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Lindquist (left) and Buysse (second from left) with fellow observers in Morocco.

CSB/SJU Students Serve as Official Observers at Morocco Conference

*By Makenzie Horrigan
with Bridget Ebert*

This past November, representatives from 195 countries met for the 22nd Annual United Nations Framework Convention on Climate Change Conference of Parties (UNFCCC COP 22) in Marrakech, Morocco. Nineteen CSB/SJU students were there as observers,

including three chemistry majors. The conference was held to increase international involvement in the Paris Agreement goal to limit global temperature increase at 2 degrees Celsius above pre-industrial levels. At the same time, there was plenty of discussion involving related issues, including studies as diverse as chemistry, physics, gender, and

economics.

Students attended through a course led by Dr. Jean Lavigne of Environmental Science and Dr. Matt Lindstrom of Political Science. As part of a research project in the course, each observer was assigned to follow a particular issue and interview experts and policy makers.

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Maroon and Gold Johnnie



Macalena (left) on game day

Be true to yourself



The Macalena Family

By Donovan Inniss

It is not unheard of for CSB/SJU students to take in a weekend football game, but **Dr. Jeffrey Macalena, Chem '01** has turned this pastime into a career. Macalena is an orthopedic surgeon at the University of Minnesota, specializing in sports medicine. He works mostly with knee injuries, attending to ligament reconstructions, as well as cartilage and meniscus surgeries. His specialty in sports medicine has allowed him to become a Gopher Athlete Physician, tending to sport teams including football, baseball, softball, and wrestling.

Macalena's routine tasks include taking care of patients about two days per week (he sees both athletes and non-athletes), surgery about three days per week and attending to Gopher athletes in the training room. Most of his job is outpatient work, but larger ligament reconstructions call for inpatient care – where Macalena does hospital rounds to assess patient progress.

Attending to division one athletes at a Big Ten university may be

demanding, but Macalena's training has more than prepared him for the experience. He is a Creighton University Medical School graduate, past University of Minnesota Orthopedic Surgery resident, and University of Pittsburgh fellow. There were key decisions on his journey to becoming a surgeon – thinking about where he would want to live and what specialty he would practice. "Seeking opportunities and connecting with different groups are all a part of the process," he recollected, "It is a long road, but I think it is fun and rewarding work."

The Buffalo, MN native credits his course work in physics and organic chemistry to helping him better understand his field. He states that his chemistry classes first taught him the scientific process – the same process he now uses during clinical research projects.

Macalena also places a high priority on family; he and his wife **Nicole (Tuma) Macalena, Chem'01** often find themselves busy with the activities of their daughters Olivia, age 6, and Sophie, age 4. As for himself, Macalena also enjoys golfing, travelling, and cooking.

Macalena is quick to remind current CSB/SJU students to follow their passions, emphasizing that without passion a job can become cumbersome. "Be true to yourself and pursue your career path because it is really what you want, not because of what others are pressuring you to do."

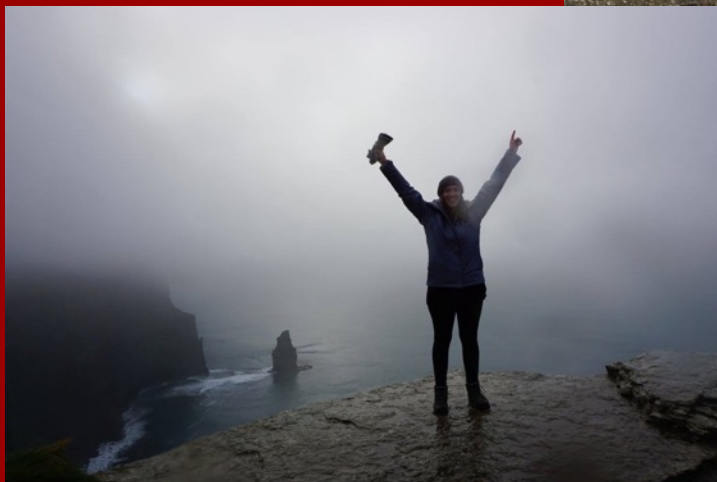
Between the black ice of Minnesota winters and the hazards of athletics, musculoskeletal injuries are bound to occur. It's good to know Macalena is there when we need him.

Postcards from Abroad



Marianne, Personified: **Talitha Burtis, Chem '18** in Cannes

Grace Lindquist, Chem '18 at the Royal Gardens of Alcazar in Seville



An Irish trio: **Riley Swenson, Bchm '18** at the Cliffs of Moher; **Sam Tinucci, Chem '18** at Charles Fort, in the coastal town of Kinsale; and the utterly triumphant **Casey Palmer, Bchm '18** vanquishes an Atlantic fog.

Students Attend Climate Conference



Harbeck (right) relaxes with friends

“We’re going to need to try harder.”

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A major topic of debate surrounding climate change is the idea of carbon capture and sequestration. **Grace Lindquist, Chem ‘18** was particularly interested in this idea during her time at COP 22. Carbon capture and storage (CCS) was discussed under the context of the Clean Development Mechanism (CDM). CDM was established as a flexible mechanism defined in the Kyoto Protocol (2007) to create and implement a reduction of carbon emissions and emission trading programs. Many countries including the United States, Brazil, and Saudi Arabia have already implemented CCS projects, in which CO₂ is injected into porous rock at least 1,000 meters underground. CCS can help keep global temperature down by lowering emissions for industries where there is no renewable option. Despite these advantages, the process is incredibly expensive and simply buys time until renewable energy can be introduced and implemented.

Given those kinds of expenses, one of the largest concerns of the UN

climate change team is funding. **Nick Harbeck, Chem ‘17** and a political science double major, followed the economics and politics of climate change policies and agreements while in Morocco. The Green Climate Fund (GCF) underwrites global efforts to reduce climate change, including the allocation of funding to developing countries for mitigation and adaptation programs. Funds from the GCF are distributed by accredited entities, with the US providing nearly 80% of the funding. Conflicts arise over whether to award funds to the most desperate groups or to those who adhere closely to GCF guidelines, and so tensions remain.

Claire Buysse, Chem ‘17 with an environmental concentration, went to COP22 with a focus on the influence of tropospheric ozone on the greenhouse effect. By the end of the conference, Buysse was deeply impressed by the problem of engaging the public and policy-makers with science. “In order to communicate [climate] science to a broader audience,” she stated, “we’re going to need to try harder”.

Communication is also a major concern as international agreements are drawn up, to an extent that may seem surprising; policies are sometimes vetoed over minute discrepancies. Nevertheless, Buysse is confident of the role scientists can make. “The main focus of the conference was the implementation of the Paris Agreement,” she explained, “which makes advances in science and engineering essential to success - and chemists can play an important role.”

Travelling the World with the FDA

By Augie Witkowski

Most Americans sit down to eat every day without a thought of food-borne illness, and they have people like **Courtney Tieg, Bchm '10** to thank for that. Tieg works as a Consumer Safety Officer (CSO) with the US Food and Drug Administration (FDA). She inspects the facilities of manufacturers and distributors of food, dietary supplements, and drugs within Minnesota, Wisconsin, and the Dakotas. Tieg also travels to investigate foreign manufacturers once a year, ensuring that facilities comply with industry regulations.

Tieg also acts as the Health Fraud Monitor for the upper midwest. In this role, Tieg investigates products that are advertised as cures for conditions for which they have not been approved. These products could include drugs, dietary supplements, and medical devices.

With the travel that is required as a CSO, and the responsibilities of the Health Fraud Monitor, Tieg does not have a typical day at work. She travels to various inspection sites for 2-4 weeks at a time, and while at each site she visits facilities and observes their day to day operations. She also checks documentation when on site to ensure that regulations are being followed.

“The best part of my job is that it is different from day to day,” declared Tieg.

Besides the variety of tasks in her job, Tieg enjoys many other



Tieg (right) accepting an FDA Outstanding Service Award

aspects of her role as a CSO. She values that she is able to help people every day by ensuring the safety of food and drugs for consumption and use. She helps to protect the public from people who do not have the public's best interest in mind. Along with helping others, Tieg says she enjoys learning something new every day through her job. She works with many knowledgeable people, and appreciates that people are constantly improving the industry of production. She also enjoys the travelling that her job requires, and the exposure to new communities it provides.

While Tieg does stay busy with ensuring the safety of the public, she also has time for fun. She

enjoys attending plays, playing softball and going to trivia nights at breweries with her friends.

Tieg never saw herself working as an investigator for the FDA. Throughout high school and college, she had prepared for a career in the forensic sciences. A Private College Job Fair during her senior year revealed a career she had never considered. Despite having been so focused on forensics, Tieg says she can't imagine doing anything else other than what she does right now. “Keep your mind open as you go through school,” she advises current students, “Opportunities are out there that you could never imagine.”

CSB/SJU Hosts Annual MACTLAC Meeting

By Alex Messner

This past fall, CSB|SJU hosted the annual meeting of the Midwestern Association of Chemistry Teachers in Liberal Arts Colleges (MACTLAC). Beginning in 1952, members from institutions such as Wabash College and Millikin University have met annually to discuss mutual interests and concerns.

The association's 64th anniversary meeting was held on October 7th and 8th, with the theme of "Reimagining Chemistry: Innovations in



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Undergraduate Chemistry Curricula." The event included keynote speakers, including noted education researcher Dr. Melanie Cooper of Michigan State University, as well as Dr. Tom Ippoliti from St Thomas and CSB|SJU's **Dr. Chris Schaller**. There were also over a dozen breakout sessions, facilitated by faculty members from both CSB|SJU and elsewhere, with themes such as "Alternative First-Year Chemistry Classes" or "Introduction to the CSB/SJU Curriculum". Overall there were sixty seven attendees at the meeting, including small-college faculty as well as postdoctoral researchers and graduate students interested in teaching.

CSB/SJU chemistry faculty were responsible for choosing the theme, organizing and planning the various speakers, session leaders, and sponsors, and arranging a banquet for all attendees. **Dr. Ed McIntee** served as the principal organizer for the event, with additional planning by **Dr. Anna McKenna** and **Dr. Brian Johnson**.

Throughout the two days,

Alum Notes

Andrew Aebly, Chem '10 is in a post-doctoral position in the lab of Jason Belitsky at Oberlin College. Aebly recently completed a Ph.D. at Montana State University.

Sara Kokkila, Chem '11 is a postdoctoral researcher in high performance computing at IBM, having recently finished Ph.D. work at Stanford.

CSB/SJU's unique chemistry program caught the eye of many. "People were very excited about our curriculum at CSB/SJU and several indicated that they wanted to implement parts of it at their institutions," said McIntee. "Overall, I think everyone was impressed with what we have done at CSB/SJU."

An additional workshop, led by McIntee and Johnson along with **Dr. Kate Graham**, brought together current and future liberal arts faculty to discuss curricular development strategies.

Joshua Gavin, Chem '19, had the chance to attend the meeting and listen to various presentations. Gavin confirmed McIntee's statements, saying "I could see lots of interest in [CSB/SJU's] new program, and it certainly caught the eye of a few liberal arts chemistry professors."

This coming fall, MACTLAC will return to the site at which it was first conceived, Monmouth College, for the 2017 meeting.



Marissa Oram, Chem '13 has started Ph.D. work in the Comparative Molecular Biosciences Program at the University of Minnesota.

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