



Costa Rica Trekking Expedition

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Expedition Goals

1. To hike in the Alajuela, San José, and Puntarenas Province, and trek up mount Cerro Chirripó.
2. To promote the Exploration Board, by acting as role models and writing articles for Imperial College publications (I only heard about the potential of/applying to this board in my final year at the college).
3. To gain confidence and practical skills in long-distance hiking and camping.
4. To experience, document and embrace the vibrant Costa Rican country and culture; encouraging further exploration by Imperial College members and the wider community.
5. To complete the expedition safely.

Background

Over the course of this expedition the team trekked across 3 different provinces in Costa Rica over the course of 2 weeks, improving our confidence trekking in various terrains, and in offline mountaineering navigation. Our main and biggest hike was Cerro Chirripó, the tallest mountain in Costa Rica. Rising 12,533 feet (3,820 metres) above sea level, this hike was as demanding as it was enjoyable. With rich wildlife and unbelievably varied landscapes - at around 11,155 feet the cloud forest gives way to páramo, a unique ecosystem found only at high elevations in Central and South America - this trek was beautifully punctuated by what felt like completely disparate ecosystems, as our hiking progressed from phase to phase up the mountain.





At the peak, we were lucky enough to observe a completely clear sunrise, allowing sweeping views of all the surrounding Talamanca Mountains, as well as both the Caribbean Sea and the Pacific Ocean. It is easy to appreciate why Chirripó National Park is the hiking capital of Costa Rica, with many of the current trails following ancient indigenous paths that once facilitated communication and commerce between the Caribbean and Pacific slopes.

Acclimatisation

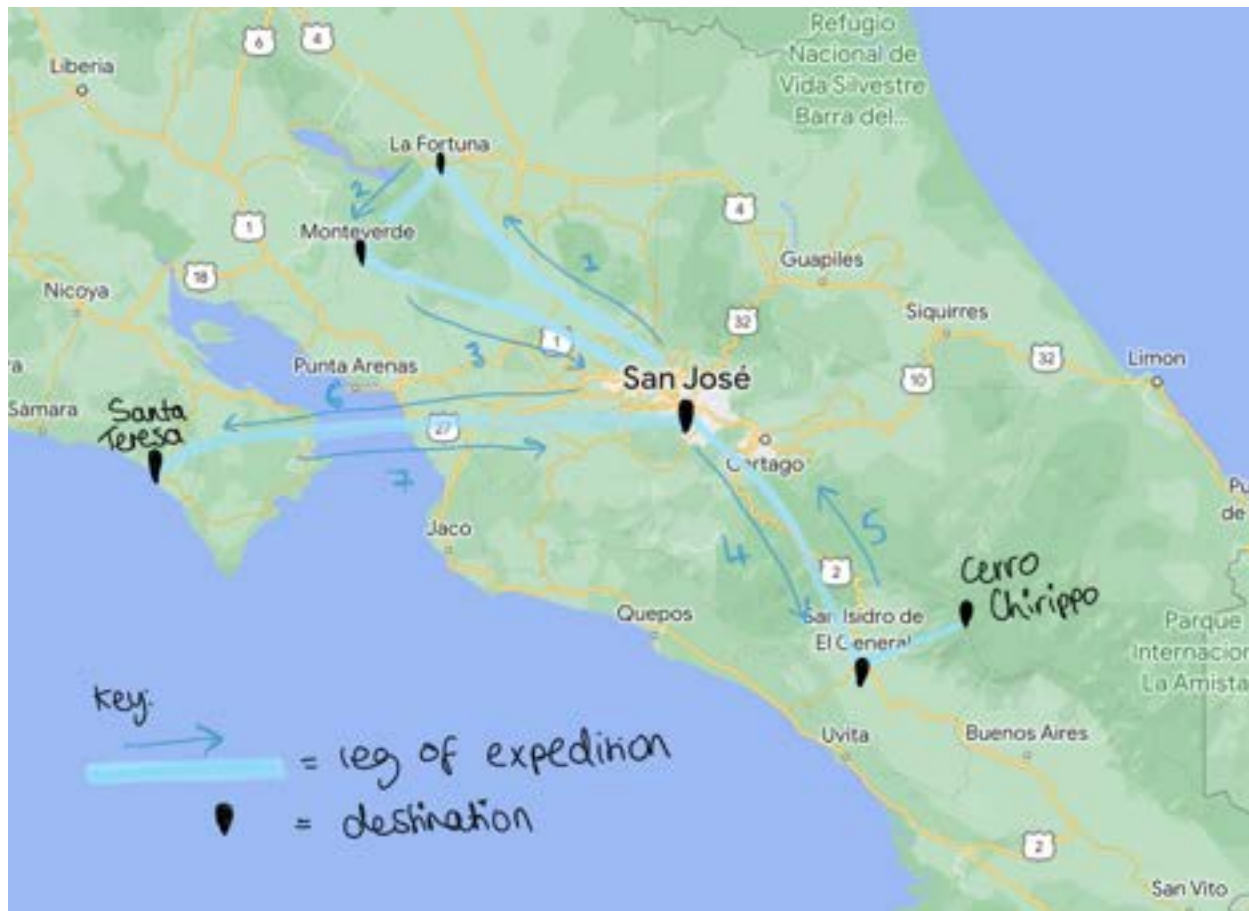
We made sure to stay conscious that we would need to be travelling to and sleeping at elevations of 8,000 feet and higher, thus necessitating acclimatisation before attempting further strenuous exercise - i.e. before hiking to the peak. As the elevations increase, the more necessary acclimatisation is, especially when 11,000 feet is surpassed.

Over the course of our expedition, we will be trekking in a variety of destinations with varying altitude; most notable is Cerro Chirripó, with an elevation of 12500 feet. This leaves us very much within the range of altitudes which enable altitude sickness, and as such, we have made the following altitude-related accommodations to our expedition plan:

1. A modification of our expedition route ascending gradually from one elevation to the other (to allow ourselves the best possibility of avoiding altitude sickness)
2. A description of the preparatory/preventative measures we will be taking in advance of the expedition (see emergency measures section)
3. Additional medications we will be bringing to treat altitude sickness, and the risks and symptoms of these in the risk assessment section.

As the physiological adaptations of acclimatisation happen gradually, when we arrive in Costa Rica, we will spend some time at the lower elevations building up to our more serious trekking. This will be important to allow our bodies to adjust to our new environment. We will take a few days once we arrive to go on shorter, lower-altitude day hikes. We have integrated these 'acclimatisation days' into our modified trip itinerary to enable us to stay on track with our acclimatisation. This should ensure we gain altitude at a speed that our bodies can handle.

Itinerary:



Date	Start	Finish	Distance (km)	Activity
16th	London	San José arrival !	N/a - 14 Hours	
17th	San José	La Fortuna	N/a - 4 hour bus journey	Travel to next destination - (205 departs every day at 5 am)
18th	La Fortuna	La Fortuna	9.2km	Hike (Arenal Volcano 1 - E: 2227 feet; 2 - Tabacon Hot Springs - E: 2540 feet)
19th	La Fortuna	Monteverde	10.5 km Then, local shuttle bus 6 hours	Hike (Mirador Colada 3 - E: 2132 feet; Ría Fortuna Waterfall 4 - E: XX?) & Travel to next destination - Local shuttle 3.5 hours
20th	Monteverde	Monteverde	9.2km	Trek (E: 5715 feet) & Night Trek (E:XX?)
21st	Monteverde	San Jose	N/a - 7 hours transport roughly	Rest Day :)

22nd	San José	San José	N/a - 5 hour bus journey	Rest Day :)
23rd	San José	San Gerardo de Rivas	N/a - 5 hour bus journey	Travel - 2 stage bus journey, changing at San Isidro de El General (£7) (E: 4000 feet)
24th	San Gerardo de Rivas	Crestones Hut	14.5km	Hike (E: 11,155 feet)
23rd	Crestones Hut → Mount Cerro Chirripó	Crestones Hut	10km	Hike (E: 12,536 feet)
24th	Crestones Hut	San Gerardo de Rivas	14.5km	Hike - all way down
25th	San Gerardo de Rivas	San Gerardo de Rivas	N/a	Rest Day :)
26th	San Gerardo de Rivas	Santa Teresa	N/a - So much travelling!!	
27th	Santa Teresa	Santa Teresa	N/a	Rest Day :)
28th	Santa Teresa	Santa Teresa	18km	Trek (Not much elevation in this region - chosen to balance the v. high altitude from rest of expedition)
29th	Santa Teresa	San José	N/a - 5 hour bus journey	Travel back to San José - 5 hour bus journey (631-A, leaves once daily £8)

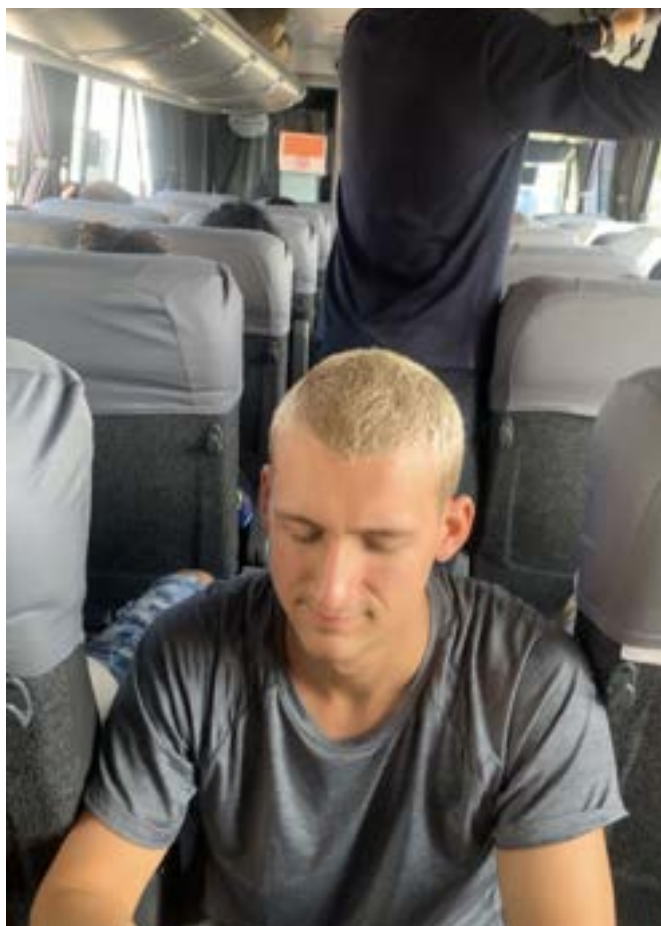
Trip Diary

Day 1 - London to San José

The team arrived in San Jose around 9 pm after a long (quite fun) trip through 3 different countries on 2 different flights. By the time we touched down in Costa Rica the jet lag was pretty bad for both of us - as the time was about 5 am in the UK! We were very much flagging in energy, so quite quickly checked into our hostel & hit the hay in preparation for trying to catch the only bus of the day leaving to La Fortuna in the morning at 5 am (Costa Rica time).

Day 2 - San José to La Fortuna

Our second day started extremely early, due to the long haul public bus journeys in Costa Rica being strangely early in the day - exclusively leaving from 5 am-6 am. Thanks to our jet lag we actually weren't feeling too exhausted with this 4:30 am wake up though, so swiftly made it to the public bus station and managed to scrape a spot on the bus, albeit not in a seat. Our second insight into public transport in Costa Rica was that it's typically very oversubscribed, and so we ended up having to sit on the floor in the aisle for the whole 6 hours!



Despite this, we really enjoyed the journey further into the countryside and the views through various towns and villages.

When we arrived in La Fortuna we headed straight to our first meal at a 'Soda' - the name of local Costa Rican restaurants - and jumped straight into our first Central American meal ordering the local drink of Aqua De Sapo (Hiel), Quesedillas and Gallo Pinto. After this, we walked around la Fortuna and sussed out our hikes in the region of Volcán Arenal.

After arriving in Arenal, we very quickly realised that the region is very touristic, and heavily enforced with expensive national park entry prices and more restricted trekking opportunities. As a consequence we didn't go to the hanging bridges because they would've cost more money to enter than expected (~\$30 pp), so we instead added a hike to a waterfall while we were in the region. We spent the rest of the day securing a motorbike for the next few days to transport us between each of our hiking spots and then went into the city for dinner in the evening.



Day 3 - Parque Nacional Volcán Arenal & Tabacon Hot Springs

With the jet lag still on playing to our benefit, we started day 3 bright and early at about 6am with the sunrise. We cooked up some breakfast & lunch, headed to a local supermarket to get some additional snacks for the day. After this we hopped on our motorbike and headed for our first trek of the trip at Parque Nacional Volcán Arenal.



This was a very lovely hike to start the trip with. It actually ended up being a bit more challenging than we expected, with quite uneven, rough terrain, the peak heat of midday and coming to 11.5km. This took nearly 4 hours in total, and spanned a variety of terrains and ecosystems due to the historic eruptions of the volcano; this included the lava fields, dense jungle shrubbery and more exposed rocky areas. We were warned when entering the national park that crocodiles are known to live in the watering spot which is also covered during the hike, but unfortunately (or not) we didn't see any.



Something that we did see many times throughout this hike though were huge huge colonies of leaf-cutting ants! It was amazing to watch them gnaw through the leaves up-close and our amazement probably contributed to why this hike took a little longer than expected!



After completing this hike we then scooted to the next hike of the day at the Tabacon Hot Springs in the afternoon. This was a bit less of a scenic hike, but it was amazing to find the much frequented hot springs at the end which was filled with locals - families with BBQs and all! We went for a dip here for a little while and caught a racoon trying to steal our leftover snacks from our bags from the other side of the stream. Baring in mind that September is the rainiest month in September, we had to end our trip at the hot springs to drive home when we saw that it was due to start raining at about 4pm.

Day 4 - La Fortuna to Monteverde

So we had originally planned to hike Mirador Colada along with the Místico Arenal Hanging Bridges while in La Fortuna, but as I mentioned we replaced this from our agenda as it wasn't aligned with our financial planning, and instead hiked Mirador Colada and also down to Ría Fortuna Waterfall - at the base of the dormant Chato volcano - on day 4.



The weather in the morning was great, and these were relatively easier hikes, which made appreciating the vibrance and unruly nature of the jungles the main focus of the morning. We took another very needed swim when we went to the basin of the waterfall, but made sure to err on the side of the accompanying stream as the waterfall fell from about 70–75 metres high, making for a powerful impact and strong current.

After wrapping up with these two hikes we took a local shuttle to Monteverde from La Fortuna as public transport is very infrequent between these towns. This ended up being a



really nice journey, taking about 6 hours in total, spanning a drive, boat transfer across Lake Arenal - the largest lake in Costa Rica, which is supposedly infested with crocodiles - and then about a 3.5-hour drive up the mountains into the Puntarenas province. As mentioned originally, there are no viable and legal camping spots in this area so we checked into a hostel here in the evening & prepared for our hikes the following day.



Day 5 - Monteverde trekking and night tour

We arose bright and early to tackle some trails (forming our own route from parts of Senderos Quebrada Cuecha, and Chomogo) in the misty Bosque Nuboso Monteverde. This reserve/area is home to roughly 50% of the biodiversity of Costa Rica and 2.5% of the world, so we were going in with our eyes peeled. It was an incredible and mysterious place - as we walked we were surrounded by intense green and an atmospheric mist concealing the trees in the distance, with a plethora of animals and bird noises everywhere we went.



Our route was roughly 11km and we were walking for around 4h, often stopping off to marvel at our surroundings. We passed a suspension bridge where you could look out onto the mountainous forests, constantly evolving as they blended with the clouds. We saw a few monkeys, many birds and a vast array of different plants and insects. During the day we had also heard from a conservationist that roughly 80% of the wildlife in the reserve

came out during the night, so we thought while we were here we should get shown around by someone who knew where to look.



At our hostel, there was also a connection to a local guide, who we went out to the forest with for a night tour. He had grown up around the Monteverde cloud forests and had much knowledge to impart about the local ecosystems and species that lived there. The first thing that struck us about the forest at night was the volume of the wildlife. It was as if it had been doubled or tripled since the day, giving us a real sense of the amount of life that enveloped us. While we were walking, we saw a great number of different animals: vibrant green snakes, possums, a family of sloths, monkeys, great spiders, armadillos, vast armies of ants and velvet-like plants. We explored the different areas of the forest for a few hours before we returned back to our hostel for the night after a long and awe-inspiring day.



Day 6 - Monteverde to San José

Another one of the dreaded 4:30am starts to make the 5:30am bus back to San Jose. Ahead of us was a many-legged two-day public transport voyage to get to the foot of mount Cerro Chirripo. We travelled by taxi to the coach station from which we would take a 6-hour coach back to San José.

We'd originally planned to stay a little longer in San José to enable us to hike in Braulio Carrillo, but due to the trip being a little shorter than expected, and our knowledge of the hard days ahead, we decided to stay in San José for the remainder of the day. We visited the bustling San José markets and got our second impression of the Costa Rican capital. It was busy and a little chaotic at times, parts of it were deprived and felt quite dangerous, people grabbing at our attention and trying to pull us into their shops. After spending time in the mystic mountains the contrast was stark. We returned to our hostel and prepared meals for our multi-day hike on the mountain so we could stay well-stocked and fed during the most challenging part of the trip (we very much appreciated this later).

Day 7 - San José to San Gerardo de Rivas

This was one of the long transport days where we thought we could not get up at 5am. Unfortunately, like most public transport information in Costa Rica, ours was out of date. Having missed the early bus to San Isidro, we had to wait around the bus station for around 4 hours before we could get the next coach. This put a lot of pressure on us as there were multiple preparatory things we had to do in San Gerardo that day - confirming our spaces in the Cerro Chirripo base camp and collecting our national park passes. Doing these a day before ascent is recommended so you can start as early as possible without anything slowing you down. There was nothing we could do about this though, so we just kept our eyes on the target of getting to San Gerardo. We got our 3 hour coach and arrived in San Isidro.

We'd missed most of the earlier public transport options to get to San Gerardo at this point so we were stuck with looking for taxis which were also extremely patchy. I utilised my Spanish speaking with locals, asking for advice on how to get to San Gerardo. We met one kind old fellow that lived close to San Gerardo



and enjoyed the cultural exchange, so offered to give us a lift, which we graciously accepted after nothing that day had seemed to go our way. He told us about his life, growing up in San Isidro next to the airstrip, transitioning into becoming a pilot, and his experiences throughout his much-enjoyed career.

Day 8 - Cerro Chirripo ascent (14km)



And so began the main event. Later than expected due to public transport inconsistencies, we set off at 8am to collect our park permits and book accommodation and food. Soon after we alighted our Safari truck at the foot of the mountain. Peering up we saw a sharp and daunting initial ascent, and set off without thinking too much.

The first kilometre provided a challenging warm-up. Steep, rugged and muddy terrain kept us humble and aware of the obstacles we still were yet to face. Our bodies took a short while to adapt and get into the swing of things. Not yet had we entered the jungle, marching in broken, rocky zig-zags past the 1km sign.



We soon entered the canopy and were struck by the density of nature around us. It quickly swallowed us on our journey, and all markers of civilization but the path were soon forgotten. Once the blood started pumping we stripped off some layers, sprayed on repellent, and pushed on. Knowing the distance that remained, we only took short rest breaks every 2km to allow ourselves to catch our breath, acclimatise, and be still for some appreciative moments. What we observed on the mountain was profound. Thin shoots of bamboo projecting upward beyond the support of their weight, only to droop back down towards earth, their lengths punctuated consistently with grassy sprouts in all directions. Trees seeming taller than the mountain we ascend, fighting for sunlight in a celestial battle spanning centuries. Magenta mandala-like succulents, half a metre across, seated firmly in the mid-upper reaches of the trees either side of the walkway, with flowers shooting out of their central sprouts.





Passing the official entrance to the mountain at 4km we acknowledged our consistent pace of ~2km/h. We had previously had our sights set on the 7km mountain station for our packed lunch, but decided to adapt our plan due to the forecast of impending rainfall and our knowledge of a challenging stretch from 7km-10km. We wanted to do as much of the challenging stretch as possible before the heavens opened, and to have lunch after we had done. Having adapted to circumstance, we continued, soon to penetrate the cloud-line into the thick, foggy forest.

Soon we started to notice the altitude, in the thinness and not quite satisfactory nature of the air, requiring us to take more regular breaks and stay topped up on our water. That said, we kept pace with our expectations and tackled an uphill stretch, just easing as we approached the halfway point to Crestones base camp. There we stopped for some

water and a quick snack at the mountain station, battling off some tropical birds in a fight for caramelised peanuts before continuing our ascent.

Soon we faced what I (Otto) found the most difficult section of the ascent at around 8km-10km. At 8km started an intense downpour, simultaneously the steepness of the



terrain increased in intensity for what felt like an age. On top of this, I began to feel a mild headache and fatigue associated with the altitude. We stopped and discussed the situation before proceeding. We decided that if my condition worsened significantly we would stop again to re-assess, and that we may have to resort to medication and slow our ascent. We also increased rest frequency, duration and water consumption. Thankfully, these measures were enough, but I found this stretch extremely testing to say the least.

Around the end of this stretch we entered a foggy and mysterious bamboo forest. All different shapes and sizes of bamboo, some almost reaching the canopy itself. Many deep dark and different shades of green with thin wispy leaves spanning their entirety. The thick



fog washed out the colour from our surroundings and concealed the distance, giving the wood an eerie feel. We crossed huge, parasitic strangler fig trees that had nearly consumed the entire path, plants and trees surrounding. With the delicate and beautiful-looking veins they had, one would not think of them as killers.

Much to our relief, after around 10.5km the path started to subside in its aggressive gradient. The rain also eased off, and with it, our hard slog turned into a more relaxing wander.

Soon after, at around 11km, the canopy started to dissipate, and fresh sunlight laid itself on our path. We started to notice the changing scenery all around us. We walked among large, harsh-looking rocks that were covered with soft, diverse and colourful coatings of vines, tiny fuzzy little plants, beautiful hanging flowers and large deliberate leaves. The grasses and small foliage interestingly gained a blue-ish tint at the root so high up. We started to notice myriads of various fungi on either side of the

path. To name a few: thousands of tiny white fungi with pink little heads growing on the rocks, deep, vivid red fungi amidst the leaves, jet black fungi growing on barren dark trees that looked as if they'd been burned to charcoal.





The terrain continued to cycle between the beautiful busyness just described, and bare, martian, rocky territory onward to 13km where the difficulty once more increased. Things got very steep all of a sudden and the focus returned mainly to our feet on the highly uneven rocks. The path also often became a stream, making the rocks slippery and the path quite muddy and treacherous at times. Our fatigue increased and we continued to feel the altitude, but we knew that Crestones hut was close, driving us forward.



It was at around 14.5km where we finally saw it in the distance. We stood over an incredible view of the basin among many beautiful mountains, overlooking the Chirripo river, rocky terrain and plentiful trees beneath a blue sky. We could see for miles, we felt the satisfaction and relief coursing through our veins. At 3200m up, we were on top of the world.



From there it was a short walk down to Crestones hut, where we took a very well-earned early dinner and collapsed, getting as much sleep as possible before rising at 2am the next day for our summit hike. Falling asleep that night was among the very easiest things I've ever done.

Day 9 - Cerro Chirripo summit and descent (24km)

We awoke at 2am, groggily exiting our slumber slightly too early for taste. We did not have time to think about it though as we had a head-torch aura through our frosted window to follow, and much to experience amidst the rising sun and mountain peaks. This walk is where my merino thermals really shone, it was freezing and dark when we left the base camp. Much to our relief, looking up revealed the full beauty of the twinkling stars. All but an aggressive thunder and lightning storm in the far distance, concealing the moon. We thanked fate that it steered clear of the main stage for this morning hike.

We set off, following our head-torch lights and clouds of breath along the rocky path. About 3 hours remained, so we started at a fair pace. The sun was to rise at 5:30am and our aim was to arrive 30 minutes before it did. We crossed many streams and a lot of uneven, sometimes very muddy pathways, but the incline was not difficult at this stage. Another 2km of similar terrain ensued before we branched off to the summit track of Cerro Chirripo. This is where we started gaining altitude again and the intensity started

increasing. Another 3km we had to face, and once more we started to feel the altitude.



Otto started to feel a moderate headache, so he had some medication and we increased the rest frequency and duration. The peak was so close, we could feel it. Our determination was strong in that moment, but we did not act rashly in reaching our consensus to press on. About another 2km on and the terrain became steeper again, transitioning into an intermittent scramble. Our breaths took longer to catch but we were patient with ourselves, we were ready for the challenge. We saw the head torches of our mountain companions in front of us, they appeared to be ascending at a near-vertical dotted line of light.

Due to our slightly decreased pace, we were beginning the final very steep stretch up to the summit with the sun hot on our tails. It was about 5:05am, so we kept pushing, and kept climbing, and pushing again. Mostly using all fours, we lugged ourselves fragmentedly up the final stretch.

We reached the summit and were greeted by an electric buzz of the brave few that preceded us. The views took our breaths away. The moment was surreal. So much had gone into this, to get to this point. We looked around at the towering, partially silhouetted

mountains that surrounded us, far into the distance. We had beaten the sun, but only just, and were treated with viewing it's daily entrance.



The views became progressively more beautiful as the sun seeped onto the landscape, the sky was kissed with fantastic hues and the mountains slowly were revealed in the depth of their greens and dark grey rock faces. We could see both the Atlantic and Pacific oceans, astounding lakes and great planes. These were the most beautiful views that either of us had seen in our lives, and we must take this opportunity to thank the expedition board for enabling this adventure. We took so much from this experience, and it would not have been possible without the excellent advice and support on the many different levels that it was offered!



We sat for some time, fully absorbing the fantastic views before the cold awoke us from our wonder. It was a mere few degrees on the mountain's peak; we were also aware of a remaining 19km to face this day, so we didn't waste time setting off on our descent. We trundled down the steep rocky slope with a bit more ease than on the way up. The large steps down demanded care as if we were hard on our knees at that point, it would beckon knee strain while part way down the mountain, which would not have been ideal. We offered encouragement to those we passed still yet to reach the peak. "no está lejos", "estan fuerte", "no hay mucho más", and of course, the customary "¡Pura vida!" as we parted ways.



We continued at a strong pace back to base camp. A little further on the sun coated us with a generous blanket of warmth. We passed rock faces with sheer drops off to one side leading down to powerful, boulderous rivers flowing amidst the now fully detailed mountains. We stopped for a while to catch some lunch at the base camp before initiating the final 14km.



We departed a little later than expected due to a late basecamp lunchtime, walking towards a sky-full of menacing clouds. We seemed to flow down the path a lot more easily than we had on the way up, but those rain clouds we had previously spied soon broke. I'd never seen rain like it, it was absolutely pouring. We pulled out all the stops and fully utilised our waterproof bags within waterproof bags. We continued through the rocky terrain, recognizing our favourite fungi and plants from the ascent before soon entering the jungle. It was strange, it appeared as though the vividness of the greens all around us had increased, perhaps the glisten of the rain on leaf tops. Without complaints, we pressed on through the thick jungle.

At around 9km from the foot of the mountain we noticed our legs starting to tire, and knees starting to become sore, so we slowed the pace a little, planning a more extended break at the 7km checkpoint in the dry. Once we reached it, we sat in the safe and dry looking out at the torrential rain all around us. It was quite extreme, and large bodies of water started to encompass large sections of path. We were both quite tired, and due to our late departure it was around 3:30pm. We knew we had about 3.5h left due to our historical pace down the mountain. It was also going to get dark at 5:30pm. We knew we'd



be facing a pretty tough descent - pouring with rain, dark, rocky, steep and sometimes flooded paths. And both getting quite tired having already trekked 17km that day. We engaged in some therapeutic sports massage on the knees and around the connective tissue, and the sore knots in our shoulders. We had to be quite wary of the time due to the impending darkness, so we had some pasta we had pre-cooked in San Jose, made our head torches accessible and tried to book ourselves a ride from the foot of the mountain. Unfortunately, there was no signal, so we had to just press on.

During the part of our walk down where there was still some light, we felt okay; we were partially rejuvenated by our rest and

plodded another 2km or thereabouts down the mountain.

It soon became dark, and another km section down the path revealed our deep fatigue once again. The next and final 4km were a test of hard endurance. We had to stay vigilant the entire time to keep aware of our footing on the uneven, steep terrain, often having to engage in problem solving to circumnavigate the large flooded sections of path. Our legs were very tired and large insects seemed to enjoy our head-torches. Moths bigger than entire fists swooping down and trying to get some illumination, time and time again. We encountered some very freaky insects on that final descent. As we hadn't had signal at the checkpoint, we had to consistently check the phone for signal at each kilometre, removing it from multiple layers of waterproofing each time, creating a shelter inside my coat for Meg to go and attempt to text our taxi. Each kilometre seemed to stretch for longer and feel further than the previous one.



But spirits rose as we reached the final 2km. Each still felt longer than the last, but we were more able to cope with it. We gritted our teeth and pushed on, starting to see the lights of civilization in the distance. We forced our way on, getting to the final stretch. The final kilometre! What a challenge, seriously hard. The path was so steep and wet, and we were so destroyed. Dragging ourselves down the last few steps, we reached the foot of the mountain. We saw the sign at the foot of the mountain, and knew we had done it. We were absolutely beaming, we couldn't believe how ridiculous that last stretch was, but we were so over the moon that we had done it. We had fully defeated the mountain - the main event - we had achieved what we set out to achieve.

We were extremely thankful in that moment that we had managed to get ourselves a ride back to our hotel booked and a much deserved dinner delivered to our rooms for us to return to. The drive back in our safari-like truck felt incredible, hanging on to the metal bars zipping along towards the prospect of nourishment and rest, a conquered mountain sat behind us. We arrived back at the hotel, showered, ate a delicious meal of vegetarian Casado and pesto pasta, and collapsed in bed, entering a deep slumber.





Day 10 - Recovery day in San Gerardo de Rivas

We had intentionally left ourselves a bit of a buffer-day on this day in case we were feeling worse for wear after the massive treks we'd undergone the days before. We certainly were grateful for having done this as we woke up with some pretty extreme aches. The first part of the day was spent relaxing, stretching ourselves out and eating some hearty breakfast. After that we decided to venture out and see the local town in the beautiful area of San Gerardo de Rivas. We met a few locals near a wonderful waterfall, having a Spanish conversation about the culture of the town and country, and how it compared to the UK and London (greatly). Everyone seemed to know and trust everyone else in this quaint little mountainside village. We headed back to our hostel for an early night as we were both shattered and had a big day of travelling coming up the day after.

Day 11 - San Gerardo de Rivas to Santa Teresa

Getting to Puntarenas Province from San Gerardo de Rivas ended up not being possible unfortunately, so we had to take a public bus back to San José, before hopefully taking an onward bus to Santa Teresa from there. This day was another slightly nightmarish day of travel... It started with us arising at our usual 4:30am for an hour-long taxi exchange to San Isidro del General from San Gerardo de Rivas, where we took a 4-hour coach into the capital.

Our second shortcoming of the day happened once we arrived in San Jose 4 hours later though, as we found out that the bus we intended to catch at 2pm was not running as this was the timetable exclusively for peak months, and the next service wasn't until 6am the next day (again the only bus of the day). So, we settled on still trying to make it to Santa Teresa regardless, so we could maximise our final days, crossing San José to try and catch the next coach to Puntarenas. This was a pretty stressful leg as we'd run out of cash, and Otto had to search for a cash machine compatible with our cards under a lot of time pressure. He eventually found the cash machine and ran back to catch the coach, which we boarded and spent the next hour on. We then had a 40-minute walk down to the ferry point at Puntarenas where we got an hour-long ferry to Paquera (East coast of the Western

section of Costa Rica), scouring the internet for transport options on the other side. Upon arriving we managed to get another 1.5-hour taxi to our final destination for the day - Santa Teresa. We arrived very late; we were exhausted and quickly collapsed into bed at a hostel.

Day 12 - Chill and Surf in Santa Teresa

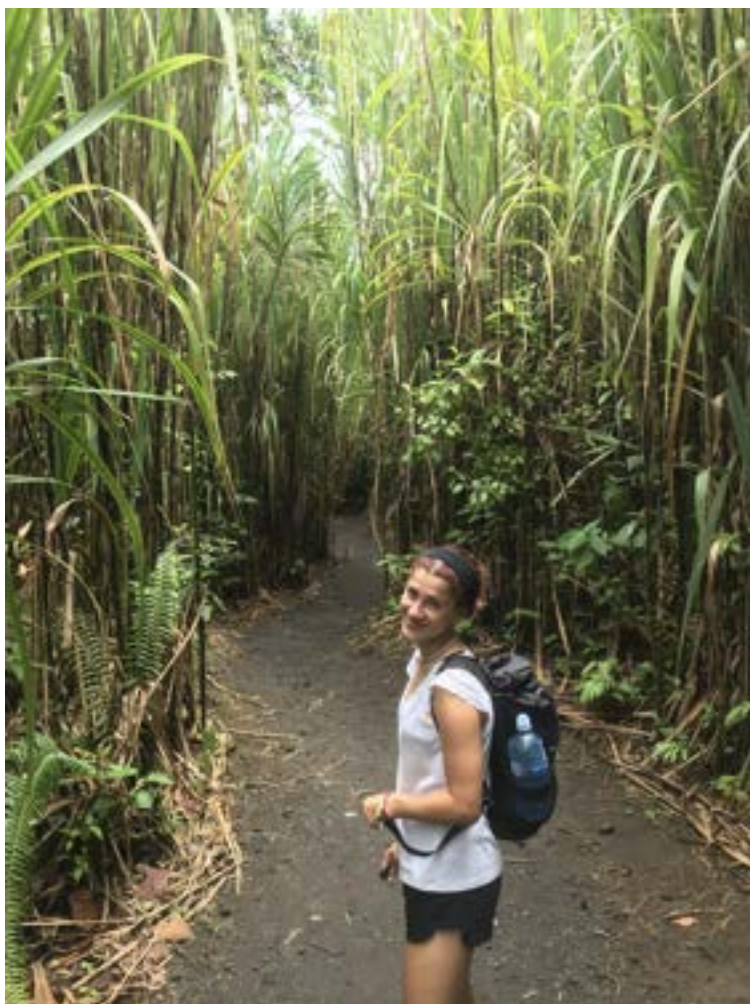
After our intensive hiking in San Gerado, followed by our arduous day of travel the day before arriving in Santa Teresa, we decided to take our first day there as a day off from trekking, although we did end up doing quite a lot of exercise. In the morning we woke up early and went to rent some surfboards in town, since we had heard from our local hostel owner that the surf in the area was predicted to be pretty good due to some incoming swell. This was really fun and felt like some very well deserved strength and conditioning on our knees which were otherwise feeling pretty battered by this point.



After the tide came in quite substantially and the difficulty of the surf increased beyond our abilities, we decided to return the surfboards and go for a walk along the stretch of the beach here from Santa Teresa to Playa Carmen. This was really beautiful, and the weather was absolutely scorching. It was about 6km in total, so it took up the rest of the day until dusk.

Day 13 - Trekking in Puntarenas Province

Then came around our final full day of enjoying the country of Costa Rica before having to travel back to the capital to head home! This was felt by the team members, and we made an intentional effort to soak in as much of the heat, beautiful views and friendly local interactions as possible.



So on this day we hiked the Reserva Natural Cabo Blanco trail, which was 9km in total and took us about 4 hours in total. It actually ended up being much hotter than expected on the West Coast for the entirety of our stay here - as it was supposed to be much colder & rainier than the East (Caribbean-side) coast - and we certainly felt that fact during our hike on this day. With the heat beating down on us, we were thankful to have at least had some coverage from the trees for the majority of this trek. We also got to see some really

beautiful flowers and mushrooms, which we had felt particularly drawn to ever since our multitude of flower & mushroom encounters during our hike up Cerro Chirripo.



We had an hour on the beach when we got back in the early evening before a team dinner and packing up for the final night.



[Day 14 - Santa Teresa to San José](#)

On this day we had to trek back to San Jose, the same way we did on the way out, taxi to the Paquera ferry, then the public bus from Puntarenas to San José.

The sunset on the ferry was really beautiful:)
← Exhibit A.

[Day 15 - San José to London](#)

The team fly home. Off to Cambridge for Megan & back to Hammersmith for Otto!

Team Biographies

Megan Howard

Leader and Navigation

Bsc Chemistry 3rd Year

Experience:

- July 2021: 1 week camping and surfing in the West of France.
- August - September 2019: 4 weeks of multiple hiking and camping expeditions across the West Coast of British Columbia Canada. Gained experience bivvying, rationing food and water, cooking outdoors, navigating, dealing with first aid issues and making decisions about whether to continue hiking in adverse conditions.
- July 2019: 4 weeks of trekking and exploring in Indonesia. Consistently trekked and biked around for 5-7 hours per day in <math><30^{\circ}\text{C}</math> heat. Successfully traversed multiple islands all the way to East Nusa Tenggara and Komodo island. Honed my extensive experience in off road navigation using offline GPS and paper maps, rationing water, dealing with first aid issues when far from help and maintaining focus and objective within our expeditions.
- June 2019: 1 week hiking around the region of the Blue Mountains in Sydney.
- April 2019: Multiple day-long hikes in Queenstown, New Zealand.
- October 2018 - March 2019: Continuous expedition originating in Beijing, China - crossing Vietnam, Cambodia, Thailand, Malaysia, Singapore - and finishing in Siargao, Philippines. Did an extensive amount of hiking and trekking on many unmarked trails without paths, sometimes carrying living equipment (large backpack). Living in basic accommodation for 6 months often with limited or unsafe water, sometimes no electricity. Additionally I completed a lot of bouldering, caving,



kayaking and overland motorbiking. Established a very strong navigational ability using offline GPS; ability to remain calm and logical in very unpredictable and sometimes dangerous situations, awareness of trekking logistics and viability; water rationing, budgeting and risk aversion abilities.



Otto White

MEng Computing

Experience:

Experience doing self-sufficient multi-day trekking, mountain climbing and orienteering in the UK and Wales, been on many multi-week camping and surfing trips across the UK, have done coastal exploration and bouldering and in south Cornwall. I have had lots of trips to Spain and become fully immersed in the culture and language; so it was great to bring what I have learned along with me to a new Spanish-speaking country. This trip really gave me a taste of what it is like to be outside of your comfort zone and be immersed in a completely new world.

Emergency Measures

High-altitude Preventative measures:

- We have spoken to our doctors to ensure we had no pre-existing conditions stopping us from walking at high altitude.
- Training before our expedition: we will include a good amount of aerobic activities - running, biking and swimming - at a sustained level, to improve our cardiovascular fitness and our VO2 max (the maximum oxygen volume your body can use - vital in higher altitude trekking since there's less oxygen in the air). This will also include hill training, and will primarily ensure we will be able to maintain a steady pace for the number of hours we will have to walk each day.
- We will eat a high-carbohydrate diet since it is fast-burning, and this energy is easier for the body to digest. Carbs also utilise less oxygen to break down than fats and we will need more calories than usual due to the harder exertion
- Cover our skin during peak sunlight hours, and wear sunscreen—since UV radiation will be more than at sea level.
- We will keep ears exposed as strong receptors of air pressure.
- We will drink a lot of water during and before our hikes to stay hydrated (about 3-4 litres a day), as well as adding electrolyte mix to our water to supplement. This is because humidity will be lower at the higher altitudes - meaning sweat evaporates quicker - breathing will be faster - meaning more water will be lost through respiration - and we may also need to urinate more, increasing risk of dehydration.
- We are going to set a slower hiking pace than normal and take breaks more frequently.
- We are going to stick by the recommended mindset, whereby if we are feeling unwell at elevated altitudes, assuming it is altitude illness until proven otherwise. Not hiking any higher, and moving to a lower elevation if necessary.
- Finally, we will avoid alcohol which decreases your respiratory rate.

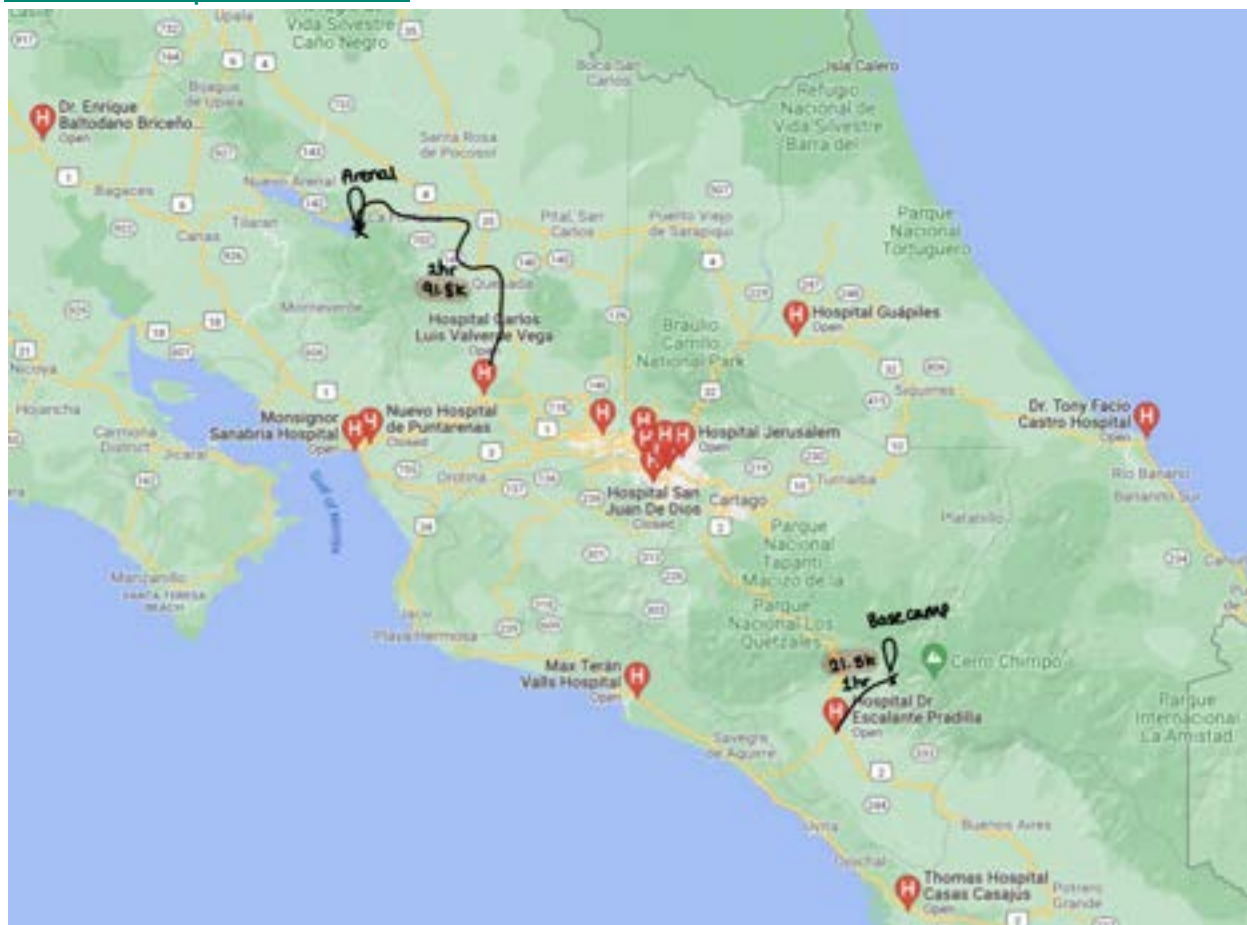
High Altitude Drugs

- Acetazolamide 250mg – Acute Mountain Sickness.
- Nifedipine 20mg – High altitude pulmonary and/or cerebral edema.

- Dexamethasone 4mg – High altitude pulmonary and/or Cerebral edema.

Also, Ginko Biloba is suggested to reduce the risk of suffering AMS when taken 2 weeks before your trip, so we will also get this.¹

Rescue - Hospital locations:



¹ <https://www.sciencedirect.com/science/article/pii/S1080603207702521>

Equipment

Team

1. MSR Hubba Bubba NX - Two man tent
2. Trangia, gas cartridge and matches
3. Bowls
4. Cups
5. Cutlery
6. Water filter / water chlorination tablets
7. Map
8. Compass
9. Camera + Film+ Batteries
10. Katadyn pocket water filter
11. Anker Power Port Solar Pack

Toiletries & First Aid

1. Bio-degradable camping soap
2. Deodorant
3. Toothbrush & shared paste
4. Hairbrush
5. Face wipes (biodegradable)
6. Toilet Paper
7. Sun lotion SPF 50
8. Insect repellent + tiger balm
9. Tweezers, small nail scissors, tick remover
10. Large first aid kit & plenty of blister plasters
11. Hand disinfecting gel
12. Medication essentials - Voltarol (pain relief), Ibuprofen (painkiller & anti-inflammation), Bepanthen (wound healing)

Individual

1. Backpacks + rain covers
2. Comfortable Walking boots (ideally multiwear so these are the only covered shoes we bring on the trip)
3. Sleeping bags
4. Head torches
5. Waterproof bag
6. Whistle
7. Personal first aid kits
8. Hydration Pack
9. Water bottle
10. Mosquito Net

Clothing (Weather: ~25C to ~ 2 C and ~19| rain 9 days, 20mm)

10. Waterproof trousers
11. Shorts
12. Hiking socks (several pairs)
13. Rain jacket
14. Towel (dislike quick dry)
15. Sunhat
16. Aviator hat (for cooler evenings at high altitude)
17. Sunglasses
18. Sandals
19. Thermal layers
20. Gloves
21. Swimwear
22. T-shirt
23. Vest top
24. Skort

Specialist Equipment

Clothing and footwear

The climate will be varied due to our trekking destinations being dotted around Costa Rica. At the summit of Cerro Chirripo conditions will be alpine in nature and thus we will need to employ a clothing system with a layered approach to maximise versatility in the event of temperature fluctuations. While weather conditions in the area are generally stable, we will be trekking in rainy season, and so considerable waterproofs will be required. Excess layers can be removed to prevent unnecessary perspiration and damp clothing once exercise intensity is reduced.

Most members have appropriate layers and their own down jackets, but any additional clothing items needed will be established and easily secured in the UK. We will use versatile salomon waterproof trekking trainers for multi-functional use across different terrains, but both need to purchase these in advance. These will be lightweight insulated boots again, this equipment is easily available in the UK.

Finances

Budget: Appendix Item A

Travel expenditure

The total cost of the flights from the UK to San José is about £600, £1200 in total: subsequent overland travel will be subject to confirmation from local transport agents. The total figure should be in the region of £1360 or below for the whole team.

Any unmet cost by funding provided from these sources, will be covered by a greater personal contribution from both expedition team members.

Snowdonia training trip write-up

As per the recommendations of the Board, myself (Otto), Megan, and 2 additional experienced trekkers (Chris & Josh) undertook a 3-day trek through the Snowdonia national park. The most interesting stints of our hike included a scramble partially up mount Snowdon on the first night; a hike up from Llyn Ogwen over Carnedd Dafydd and then to Carnedd Llewlyn and down one side (15km total, 1500m elevation); and another extended

hike over from the previous spot and a challenging scramble up Tryfan (16km total, 1350m elevation).



On the final day we took a shorter route that still had some fun scrambles from the far side of Tryfan, and looping back round past Llyn Idwal to Lyn Ogwen, where our journey began (9km total, 1400m elevation). On the different sections of our hikes we were able to experience a range of differing terrains and weather conditions, as well as assessed our fitness levels, team-working abilities, and come up with any necessary amendments for our trekking expedition to Costa Rica.

Contingency plan

1. Check if medical advice required, if so, seek it - call a UK-based emergency contact. Doctor to be confirmed. Insurance medical emergency helpline as alternative.
2. Contact Insurance company - call insurance company. state intention to evacuate and details on the situation. Obtain written authorisation to proceed with an agreed plan.
3. Contact Imperial College London - call Imperial college security and leave a message with them for Dr. Lorraine Craig on 00 20 7594 8910. Include casualty location, our location, actions being taken, and insurers advice. Instruct home contact to keep you informed of any updates
4. Debrief - Document incident as fully as possible, once in safe location and situation is diffused, both members to write a report. Complete the Imperial College incident report form. If required speak to UK contact to discuss. Any major incident will involve a full debriefing on return to London led by the Expedition Leader.

Risk assessment - Appendix B

Useful Numbers:

- Emergency services in Costa Rica: 911
- Ambulance specifically in Costa Rica: 128
- NHS Overseas Health Team: +44 191 218 1999
- Imperial College 24/7 Security: +4420 7589 1000

Action in An Emergency:

In the event of an emergency an assessment of the situation would be carried out. If deemed necessary the emergency services will be called on 911. In the event of a medical emergency if medical advice is required we will contact the NHS Overseas Health

Team. The insurance company will be contacted for assistance and if any claims are to be made. Imperial will be contacted once we are all safe.

Accident procedure In the event of an accident:

1. Keep calm.
2. Carry out immediate first aid and make any casualties comfortable whilst waiting for help. Remember: make the casualty's position easily seen.
3. Assess the situation and agree on a plan.
4. Organise assistance.
5. If emergency assistance is required, dial 911 immediately and ask for the appropriate service
6. Raise alarm at nearest habitation.
7. Give the International Distress Signal: six signals at one-minute intervals.
8. Record key information to tell emergency services.
 - Date and time of the accident:
 - Location: OS Card no. Grid Reference or GPS location:
 - Approximate place name or nearest recognisable feature:
 - Name(s) of injured person(s)
 - Condition of injured person(s):
 - Responsiveness: alert/verbal/responsiveto pain/unresponsive. Injuries: bleeding/fractures/burn/medical conditions etc.

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Appendix

Appendix A - Budget

Item	Unit Cost	Number	Total
Travel			
Return Flights	£600.00	2	£1200.00
Transport around country	£80.00	2	£160.00
Bike Rental (3 days when in San José & 2 days when in La Fortuna) - to assist in getting to our hikes	£105.00	2	£210.00
Subsistence			
Food	£200.00	2	£400.00
Logistics			
Cerro Chirripó Park Permit (\$36 USD for 2 nights)	£27.00	2	£54.00
Cerro Chirripó Base Camp (\$80 USD for 2 nights)	£59.00	2	£118.00
National Park Permits	£70.00	2	£140.00
Accommodation (including wild camping permits)	£140	2	£280
Equipment			
Salomon waterproof hiking trainers	£120.00	2	£240.00
Robens Primacore 60 ground insulation	£89.00	2	£178.00
Rab Ascent 300 Lightweight Down Sleeping Bag	£154.00	2	£308.00
Hydration pack	£39.00	2	£78.00
Waterproof mountaineering backpack	£100.00	2	£200.00
Mosquito Nets	£12.00	2	£24.00
		Total	£3590

Appendix B - Risk Assessment

Hazard	Consequence	Control Measure	Likelihood (L)	Severity (S)	Total Risk (S*L)
		Hiking	Scale: 1-5	Scale: 1-10	
Loss of direction	Unplanned route exposure	Frequently check our maps and GPS. Ensure both team members aware of route and confident in solo navigation	4	3	12
Fatigue	Irritable and irrational behaviour; Possible stumbling or falling; Lowered core body temperature	Frequent, sufficient scheduled rests in our hikes. Ensure we're always carrying sufficient water. Carry emergency high energy food.	3	4	12
Dehydration	Dizziness, headaches, stumbling	Regularly and frequently take in liquid. Drink at minimal 3 litres of fluid per day.	3	4	12
Hypothermia	Uncontrollable shivering, pale and blue extremities, lowered core body temperature.	Wear sufficient warm, waterproof and windproof clothing, including carrying spares. Change out of any wet clothing as soon as possible.	1	5	5
Bad hiking conditions	Difficult navigation, potentially unsafe trekking conditions	Refer to GPS and trail map more frequently. Be prepared to adjust plans (e.g. take different route or camp earlier than planned).	3	3	9
Trips and Falls	Sprained, twisted, fractured or broken ankle or knee. Other injuries.	Try to stop trekking before dark; ensure always carrying head-torches. Be observant; take no unnecessarily risky routes.	2	3	6
Team Separation	Increased likelihood of becoming lost due to distraction.	Team should always be aware of others location on the hike; have plans in place for each hike in the event of separation.	1	2	2

Small Injuries (e.g. cuts, sprains)	Affected body area will be out of use.	Ensure both team members familiar with all equipment and confident hiking at incline; take no unnecessary risks.	2	2	4
Large injuries (e.g. fractures)	More serious or permanent injuries; potential cancellation of further treks	Be cautious at all times. Both members will be trained in first aid to deal with issues as immediately as possible.	3	7	21
Injury due to heavy loading	Inability to continue trekking at full capacity; more permanent injury	Distribute loads fairly; be mindful of injuries and fitness; ensure to warm up and stretch every morning.	2	3	6
Blisters	Sores, blisters, open wounds,	Wear sun cream, lip balm, sunglasses, and sunhat. Check each other visually for exhaustion, Keep limbs covered while on snow/ice, even on cloudy days.	5	2	10
Sunburn / Heat Exhaustion	Sores, blisters, open wounds, blindness.	Wear SPF 30+ sun cream, lip balm, sunglasses, and sunhat. Check each other visually for exhaustion and other signs of sunburn.	3	5	15
Dirty Water	Sickness and Diarrhoea	Ensure we're vigilant about checking water sources for obvious contaminants; always filter and sterilise water.	2	5	10
Food Poisoning	Sickness and Diarrhoea	Avoid uncooked local food where possible; use antibacterial hand gel for cooking.	2	5	10
		Wildlife			
Poisonous snakes / Spiders	Skin turning red or swelling at the site of the sting. If allergic, people can have a life-threatening	Ensure we're vigilant about checking trails for dangerous animals.	2	6	12

	reaction - anaphylaxis.				
		Other Transport Risks			
Road Crash	Broken bones or possible death	Use recommended drivers from Rimo, remain alert during journey	2	8	16
Rucksack Breaking	Unable to carry equipment	Observe bag for any breaks, don't put too much weight in our bags.	2	3	6
Theft / Mugging	Loss of property, personal injury	Travel in towns according to FCO advice and use common sense. Remain in a group at all times. Hide sensitive materials or carry on person during the climbing phase	1	3	3
		Altitude- related risks			
Mild Acute Mountain Sickness (AMS)	Mild decrease in levels of concentration and performance	Increase altitude with caution, Acetazolamide may be taken to aid acclimatisation, normally 250mg twice daily.	3	3	9
Moderate/ Severe Acute Mountain Sickness	As above. Normal activity may become more difficult. Member might have to be aided by the other.	As above	2	4	8
High Altitude Cerebral Edema (HACE)	Symptoms can include headache, loss of coordination (ataxia), weakness, and decreasing levels of consciousness inc. disorientation, loss of memory, Hallucinations, aggressive behaviour, and coma	As for Severe AMS plus: Impaired Cerebral functions. Coma. Death.	2	5	10

High Altitude Pulmonary Edema (HAPE)	Fluid build up in the lungs	Shortness of breath at rest. 'Tightness' in the chest. Marked fatigue. A feeling of impending suffocation at night. Weakness. A persistent cough bringing up white or pink, watery, or frothy fluid. Confusion and irrational behaviour are signs that insufficient oxygen is reaching the brain.	2	5	10
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