



VENEZUELA 2018

*EXPEDITION
REPORT*



Mission Summary

The Good Project supports education, healthcare, and preservation programs for indigenous peoples through intercultural and participatory perspectives. We document, learn, and share their way of life to foster cross-cultural awareness, and promote the recognition and protection of indigenous rights and ancestral lands.

Our Vision

The Good Project envisions indigenous communities empowered with agency, self-representation and self-determination in navigating through their ever-changing expanding world.



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Dear Supporter,

After returning home from Yanomami territory in Venezuela, I was hospitalized twice for malaria and spent many weeks recuperating. Bedridden, I took the opportunity to contemplate on my recent experience with the Yanomami people and the research we conducted. The expedition was thrilling, adventurous, emotional, difficult, and rewarding. Laughs were shared, tears were shed, the dead mourned, and new life celebrated. My identity as a Yanomami continues to strengthen and my spirit is more emboldened to serve my people.

I had the honor of being part of a tremendous intercultural team comprised of scientists, medical personnel, government functionaries, military officials, private enterprises, Yanomami leaders, missionaries, and volunteers. Together we healed the sick, conducted groundbreaking research, established trust, and created partnerships with Yanomami communities. With each expedition under our belt, we gain more knowledge and insight on Yanomami culture, their contemporary challenges, and how they are redefining indigeneity in the 21st century. It is overwhelming to think of the adversities the Yanomami face today - invasion of illegal gold miners, devastating epidemics, limited access to basic healthcare, disruption of education and schooling, and cultural degradation. Mounting international efforts are working towards helping them and the Good Project is proud to be a part of it. We are already underway in preparing for the next expedition.

The Good Project will give back to the Yanomami with resources specific to their health and educational needs. We will deliver medical equipment, medicines, and mosquito nets. We will hold workshops to continue the dialogue of the link between the microbiome and health, as well as conducting ethical research among indigenous communities. We will continue our objective in reuniting Yarima with her family in the United States. We are excited to begin this next journey and building our Good Project family.

I'd like to personally thank you, the Good Project supporter, for helping us make a difference both here and in Yanomami-land. Though we all may live different lifestyles, eat different foods, and believe in different gods or spirits, we share the same world and depend on each other to preserve our beautiful planet for future generations.

Sincerely,

David Good
Executive Director

THE FIELD TEAM



David Good

A biologist and executive director of the Good Project. He received his undergraduate and master's degree in biology at East Stroudsburg University of Pennsylvania

His passion is medicine and teaching. He is currently studying for medical school and is an adjunct professor in biology at Northampton Community College of Pennsylvania.

He travels the world to share the knowledge and wisdom of the Yanomami people to raise cross-cultural awareness and advocate for indigenous rights.



Hortensia Caballero

An anthropologist and head of the Anthropology of Development Laboratory and Associate Researcher at the Center of Anthropology of the Venezuelan Institute of Scientific Research (IVIC). She received her Ph.D in anthropology at the University of Arizona (2003).

Her work focuses on cultural, historical and political transformations among the Venezuelan Yanomami as well as intercultural processes and indigenous rights among Amazonian peoples. She currently serves on the advisory council for the Wenner-Gren Foundation and is on the Good Project board.



Monica Contreras

A microbiologist and head of the department of Microbiology and Biochemistry at the Venezuelan Institute for Scientific Research. She received her Medical Technologist bachelor's degree at University of Los Andes, Mérida, Venezuela in 1991, and her Ph.D. in Microbiology at University Paris XI and Institute Pasteur from Paris, France in 2003.

Her area of research focuses on the human microbiome, and its relationship with state of health and nutrition, at varying levels of urbanization. She also investigates antibiotic resistance in *H. pylori* bacteria and its role in causing disease.



Orlana Lander

A parasitologist and researcher at the Institute of Tropical Medicine at the Central University of Venezuela. She received her degree in bioanalysis at the same university and is a professor in their medical school.

She has worked with indigenous communities for over ten years specializing in diagnostics of intestinal parasites, onchocerciasis, leishmaniasis. She is also a researcher in the microbiome projects in Venezuela. She avidly supports programs that empower indigenous peoples.



Roger Cariban

A medical doctor and coordinator of the Indigenous Health office in Puerto Ayacucho. He received his medical degree from the Universidad de Los Llanos Centrales Romulo Gallegos, Venezuela.

He frequents the Upper Orinoco and provides medical care to Yanomami communities most affected by health issues. His passion for providing healthcare to indigenous peoples has led him to work in Puerto Ayacucho.



Andrew Lee

A resident of the Upper Orinoco in Yanomami territory. Born in Boliva, he has lived most of his life among the Yanomami. His native language is Yanomami and he speaks English and Spanish fluently.

He is highly skilled in jungle survival and navigating the river ways of the Amazon. He supported this expedition by serving as a motorist, guide, and translator.

His wife is Yanomami from the Jalalusi-teri village and he is a proud father of five.





RESEARCH SUMMARY

Microbiome research surrounding indigenous societies is an increasing focus within the medical and public health field. The Yanomami took center stage after a study by Clemente, et al.,¹ was published in 2015, which indicated that the gut bacteria of one remote community had the highest diversity seen in any human group. The people were not exposed to the negative effects of a “*Western lifestyle*”, which has been shown to have drastically decreased our microbial diversity. This imbalance, or dysbiosis, is linked to an array of ailments and diseases (e.g. irritable bowel syndrome, diabetes, obesity, etc.).²

It is assumed that these “diseases of the affluent” essentially do not exist among isolated or minimally impacted Yanomami communities largely due to their robust and diverse microbiome. The race is on to study their evolutionary legacy before it is changed forever. The Good Project supports a study titled, “Estudio del microbioma en sujetos amerindios y mestizos para evaluar los parámetros de salud, dieta y actividad física” [Study of microbiome in Amerindians and Mestizos in order to evaluate their parameters of health, diet and physical activity] coordinated by the Venezuelan Institute of Scientific Research.³ A major goal of this research is to characterize and compare the microbiome of communities along an “urbanization” gradient (i.e. how microbial diversity changes when communities are more impacted from westernization).

Venezuelan scientists, including executive director David Good, traveled to two different Yanomami villages to conduct their research. They started out in a village within the Padamo sector, described as “high impact” due to frequent contact with non-Yanomami, more exposure to Western diet, and changed house structures. The other village is located almost 120 miles further up the Orinoco River past the Guajaribo rapids. With less frequent interaction with non-Yanomami, they live a more traditional Yanomami lifestyle and so were categorized as “minimal impact”. They dwell in a traditional shabono, hunt exclusively with the bow and arrow, forage with baskets, engage in shamanic rituals, and chew tobacco. Outside impact is evident as clothing, metal pots, a nonfunctional shotgun, and other steel goods can be observed in the village.

Stocked with cotton swabs and tubes they sampled different parts of the body with the aim of preserving bacterial communities and analyzing them in a lab. Additionally, they measured physical parameters such as height, weight, blood pressure, glucose levels and recorded their diet. There was much excitement in the air since no such research had ever been conducted in their communities. It was hard work but many Yanomami



David measuring blood glucose of Yanomami woman



Monica using a cotton swab to sample Yarima's arm

volunteered to assist the team and took active roles in the project. In addition to following all local and national human rights laws, protocols, and ethical conduct for research, the team went above and beyond by upholding the following principles:

TRANSPARENCY

Research among the Yanomami has had a checkered past. The dark history of scientists violating ethical codes of conduct has left a lasting scar for many Yanomami communities (for more information refer to Robert Borofsky's "Yanomami: The Fierce Controversy and What We Can Learn from It").³

The team quietly and patiently received strong admonition and anger expressed by Yanomami leaders who harbor a deep suspicion for scientists. The team responsibly apologized for the past transgressions committed by scientists and researchers and acknowledged their every right to be skeptical and indifferent towards the their presence. After hours of discussion the team and the Yanomami leaders came to an understanding through honesty and openness.

EDUCATION

Before sampling, ample time was dedicated towards explaining and sharing knowledge on the link between health and the microbiome. Demonstrations were carried out to simulate the sampling process and explain how the instruments will be used. Additionally, visual tools such as posters were used to help explain the microbiome and it how it is unique to the Yanomami.

INCLUSIVITY

The Yanomami were integral in carrying out the research. They became part of the team participating as translators, guides, and research assistants. The team always answered their questions and demonstrated how to use various instruments such as the glucometer and blood pressure cuffs. Microscope sample-slides were shared visually exposing them to the microbial world.

Furthermore, the research study was presented to numerous agencies and stakeholders that include the military, missionaries, medical personnel, and various Yanomami political figures before even reaching the Yanomami territory. The team was open and honest in presenting the importance of the research, the manner in which the research was carried out, and how the samples were stored and analyzed.

RESPONSIBILITY

The team recognized that, in addition to carrying out the study, there was a responsibility to provide aid for the Yanomami communities. Medicines and supplies were brought in and distributed under the supervision of the medical doctor. Medical clinics were held to tend to the sick and wounded. This strengthened our relationship with the community showing that the team cared for their health and well-being .



Team discussing with Yanomami village leaders



Hortensia presenting the poster to Yanomami villagers

MEDICAL SUMMARY



Medical doctor Roger Cariban and parasitologist Orlana Lander provided medical aid for the expedition team as well as the Yanomami people. It is difficult for many communities to gain access to basic healthcare and much needed medicines. During group discussions, the Yanomami anguished over the loss of loved ones that had perished due to the outbreaks of introduced diseases. Therefore, they were grateful for medical provisions that arrived to their village. Roger is a veteran field doctor capable of working in the harshest of conditions and Orlana's expertise in microscopy were crucial in diagnosing parasitic infections. One of the most memorable medical encounters happened just a few hours after the team landed in Yanomami territory. An 8 year old boy had been playing near tall grass around his home when the fer-de-lance snake struck his right ankle injecting its deadly poison. The villagers quickly summoned the medical team which acted quickly administering anti-venom. The boy writhed with pain as the swelling crept up his leg towards his pelvis. It was a long, somber and intense night as everyone knew how lethal the snake's poison was. However, the anti-venom took hold and prevailed. The boy survived and his parents were grateful for saving his life.

Patients seen and clinical presentation in the village of Padamo sector⁴

| Diagnostics | < 1 yr | 2-5 yrs | 6- 9 yrs | 10-49 yrs | 50+ yrs | Total |
|-----------------------|--------|---------|----------|-----------|---------|-------|
| Snake bite | | | 1 | | | 1 |
| Fever | 1 | 1 | 3 | 16 | 3 | 24 |
| Scabies | | | 2 | 3 | 1 | 6 |
| Low back pain | | | | 3 | | 3 |
| Tooth pain | | | | 5 | | 5 |
| Intestinal parasites | | 12 | 23 | 19 | | 54 |
| diarrhea | | 1 | 2 | | | 3 |
| Headache | | | | 8 | | 8 |
| Wound | | | | 3 | | 3 |
| Prenatal consultation | | | | 1 | | 1 |
| Malaria P. Vivax | | 1 | 1 | 1 | | 3 |
| Abdominal pain | | | | 2 | 1 | 3 |
| Total | | | | | | 114 |



Tending to boy bitten by a fer-de-lance



Team assessing the medical supplies in a medical clinic



Collectively, the team has over a century of experience working and living in the Upper Orinoco of Venezuela. Yet, each expedition brought unforeseen challenges, obstacles, and setbacks. The Amazon, in all its glory, is an untamed, unpredictable, and powerful place. One must prepare to endure torrential rainfalls, cross dangerous rapids, cope with the harsh sun, battle disease, and survive cold nights. While the jungle provides food, shelter, and medicine, it also harbors venomous snakes, poisonous plants, predatory beasts, and parasites transmitted by flies and mosquitoes. The almighty Amazon - we must respect it, fear it, and admire it. The journey to this majestic land is always, without fail, an adventure. Below is a pictorial time line of our expedition from Bethlehem, Pennsylvania to Wanapuwei, Amazon.

Months before departure - Bethlehem, PA



At the Good Project base field testing equipment and taking inventory.

07/28 - Caracas, Venezuela



Research team meets up in Caracas

08/4 - Caracas to Puerto Ayacucho



9 The ferry town of Puerto Paez was flooded so porters were hired to shuttle the team safely across.

08/5 - Puerto Ayacucho



The team conducting field simulations of the sampling protocols.

08/26 - En route to Yanomami-land



Aerial shot of the awe-inspiring canopy of the Amazon in Venezuela. The team takes the three-hour flight into Yanomami territory

08/28 - Padamo sector



Over the course of several days, the team sampled various villagers for the microbiome project.

09/4 - Orinoco River



The team left Padamo sector en route to the next community. The trip took three days covering about 120 miles. They passed numerous villages along the way as well as other missionary posts.

09/8 - Above Guajaribo Rapids



The team arrived in village above Guajaribo taking the first few days to explain the microbiome project.

09/10 - Research in Yanomami village



Hortensia working with Yarima. The villagers were very excited and curious over the research project. They shared many laughs and were happy to help whenever possible

09/12 - Leaving village



The team is loading the boat for the return journey. They all made it home safely. David stayed behind to spend time with his family. He returned safely home to his family around mid-October.

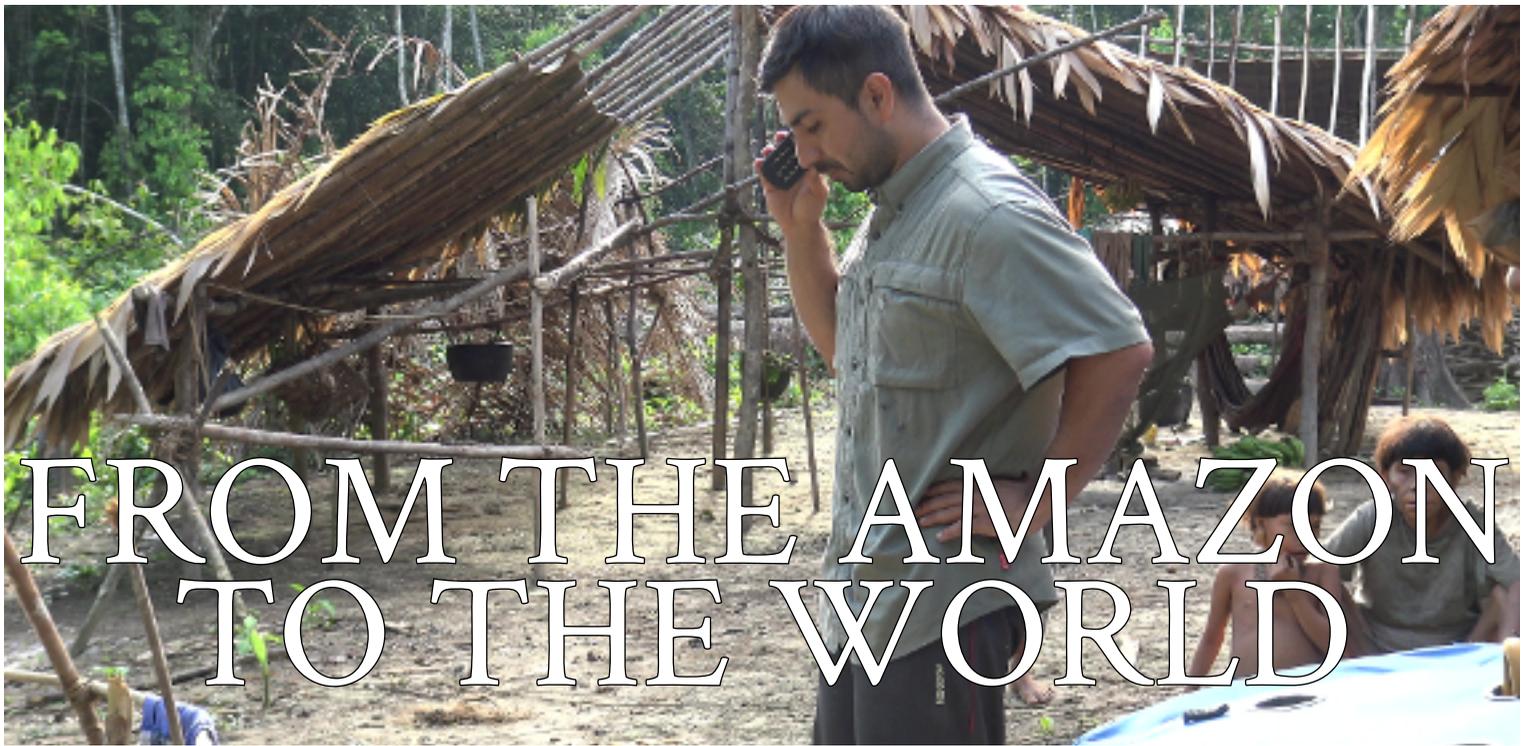


YARIMA'S RETURN

One of the main expedition objectives was to bring Yarima back to the United States for a visit⁶. Unfortunately, she was unable to begin this process due to bureaucratic complications as a result of the Venezuelan economic crisis. It was a great disappointment for all of us .

Due to dwindling resources and the limitations of the registrar offices in the Upper Orinoco municipality, the team was unable to obtain the necessary paperwork to begin the passport and visa process. Telecommunication, for obvious reasons, is difficult in the remote Amazon so the only way to begin this complicated and difficult process was for Yarima to leave her village. Given the scarce fuel supply and resources, there was no guarantee that Yarima would have been able to return home if faced with long delays in the city. This was a chance we could not take. The Good Project team is regrouping and reworking our strategy to safely bring Yarima to the United States.

Yarima expressed a great desire to see her family in the United States and to spend time in a world she had not seen in over twenty-five years. While her visit would reunite a family, her trip has another deep symbolic meaning. Yarima represents a society that is under threat from illegal gold mining, epidemics of introduced diseases, climate change, and deforestation. As her voyage to the United States will capture the hearts of millions worldwide, this would be an opportunity to raise awareness through cultural exchange and dialogue. Yarima and the Yanomami people are protectorates of the rain forest by simply being who they are.



FROM THE AMAZON TO THE WORLD

The team was able to directly connect to the campus of Northampton Community College of Pennsylvania via satellite. The Good Project, in collaboration with NCC Science Club and NCC Center for Civic and Community Engagement, held three live Q&A sessions by calling in via satellite phone and broadcasting on Facebook Live⁷. This provided a unique opportunity to engage directly with students and followers while in the field. They answered questions that involved topics such as Yanomami belief systems, conducting research, and traveling through the Amazon. This provided valuable insight on the current situation surrounding education and health in Yanomami communities.

Throughout the expedition, experiences were shared by sending short messages using the Garmin InReach Explorer. Technology has allowed the Good Project, no matter where the team is, to continue its work in education, raising awareness, and sharing the unique culture of the Yanomami people.



ACKNOWLEDGMENTS

This expedition could have not been possible without the support of volunteers, family, collaborators, students, Good Project staff, donations, and sponsors. We would like to pay a special thanks to the following for their instrumental role in making this project a success:

(alphabetical order)

Center for Civic and Community Center at Northampton Community College.

Debora Bohr

Don and Mariana Dawson

The Emch Fund

Dr. Larry Weiss

Dr. Maria Gloria Dominguez-Bello

Mayor's Office of Esmeralda

Ministry of Popular Power for Health, Venezuela

Ministry of Popular Power for Indigenous People, Venezuela

Mission Padamo and Aviation Services

Persona Biome

Ramiro Moi

Serena Belsby

Venezuelan Institute for Scientific Research

Yheicar Bernal

The Yanomami people who worked side by side with the team. We are especially grateful for Nelson and Yerson for guiding us in the hard journey. The Yanomami taught us so much and we are truly grateful for being part of their legacy and history.

We would like to acknowledge you! The Good Project supporter and donor. Your contribution was crucial in making this expedition successful. You continue to believe in our cause in supporting the healthcare, education, and cultural preservation of the Yanomami people. From the bottom of our hearts and the depths of the Amazon...

THANK YOU

APPENDIX

¹ To read more about this study click on the below:



² To learn more about how the microbiome influences your health click on the button below:



³ The Good Project was not involved with the IRB process at the Venezuelan Institute for Scientific Research. It supported the study by providing funding and logistical resources

⁴ This table was translated Spanish and adopted from the medical report written by Dr. Roger Cariban. To access the original medial report send your inquiry to contact@jointhegoodproject.com

⁵ To view the map on Google Earth click on the button below:



This link has been disabled. We apologize for the inconvenience

⁶ To read more about Yarima's return and to support her trip click on the button below:



⁷ To watch one of the Facebook Live videos featuring a live Q&A click on the button below.





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