

**Merrimack College**  
**Haiti Service Learning Initiative**  
**Trip Summary Report**

June 3<sup>rd</sup> – June 9<sup>th</sup>, 2012  
Merrimack Joins Medishare for Haiti



*The Merrimack team with our Haitian partners*

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## Introduction

On June 3<sup>rd</sup>, 2012, seven members of the Merrimack College community traveled to Haiti for a week-long trip, in which, they collaborated with Project Medishare for Haiti (Merrimack's host organization) and the communities of the Central Plateau to increase the local healthcare capacity and improve access to clean water. Members of the trip included two Athletic Training (AT) students: Mollie Fitzgerald and Chelsea Jacoby, two Civil Engineering (CE) students: Daniel Borges and Margaret Jacques, and three faculty and/or staff members: Kevin Melanson from Health Sciences, Brian Suehs-Vassel from Campus Ministry, and Marc Veletzos from Civil Engineering. Building off Project Medishare's well-established programs and relationships, the Merrimack team collaborated with local communities to increase health care workers' ability to care for low back pain, and improve the efficiency of the municipal water system in the town of Marmont. These projects proved to be both physically challenging and personally rewarding, however, it is believed that the greatest success of the trip was not any specific task accomplished, but the establishment of a long-term, mutually beneficial relationship between Merrimack College, Project Medishare, and the communities of the Central Plateau.



## Background

Project Medishare (PM) for Haiti is a medical non-profit organization that was co-founded by Merrimack Alumnus Dr. Art Fournier and works together with the people of Haiti to provide rural communities in Haiti with quality healthcare and development services. In the summer of 2011, Kevin Melanson, Brian Suehs-Vassel, and Marc Veletzos all participated in a fact finding trip to Haiti. The information gathered from the trip confirmed that the students, faculty and staff at Merrimack College possess the knowledge and skills to partner with Project Medishare in developing sustainable initiatives to improve the health and well being of the Haitian people. Specifically, the need for improved healthcare for musculoskeletal disorders could be addressed by individuals in the Athletic Training Education Program, and the need for increased access to clean-water could be addressed by individuals in the Civil Engineering Department.

## Student Feedback

### *Overall Reflections on the Trip*

“I think I would describe my experience as enlightening, rewarding and eye-opening. For someone who’s never been to a third world country I think it’s hard to imagine how truly poor these people are. What’s even harder to imagine is how incredibly amazing they are and how thankful they are for the work we did. Without this trip I don’t know if I ever would have gotten into service work. Now I know it’s something I can’t live without.”

“Although it is hard to put into words how truly incredible this experience was, I would have to describe it as life changing. This trip was amazing and I would recommend anyone to take part in it. I was able to experience a new culture, as well as put into practice what I’ve learned in the past three years. This trip helps put things into perspective and reminded me how fortunate I am. It served as a motivator to continue to work hard and also to hopefully become more involved in service work in the future.”

“This trip was absolutely amazing and forever life changing. It was so exciting every day getting to help people and to experience the culture first hand was incredible.”

### *Interactions with the Haitian People*

“The best part about this experience was meeting the Haitians and immersing ourselves in their culture. I found that I’m jealous of their happiness and their simple lives. My interactions with the Haitian people were difficult, because I didn’t speak their language, but always rewarding. I loved interacting with the children. I loved making them smile without saying more than Bonjour. Everyone was so nice and happy that we were there to help them.”

“I loved getting to know the Haitian people. It was an honor to meet/be accepted by some of them; it made my whole week. I liked being able to make huge positive changes in their life just with education and giving them the opportunity to make a difference. Also getting to know everyone on the trip it was an awesome experience and a pleasure to get to know everyone personally.”

“My favorite part of the experience was the chance to interact with the Haitian community, especially the healthcare workers. We were fortunate enough to get to see them teach other people the stretches and exercises we showed them for back pain, which was extremely rewarding to see. The people were so enthusiastic and motivated to learn.”

“I really valued all of the time I was able to interact with the Haitian people. It was so touching to meet such warm and welcoming people. They are so grateful for any help that is given to them and I felt like I was a member of their community for the entire week. Seeing people who have so little but who are so happy really makes you think about all that we have and all that we take for granted.”

“Inspiring. Seeing, talking and interacting with the Haitian people was eye opening because they are so appreciative, genuine, smart, and above all, happy! They have so little yet are so content and that really hit home for me. They accepted us into their community where we came as strangers but left as family and friends and it is an amazing feeling.”

“Absolutely amazing! I have never met people who have been so hard working and have wanted the best for the people of their community. Raphael, the Marmont water president was so dedicated to fixing and finding solutions to problems he encountered every day. He was a large inspiration to what I strive to become as I grow more experienced in my field of study and everyday work environment.

### *Work in the Civil Engineering and Athletic Training Areas*

“The project we worked on while in Haiti applied directly to classes I’ve been taking. It was awesome to apply it to a real life situation and especially in this context. For the first time I was able to apply my knowledge to something outside of the classroom and it has never been so rewarding.”

“Throughout the week, we were able to interact with many healthcare workers and provide educational training sessions on how to treat and prevent the back pain with the Haitian Healthcare workers. We were also able to observe the activities of daily life of the Haitian people to gain a better understanding of the stresses that are placed upon the body which will help us in the future to provide more effective information and treatments on future trips.”

“The experience we had bringing athletic training to Haiti was awesome. Everything we learned/our skills correlated perfectly to what they need and it was great knowing we can do so much more to help by teaching them the basics [of our profession]. It was an eye opener as to the fact that athletic training isn’t just for sporting events and can be used to help people all over the world and I felt like I really made a difference.”

“The tasks we were given each day gave me motivation to keep working to our goal of getting clean water to the town of Marmont. I really enjoyed physically fixing specific parts of the Marmont water system. Having the opportunity to work with residents of the community to show them how they can save water was rewarding since we hope we made a difference towards a better way of life for the Haitian community.”



*Mollie Fitzgerald (AT)*



*Chelsea Jacoby (AT)*



*Maggie Jacques (CE)*



*Dan Borges (CE)*

**Figure 1: Merrimack College Student Participants**

## Project Specific Summaries

### *Civil Engineering*

#### 1 Marmont Municipal Water System

The Merrimack College Civil Engineering team met with Project Medishare personnel and Don Rafael, the President of the Marmont Municipal Water System (MMWS). We inspected the MMWS and looked for ways to improve the water service to the town of Marmont.

The MMWS collects water from a capped spring that is approximately 1000 feet above the town and far enough away from the general population that the water remains clean. We tested the water for a few chemicals that would indicate contamination from human waste and found no indication that the spring is contaminated. To the best of our knowledge, the system was built by the Haitain government about 20 year ago. The capped spring feeds a 20,000 gallon storage cistern through a 2 inch diameter galvanized steel main pipe. At various locations along this main pipe are small (approximately 50 gal) concrete storage tanks with faucets for the people to access clean water. In addition there is a network of  $\frac{3}{4}$  inch diameter PVC pipe that distribute water from the main pipe to the population.



**Figure 2: 20,000 gallon cistern for the town of Marmont**



**Figure 3: Small concrete storage tanks with faucet**

Our team identified numerous leaks in the MMWS due predominantly to broken PVC faucets. On the day we measured the water losses, the system was losing over 34 gallons per minute. This equates to nearly 50,000 gallons per day and is approximately equal to the amount of water that the people of Marmont need for a single day.



*Fracture in main line*



*Broken PVC faucet*

**Figure 4: Typical leaks in the MMWS**

In addition, the main valve for the MMWS is broken in the mostly off position. Thus the system is not taking in its full capacity of water. In fact, more than twice as much water is flowing out the overflow pipe in the capped spring than is flowing into the MMWS. Repairing this valve should triple the amount of water that enters the MMWS.

On one of our days in Haiti we drove to Port au Prince with Don Rafael, and Project Medishare personnel (Riche, De Louis), to purchase material and equipment to repair the main valve and two PVC faucets. We were able to repair the largest leak identified in the system. This leak amounted to about 66% of the measured water losses (i.e. ~30,000 gallons per day). Due to time constraints, we were not able to repair the main valve while we were there, but had thorough discussions with Don Rafael and are hopeful that he will be able to complete it on his own.



**Figure 5: Don Rafael, President of the Marmont Municipal Water System, with the repaired faucet**

## 2 Natural Springs Near Marmont

Don Rafael and PM personnel (Rony), showed us four natural springs in the Marmont region. We tested the water quality of these springs and they all appear to be free from contamination. It should be noted that we only tested for a few chemicals that are an indication of human waste. We did not test for cholera, ringworm or other contaminants that may cause illness, thus we cannot ensure that these springs are safe to drink at this time. Perhaps in the future these springs can be capped and connected in cisterns to maximize the use of the water. The water from these springs will likely also require some water treatment, such as filtration and/or chlorination because they are not in locations well above the general population



**Figure 6: Natural spring near Mormont**

### 3 Casse, Lahoye

The Merrimack College Civil Engineering team met with a PM representative, Pascal, and discussed possible methods to deliver clean water to the town of Casse. The team performed various water quality tests on each spring and spoke with residents about how the water is currently used and whether or not people became ill after drinking the water. In addition, we inspected the existing rain harvesting system located at the Lahoye Health Clinic.

Pascal and PM personnel (our driver), showed us four natural springs (two capped and two uncapped) in the Lahoye region. We tested the water quality of these springs and most appear to be free from contamination. One capped spring indicated very high levels of nitrates, which indicated the presence of wastewater, however the nitrate levels in the storage tank adjacent to the capped spring were within acceptable limits. This particular capped spring was being used for bathing and is not used for drinking water. We believe that the water near the surface of the capped spring was being contaminated by the people bathing at the site and that the spring itself is not contaminated. Perhaps in the future these springs can be capped and/or connected in a storage cistern located at the top of a local hill to distribute the water to the town of Casse and to maximize the use of the water. This will require pumping the water uphill from the springs to the storage cistern and may also require pumping the water to Casse as the town is at a higher elevation than the surrounding hills. The water from these springs will likely also require some water treatment, such as filtration and/or chlorination because they are not in locations well above the general population



**Figure 7: Natural springs near Casse**

The Lahoye Health Clinic rain harvesting system consists of a catchment basin (i.e. the roof of the clinic, 7 <sup>11</sup>/<sub>16</sub> inch diameter PVC pipe for water transport and a 10,000 gallon storage cistern. We inspected the system and observed that the PVC pipe is bent in several locations and thus flow will be somewhat restricted. We also observed that the cistern was littered with debris and is in need of cleaning. There is a sediment tank at the entrance to the cistern but it is clearly not functioning properly as it is allowing dirt and organics to enter the cistern. The cistern was full at the time of our visit and we were informed that the water in the cistern is currently used for cleaning the clinic only. It is not used for drinking.



**Figure 8: Lahoye Health Clinic rain harvesting system**

This water system appears to be in good condition, but requires some maintenance. Our water quality tests indicate that the water is not contaminated with human waste. It is our opinion that the water in this system could be used more effectively with some cleaning, maintenance and education.

## Athletic Training

### 1 Exercise Program Education

The Merrimack College Athletic Training team collaborated with a Project Medishare interpreter (Jean-Baptist) to train Community Health Agents (CHAs) in Marmont, Lahoye and Thomonde to be able to provide their patients with exercises designed to treat and prevent low back pain. The specific programs taught to the CHAs were comprised of low-risk, stretching and flexibility exercises designed to help with low back pain caused by repetitive forward or backward bending.



Figure 9: A sample of the handouts provided at the educational workshops.

Each educational workshop started with a discussion about musculoskeletal injuries commonly seen by CHAs during visits with their patients. Through these conversations, low back pain and knee pain were isolated as frequent complaints of patients. The CHAs were very eager to learn techniques they could utilize in helping to reduce their patients (and their own) low back pain. The exercises were taught in a four-step progression:

(1) We presented basic explanations for the selection of each exercise, and the mechanisms by which each exercise aided in treating low back pain. (2) We worked with a CHA volunteer to demonstrate proper and improper form of each exercise. (3) Once the exercises had been shown, CHAs were separated into groups to perform the exercises under the supervision of a member from the Athletic Training Team. (4) When the CHAs felt comfortable performing the exercises, they were given the opportunity to teach to and correct the exercises performed by a partner.



**Figure 10: Low-back workshop with the Marmont Community Health Agents**

Discussions at the conclusion of each workshop gave CHAs the opportunity to provide feedback on the exercise programs. These talks informed us about their desire to learn more methods to treat back and knee pain. They were also interested in receiving some form of a certificate to verify their completion of a training program.

The workshops were provided to 18 CHAs in Marmont, 15 in Lahoye and three in Thomonde. In Marmont, the workshop offered three CHAs from the initial training session of 13, the opportunity to collaborate with athletic training students to teach five CHAs who had missed the primary training session. In Lahoye, we had the opportunity to include the Director of Nurses for Project Medishare (Rose-Maryline, who had been taught the exercises the prior day) as one of the educators in the training of 15 CHAs at the Lahoye Health Clinic. In Thomonde, we were

able to train three more CHAs, including the Thomonde CHA Manager (Bennay). Working with our students, Bennay educated two adolescent boys in how to perform the exercises. In total, we were able to empower 36 Community Health Agents with the ability to utilize flexibility exercises in treating and preventing low back pain in their patients. Based on our experience with the CHAs, their ability to quickly learn these foreign exercise programs indicates great potential for future program development.

## 2 Assessment of Activities of Daily Life and Musculoskeletal Disorders

Our time in Marmont, Lahoye/Casse, Thomonde and Tierramuscadly provided the opportunity to observe the activities of daily life and evaluate the resulting musculoskeletal disorders (MSDs) in these communities.



**Figure 11: Farmers working on a mountainside in Marmont**

The need to be physically able and self-mobile was clearly evident in all locations. Activities of daily life included, but were not limited to, walking/hiking (many times without footwear), unaided transport of supplies (food, water, clothing, etc) by hand or balancing on the head, and riding on horses, motorcycles and overcrowded trucks. The most commonly seen occupation in this region was farming. Crops included black peas, corn, peas, peanuts, millet and tobacco. Work-related tasks involved carrying equipment up the mountainside, sustaining hyper-flexed crouching positions to load material and tend to crops, handling livestock and repetitive overhead movements such as tilling an uphill-field with a hoe.

Evaluating the MSDs of fourteen patients revealed injuries ranging from overuse conditions such as knee osteoarthritis and patella-femoral pain syndrome, to a severely dysfunctional, likely

fractured, hip (the result of a motorcycle accident two years prior). Fortunately, we were able to fit some of these patients with braces (donated from Collins Sports Medicine and Surgicare: medical suppliers to Merrimack College's Sports Medicine Department). Every patient seen was provided with rehabilitative exercises designed to correct the source of their condition, or tips for managing their pain.

The physical demands from the work-specific tasks and activities of daily life observed in this region displayed the vulnerability to, and significance of, musculoskeletal disorders in this region. Our experience evaluating and treating some MSDs displayed the need for, and potential benefit from, increased access to musculoskeletal braces and rehabilitative exercises in rural Haiti.

### 3 Participation in the Mobile Health Clinic

In Tierramuscadly, we participated in a mobile health clinic by taking blood pressure measurements and evaluating two patients with MSDs. Due to the fast pace of the clinic, we were not able to develop a thorough understanding of the services provided at the clinic. However, base on interactions with two patients we evaluated, it was gathered that people did not have any access to care for musculoskeletal disorders.



**Figure 12: Athletic Training Students measuring blood pressure at the Mobile Health Clinic in Tierramuscadly (left), and evaluating a knee injury in Marmont.**

### *Campus Ministry Involvement – Emotional and Spiritual Development*

Campus Ministry's involvement in our Haiti Service Learning Initiative trip was to take the lead in three facets of the trip. The first aspect was the pre-trip community building as well as emotional and spiritual preparation. The second aspect was facilitating nightly reflection experiences that sought to connect the work the students were doing with their own emotional and spiritual lives. The third aspect was to gather students to reflect on the trip after returning to the United States.

- (1) In preparation for the trip our students, faculty, and staff met once a month to prepare for the experience. We covered topics including the History of Haiti, Haitian Culture, and Service and Justice from a Christian perspective. These meetings mixed presentations with opportunities for discussion and sharing.
- (2) During the trip the whole group gathered each evening after eating dinner for a period of reflection. This process is detailed below.
  - Each session started with a small quote from St. Augustine or from Scripture.
  - Next everyone had an opportunity to remember or pray out loud for people they had met that day.
  - Then we engaged in reflection.
    - On our first night the members of the group shared the fears that they wanted to sink for the week as well as the hopes that they wished would float.
    - At the end of the week group members wrote letters about their experience to people they cared for in their own lives. These letters were mailed weeks after returning to the USA.
    - Group members also reflected on what part of themselves they wanted to leave in Haiti as well as what they wanted to bring back to their lives in the United States.
    - On the other days of the week, the group engaged in the examen, which is a process in which students journaled each day about a key moment of consolation and desolation.
    - During reflection participants would then share these moments of consolation or desolation with the group, which would then lead into broader discussion and sharing.
- (3) After returning from the trip some members of the group gathered together for another period of reflection in which we talked about the joys and struggles of integrating our experiences in Haiti into our everyday lives. Future trips will incorporate this post trip reflection more formally.



**Figure 13: Trip members taking part in one of the nightly periods of reflection**

### Student Reflections about Preparation and Reflection

#### *About our Preparation Beforehand*

“These meetings were very beneficial in teaching us about the history and culture of Haiti, the plan for our trip and what to expect as well as preparing us emotionally.”

“These meetings helped give us more insight of what to expect when we got to Haiti. The information on the culture and history was useful in helping us to make sure we were being culturally sensitive in what we were doing.”

#### *About our Nightly Periods of Reflection*

“Reflection was very beneficial for me. It really helped me sort out my thoughts and reflect on the emotional roller coaster ride I was on. I really liked the first exercise we did where we gave a hope and fear. I think it really helped everyone open up and get closer immediately. I don’t think anything should be changed. I don’t think my experience would have been the same without it.”

“I looked forward to reflections every night. It was a great way to help process everything that had happened throughout the day. I loved all of the reflection activities, including writing a letter to someone from home and the backpack activity, but my favorite activity was sharing consolations and desolations. I think that reflection created a welcoming environment where people felt comfortable sharing what was on their mind and was a very important component of the trip.”

“Reflection was so incredibly helpful and a perfect way to let off steam and a way to really understand/accept the experience and the surroundings.”

“Reflection was by far the event I looked forward to the most every night. I felt very comfortable sharing the way I felt. My most favorite activity would have to have been when the reflection was opened up to any other concerns or questions we may have had. I believe that it gave us the ability to connect with one another’s experiences throughout the day. It gave us perspective into how others were able to experience what they had encountered throughout the day.”

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