



Dr Christopher Spencer, geologist and educator leads...

30 July to 8 August 2018

Anatomy of the Alps

Discover Plate Tectonics in Italy and Switzerland

Join an enthusiastic group of teachers and discover the wonders of tectonics in the beautiful Italian and Swiss Alps.

This field experience in the Italian and Swiss Alps will introduce you to the rock cycle of mountain building including magmatism, sedimentation, and metamorphism, along with the geologic features and hazards associated with living on an active mountain system. We will discuss the nature of the continental crust, cycle of plate tectonics, and the features of a subduction from the mantle to volcanoes. We will see diamond-bearing metamorphic rocks to dinosaur tracks and everything inbetween!

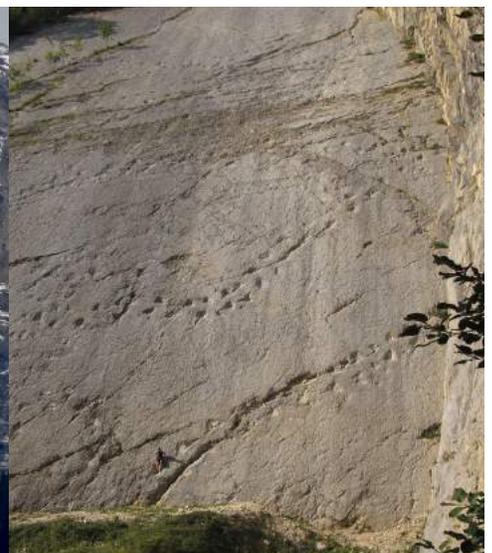
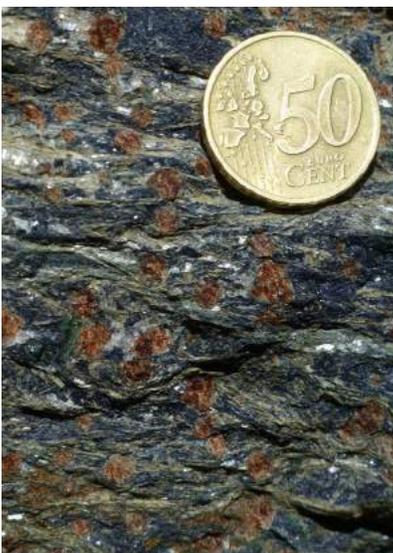
We will use our observations and new found knowledge to discuss methods on how to effectively communicate geologic concepts with students. We will model inquiry in the field. We will collect data and develop models for what we see. We will look at engineering structures to assist with landslides, earthquakes, and more. You will take a lot of photographs, collect samples and have amazing experiences.

This trip is designed for K-12 Earth science and Geography teachers with no or little Earth science background and college students with an interest in mountains and geology. Families are welcome (see trip details).

Hosted by:

GEO*etc*
Geoscience Education & Outreach

& TRAVELINGEOLOGIST



Trip Itinerary*

Day 1. - fly into the Milan Malpensa airport before 1:00 pm (may need to arrive a day early**). Meet group in airport and be transported to Balmuccia to see the mantle/crust contact and then dinner in Scopello. Stay in Scopello.

Day 2. - Morning talk : Introduction to Subduction and the Alps. We will see an ancient supervolcano from granite at the bottom to volcanoes at the top. Dinner and hotel in Settimo Vittone.

Day 3. - Morning talk: Introduction to Metamorphism. Drive to Quincinetto and Fontainmore. We will see into the depths of a subduction zone with world-class blueschist and river-polished pavements. Dinner and hotel in Settimo Vittone.

Day 4. - Sunrise on Cervino (Matterhorn) from Lago Blu. Cable car from Buisson to Chamois or Falinère (weather permitting), hike downhill to Buisson (6-9 km depending on route). Will see beautiful overview of Cervino, metamorphosed pillow basalt, and blueschist. Dinner and hotel in Saint Vincent.

Day 5. - Morning talk: Metamorphism and Mineralization. Drive to Druges, hike to Servet-Prabona mines (10 km round trip - rigorous hike). From Roman times, this area has been mined for copper and other semiprecious stones. I have never been here without finding something spectacular!

Day 6. - Morning talk: folding and thrusting of the Helvetic Nappes. Driving to Switzerland and through to Salanfe. Steep 2 km hike to the auberge (mountain inn) in time to see the sunset. Stay at the auberge (dinner provided).

Day 7. - Hike around the Lac de Salanfe tracing out folds of the Helvetic Nappes. Stay at the auberge (dinner provided).

Day 8. - Drive to Sanetsch Pass (or take cable car) to investigate the sediments and fauna of the Tethys ocean that have all been deformed by the continental collision with Africa. Dinner and hotel in Bulle.

Day 9. - Morning talk: erosion of mountains. We will examine the road cuts at Zollhauss, Scharzsee, and dinosaur footprints at Lommiswill. Dinner and hotel in Bern.

Day 10. - Travel from Bern to Milan for flights home (no flights before noon please)***.

* Itinerary may change due to weather and other factors.

**If your flight schedule doesn't permit arrival by 10am on day 1, you will need to arrive a day early and stay the night in Milan. We can arrange accomodation for you if needed.

***If you would prefer to fly out from Geneva or Zurich, there are regular train services to accommodate this.

Price: US\$1985

\$US500 Deposit is required with registration. See the refund policy details online.

Trip Details (the fine print)

- Price does not include flights to/from the Milan Malpensa airport.
- Please do not book any flights or make any travel arrangement until the trip and your place on it has been con-firmed. We will send you details of arrive and departure dates and time as early as possible.
- Transport is in airconditioned vans.
- Accommodation is in shared hotel rooms, single or family rooms can be arranged for an additional cost.
- Four dinners are not included. There will be many excellent options to accommodate any budget. Other nights options will be limited. 3 Dinners are included.
- Price does not include any optional tours or equipment.
- Price includes breakfasts. We will expect folks to make their own picnic lunches for each day - we will visit stores to get supplies.
- The trip is open to all teachers and their familes. Family members have to stay and travel with the group. There is no discount for children. Use of private or hired vehicles by participants during trip is not allowed.
- Be aware that this trip involves some hiking and you should be moderately fit and have no medical condition that precludes you from participating.

www.geoetc.com

www.travelinggeologist.com





Accommodation

We will be staying in 2-3 star hotels and mountain inns. Some localities will have a swimming pool. Breakfast will be provided at all of the locations. Most importantly, they all have fantastic views of the mountains.

Transportation

We will 7-9 passenger airconditioned minibuses to travel around the Alps. Note: the mountain roads are narrow and curvy. Those prone to car sickness should bring dramamine.

Trip Leaders

Christopher Spencer is an academic geologist working for Curtin University in Western Australia. He is a 'tectono-chemist' who looks for ways to apply the field of geochemistry to large scale tectonic problems. He is also the founder of TravelingGeologist, a science outreach program that earth scientists from undergraduates to professors share their love of science and getting paid to work outside. Originally from Utah, He received his PhD in Earth Science from the University of St Andrews in Scotland and has taught field courses in the USA, Scotland, Spain, Italy, Switzerland, Norway, Namibia, and India. Chris loves being in the mountains and sharing the stories they have to tell with likeminded souls.



Gary Lewis is the President of GEOetc and works for the Maine Mathematics and Science Alliance. His speciality is the communication of geological processes to teachers, students and the general public and the operation of programs that raise the awareness of Earth science at an international level. He is a trained geologist - with an honors degree in Geology from the University of Sydney - and a K-12 teacher. He has worked in Earth science outreach in Australia and the USA and run trips for teachers to Hawaii, Iceland, Australia and other destinations since the 1980s. He is the author of over 30 Earth science teaching resources. He has been involved in teacher and student trips to Hawaii for over twenty years and is passionate about making GEOetc trips life-changing for the participants.



Want more information or make a reservation?

Contact Gary Lewis
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