

ROCKIN' AROUND NEW MEXICO 2020

A Geology & Mineral Education Workshop for Teachers

July 6-10

Virtual Volcanoes and Seismicity in New Mexico

Co-sponsored by NM Bureau of Geology and Mineral Resources,
NM Department of Homeland Security & Emergency Management,
and the Master of Science for Teachers program at New Mexico Tech

To register for this teacher workshop, complete this form and mail it to the address below. Electronic copies of this registration can be sent to cynthia.connolly@nmt.edu. You will receive a confirmation letter with details to help you plan for this workshop. There is a \$40.00 application fee for workshop materials. **If you live in New Mexico** and pay the \$40.00 fee, you will be reimbursed through the DHSEM. We can accommodate active teachers only, as space is limited. Preference will be given to teachers enrolled at *New Mexico Tech's Master of Science for Teachers program*. Other applicants will be enrolled on a space-available basis, or may be placed on a waiting list.

Teachers who wish to take this class as professional development, please attach a check for \$40.00 payable NMBGMR to help cover workshop materials

PARTICIPANT REGISTRATION FORM:

Name _____

Address (home) _____

Name of school _____

E-mail address _____

Phone (home) _____ (cell) _____

What grade level and subject(s) do you teach? _____

Details about New Mexico Tech graduate credit for ST-540 REGISTRATION:

- Are you interested in receiving the optional one hour of credit from New Mexico Tech? _____ (yes/no)
- If yes, and you have taken a class at NMT before, please provide your student ID # _____ [The MST office will then register you for ST-540. A scholarship will cover tuition, fees and the \$40 materials cost mentioned below, unless you are notified otherwise]
- If yes, and you are not currently an NMT student, you will be contacted by e-mail shortly with registration instructions.

Questions?

Please contact Cynthia Connolly at (575) 835-5264 or cynthia.connolly@nmt.edu.

Mail this registration form to: **Rockin' Around New Mexico**

New Mexico Bureau of Geology and Mineral Resources
801 Leroy Pl. Socorro, NM 87801

***Non-credit participants please remember to include your \$40 check.**

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A Geology & Mineral Education Workshop for Teachers

July 6-10, 2020

Virtual: Volcanoes and Seismicity of New Mexico

Rockin Around NM: ST-540 (optional Masters of Science for Teachers graduate credit)

The Rockin' Around New Mexico workshop is designed for K-12 teachers interested in expanding their knowledge of geoscience and geologic hazards. This year because of the current global pandemic, we will not be able to offer a traditional, hands-on, field-based workshop. But, rather than cancel this valuable educational opportunity for New Mexico teachers, we have developed an alternate workshop program that relies on distance education methods. We will have two hours of Zoom remote field and pre-recorded instruction each day and then will assign short group homework activities that you can use in your classroom. The details of the workshop activities are outlined below.

Day 1: We will begin the workshop with Zoom introductions, an introduction to Rockin' Around New Mexico class expectations and a volcano and seismicity overview presentation. Geologists will then assign a group homework: "Volcanoes in a Cup", assignment. The homework should take approximately 1 hour and teachers should be prepared to share their results on Day 2.

Day 2: Geologists will present a live Zoom remote meeting at the Carrizozo Volcanic Field (or pre-recorded backup Carrizozo footage with accompanying Zoom commentary by a volcanologist). Teachers will get a (virtual) geologic tour of the young, basaltic Carrizozo lava flow. The Carrizozo basaltic lavas resulted from classic Hawaiian-style eruptions, and are among the youngest lava flows in the lower 48 United States. Teacher groups will share out Day 1 homework findings and will work in groups (virtually) via Zoom breakout rooms to build "Wax Lava Flows" or "Calderas in a Box".

Day 3: Geologists will present a live Zoom remote meeting at the Valles Caldera in the Jemez Mountains or pre-recorded backup Caldera footage (with accompanying live Zoom commentary). Teachers will take a video tour of the Valles Caldera, a 13.7-mile wide circular depression created from the eruption of a supervolcano, 1.25 million-years ago. Teachers will present their group "Wax Lava Flows" and "Caldera in a Box" findings and will learn about radiometric dating. Teachers will work in groups (virtually) to model the concept of radiometric dating with the "Radiometric Dating Popcorn Activity" and should present their group PowerPoints tomorrow.

Day 4: Teachers will visit other New Mexico volcanoes via a pre-recorded tour of some of the volcanoes featured in the "New Mexico Southern Parks and Monuments" Book, with live (Zoom) commentary by geologists. They will also present pre-recorded mining volcanic minerals video, filmed at the St. Cloud Zeolite mine and the Socorro Perlite mine. Teacher groups will then present their "Radiometric Dating Popcorn Activity" data, with a focus on analytical reproducibility and possible sources of analytical error. For homework, half of teachers will do the "Mining in Your Yard" activity and half will do the "Mining Cookies" Activity. Teachers will present group findings tomorrow.

Day 5: Teachers will share their results from the "Mining in Your Yard" and "Mining Cookies" activities. Geologists will then discuss, through pre-recorded and live Zoom presentations, the dangers of earthquakes, liquefaction, faulting and volcanoes using PowerPoints and demos—with a focus on dangers in New Mexico along the Rio Grande Rift, by the Socorro Magma body, in the southeastern NM-Permian Basin, and along the Jemez Lineament. We will do a "Great Shake Out" drill and a speaker from the New Mexico Department of Homeland Security and Emergency Management (NMDHSEM) will convey the importance of preparing for earthquakes—especially for schools.

This workshop is open to educators who are actively teaching, and pre-service teachers. **All participants must submit the NM Bureau of Geology registration form so we can keep you informed and help you plan for the workshop.** Non-credit participants need to send the \$40 fee for materials with the application. Participants receiving credit will have the \$40 fee covered by the tuition/fees scholarship through the MST office, unless otherwise noted. (90% of course credit tuition is covered by the MST this summer.)

All participants will receive geology resource materials and the \$40 registration fee paid by non-credit hour seekers will be reimbursed by NM Department of Homeland Security and Emergency Management. **Only New Mexico teachers can apply for fee reimbursements.**

Although graduate credit is optional, first priority for registration will be given to students at New Mexico Tech. The course is *ST-540 Rockin' Around New Mexico*. Call Megha Khandelwal at 575-835-5470 or email megha.khandelwal@nmt.edu if you would like information about the Masters of Science for Teachers Program at New Mexico Tech.