



The Cavendish Chronicle

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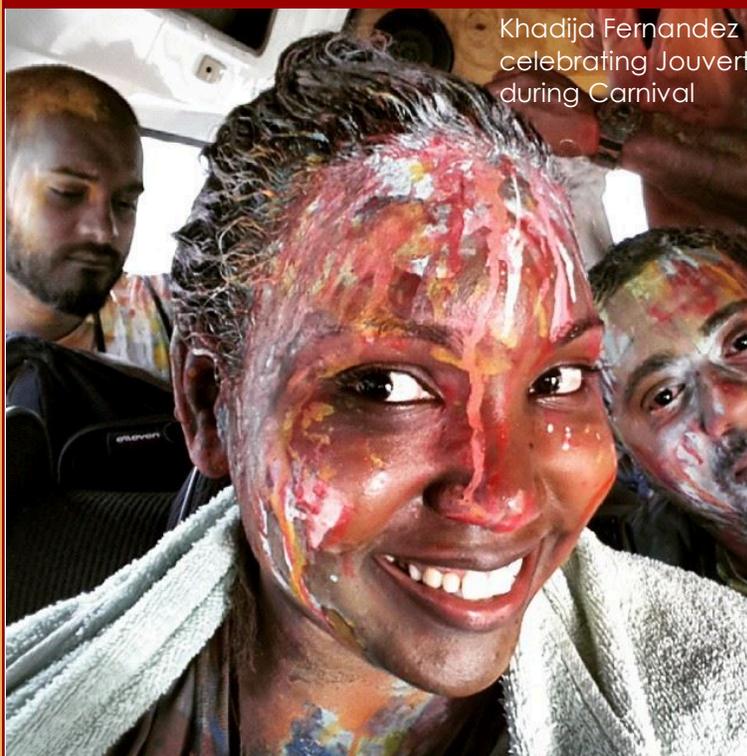
Spring, 2016



Reaching New Heights of Excellence
page 4

Inside this Issue

White Retires	2
Chemical Kinetics	3
Men's Institute	6
Alternative Break	7
Mayo Innovators	7
ACS	8
Postcards	9
Caritas Awards	9
Alum Notes	10
NSF Honors	10



Khadija Fernandez celebrating Jouvert during Carnival

Island Chemist



By Donovan Inniss

Sun, surf, soca music, and chemistry? Working on a Caribbean island comes pretty close to heaven. **Khadija Fernandez, Chem '12**, found a job in paradise at Carib Brewery in her native Trinidad and Tobago. The environmental chemist credits her career to her studies at CSB/SJU, but she had to take several steps to get to the beachy brewery.

Following graduation, Fernandez returned home to teach math for three months at a local high school. In January, 2013, she was offered an internship at Angostura Limited / Trinidad Distillery, well known for their Angostura Aromatic Bitters – an essential ingredient for any fête and drink mixture. Working at Angostura equipped her with the skills she needed to pursue other

opportunities, and in March, 2015, Fernandez was hired to her current job as a Lab Technician under Quality Control at Carib Brewery. Under Quality Control, she worked directly with the raw materials and the beer produced after fermentation and filtration. Through hard work, determination, and the melodies of the steel pans outside to keep her going, she eventually was promoted to an Environmental Chemist.

Fernandez now works to help the company produce a range of local and foreign beers and lagers, a variety of soft products, juice mixes, and Malta-beverages – a vitamin-rich favorite in the Caribbean. Specifically, she is in charge of monitoring effluent leaving the company. In accordance with the Trinidad and Tobago Environmental Management Authority (EMA), waste that enters the environment from minor and major manufacturing
(continued page 8)



Richard White, Long-Time Instructor of Physical Chemistry, Retires

Left: White enjoys the view at Bryce Canyon National Park

By Alex Messner

Dr. Richard White is retiring after 30 years at CSB/SJU. He has been responsible for teaching courses in general chemistry, kinetics, thermodynamics, quantum chemistry, polymers, and sustainable energy.

White comes from a military family. His father, a propeller mechanic for the Air Force, was stationed in Saigon during the Tet Offensive in 1968, and all of his uncles served in the Navy during World War II. White enlisted in the Air Force as a corpsman and served as a dental hygienist, where he spent the first half of his service time of 3 years, 9 months, and 29 days in oral surgery and chairside assistance, and the latter half as an x-ray technician. His daughter would later follow in his footsteps, spending 8 years serving as a logistics specialist in the Quartermaster Corps, and later spending time in Information Technology for the military police.

White received an undergraduate education at Clinch Valley College in Wise,

Virginia, where he worked as a teaching assistant in the chemistry department. Because of his nontraditional age, White was able to form more personal relationships with his professors. Following undergraduate, he originally entered into a master's degree program for chemical engineering at Virginia Polytechnic Institute and State University, but later transferred to the chemistry Ph.D. program. Under the guidance of Dr. Jack Graybeal, White studied microwave spectroscopy, specifically determining the molecular structure of a stable free radical, bis-trifluoromethyl nitroxide. He was tasked with writing a computer program to calculate the energy levels and microwave spectrum of the molecule, as well as building a semi-confocal Fabry-Perot interferometer to access the spectrum.

Upon completion of Ph.D. work, White came to CSB/SJU where he has taught a variety of chemistry courses, FYS, and integrative science. He is a strong believer in the Benedictine values of the two

schools, and has greatly enjoyed being able to form relationships with the monastic community.

Time spent serving on committees in faculty governance and as chair of the Faculty Assembly has given him the opportunity to understand a true liberal arts education, and to grow in many aspects as a person.

Outside of the classroom, White enjoys carpentry. He originally began working in carpentry after his time in the Air Force, working in a small lumber yard. Later, at Clinch Valley, he built three custom homes over the course of three summers, teaming up with a biologist. In graduate school he often served as a handyman for many of the faculty members' rental properties.

White is also an avid golfer. He began playing golf as a way of relieving stress in graduate school, but admits that it may have caused more stress than it relieved. He and a few of his classmates would often meet on Saturday mornings and play 18 holes before heading for lab.
(continued page 10)

Chatelaine: Making a Splash on Campus



Left: Haley Chatelaine at the Pool

Haley Chatelaine, Chem '16, is a very organized person. As a distance swimmer for the CSB Blazers Swim & Dive Team, she practices from October through February, on top of all her classes and labs. She is also a team captain, which extends her work even earlier into the fall semester as she schedules pre-season workouts for her crew and organizes team-building activities for CSB and SJU swimmers.

It isn't all about work, though. A highlight of the season is a "super fun/intense" training trip to Florida over the winter break.

"My number one job," Chatelaine pointed out, "is to make sure we're all having a blast and working our hardest so we can achieve our goals."

Chatelaine started swimming seriously in fifth grade; she describes it as one of the best choices of her life. She also played lacrosse through high school, and continues in other athletic activities on her own. As part of her year-round fitness routine, she bikes and runs; she has done some triathlons, and hopes to do more after college.

Chatelaine's activities are not limited to sports. She is currently

President of the Chem Club, and serves on both the Honors Planning and Advisory Committee and the Benedictine Friends leadership team. In addition, she served as the Secretary for the Minnesota Intercollegiate Athletic Conference Student-Athlete Advisory Committee. She works as a tutor at the Math Skills Center. One of her favorite activities is helping out with maple syrup tapping in the spring.

She has a creative side, too. In her free time, Chatelaine has made promotional videos for the Swim & Dive Team, as well as the Sisters of the Order of Saint Benedict.

How does she keep all of that straight?

"I actually have an Excel spreadsheet where I plan out my daily schedule for the semester," explained Chatelaine. "I plan out my days the evenings before to make sure I have time to do homework, remember to go to meetings, and fit in practice."

Academically, Chatelaine's interests are not limited to chemistry. She has taken several Nutrition courses, plus others in Exercise Science and in Biology.

That makes for a tight schedule, but she still managed to spend 10 days in Cuba during May term 2015.

Chatelaine has also had the opportunity to do three summer research internships: at CSB/SJU, at CenUSA/University of Nebraska-Lincoln, and at South Dakota State University. She plans to follow up on those interests next year; she has been accepted into the Ph.D. program in Food Science at The Ohio State University.

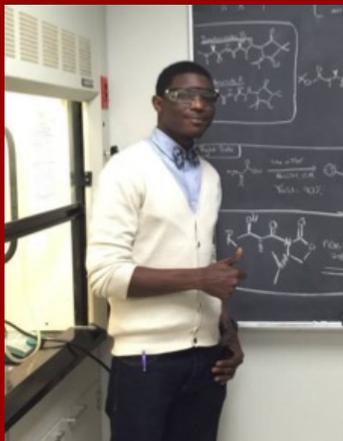
Despite all the time pressures, Chatelaine thinks athletics have been a key part of her college career.

"The people I've met have definitely been stellar," she said. She also appreciates "how the lessons I've learned in sports -- like persistence, patience, accountability, and dedication -- translate to my daily life."

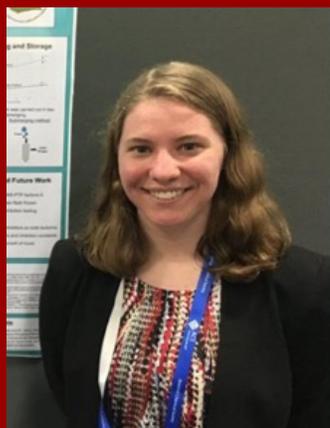
Chatelaine on the run!



Student Achievements Recognized



Demeritte



Tinucci



Vanyo

The Academic Year 2015-2016 Chemistry Department Award Winners have been selected. These awards are presented to students each year who show promise in the field of chemistry.

The CRC First-year Chemistry Achievement Award, made possible by CRC Publishing, will be given to **Ellen Arnold, Joshua Gavin, Janna Quick, Sophie Samson, Michael Thompson, and David Stockman '19**. The award includes a copy of *The CRC Handbook of Chemistry and Physics*. In addition, The CSB/SJU Chemistry Department Award for Distinction in First Year Chemistry goes to **Joseph Chitwood, Mary Gaytko, Thomas Hillemeier, Jack Kirsch, Ryan Lembke, and Cassidy Sharp '19**.

The **Richard L. Jochman** Scholarship for Achievement in Organic Chemistry is awarded to **Samantha Tinucci, Bchm '18 and Brandon Thauwald, Chem '18**. The award, in honor of the longtime CSB/SJU professor, was established through a gift by **Dr. Paul Zenk '78**. Another sophomore award, the CSB/SJU Chemistry

Department Award for Distinction in Chemical Reactivity, will be presented to **Simone Creed, Jordan Danielson, Davis Deanovic, Hannah Holst, and Grace Lindquist, Chem '18, Annette Klomp and Riley Swenson, Bchm '18, and Luke Morrey, Bchm '17**.

An additional award for high performance in a particular domain of chemistry, the Analytical Chemistry Award, will be shared by juniors **Claire Buysse and Alexander Vanyo, Chem '17**.

The **Abbot John Klassen** Summer Research Award will be presented to **Rejene Giinther, Chem '17**. The award was established by Dr. **Steve Holmgren '89** and his wife, **Dr. Mary Cloninger** in honor of the 1971 graduate and former faculty member. The **Father Matthew Kiess** Scholarship, which recognizes exceptional skills in the laboratory, goes to **Thomas O'Toole, Bchm '17**. Kiess was a 1921 graduate and longtime chair of the chemistry department.



Thauwald



Giinther



O'Toole



Kress



Chatelaine



Twumasi



Buyse

The **Sister Rogatia Sohler** Scholarship for an outstanding CSB junior will go to **Sarah Clark, Bchm '17**. The award is named for a 1932 graduate who later joined the chemistry faculty, and was established by the family of **Professor Emeritus William Muldoon**. The **Glen Arth** Scholarship for an outstanding SJU junior will be given to **Raymond Twumasi '17**. The award was established by Arth's colleagues at Merck, Sharp & Dohme in honor of the 1933 graduate.

Two specific awards for seniors are meant for students who intend to pursue further study in a particular area of chemistry. These awards are given by different sections of the American Chemical Society. The Undergraduate Award in Organic Chemistry will be given to **Adrian Demeritte '16**. The Undergraduate Award in Inorganic Chemistry will go to **Paul Kress '16**.

An additional award is given to seniors who show overall promise for a career in chemistry. The American Institute of Chemists Award will be shared by **Jasmine Tutol** and **Forrest Hyler '16**.

In addition to academic awards, the Distinguished Service Award will be presented to **Haley Chatelaine '16**; the Outstanding TA or Tutor Award will be given to **Rebecca Flynn '16**.

In addition, the Omega Chapter of Delta Epsilon Sigma, the national Catholic honor society, has announced the induction of **Emma Johnson, Chem '16** and **Claire Buyse, Chem '17**.



Clark



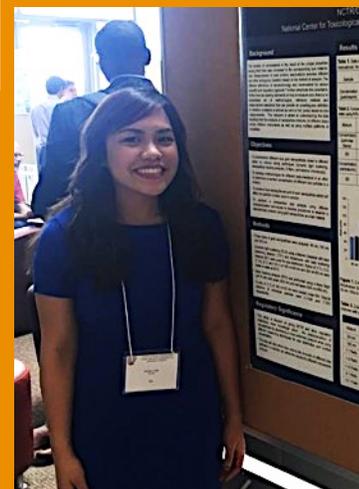
Flynn



Hyler



Johnson



Tutol



Mullings

Mullings Finds Mission at SJU Men's Development Institute

By *Augie Witkowski*

Some people are driven by an ideal; that drive motivates them to go the extra mile. On top of the busy schedule of being a biochemistry major, a gender studies minor, and a resident assistant, **Lincoln Mullings, Bchm '18** is also involved in The Men's Development Institute (MDI).

The MDI is one of the more recent programs formed for student development on the CSB/SJU campuses. It was formed in February 2014 with the goal of creating an environment that fosters the discussion of gender issues with a particular focus on masculinity, stereotypes, and men's personal development. It began with only two staff members, but has since expanded by hiring more workers and volunteers.

Mullings' service work has not gone unnoticed; he has been named a 2016 Marie & Robert Jackson Fellow.

Mullings has been involved in community and personal development for many years. While growing up and attending high

school in Nassau, Bahamas, Mullings felt he never quite fit in with the crowd. This realization led to his questioning of the stereotypes and roles that have been institutionalized by society. He realized that not blending in is not necessarily bad, and began to value his own uniqueness. By becoming personally empowered, he discovered that he wanted to spread this message of positive individuality to others.

Prior to his engagement in the MDI, Mullings created a mentorship program for younger students in his high school. The program's mission was to educate students on issues and topics like crime and economics while helping them develop personally through connections with senior students. He now uses this previous experience to plan workshops, seminars, and discussions for the MDI.

Mullings is one of ten staff members of the MDI. He holds the position of Logistical Program Coordinator. In this role he plans and facilitates events which are geared towards the individual development

of students while addressing various gender issues that are prevalent in society.

"My favorite part about working with the Institute is the ability it gives me to make these questions and stereotypes a topic of discussion," Mulling says.

He has used his unique role in the MDI to make a difference in the CSB/SJU community by challenging societal norms and instigating discussions. Yet in order to cause a larger shift in societal views of gender, changes must be made in each individual's personal development. Mullings realizes this, and says "...only through the development of our men growing up that we could change these norms." This idea drives the work Mullings does for the MDI. He plans to continue making a difference in the world by pursuing a medical degree, and applying the values that he has learned here at CSB/SJU to life following graduation.

Taking a Break from School and Helping Others



Renovating a home in New Orleans

worked on various projects doing exterior priming, painting, siding, and gutting a house that had experienced a fire.”

Tinucci went on to describe one house in particular. “It needed a lot of siding work as much of the boards were rotting, as well as a full exterior treatment of scraping, caulking, priming and painting.”

Sometimes tragedy can strike twice. Tinucci and her group also visited the home of a man who had been rebuilding after the hurricane when a fire occurred.

It was clear to Tinucci that a city like New Orleans can’t be completely rebuilt in ten years, much less in a few days. However, with help from able volunteers, locals are able to feel relief in the midst of tragedy.

By Caitlin Loeffler

Winter break at CSB/SJU offers students time to take a rest from the constant pressures of classes and homework while giving them a chance to spend some well-deserved time with family. Students will sometimes enjoy this time at home while others travel all over the globe.

However, there are other options for students to take over breaks. Alternative Break Experiences (ABE’s), are service trips that aim to raise awareness of social issues and

help encourage students to get involved and volunteer.

Sam Tinucci, Bchm ’18, travelled with a small group of students to New Orleans over the past winter break on one such trip.

“Our student-led ABE group worked with the nonprofit United Saints Recovery project in New Orleans, Louisiana, whose mission is to restore homes and communities affected by natural disasters, especially Hurricane Katrina,” said Tinucci.

“Throughout the week we



Tinucci on the job

Two Complete Interdisciplinary Team Projects for Mayo

Two biochemistry majors participated in the 2016 Mayo Innovation Scholars Program (MISP). **Yan Chuen (Vincent) Lai, Bchm ’16**, and **Niesha Ford, Bchm ’17**, completed the program.

MISP places students in

interdisciplinary teams from business and science backgrounds to solve problems of current interest to the biomedical community. A dozen teams made final presentations to an audience at the Mayo Clinic in April.

Lai’s team focused on a means to prevent nerve damage due to inflammation. Ford’s team looked at ways to facilitate product development based on hospital research.



Fernandez Ensures Water Quality in Tropical Lab



Fernandez in lab

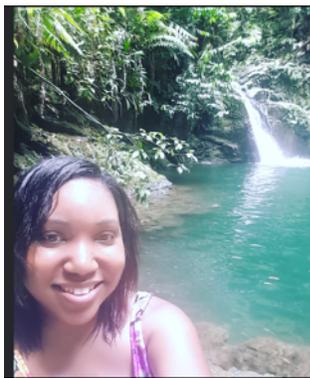
Working in Paradise

(from page 1)
companies must be monitored. Fernandez works on a strict monitoring schedule and generates monthly reports for the EMA.

To ensure that there is no harm to the beautiful Caribbean island, a typical day consists of extensive data collection (pH, temperature, flow rates); results may vary by the hour as the brewery moves through different processes. Fortnightly, samples are tested for biological oxygen demand, oil and grease, total petroleum hydrocarbons, total phosphorus, total ammoniacal nitrogen, total suspended solids, and fecal coliform. She must also report the color, smell and other

visible components of the effluent, comparing it to environmental data from off-site locations. Despite being surrounded by miles of aquamarine salt water, Fernandez enjoys working alone in her lab, setting her own pace.

Although she grudgingly admits to missing the snow periodically, Fernandez manages to cope by hiking and snorkeling in her spare time.



Fernandez on the trail

Looking back, Fernandez attributes much of her success to her CSB/SJU experiences.

“CSB/SJU really set me apart with the training and guidance I received in all my chemistry classes,” she explained. “I was able to quickly adjust to using instruments because of the labs done in advanced analytical chemistry and organic chemistry.” All in all, the sun-kissed chemist enjoys her job in paradise and advises students to take advantage of all CSB/SJU has to offer, including the ready availability of instructors.



Students Attend Spring 2016 ACS Meeting in San Diego



Students pose at the 251st National American Chemical Society Meeting. Front (l-r): **Sam Tinucci, Haley Chatelaine, Becca Flynn, Forrest Hyler, and Joe Freemark.** Rear (l-r): **Zach Brown, Matt Lerick, Lorien Rusch, Paul Kress, Adrian Demeritte, and Tyler Dick.**

Postcards From Abroad

Chem and Biochem
Students Travel the
Globe



Claire Buysse, Chem '17: "I'm studying abroad at Nelson Mandela Metropolitan University in Port Elizabeth, South Africa this semester. I get to do service learning at the House of Resurrection Haven every week (an orphanage/foster home for children who have been affected by the prevalence of HIV/AIDS in SA) and I've also joined the women's soccer team. Here is a picture of me at the top of Table Mountain in Cape Town (which is one of the 7 wonders of the new world). Our entire group climbed the mountain earlier that day as part of our autumn break excursion to Cape Town."

Rejene Giinther, Chem '17: "This picture was taken at Tikal which is a site full of Mayan ruins. The temple in this picture is known as the Temple of the Jaguar. In the Mayan culture the jaguar is considered the strongest animal of all time. I chose this picture because my visit to Tikal has been the most interesting thing I have done in Guatemala."



Chem, Biochem Students Win Caritas Extraordinary Service Awards

Frantz Soiro, Chem '16, and **Abdirizak Ismail Jama, Bchm '18,** have been recognized for their service to the community with the Caritas Man of Extraordinary Service Award. The award honors St. John's undergraduate men who have demonstrated their dedication to serving others both at CSB/SJU and in the local community. These men show a commitment to society through an

active participation in student leadership, civic leadership and social leadership.

Soiro, a member of the St. John's Senate, has been heavily involved in campus activities, including dance performance as well as service. He has also participated in mission activities such as a recent Vida trip to volunteer at two different clinics in Guatemala.

Jama has served on a number of panels on topics such as restorative justice, challenges for modern Africa, and combating Islamophobia. He has been active both on campus and in the surrounding community.





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Photo Credits: Khadija Fernandez, Mike Ross, Alicia Peterson, CSB/SJU chemistry and biochemistry students.

The College of Saint Benedict | Saint John's University

Student Honored in NSF Awards

Haley Chatelaine, Chem '16 has received an honorable mention in the 2016 National Science Foundation (NSF) Graduate Research Fellowship (GRF) program. Chatelaine's proposal focused on investigating foods as soft materials.

Previous CSB/SJU awardees include **Jeff Bandar, Chem '09** (Columbia), **Stephanie Roe, Chem '10** (Minnesota), and **Joe Gair, Chem '12** (Chicago).

Alum Notes

Check out the archive!
<http://employees.csbsju.edu/cschaller/cavendish/Cavendish.htm>

Ryan Rubischko, Chem '98 has accepted a position as Project Lead and Marketing Manager at Monsanto in St. Louis, MO.

Lars Liepold, Chem '00 has founded a start-up biomedical testing company, MeasureMeNow. Liepold has a Ph.D. in chemistry from Montana State University.

Damiene Stewart, Chem '13 is in graduate school in computer science at the University of Washington.

Ian Manion, Chem '15, has a new publication from his work at Southwest University in China (*J. Mol. Cat. B*, **2016**, *124*, 62-69). Manion recently accepted a position with St. Jude Medical.

White to Retire to Virginia Beach

(from page 2) As he improved in the sport, he found it easier to let go of his bad shots and focus on enjoying the game.

White says he does not have any big plans for retirement. He hopes to play more golf at Blackberry Ridge golf course, where he received a membership as a gift from his wife, Amy. She is currently an Intensive Care Nurse at St. Cloud Hospital, but

after she retires, the couple intends to move to Virginia Beach; White is excited to be able to play golf year-round. He is also looking forward to attending his undergraduate college homecoming in order to catch up with some old friends, and just seeing where life takes him next.



The sun sets over the Pacific at the San Diego ACS Meeting