

THE BLUE HOLE

The BAMSI Bulletin

SEPTEMBER 14, 2015

Cultivating

Young Minds for Success:

BAMSI begins Fall Semester 2015

WITH year one

successfully under its belt, The Bahamas Agriculture and Marine Science Institute (BAMSI) is focused on a 2015 academic year where it will continue to build a cadre of trained professionals skilled in the areas of marine science and agriculture. Executive Director of the Institute Dr. Raveenia Roberts-Hanna said the Government's mission to deepen the level of expertise in these fields is being realized as more students take advantage of the opportunity to pursue a degree programme.

"We have almost two dozen new students joining us this year and what we are particularly pleased about is the fact that they come from islands across the archipelago, Cat Island, Grand Bahama, Eleuthera, Great Harbour Cay and even



During Orientation week BAMSI visited The New Community Baptist Church in Nicholl's Town, Andros, pastored by Minister Garneth Campbell. Pictured in centre front are Pastor Campbell (brown suit) and Dr. Raveenia Roberts-Hanna surrounded by students, faculty and church members.

as far away in the south as Crooked Island. As we continue to build our legacy, building a tradition of excellence, more Bahamians will view us as a first option in their pursuit of higher education," she said.

BAMSI's orientation period proved to be

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BAMSI PRESIDENT WELCOMES NEW STUDENTS

All of you are about to embark on a new chapter in your lives. This chapter, depending on the manner in which you utilize it, will determine the course your life will take.

You have also decided to attend, for whatever reason a new academic, tertiary institution. Despite its youth, the Institution has had much publicity, some negative and growing positivity.

You will also encounter a faculty which is dedicated, knowledgeable and interested in your development as agriculturalist, marine scientists or environmentalists. You will receive a unique education in that your curriculum will be geared to prepare you to meet the challenges of the global society in which we live.

The Bahamas has reached a critical juncture in its development. It is incumbent on governments to ensure that its food resources be it from land, the sea or processed, can be reasonably supplied by its farmers, fishermen and food processors.

The primary objective of this Institute is to pass on to you new and innovative technologies which will enhance your competitiveness in order to compete at the global level.

Also, the Institute would like to train you so that you will return to your individual islands with the skills you have acquired here to go into some type of business – farming, fishing or food processing in order to expand and diversify your island economies.

Furthermore, you will find during your studies here that this Institution is science based, technology driven, geared towards environmental sustainability and the development of innovative practices.

When you leave here you will be a different person and that new chapter in your life that I talked about earlier will become a reality.

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Ambassador Godfrey Eneas
President of BAMSI

President Eneas discusses the history of agriculture in the Bahamas with new students in his Introduction to Agriculture class.



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BAMSI SIGNS BILATERAL AGREEMENT WITH OCEAN UNIVERSITY OF CHINA



The Bahamian hosts and the delegates from Ocean University in China engage in what is customary in many societies when entertaining visitors—they break bread together, in this case Bahamian johnny cake and stew fish.

SOLIDIFYING its position as a premier research facility, The Bahamas Agriculture & Marine Science Institute (BAMSI) enlarged its territory in July with the formal signing of an agreement of co-operation with Ocean University of China (OUC), one of the country's top academic institutions in the fields of oceanography and fisheries science.

Prime Minister Perry Christie, who met with the delegation, said "specific areas of collaboration on resources as well as faculty and student exchange" had been identified as top tier priorities following discussions with BAMSI's Executive Director Dr. Raveenia Roberts-Hanna

its farm and marine directors, and faculty members from both the agriculture and marine science departments.

In January the two institutions signed a bilateral agreement in Beijing which enabled the scientific and education cooperation between them.

BAMSI President Godfrey Eneas said the overarching

Memorandum of Understanding allows for the training of marine talents, academic exchange and collaborative research.

From a practical standpoint the agreement will take effect beginning in the 2016/2017 academic year and allow BAMSI students and faculty to study toward a graduate degree at the Qindao-based University. The agreement further outlines the parameters for the successful acquisition of scholarships and the establishment of a joint research centre. Both parties are now expected to engage jointly in activities and research in the fields of oceanography, fisheries, Aquaculture, food science, engineering and marine

Ocean University officials were treated to a tour of BAMSI's 1. livestock housing, 2. greenhouse, 3. farm and 4. Interesting locales in North and Central Andros.



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New students were given a tour of North Andros during Orientation Week. The group is pictured at The Caves at Morgan's Bluff.

Preparing For a Bountiful Harvest

BAMSI's first crop of graduates expected in 2016.

Cultivating Minds Cont'd from pg. 1.

an exciting, perhaps even challenging, one for new students who were caught up in a five day whirlwind from stimulating entrance exams to an adventurous tour of the North Andros community to the solace of a church service and a list of bustling movement and meetings in between. Returning students experienced a more relaxed pace, having been through similar sessions just one year ago. Happy to see familiar faces, although many kept in close contact over the summer, they were anxious to settle in to begin another semester.

Agriculture majors Cordena and Cordea Colebrooke, eighteen-year old twins from Red Bays, Andros, said they could not wait to come to BAMSI. As students of North Andros High the two participated in the school's agriculture programme where they learned about the

Institute. In fact it was their teacher, Rai Budhu, who encouraged them to apply. "When I first heard about BAMSI I never really wanted to attend," Cordea admits. "I wanted to go either to a university in the States or the University of the West Indies until my teacher told me about it and my dad said you all should go to BAMSI, and especially how I want to be a veterinarian, I'm like why not start here."

Like many individuals when faced with a new experience the sisters had their own ideas about what a semester at BAMSI might look like. Cordena thought the entire focus would be on the practical aspects of agriculture. "I thought we were just going in the field. I didn't know we were going to do all this school work until orientation and then when I actually came to class it changed – the work just opened my eyes

in a good way because I am learning more. Some of the work I'm seeing for the first time and I am enjoying the experience."

For Nicholl's Town resident



Cordea and Cordena Colebrooke

Vondenton Robinson, the choice to come to BAMSI after dealing with the stress of having to work and go to school at the same time was an easy one. "BAMSI was my first choice. I am interested in Marine Science and I thought this was a great option." According to Vondenton, the first few weeks of class have underscored his choice – smaller, more personalized sessions which allow for

greater access to lecturers is something he really likes, along with the fact that he is able to sit in classes which relate directly to his interest. "A lot of the information is relevant, like Introduction to Aquaculture. I'm very interested in that because to farm fish is a very good thing, it's fascinating to me."

Another major point in BAMSI's favour is that he can achieve his degree while at home. "It's easier for me because I'm home and I could focus on my classes. Balancing school and a job is hard...and without a car - so I am grateful for the experience."

Returning student Ian Hepburn, who hails from West End, Grand Bahama, sees his place at

BAMSI as a fundamental element to future career success. "It was refreshing coming back to Andros - feels like a vacation!

Coming back to learn about something that you are really passionate about, I was anxious about it, anxious to be here."

Fuelling his desire in part to soak up as much information as possible as he works to complete his degree is his intention to develop a business plan to support his entry into the entrepreneurial sector. "Over the

summer I purchased a California skiff and I started a little fishing business. One thing I like about BAMSI they are preparing you to start your own business, and I did this over the summer as a trial run and it was pretty successful."

Ian points to marine science lecturers Erin Cash and Cameron Lightbourne, and Alaasis Braynen, BAMSI's agribusiness lecturer, saying they were all equipped to guide him through the process. "I like the environment, the level of participation in class and the ability to interact with my peers. I am loving this semester!"

Nassau born and bred, Ethan Thompson is an agriculture

major who is returning to BAMSI following a productive summer spent at the Bahamas Agriculture Industrial

Corporation (BAIC). "I was eager to come

back to my surprise. Considering me being from Nassau the island was never appealing to me until I got to see the potential that not only Andros, but BAMSI has to offer."

For Ethan, BAMSI offers the chance to learn and be productive in a new environment. "I'm just soaking it all in as much as I can - the

time is short. On the farm itself it's good for me because I've never done that work. It's good

to learn the techniques, the technology, have a critical eye when looking at plants, the setup of the



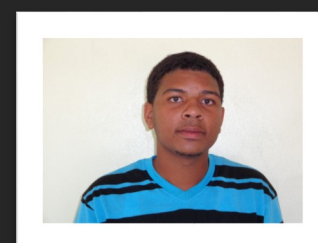
Ian Thompson

farm, ways to improve it, technologies that make it more productive," he said.

Passionate about marine conservation, 18-year-old marine science student Nigel Sands who was born in Eleuthera, the island many consider to be the jewel of the Commonwealth, said BAMSI provides him with the opportunity to get out and do what he loves, which is conservation. "Being back in school is awesome. When I think about it I get a bubbling feeling inside - you're learning to do what you love both in and out of the classroom. I would encourage all people, young and old to become a part of the programme or



Lowe's Pharmacy donated gift bags for all of BAMSI's new students for the Fall semester 2015.



Nigel Sands

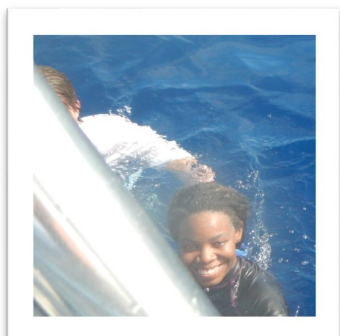
'Her Say'

BAMSI's Student Perspective



Gimel Morely is a second year Marine Science student at BAMSI. Over the summer she interned at Atlantis, was part of a conch research trip and she also attended a whale camp. In her own words, this is her experience.

THE theme for my summer vacation was to embrace the summer. I went into it thinking that I wanted to gain as much experience in the marine field as possible. Jumping on every opportunity presented to me was my goal. So when BAMSI graciously provided me with the opportunity to work at Atlantis for six weeks I was really excited and went into it with an open mind. I got so many experiences out of it, like getting to interact with various marine species and meeting so many people. It's very different looking at the animals from the outside than it is actually having to go into their environment to feed and interact with them. I also became friends with some of the people that supervises me and still keep in contact to this day. Overall my experience there was an eye opener on how the hotel industry manages their aquatic systems and I got to play with baby green sea turtles as much as I wanted which was a plus.



Gimel in the water during the conch diving expedition.

After Atlantis I went on a conch research trip sponsored by Shedd Aquarium and it was more difficult than I thought it would be. We lived out to sea for about a week doing research on the sand banks by the tongue of the ocean. No cell reception or internet, but that was not the difficult part. Every day we went out on boats about twenty two feet long in rough seas. After we got to a designated transect we had to jump into the water with snorkel gear on and were dragged behind the boat by a rope or board to count conch for about fourteen minutes at a time. That was the difficult part, especially when you are just a beginner. My mask even flew off a few times in the water, but thankfully I caught it with my free hand that wasn't clinging to the rope for dear life. With all of that happening it was difficult to concentrate on finding these hard to spot

conch. With more experience I learnt how to use the momentum of the boat to drag myself to the bottom which made it so much easier to spot conch, donkey dong sea cucumbers and just look around at the marine life. After a long day of work there was always an amazing dinner waiting. If there is one thing I will always remember about that trip it is the food and the amazing amount of candy that I scoffed down every day. There were so many brilliant people on that trip, but they still knew how to have fun. One of the scientists convinced a Masters student that trigger fish were dangerous so every

"It's hot, we're tired and we need to be eating conch, not counting it."
Gimel Morely — under towel one or two.



Cont'd on pg. 7

Ocean University

Cont'd from pg. 3.

biology.

Prime Minister Christie noted that the size of the Chinese contingent, which was on hand to finalise the bilateral agreement, was indicative of the importance such a partnership held in the mind of the Chinese Government, and reflected their willingness to support the development of the country's marine science education platform.

Led by OUCs President Professor Yu Zhigang, and the Chinese Ambassador to The Bahamas, His Excellency Hu Shan, the Chinese delegates



President of Ocean University Professor Yu Zhigang (far right) and Chinese Ambassador to the Bahamas Hu Shan discuss the promise of BAMSI with Dr. Raveenia Robert-Hanna and Soil Scientist for BAMSI Dr. Joseph Lindsay (far left in red shirt).

also travelled to Andros where they met with Dr Eneas and other senior officials at BAMSI. While there the group had the opportunity to tour BAMSI's campus, farm facility, including the aquaponics segment which

sparked a great deal of interest, and see the infrastructure currently in place.

Of course no visit to Andros would be complete without a sampling of a true Bahamian breakfast of stew fish from local hot spot Trinity. They were also treated to a tour of both North and Central Andros, including some of the island's national parks and blue holes.

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Gimel's story

Cont'd from pg. 6

time he jumped into the water he panicked when ever the queen trigger followed him thinking that it would take a chunk out of his skin. There were a few accidents that happened, like one of the small boats capsizing in the middle of the night, but it was dealt with and work had to go on. After that it was a short stay in Nassau then off to Abaco for whale camp. I found out about the camp from one of the workers at Atlantis which was just through casual conversation.

All the students participating in the whale camp, held by The Bahamas Marine Mammal Research Organization located in Sandy Point Abaco, slept in the same house together. Females in one room and males in another. It was like staying with long lost family members. We ate breakfast and dinner together at the dinner table and we even had

chores to do like cooking dinner, washing the dishes and cleaning the bathroom. The house was filled with skeletons of marine mammals and they even had a dried conch egg casing on display, which I was supposed to be looking for during the conch survey but wasn't sure about. While there, when the weather was good, we went out on the boat to look for marine mammals or we stayed on land doing a survey on the potcake population in the area. We even gave some of them nicknames. Most of the time while we were looking for potcakes we got to interact with the locals who seemed very friendly. There was a fisherman hanging out by the dock who brought a few conch to the house we were staying at free of charge just because we asked.

Bottlenose dolphins swimming in pods were a common accordance, but the sperm whales were very elusive. We heard them underwater using a hydrophone, but we only saw one as it was about to dive. We came in from a long day of exploration for dinner. After dinner we had presentations that we listened to. There were discussions and I also learnt a lot about the marine mammals in The Bahamas. One thing that fascinated me while I was there was taking outside showers. There is nothing better than being able to view a sunrise or sunset

Cont'd on pg. 8

Cultivating Minds Cont'd from pg. 5

we are a part of the future.”

With the arrival of all the students, the stage is set for the Institute's first crop of expected graduates who are entering their final year of studies. For the BAMSI class of 2016 the ground work has already been laid for those who wish to continue in their chosen field. Earlier this summer BAMSI, led by the Institute's President Godfrey Eneas and his executive team, formalized a memorandum of understanding between the Institute and China's Ocean University. The agreement allows BAMSI students to attend the university as they continue their education to the bachelor's or master's degree level. The agreement is just one of a number of partnerships with international universities, including a partnership with the University of Miami's Rosenstiel School of Marine and Atmospheric Science.

Along with the start of a brand new academic year, BAMSI has also moved its teaching facilities to the BARTARD Building located on the campus site along Queen's Highway south, in North Andros. “We are thrilled to be in our own building, the BARTARD Building, which gives us ample space and a comfortable



Dr. Hanna welcomed students during orientation week. Seated to the right is Bishop Fowler, who represented newly elected President of the North Andros Christian Council Father Jude Edomwonyi.

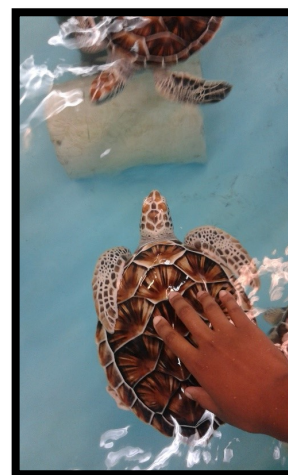
environment for students and staff,” Dr. Hanna noted. “The relocation also puts our students closer to the tutorial farm, which is an important area for them and where much of their learning, research and experiments take place. Our move also signals to the wider community of Andros and the entire Bahamas that BAMSI is taking measured steps to solidify its position as an important agent of change in the field of tertiary education in The Bahamas – we're making an increasingly greater difference in the lives of Bahamians day by day.

“Ultimately, the Government has invested a huge amount of resources into establishing a gateway that will train and develop professionals to lead us into an age of food security and widespread sustainable practices in the agriculture industry. We are excited to be in a position where we are directly impacting the future of the nation and it's a position that we do not take lightly,” Dr. Hanna said. B

Gimel's Story Cont'd from pg. 7

from there while looking out at the ocean. It is one of the most breathtaking experiences I have ever undertaken. But the best part of all of the trips I made was meeting Sheldon, Datra and Lyndeisha. They went on many adventures with me in the middle of the night and became people who I will always remember. B

Gimel experienced many different types of marine life while she was on summer vacation, from baby turtles to sting rays.



Her Say:

A World Explored — Women In Agriculture



Constentina Hamilton, BAMSIs Assistant Farm Manager with oversight of the greenhouse and protected agriculture. Also liaison for the Associate Farmers Programme.

encounter.

After graduating from the University of the West Indies (UWI) Trinidad and Tobago with a Bachelor of Arts Degree in Science and Technology Ms Hamilton joined The Bahamas Agriculture and Marine Science Institute (BAMSI) and was given oversight of the protected agriculture and greenhouse department where she is responsible for marrying equipment and tools with growing healthy, flourishing plants.

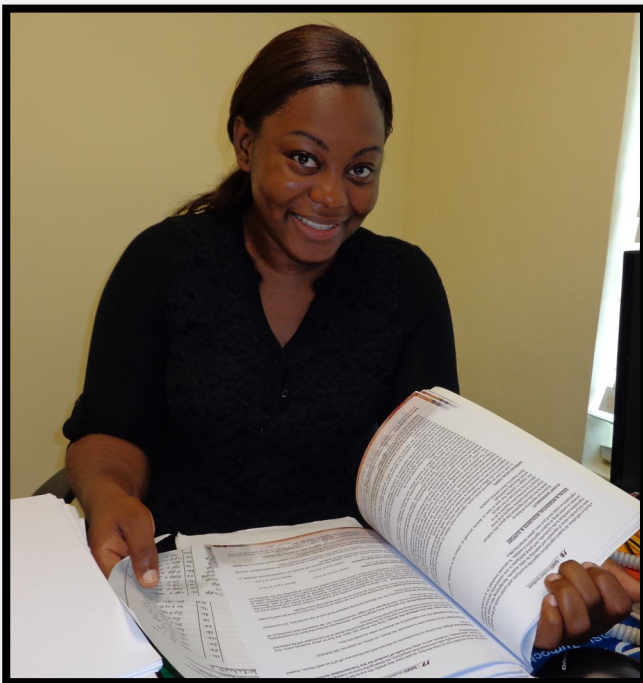
Her role quickly expanded however, to include liaison for AFP which currently boasts almost a dozen farmers with more expected to be brought under the BAMSI flag shortly. Under the umbrella of outreach she also works with the Ministry of Agriculture, the Bahamas

Agriculture Industrial Corporation (BAIC), and agencies such as Her Majesty's Prison, Simpson Penn and the Ranfurly Home, collaborating with them to create mentorship programmes that utilize agriculture as their foundation.

Beyond the academic arm and the commercial farm, BAMSI also serves as a research facility where new methods for producing better quality plants are developed. The confined conditions of the greenhouse make it an

YOUNG. Female. Educated. Farmer...Expert in the field of Agriculture????!! Something seems amiss with this picture when the current line of thinking, current hypothesis, advances the view that the average Bahamian farmer is male and in his 60s. Shattering the mold and clearly unlike that imagined character – with his balding head, sun-scorched and leathery façade, and aged body – are an emerging crew of modern, educated and

focused women who are passionate about growing food. Standing shoulder to shoulder with these game changers is Constentina Hamilton, BAMSIs Assistant Farm Manager for Outreach and Extension. Her presence, her position as a point of contact for farmers involved in BAMSIs Associate Farmer's Programme (AFP), reveals the feminine, evolving side of agriculture in The Bahamas and also highlights the challenges that new entrants into the field sometimes



Part of Ms. Hamilton's role is the research and development of new technologies to support the growth of an abundant crop.

ideal laboratory to conduct trials and experiments to determine the essential ingredients needed to produce plants which are able to grow above and beyond the average production level and result in a healthy and abundant crop.

"If [plants] can't get enough water, I take what I learned from the confined conditions of the greenhouse and transfer it into the field. I can increase the optimum conditions – sunlight, nutrient uptake, water, soil conditions, pest and disease management – manipulate those variables that help the plant to grow consistently. We use shade houses, different types of irrigation, injector systems and various apparatuses to help plants do what they do best. I take what

naturally happens and I mimic it – mimic what soil does, what sunlight does, I get it to do what it does."

According to Ms. Hamilton, once a successful regimen has been identified she not only takes what she learns and transfers it into the field, it is also shared with members of the extension.

It is at this stage perhaps where her gender most comes into play, where the credibility of her information may be questioned. And what happens if she has to go into the field to demonstrate a certain planting or harvesting technique, operate machinery or 'gasp' get down and dirty, hot and sweaty?!! "The physical labour - they don't believe I can drive a tractor or engage in disking or mulching (forms of land preparation).



In July Ms. Hamilton was invited to attend the International Training Seminar for Modern Technology and Sustainable Agriculture Systems (MOTSAS), held in Thailand.

Ms. Hamilton joins seminar participants for a group photo.



They can't picture me picking up a 50 pound bag of fertilizer or using a mulching machine, they try to add up how it works. They don't feel as if I understand or appreciate being in the sun or being at work at 7am to spray – these intense labour aspects of farming.

"Many of them think you are just text book, that's the challenge being a young female. Not until they saw me actually out there picking up the fertilizer with them, sweating and not complaining, then they trust what you do and say," she said. "And farmers are naturally sceptical, they have to question when, where and why: 'when should I

plant', 'where should I plant' and why. You try to be as prepared as possible before the first seed is deposited, so you've already analysed many questions and viewpoints."

Like Ms Hamilton, women across the globe, across the Bahamas, across Andros are taking on more of a leadership role when it comes to agriculture. No longer just the subsistence farmer whose harvest feeds her family or provides a small income for the family, these women are entering the field at a number of different tiers – from packing house managers, farm owners, post-harvest experts to marketing directors, soil scientists and agribusiness professionals.

"A lot of women are in research and development, those technical fields such as processing, post harvesting and testing. They take on a range of roles from farmer, marketing manager to the complete business woman. The younger women, many of them highly educated, understand the concept of 'from the farm to the gate': from the farmer to the distributor, retailer/wholesaler to the consumer, they understand the complete

loop system," Ms. Hamilton said. "Once you understand all of the powers in play you understand how to market. Before you grow or send to the packing house the women have already determined the end result, the pricing, marketing, cost. Younger farmers get it, but older farmers probably can't tell you what their costs are."



Ms. Hamilton joins Dr. Joseph Lindsay, a Soil Scientist (centre.), as he discusses crop production with student farmer Marina Newton (right).

It is her position that the average person underestimates the psychology behind farming – believing it instead to be all brawn and no brain – a poor, uneducated man's job, after all how much does it take to plant a seed? The reality however, is that modern day

farmers have to understand technical, scientific matters in order to successfully bring a healthy harvest to market. "They need to be a chemist, nutritionist, labourer – they are creating life and maintaining it. You need a level of intelligence, sophistication to be successful."

Reflecting on her own career goals going forward, Ms.

Hamilton said her dream job is to be the Director of Agriculture, a post that even at her young age – not yet 30 – is well within reach. "I want to educate people, to get them to be as passionate about agriculture as I am. Like my little sister says I'm a scientist without the lab coat, a director without a suit."

With a nod of appreciation toward her Nigerian grandmother who grew food – mango trees, avocado pears, spices and herbs - to help feed her family, Ms Hamilton said that she has always felt most happy and safe in this area. "Agriculture has always been the best part of my life. There's a level of pride in being able to take care of people through food that you've grown yourself."

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