

ROCKIN' AROUND NEW MEXICO 2021

A Geology & Mineral Education Workshop for Teachers

July 6-9

Pseudoscience in the Geosciences: Risks and Hazards

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. 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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Pseudoscience in the Geosciences: Risks and Hazards

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.

- Overview of geology themes covered during the workshop with an emphasis on risks and hazards associated with misconceptions in geology and the importance of finding reliable geoscience information to mitigate damage and harm.
- After presenting evidence that climate change has occurred, geologists will explain the mechanisms of climate change, and will discuss climate change risks and hazards. Geoscientists then will demonstrate activities that teacher attendees might adapt for their own classroom lessons on climate change.
- Many people are not aware that water in aquifers is located in the voids between rocks, rather than as open underground lakes or rivers. Water “witching” is sometimes used as a method for deciding where to drill wells, rather than placing wells using available data about aquifer depth. We will present how the bureau has used geophysical, hydrologic and laboratory analysis to construct a model of New Mexico’s aquifers and we will discuss why knowing the location of underground water is critical to the survival of communities and municipalities in the arid, Southwest.
- Rock and mineral identification is imperative for risk and hazard assessment. Some examples of troublesome earth materials include: swelling clays, evaporates, or collapsible soils below infrastructure development and unconsolidated sediments vs. bedrock in relation to the hazard of liquefaction. Our goals for the virtual workshop are to offer guidance on trusted resources (websites and publications) for rock and mineral identification, to teach educators about mineral and rock identification tools and methods and to examine different types of rocks and minerals important in risk and hazard assessment.
- We will discuss earthquakes and seismic hazards specifically focusing on common misconceptions about earthquake magnitudes, induced seismicity and associated damages. We will also discuss how to access accurate information about earthquakes and earthquake safety. On the last morning of our workshop, we will present earthquake-related information, demos, and activities including a “Shake Out” earthquake practice drill in order to 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.)

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.