

Measuring the roof of the Caribbean: Pico Duarte and La Pelona
Wolfgang Schlitz Adventure Fund Proposal

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Expedition Details:

We are proposing to climb the two tallest mountains in the Caribbean, Pico Duarte and La Pelona which are located in the Parque Nacional Armando Bermudez of the Cordillera Central Mountains in the Dominican Republic. We will ascend the peaks along the Mata Grande trail, a well established but infrequently traveled trail that begins at 850 meters and goes to 3087 meters at the summit of Pico Duarte. We will descend the peaks along the La Cientaga trail to the town of La Cientaga. We will travel from Santiago to La Mata and from La Cientaga back to Santiago by bus, a cheap and reliable mode of transportation in the Dominican Republic.

It is thought that Pico Duarte was first ascended and first named Monte Tina in 1851 by Sir Robert Schimburgk, the British consul to the Dominican Republic. Sir Robert Schimburgk estimated the mountain's height at 3,140 m. In 1912 Father Miguel Fuertes, a Dominican clergyman, climbed what is now La Pelona and claimed it was the tallest on the island. A year later the Swedish botanist Erik Ekman sided with Schimburgk and since then Pico Duarte has been considered the tallest mountain on the Dominican Republic, with an established altitude of 3,175 meters. In recent years (since the mid 1990's) this number has been called into question via GPS altimeter readings. It is currently suspected that Pico Duarte stands at 3,087 meters while its sister La Pelona is a meager two meters smaller at 3085 meters.¹ However, this is based on a single GPS experiment and our preliminary research has indicated that there is limited consensus on the actual altitude of both peaks.

For us, this trip will be primarily an opportunity to learn how to use and apply Global Positioning Technology (GPS) in mountaineering by developing an ascent and descent route as well as try to independently record the height of both peaks. We hope to familiarize ourselves with the practical advantages and disadvantages of using GPS for route finding and general mountaineering purposes. We aim to apply the practical GPS skills honed on this trip to other more technical mountaineering endeavors.

In addition to the skill building and scientific aspect of this trip, there is a significant cultural component to the trip as well. There is often not a better way to get to know the culture and climate of a new region than by trekking through its countryside. Our proposed route up Pico Duarte and La Pelona will allow us to trek through various landscapes including farmland, cloud forests, pine forests, alpine valleys and craggy summits.

The Dominican Republic is currently a relatively safe destination for American travelers. compared to its western neighbor, Haiti. We will not be crossing the border into Haiti. Besides petty crimes which can occur throughout the Caribbean, there are relatively few social and political risks associated with trekking in the Dominican

¹Orvis, Kenneth "The Highest Mountain in the Caribbean: Controversy and Conclusion via GPS," *Caribbean Journal of Science*, Vol. 39, No. 3, 378-380, 2003 available at http://caribjsci.org/dec03/39_378-380.pdf

Republic. Tourism has exploded in recent years and the country has a vested interest in reducing crime and encouraging the safety of American travelers. Additionally, the U.S. Department of State has not recently issued any travel warnings within the Dominican Republic. (http://travel.state.gov/travel/cis_pa_tw/cis/cis_1103.html).

Detailed route:

March 18- arrive in Santiago, Dominican Republic. Travel by bus to the town of Mata Grande.

March 19- Trek 20 km from Mata Grande to the shelter at Las Guacaras.

March 20- Trek 12 km through the cloud forest of the Rio Bao into the Bao Valley. Camp in the Bao Valley.

March 21- Trek from the Bao Valley to the Lilis Valley. From the Lilis Valley, climb La Pelona, the second highest summit in the Caribbean. From La Pelona follow the Sabaneta trail ridgeline to the summit of Pico Duarte. From the summit of Pico Duarte, we will take La Cienega trail to camp at La Comparticion, an abandoned shelter located at 2800 meters above sea level). Total distance is approximately 10 km.

March 22- Descend over 2000 meters over 18 km from La Comparticion to the river at Los Tablones. From there continue to descend to the tiny town of La Cienaga.

March 23- Travel by bus from La Cienaga back to Santiago and will be camping on the northern coast for a few more days until we fly back to the United States.

Money, Money, Money:

| Item | Unit Cost | Quantity | Total Cost |
|--|------------------|-----------------|-------------------|
| Travel: Airfare | \$274/person | 2 people | \$548 |
| Travel: Bus | \$4/person | 2 people | \$8 |
| Park Pass Permit Requirements (Parque Nacional Armando Bermudez) | \$25/person | 2 people | \$50 |
| Food | \$5/person/day | 2 x 5 days | \$50 |
| Guidebooks | \$10 | 1 | \$10 |
| Lodging | Free | n/a | \$0 |
| GIS Materials/ GIS Unit | Free | n/a | \$0 |

Total

\$666

This does not include the estimated \$200 per person of gear we will have bought plus the costs of food and lodging on the days before and after the trek.

We are asking for \$250 per person (\$500 total) from the Schlitz Adventure Fund, to contribute to the costs of food, park permits, and in particular, travel costs.

We are not applying for any other sources of funding.

Maps:

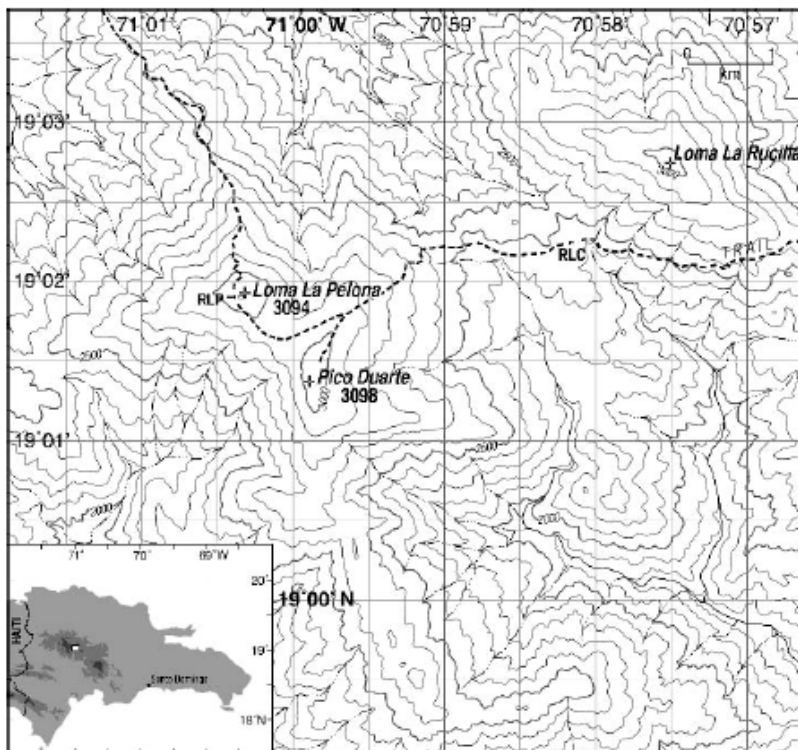


Figure 1. Contour Map taken from Orvis, Kenneth "The Highest Mountain in the Caribbean: Controversy and Conclusion via GPS," *Caribbean Journal of Science*, Vol. 39, No. 3, 378-380, 2003 available at http://caribjsci.org/dec03/39_378-380.pdf



Figure 2. Indicates Mata Grande and La Cienaga (beginning and end destinations) in red with the Pico Duarte and Le Pelona in blue. Image from <http://www.geocities.com/Yosemite/Rapids/1432/picoeng.html>



Figure 3. Region of Pico Duarte and La Pelona outlined. Image from [http://mappoint.msn.com/\(fmktvo55licjkt45pffkjp55\)/map.aspx?C=19.0229806%2c-70.9980778&A=150&L=WLD0409](http://mappoint.msn.com/(fmktvo55licjkt45pffkjp55)/map.aspx?C=19.0229806%2c-70.9980778&A=150&L=WLD0409)

Level of Appropriateness:

Paul Mozur

I have been hiking since Middle School and over the course of my time in High School managed to gain strong hiking experience in Colorado's Indian Peaks, the Grand Canyon, and all around Pennsylvania's Pocono Mountains. Since coming to Dartmouth, I have hiked many local peaks and this fall completed a single day Presidential Mountain traverse. I have significant winter mountaineering experience hiking in the Presidential Mountains as well as in the Franconia Ridge vicinity.

As a member and gear manager of the DMC I have co-lead several climbing trips and during my sophomore summer was in charge of operating the DMC's gear locker. Since coming to Dartmouth I have been rock climbing and possess extensive sport climbing experience. I have climbed as high as 11.C and feel very comfortable in alpine environments. My sport climbing has taken me to Red Rocks, Nevada, Jack's Canyon, Arizona, and New River Gorge, West Virginia. During my sophomore summer I took Dartmouth's lead climbing course and gained greater experience with alpine safety. I have further traditional climbing experience at Cathedral Ledge and Cannon Cliff. I have not recently been as involved in the DMC as I once was freshman through junior year, I am still very interested in being involved in the club and giving back to the club in a new way.

While in China I spent a significant amount of time in high altitude environments independently and with guides trekking. During this time I made no notable ascents; however, my appetite for high altitude treks was stirred and I'm hoping with this trek to further develop the skills and explore the high altitude environs I grew to love. I am also extremely interested in our scientific goals of more accurately determining the height of the peak and coming to understand the practical mountaineering uses of GPS. Upon graduation from Dartmouth I hope to move to California and continue to garner experience with high-altitude mountaineering with the ultimate goal of returning to China and ascending some of the massive peaks I saw during my travels.

Libby Hadzima

For me, while this trip may not be the most technically difficult, will be an opportunity to get back into hiking and recondition my knee after undergoing ACL knee surgery this past fall. I have been hiking for as long as I can remember and have been involved in both my high school outing club and the Dartmouth Outing Club.

My experience includes numerous hiking trips in the White Mountains including extended trips on the Franconia Ridge, and Presidential Mountains. I have also hiked in Joshua Tree National Park, Grand Canyon National Park, the Badlands, Zion National Park, Bryce Canyon National Park, Canyonlands National Park, Death Valley, etc. Internationally, I have done alpine hiking in Switzerland (Zermat and Interlaken areas) and in Costa Rica. I have been at higher altitudes while climbing Mt. Chirripo (3820 meters) in Costa Rica.

Additionally, the Dartmouth Earth Science off campus Program contained a lot of hiking and field research in the western part of the United States. While we did not focus on hiking, I have spent the past three months outside everyday doing geology field work in difficult terrain including scree-slopes and snow fields.

I also have glacial mountaineering experience and took a Trails Wilderness School Mountaineering Course (June 2001) where I backpacked in the Chugach Mts of Alaska for 30 days. The terrain included both trekking and glacial-mountaineering including self-arrest, roping, Prussik knots, rescue, etc.

Lastly, I have been involved in the DMC and Cabin and Trails. I was a council member in Cabin and Trails and led outdoor training programs and numerous weekend hiking trips throughout the White Mountains. Since a skiing accident last winter, I have been unable to be as involved in Cabin and Trails and in hiking as I have wanted to. This is a great opportunity to get back into hiking as I've worked very at knee rehabilitation and I hope to lead some trips again in the spring and next fall (when I still haven't graduated.)

Additionally, I have GPS experience through being an Earth Science Major (have taken classes on remote sensing (EARS 55) and am using GPS technology in my current thesis (using remote sensing to study arsenic contamination in groundwater in Cambodia).

I feel confident in my hiking ability, fitness and experience. I look forward to getting back outside after knee surgery and feel prepared to take on this trip. Additionally, I am excited to be hiking in a Spanish speaking country as I speak Spanish and am very interested in Caribbean and Latino culture.

Risks and Risk Management

Risks of the expedition include thunderstorms, petty crime generally caused by poverty, and altitude sickness. As members of the DMC and Cabin and Trail, Libby and Paul have significant experience operating under lightening danger. While we are climbing the peak during the dry season, we will check weather forecasts before beginning the hike. If dangerous storms move in, as they can, we will move immediately to safe, low-lying areas. At Dartmouth Libby has completed Spanish 1, 2, and 3, lived in La Casa, and during an off term lived in a small town in Costa Rica that spoke exclusively Spanish. Paul has had five years of high school Spanish and during high school spent two months living in Santa Cruz, Bolivia where little English is spoken. We feel we collectively possess an adequate knowledge of Spanish to deal with any emergencies we might run into. The United States State Department has not posted a travel warning for the Dominican Republic; however, it warns against petty theft. While crimes such as theft are often an occurrence of chance, we will do our best to hide all valuable possessions and will not elevate any incidents of violence or theft. Finally, Libby has hiked once to an altitude of 3,800 meters while Paul has climbed to above five thousand meters on a trek in China and has been above ten thousand feet multiple times on previous hikes in the Western United States. Both Libby and Paul are CPR and first-aid certified and are in proper shape to take on the physically demanding hike up Pico Duarte. We also plan on doing several winter hikes (including a winter traverse of Franconia Notch) in March to more adequately prepare ourselves for the climb.

How We're Gonna Give Back:

Our primary way of giving back to the Dartmouth Outing Club will be to give at least one beginning seminar on the practical applications of GPS and mountaineering.

While the DMC and Cabin and Trails possess many significantly experience outdoors-people, few understand or have had the opportunity to learn basic GPS skills which while are no substitute for map and compass, can significantly aid in route finding as well as developing academic projects that can be combined with mountaineering. Our seminar will include basic GPS mapping skills and we will lead a hike out to a regional area and then will use the GIS lab in Fairchild Hall to demonstrate to participants the entire practical process of GPS.

Our second way of giving back will be to write up a report about our trip and will process of GPS data to generate a topographical map of our trek. We will compare our created topographical map with Digital Elevation Model and STRM data to come to our own conclusion about the altitude of these two peaks. We will present our data in our GPS workshop in order to provide an example to participants about the applicability of GPS technology.

Additionally, much of the inspiration of this trip has come from seeing slide shows of previous Schlitz funded expeditions. Very often the cultural experiences of expeditions can rival the pure mountaineering aspects. We would like to give a slide show emphasizing the cultural and mountaineering experiences of our trip in the hopes of inspiring other groups to take on both technically and culturally interesting adventures around the world.