

THE BAHAMAS AGRICULTURE AND MARINE SCIENCE INSTITUTE

THE BLUE HOLE

THE BAMS I NEWSLETTER

MAY 2018

**BAMS I CELEBRATES
ITS SECOND CO-HORT
OF GRADUATES**



BAMSI RECRUITS INTERNATIONAL SPECIALIST IN FEED BIO TECHNOLOGY – AND HE IS A BAHAMIAN

With over a decade of research and field work in feed biotechnology, Dr. Jason Sands brings a wealth of international experience, industry exposure and technical expertise to the Bahamas Agriculture and Marine Science Institute (BAMSI). His addition to the staff, as the Chief Operating Officer (COO) of the Gladstone Road Agricultural Centre (GRAC), strengthens the human capital in place and further positions BAMSI as an agent of change in the development of this nation's agriculture sector.

The move is further expected to reposition GRAC as a pivotal player in the industry, supporting the Institute's overall goals of increasing food and nutrition security.

"The academic, research and extension themes of BAMSI are aimed at increasing the number of farmers, helping farmers develop better methods in agriculture, also in research to improve agriculture in the Bahamas and encouraging the general public to become involved in urban agriculture," Dr Sands said.



Dr. Jason Sands

Dr Sands' work in feed bio technology looks at enzymes and examines how these additives can be used to improve the utilisation of nutrients in farm animals. He spent the last five years working as a technical advisor to large feed companies across Europe and the United Kingdom that supply feed additives, advising them and their customers on how best to apply feed additives to improve animal production.

Having worked in Europe primarily, but also across the globe, Dr. Sands

acknowledged there is a big difference in the level of technology available in the Bahamas and even the work that needs to be done to increase and improve production, and implement sustainable measures in the industry.

Outlining what it will take for GRAC and the wider industry to be successful in its mission,

Dr. Sands said, "it requires more efficient exploitation of existing human and natural resources, increasing the level of technological inputs, and also training of younger agricultural scientists to elevate the level of agriculture output. Increasing the amount of information available to farmers, in terms of scientific and technological resources is critical."

Ultimately, success will be found in the industry's ability to control its resources and manage them effectively. "The challenge, and I think that it will be a great challenge, is to use the resources that we have

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World Food Day



Planting for the Future: As part of its World Food Day mission, BAMSI donated banana and coconut trees, along with a number of seedlings, to schools in New Providence and Grand Bahama. Head of BAMSI's Associated Farmers' Programme (AFP) Dr. Jason Sands was on hand to present the donations to representatives from each of the 16 schools present.



Minister of Agriculture Renward Wells visits the BAMSI booth and receives a handful of bananas. Also with the Minister are Member of Parliament for North Andros Carlton Bowleg (orange tie), Permanent Secretary in the Ministry of Agriculture Phedra Rahming and Marketing Officer Delreese Moss-Grant (in red). Representing BAMSI are Admissions Officer Jarenda Rahming, Information and Communications Officer Yolanda Deleveaux and Agriculture Development Officer Paul Major.

BAMSI Specialist continues



more efficiently to make real advancements in the field.”

In his role as COO, Dr. Sands is responsible for managing the activities of GRAC and ensuring its performance is consistent with BAMSI's strategic plan. The move is a 'relaunch' of sorts for GRAC, and points to the government's desire to see the centre emerge as a pivotal player in agriculture – bringing locally grown produce even closer to the country's primary population centres. Agriculture, and the development of the Bahamian industry, has always been important to Dr. Sands. As a boy in Eleuthera, he was surrounded by farmers and fresh produce. He had a keen interest in his grandparents farm activities and was part of a community where many families had a small plot or field. “The fact that you could

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Almost two dozen guidance counselors, community and civic leaders attended BAMSI's first Informational Symposium.

THE Admissions

Department of The Bahamas Agriculture and Marine Science Institute (BAMSI) held a series of Informational Symposiums for senior school guidance counselors, community leaders and civic groups. The symposiums were designed to familiarize attendees with the various arms of BAMSI and to give them a working session on the application and admissions process to the BAMSI College.

Dr. Raveenia Roberts-Hanna, executive director of the College, informed participants of the multiple degree and certificate offerings at the Institute, as well as the opportunity for successful applicants to obtain a full tuition scholarship. "BAMSI is the only institution - at the tertiary level - offering teaching and training to provide the professional and technical qualifications necessary for the various branches of agriculture and marine resources," Dr. Roberts-Hanna said. She added that BAMSI offers associate degree



and certificate programs in aquaculture, marine science and agriculture.

Also on hand during the first session was then president of BAMSI Godfrey Eneas, who also served as the Bahamas ambassador to the UN's Food and Agriculture Organization (FAO). He provided an historical perspective of the nation's agriculture industry and identified the role BAMSI is playing in moving the sector forward.

EACH ONE TEACH ONE: 4-H Club comes to BAMSI



STUDENTS at The Bahamas Agriculture and Marine Science Institute (BAMSI) are big believers in the motto: Each One Teach One. With that in mind, they launched a Soil to Supper project as part of the mandate of the newly established 4-H Club, an international non-profit youth empowerment movement that focuses on agriculture, citizenship, health science and more. Liz Brace, BAMSI's student activities coordinator, said the agricultural initiative "is connecting with primary school students in North and Central Andros, getting





BAMSI Students share agriculture tips with primary school students

the youngsters up close and personal with the growing cycle and helping them to understand the direct connection between farming and the food supply.” The project also supports environmental awareness, and focuses the students on sustainable growing practices. Club members recently visited two schools - Mastic Point Primary School in North Andros and Stafford Creek Primary School in Central Andros. The students were fully engaged in the Soil to Supper project, excitedly helping to prepare, plant and, eventually, present and plate the food from their school yard farm plots. In mid-February the schools will be invited to BAMSI’s North Andros campus to share their experiences. Ms. Brace, who was instrumental in forming the 4-H Club and launching the Soil to Supper initiative, explained that club members, who were joined by members of other students’ clubs, such as Circle K International and Eco Warriors, sponsored by the Bahamas National Trust (BNT)-will serve as extension officers for the student farmers.

The little ones, aka tomorrow’s farmers and agribusiness-persons, also received safety tips to initiate when working in their school’s respective farm plots. This was the first of several planned engagements with the schools.



WELLNESS IN THE WORKPLACE INITIATIVE

SENIOR members and associates of The Bahamas Agriculture and Marine Science Institute (BAMSI), joined with the Ministry of Agriculture and Marine Resources and the Bahamas Agriculture Industrial Corporation (BAIC) to invest in the health and well being of their employees. The Wellness initiative will focus on increasing the availability and consumption of fresh fruits and vegetables, and getting employees to become more active - as they move toward developing health habits and healthier lifestyles in 2017.

The Bahamas Agriculture and Marine Science Institute (BAMSI), in partnership with the Ministry of Agriculture and Marine Resources and Bahamas Agriculture and Industrial Corporation (BAIC), will serve as a stakeholder in the 'Wellness in the Workplace' government initiative launched earlier. With non-communicable diseases and obesity on the rise in this nation, these agencies are front and centre in the government's push to improve health conditions within Bahamian society because they provide one of the key ingredients needed to restore and maintain best health – fresh whole foods; fruits, vegetables and fish.

In its 2012 report, the Bahamas STEPS survey looked at chronic disease risk factors in the Bahamas revealing that 90 percent of

respondents acknowledged eating less than five servings of fruit and/or vegetables a day. The survey also revealed that 73 percent of Bahamians did not engage in vigorous physical activity.

The launch of the workplace initiative will see both agencies making a focused effort to make available local produce on a consistent basis, encouraging a higher level of consumption among staff members, stakeholders and initiative partners, including BAIC.

Along with these measures, both BAMSI and BAIC have committed to building a wellness program within their insurance plans to further support the initiative and the development of healthy habits among employees. Corporate exercise plans have also been initiated.

IMAGINE the plot line: new entity springs up on the economic landscape, sparks interest from a wide cross-section of society. Ripe with radical ideas, the institution advances cutting edge technology within its field, a talented and diverse workforce that pushes for industry best practices and standards, and even the unwitting political controversy – all told these elements raise its standing in the public sphere and add prestige points. As the institute progresses it takes on a following of sorts, individuals who stand on the outside, but who follow its every move - reading the stories and headlines, tracking the development and even preparing themselves to one day take advantage of the opportunity presented.

Perhaps not as scintillating as a made-for-TV movie on Lifetime, this scenario unfolded recently as daughter of the soil Ezralee Rolle joined the Bahamas Agriculture and Marine Science Institute's (BAMSI) team as a lecturer in biology and environmental sciences. What makes her employment remarkable is that she is an Androsian by birth – daughter of Bettymae and Ezra Rolle from North Mastic Point - who watched BAMSI spring forth and grow from strength to strength, and then decided that she would gain the skills necessary to position herself to one day fill a place at the Institute.

Like many young Family Islanders - including her eleven siblings – leaving Andros after graduating from high school in 2001 was the best, no, only option in Ms. Rolle's view. "You swore you'd never return to Andros, there just was nothing going on, nothing there."

Free of the restraints of secondary school, she would quickly head for the capital



Ezralee Rolle: the newest faculty member at the Bahamas Agriculture & Marine Science Institute: She brings experience, academic grounding and love for Andros!

where she landed a job, and eventually completed a Bachelor of Science degree in Biology, Combined Science and Education from the College of the Bahamas ('12). As fate would have it however, BAMSI would be the bridge that would reconnect her to the island of her birth. In 2014 the Institute was established and its launch opened a window for Ms. Rolle, a window which revealed what life could be like on Andros if she had a means to pursue her passion and a means to live her fullest life.

And so began a period of intense examination. She watched BAMSI push through growing pains that any start-up operation would experience, watched it prove its right to exist by increasing support for Bahamian farmers and building market presence for locally grown produce. She watched as BAMSI pushed for education,

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BAMSI ATTENDS THE UNITED NATION'S SMALL ISLAND DEVELOPING STATES SYMPOSIUM



Members of the Coral Engine dive team from left: Jesper Elzinga, Environment Engineer, Van Oord; Marine Scientist and BAMSI lecturer Jennifer Pollom and Eddy Raphael, freelance photo journalist.

facilitated was different from the more traditional method of fragmentation used to rebuild or expand a coral reef. In fragmentation, pieces of coral are cut from an existing 'parent' coral and used to grow new reefs. In a release from Van Oord, the company pointed out that while rapid growth – more than doubling in weight within 10 months – has been observed in previous nurseries off the coast of New Providence, a limitation of the fragmentation method is their genetic make-up is exactly the same as the 'parent' coral. While this can be partially overcome by selecting diverse parent

The Bahamas Agriculture and Marine Science Institute (BAMSI) was recently invited to join Dutch dredging and marine contractor Van Oord in a coral rehabilitation initiative known as the Coral Engine project. Using, what has been termed, "an innovative mobile laboratory" called ReefGuard, the project's long-term aim is to rebuild coral reef systems and promote environmental gain using biodiverse coral agents amassed through modern breeding technology. Marine Scientist and BAMSI lecturer Jennifer Pollom was selected to be a part of a coral spawning event in August.

The Science Behind the Coral Engine

Describing the Coral Engine project as 'cutting edge, application-driven science', Ms Pollom explained the sexual reproduction being

colonies, the resulting reefs will be subject to limited diversity. "Additionally, a lack in genetic diversity results in potentially lower resilience to diseases and stressors."

Conversely, a limitation of sexually produced juveniles, as compared to fragmentation, is the



Ms. Pollom uses her net to capture gametes (eggs and sperm) released by the coral reefs.

time required for these juveniles to reach a size where they can be safely placed in the nurseries. By combining the sexually produced juveniles and fragments into one nursery, the Coral Engine aims to allow both techniques to work to their strengths (fragments: quick growth, juveniles: genetic diversity) rather than be limited by each technique's weaknesses.

The Dutch company believes the Coral Engine project distinguishes itself from other restorative efforts by incorporating sexually produced coral juveniles – produced in the ReefGuard facility - into the fragment nurseries. “Sexual produced juveniles each have a unique genetic make-up and they provide a critical component to the long-term sustainability of a reef,” Jesper Elzinga, an environment engineer with Van Oord, said.

BAMSI's Involvement

Ms. Pollom noted that her involvement in the rebuilding efforts came about as a result of various partnerships BAMSI College and the marine science department enjoys, having already participated in a number of environmental initiatives.

“It's important that BAMSI continue to be involved in conservation efforts throughout the country. The marine habitat is so critical to the country's economy and tourism culture and that's why it's important to be involved not only because of the research and conservation side, but we're working to protect a critical economic driver here. It's exciting to be a part of the research and to be able to bring it back to our students.”

This latest initiative is part and parcel of BAMSI's conservation objective which is an important component of the Institute's aegis – driving public awareness, research and education. Along with the coral reef rebuild, BAMSI, its students, faculty and staff are also on the frontline of a number of conservation efforts, including queen ‘conchervation’ and grouper tagging efforts.

“This is exactly the kind of thing BAMSI should

keep doing – building relationships and strengthen ongoing endeavors. It's important to get the Institute involved in cutting-edge science and cutting-edge conservation work,” Ms Pollom said. The work of rebuilding the reef proved to be an interesting one for those involved. The coral spawning takes place once a year over the period of about a week. Working in teams of three – with three to four persons per team, the group traveled to waters off Blue Lagoon Island where they ventured out on dive excursions.

“We went out six or seven nights from 6pm to midnight. We'd go to same location where several Elkhorn coral heads had been identified, along the northeast corner of Blue Lagoon Island, and head out into the reefs where we would set up collection nets, and we also had hand nets. We would typically wait until 10pm to see if the corals would release gamete bundles (eggs and sperm) into the water. Most nights it did not happen, but a couple of nights it did – billions of gametes were released into the water – and we were trying to collect gametes with our nets and then hand it up to someone waiting in the boat. The spawning only lasts for about 30 minutes each year.”

All of this effort, the late-night dives, the hours spent in the water, were all done to aid the fertilization process. By collecting the eggs and sperm and bringing them together in the lab (ReefGuard), it increases the chance of healthy offspring. Predators are removed from the equation and eggs and sperm are concentrated in a small area. The resulting embryos are placed in large aquaculture tanks that contain small bits of aragonite preconditioned for growth which the embryos are able to settle onto.

Continuation of Coral Engine by Bahamian Stakeholders

In August, Van Oord hosted a special ceremony with 150 guests where they turned over the maintenance of the Coral Engine to local partners Stuart Cove's Dive Bahamas, Bahamas

BAMSI COLLEGE BECOMES NEWEST CHAPTER OF CIRCLE K INTERNATIONAL (CKI)



BAMSI becomes newest member of Circle K International. Pictured from left are: Kiwanis Governor Elect Melford Clarke; President of Kiwanis Club of Fox Hill, East Nassau Anithra Cartwright; Executive

FOR BAMSI College, fall semester 2017 will be marked by a number of firsts: it was the largest intake of new students to date, two associate degree programmes – environmental science and agribusiness - were added to the Institute's academic portfolio, and the College became the newest chapter of Circle K International (CKI), the collegiate arm of Kiwanis International.

For the special ceremony, senior members of Kiwanis Bahamas and representatives from sponsoring clubs – Kiwanis Club of Fort Montagu and Kiwanis Club of Fox Hill, East Nassau - flew to Andros on the last Friday of November to present the certificate of charter to the BAMSI club. Dr. Raveenia Roberts-Hanna, Executive Director of the Institute, received the charter, and the officers and members, including student president Ashley

Albury, were installed.

The installation and mini-training session equipped the club's members with the tools and information required to have a successful performance during their upcoming fiscal year while holding meaningful club meetings, activities and rendering altruistic service to the local community. The Kiwanis delegation came with a wealth of knowledge to impart and left with enthusiasm for their newest service club and a huge gift of appreciation from the Institute's farm.

For BAMSI's leadership team, encouraging a heart for service and building a connection with surrounding communities is an important component in developing a well-rounded citizenry. Under the direction of Dr. Hanna, BAMSI College has created avenues and formed private/public sector partnerships that help students participate in community-focused activities. As part of Circle K International, BAMSI CKI has the benefit and support of millions of members around the world as they go into the North Andros community, providing help where necessary.



THE BLUE HOLE

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