A New Class of Sustainable Concrete**, University of Miami, Florida, 5-6 August (remote).

### ABSTRACTS, MEETINGS AND CONFERENCES

**Surtsey volcano, Iceland** (alphabetical by year)

Sayyadi, S., M. T. Gudmundsson, J. D. L. White, Th. Jónsson, **M. D. Jackson**, 2022, An aeromagnetic survey over the volcanic island of Surtsey off the south coast of Iceland (abs.): NH2.1—Living with volcanoes, EGU22-11029, **EGU General Assembly 2022**, 23–27 May 2022.


Ancient Roman concrete and related topics


RESEARCH FUNDING


2020 Ses Llumetes Project, Roman shipwrecked pumice at Porto Cristo, Spain, Social Sciences and Humanities Research Council (SSHRC) of Canada and University of Victoria. $3785

STUDENT ADVISING

Ph.D. and M.Sc. Thesis Research Committees
Bradley Cottle, M. E. 2022, Fabrication of Roman reactive glass mortars (with Pedro Romero, Civil and Environmental Engineering).
Jeremiah Bernau, Ph. D. 2022, Spatial and temporal processes of evaporite deposition & alteration at the Bonneville Salt Flats (with B. Bowen).
Samantha Couper, Ph. D., 2021, Application of novel methods investigating high temperature and high pressure deformation behavior of Earth materials (with L. Miyagi).

Undergraduate Research
Jenny Hambleton, B. Sc. 2021, Volcanic and authigenic fabrics in tephra from the “Ses Llumetes’ shipwreck and Roman marine concretes, Senior Thesis
Jacob Peterson, B. Sc., 2020, X-ray microdiffraction and microfluorescence studies of altered glass in submarine basaltic tephra, Surtsey volcano, Iceland, Senior Thesis.

COMMITTEES
American Ceramic Society, Fellow 2020
Vice-Chair, Chair, Art Archaeology and Conservation Science Division
Geological Society of America
Vice Chair, Continental Scientific Drilling Division
American Concrete Institute
Committee 204 Associate Member, Natural Pozzolans
Contributions to specifications for volcanic pozzolans

MEDIA COMMUNICATIONS
Ars Technica, Noblewoman’s tomb reveals new secrets of ancient Rome’s highly durable concrete 1/2/2022
Materialism Podcast, Episode 11. The Ultimate Construction Material: How we are reinventing concrete with inspiration from ancient Rome
https://materialism.pinecast.co/episode/1f4cfad710c74a5a/episode-11-the-ultimate-construction-material

OTHER