

## Wow! Look, the Earth is huffin' and hey, there goes a puffin!

### EES Travels to Iceland

In May, 2016, sixteen intrepid EES students and Professors Cunningham, Hyatt and Drzewiecki arrived in Iceland at 5 am, then promptly examined fissures on the Mid-Atlantic Ridge where it makes landfall on the Reykjanes Peninsula, ate breakfast at a swanky hotel, paddled in the thermal waters of the Blue lagoon and then drank beer – all before 8 am! Thus began EES's inaugural undergraduate field trip to Iceland.

Only Cunningham knew the area from a previous visit, but he could not speak the language except for 'geysur' and 'jokulhau' and 'Bjork' and so a local expert named Gugga was hired as our guide complete with 20 seater minibus and her husband as driver. We gushed with gratitude as guests of the good guide Gugga.



We explored the highlights of the Reykjanes Peninsula for the first 2 days including stumbling over inflated and cracked tumuli, climbing onto cone rows and into lava caves, discovering palagonitic tuffs and various lava types and feeling the Earth's inner furnace at the Krysuvik geothermal site. The Reykjanes Peninsula's raw landscape and expansive views enthralled us and whetted our appetite for more spectacular geology as we then headed east.

Next, we followed the classic 'golden circle' tour and explored the Thingvellir rift on the plate boundary and were stunned by the huge fissures and extensional escarpments, tilted blocks and huge volcano-tectonic landscapes. Then we went to see the geysers including the enthusiastic Stokkur and other expressions of crustal indigestion. The magnificent Gullfoss was the climax of the day. This huge jaw-dropping waterfall thunders down from the high interior and was almost lost to a hydro-electric scheme, but saved due to the efforts of a single determined environmentalist named Sigridir Tomasdottir - now clearly an Icelandic heroine. Gullfoss awed us with its power and reminded us of Iceland's endless battle between volcanism, crustal uplift and glacio-fluvial erosion.



Group at Thingvellir



On Heimaey

The following day was filled with a wonderful tour of Heimaey in the Vestmann Islands. These islands comprise a line of Quaternary volcanoes that mark the eastern arm of the Mid-Atlantic Ridge – interpreted to be the newest expression of the plate boundary as it migrates eastwards from the Reykjanes Peninsula. We toured the island which is famous for its sudden and violent 1973 eruption and the heroic efforts by the small fishing community to divert the lava that threatened to engulf their town and destroy their livelihood. We climbed the Eldfell cinder cone and marvelled at the view and the residual heat emanating

Lexi on Eldfell summit  
spatter cone, Heimaey



At Kiviarjokull outlet glacier,  
Vatnajokull, Iceland



from fumarolic cracks at the summit. The climb was cold and blustery and to some, a bit precipitous and scary. But, views of the rugged peaks and cliffs that surround the island's green fields (adorned with scattered shaggy sheep) and the snug little fishing harbour, combined with the surrounding tempestuous North Atlantic and distant ice caps on the mainland, left us deeply moved by the forces and beauty of nature.

The next day was rainy, but we hiked up to the Sólheimajökull glacier – an outlet glacier from the Mýrdalsjökull ice cap. Despite the wet gloom, we ventured onto the melting edge of the glacier and saw many classic features of the ablation zone. Kettles, striated pavements, roche moutenees, outwash channels and stranded dead ice blocks all provided a clear lesson on the erosional, sedimentological and geomorphological processes at work. This glacier's recession is well documented and so discussions ensued as to the future fate of Iceland's valley glaciers and icecaps. Next we headed to a wet coast and saw our first puffins and then beautiful columnar basalts on the cliffs of the Dyrholaey Peninsula. Then it was on to Skogar where we visited an excellent folk museum which preserves the cultural history of this small Icelandic settlement including its courageous fisherman, puffin hunters and farmers. We entered the tiny stone walled and sod-roofed homes and marvelled at the hardiness of the people who carved out their lives in such a cold, windy and damp North Atlantic climate.



L to R: Brynn, Lexi, Morgan, Sam and Emma on fissure-fed cone row, Reykjanes Peninsula.

We then hiked up to Skogafoss which forms a beautiful backdrop to the small town and which offers free showers to anyone standing within 100 feet of the falls. Several students climbed up the flanks of the ridge adjacent to the falls and gave the leaders heart failure, except for Peter who was out searching for mud cracks.

Next we headed east and crossed the huge sandur plains which are swept clean by periodic jokulhaups from the huge Mýrdalsjökull and Vatnajokull icecaps. These braided plains are notable for their pebbles and cobbles and Peter's inexplicable fascination with gravel. We passed the night in rustic cabins at a place called Hörgsland where we dined out at a simple restaurant serving fish and cheeseburgers that cost about 80 dollars per plate. After paying what we could and then helping wash the dishes, we decided to return to our self-catered pasta dishes and corn flakes for the rest of the trip.

Then it was on to the ice lagoon at Jökulsárlón where we felt first-hand the insignificance of our existence amongst the giant glaciers in the distance and windex-blue icebergs floating about us as we cruised the huge melt-water lake. We stopped at other beautiful valley glaciers emanating from the south side of the Öraefajökull strato-volcano, the highest mountain in Iceland, before we arrived at Skaftafell National Park, where we spent the afternoon hiking around the tundra-like landscape and stunted forests below the glaciers. We also walked to the snout of the Skaftafellsjökull glacier and saw many more impressive examples of kettles, push-up ridges, dead ice features and other erosional, and sedimentological features in the terminal zone. Peter found some more gravel, Drew took his 9357<sup>th</sup> photo and waxed lyrically about periglacial cryo-morpho-scan-sites for Agisoft and Dickson still tried to understand how palagonite forms and explain it to students who were slowly drifting away and joining Peter's search for mudcracks.

Then we headed back to Reykjavik with stops at the Seljalandsfoss where our student Thor stripped and roared under the icy meltwater as he attempted to communicate with his Viking ancestors. We stopped at the famous eroded basalt columns at Kirkjubæjarklaustur which resembles a church pavement. Back in Reykjavik we had time to tour the Hellisheiði geothermal plant east of the city where the hissing ground's heat energy is harnessed to supply local power. This was a highlight for all of us including the sustainable energy track students because the facility provided excellent exhibits and an informative tour guide who explained the natural energy source and technology used to exploit it.

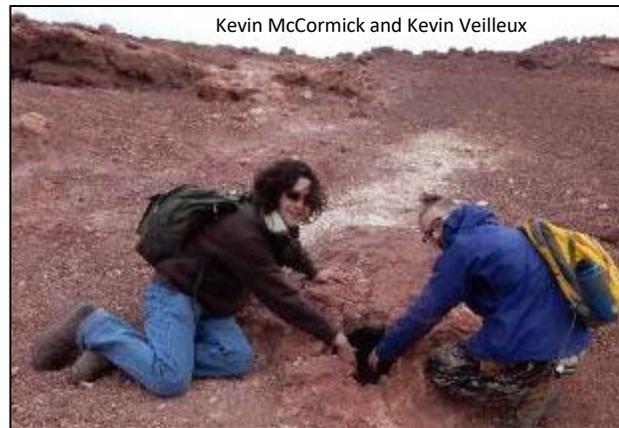


We spent a nice afternoon and evening in Reykjavik and had a farewell dinner where more than milk and cookies were consumed. Then it was time to head home, all weary but fulfilled, each with unforgettable memories happily stored away. As we took off, we watched puffins flying outside the airplane window— a fitting goodbye after an amazing Icelandic adventure.



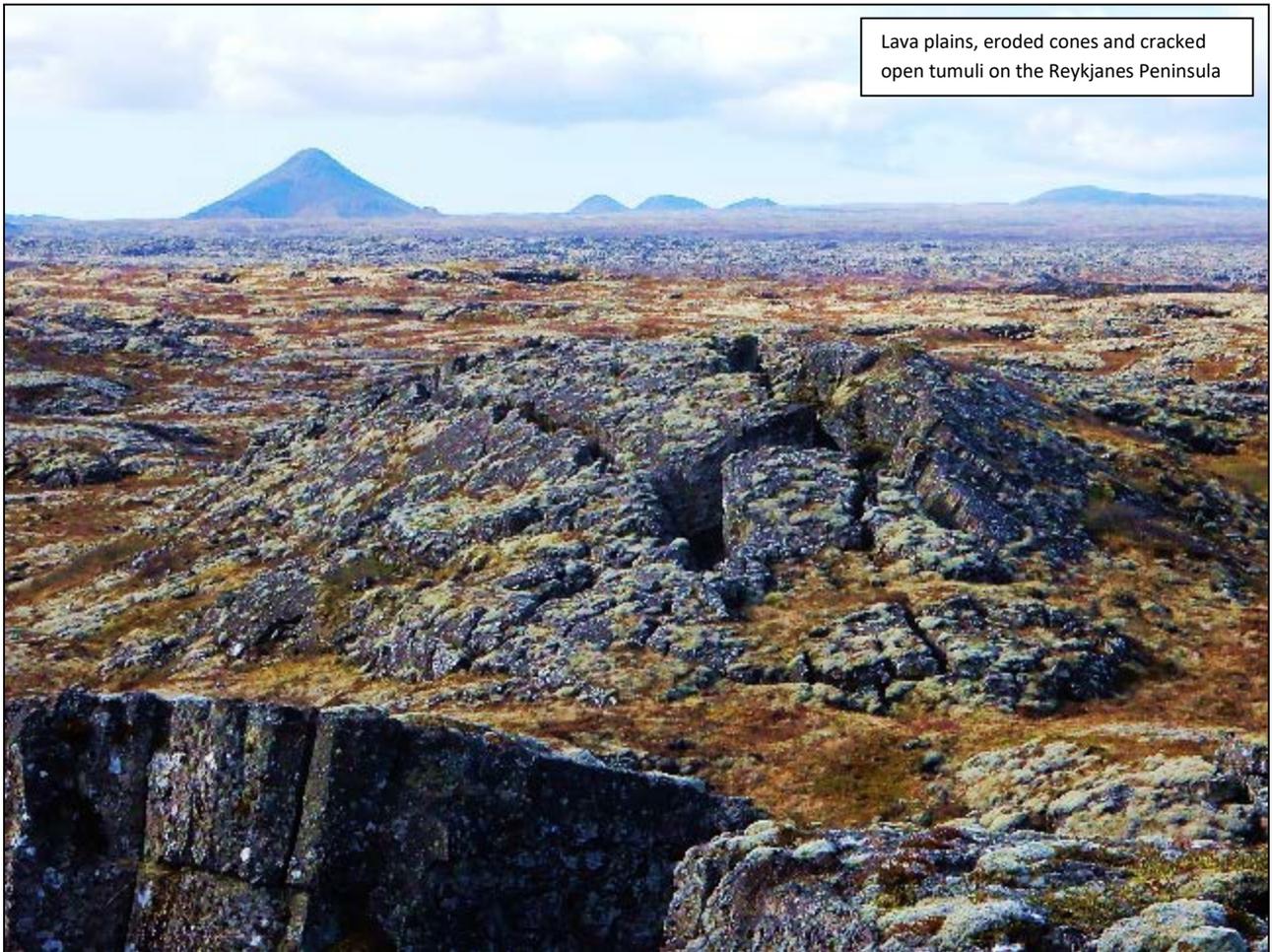
Iceland Trip Scenes – clockwise from top left:  
Grinning at Gullfoss; Dramatic Heimaey coast;  
Jokulsarlon; Stunning Gullfoss; Sea stacks in  
the fog near Vik; EES ladies on Heimaey.

## Some EES Rock Stars in Iceland





Sydney Day and kettles,  
Skaftafell National Park



Lava plains, eroded cones and cracked  
open tumuli on the Reykjanes Peninsula

