

ISPE Student Chapter Profiles: Featured Universities of the Carolina-South Atlantic Chapter (CASA)

Editor's Note: This article is part of an ongoing series profiling ISPE Student Chapters and the people, education, research, and activities of tomorrow's pharmaceutical professionals.

The ISPE Carolina-South Atlantic Chapter (CASA) provides support to ISPE Student Chapters at the following universities: Campbell University (profiled in the March/April issue of PE), Clemson University, James Madison University, North Carolina A&T State University, North Carolina Central University (NCCU), North Carolina State University (NCSU), and University of North Carolina-Chapel Hill (UNC-CH). The following are profiles provided by four of the most active Student Chapters.

Clemson University Student Chapter

The Clemson University Student Chapter of ISPE was formed in the spring of 2006 and was recognized by the university for funding during the spring of 2007. The Clemson Student Chapter was started by Dr. Caye Drapcho from Clemson University, Bruce Craven of BE & K, and a few Clemson students who later became the Student Chapter's first officers. The major goal of the Student Chapter was to link industry with academia to allow students to get



Clemson field trip and tour to IRIX Pharmaceuticals.



Five Clemson students attended the 2007 East Coast Leadership Forum in NC.

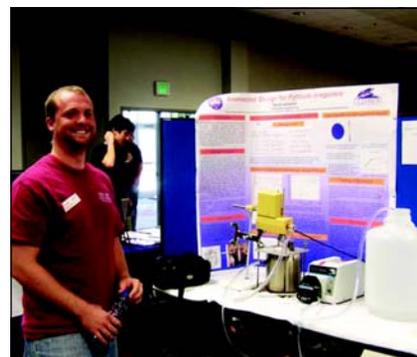
industry experience before they entered the work force.

The Student Chapter began with approximately ten students and later grew to 22 in the first year of operation. The Student Chapter gains new members by advertising for events, tours, and guest lecturers from industry that the Student Chapter sponsors. The Student Chapter is composed of Clemson biosystems and chemical engineering majors. During the first year of operation, Nicole Litton was the President. Brian Corbett was the Vice President and Darryl Jones was the Treasurer. During the recent meeting in March 2007, new officers were elected. Justin Montanti was elected President for the upcoming year. Jessica Easterling was elected Vice President, Lindsey Sanders was elected Treasurer, and Nysten Simmons was elected Secretary.

During the 2006 year, the Student Chapter toured many companies in the biotechnology industry. These companies included IRIX Pharmaceuticals in Greenville, SC, Martek in Kings-tree, SC, Roche in Florence, SC, and Bausch and Lomb in Greenville, SC. In addition to company tours, the

Student Chapter sent four members to attend the ISPE Annual Meeting in Orlando, Florida. David Johnson, an ISPE Student Member at Clemson University, won the undergraduate poster competition in the South East and won an all-expenses paid trip to present at the International Student Poster Competition in Orlando.

Members of the Clemson University Student Chapter also attended ISPE training workshops during the 2006 academic year. Five students attended the ISPE East Coast Student Leadership Forum in Raleigh and networked with employers as well as other ISPE Student Chapters. Four students attended the BE & K Fill Finish Facility of the Future seminar and learned about validation and construction of future facilities in the biotechnology industry. The ISPE Student Career



Participating in Clemson's Engineering and Science Week.

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Fair in Raleigh was attended by two students from the Chapter in February of 2007.

As our Student Chapter enters our second year at Clemson we hope to be further involved in community activities. In February 2007 we hosted a table at the Engineering and Science Expo again and reached out to the local youth. More than 300 middle school students came to Clemson for the day and participated in various activities to get them interested in science, math, and engineering. Industry Advisor Bruce Craven participates in many activities and is always available to help.

North Carolina Central University Student Chapter

The North Carolina Central University (NCCU) Student Chapter of ISPE recently became an official Student Chapter. The NCCU Faculty Advisor is Dr. Weifan Zheng and the Industry Advisor is Charles Wright, an alumnus of NCCU, who is currently employed at Tyco Healthcare. NCCU currently has 13 Student Members and hopes to steadily increase their membership over the coming years. Some of the students have already benefited from a tour organized at Biogen Idec. Below is a description of a unique program which allows for the perfect environment for an ISPE Student Chapter.

NCCU has established the Biomanufacturing Research Institute and Technology Enterprise (BRITE) Center of Excellence. BRITE will provide the biomanufacturing industry with skilled workers who are prepared to pursue careers in biopharmaceutical science and management. The 52,000 square foot state-of-art facility is currently under construction and scheduled to be completed by Fall 2007. The Golden Leaf Foundation Inc. has provided a grant of \$17.8 million for the construction of the BRITE facility. In 2005, the Golden Leaf Foundation Inc. awarded BRITE \$1.5 million for additional laboratory equipment.

As a component of the North Caro-

lina Biomanufacturing and Pharmaceutical Training Consortium, BRITE will offer education and training in biotechnology and biomanufacturing for students at the Bachelors, Masters, and Doctoral levels.

Biomanufacturing related programs would initially focus on bioprocess improvement, bioanalytical, and formulation sciences. The University is developing its curriculum to train students to become competitive in working in a biomanufacturing or a biotechnology related company. Coursework will include microbiology, cell and molecular biology, biochemistry, instrumentation, and analytical chemistry for the first three years. New courses focusing on biomanufacturing topics will be added throughout the four-year curriculum. In the senior year, students will participate in specific projects in laboratory modules that will simulate the work environment of the biomanufacturing industry. This model will build upon NCCU's successful investment in the Julius L. Chambers Biotechnology/Biomedical Research Institute. In the five years since this state-of-the-art facility opened, it has attracted top scientists who are training students in cardiovascular biology, neuroscience, cancer, and genomics in an environment that replicates the laboratories found in industry.

Interdisciplinary biology and chemistry concentrations will provide a solid foundation in the sciences and specialized education in biomanufacturing competencies. Students from community colleges will enter into the BRITE program at the junior level. Many summer courses will be offered to students as a flexible entry into the BRITE programs. Students will also be able to take courses in the schools of business and law for intellectual property and business ethics that will augment the small and medium-sized biotechnology company.

The BRITE program will provide students with fellowship and internship opportunities depending on their

academic performance and merits on a competitive basis. BRITE's academic program will provide collaborations and logistical support for biomanufacturing and biotechnology industries.

The BRITE program will deliver educational programs that provide essential hands-on training and high-quality students to meet and exceed the current needs of the biomanufacturing, pharmaceutical, and agribiotechnology industries in North Carolina. Professional science Masters degrees and Doctorates in bioprocess and biopharmaceutical sciences will produce future technical and business leaders, a development that will ensure this industry cluster remains vital and innovative well into the future.

Initially, NCCU students with a science major in biology or chemistry (or other scientific major, such as environmental science, physics and mathematics) and students from community colleges with an interest in biotechnology will benefit from such training experience. It is projected that 40 students per year will graduate from the BRITE program; eventually the number of students will increase. Incumbent workers currently employed in the operational sector of biomanufacturing can also be trained in the BRITE program to prepare them for moving up to the other sectors of their company.

North Carolina State University Student Chapter

The North Carolina State University Student Chapter of ISPE was founded in 1995 by Jane Brown, Dan Dunbar, and Dr. Peter Kilpatrick. They felt that students were an untapped resource and knew that ISPE had a lot to offer these future professionals. Students at North Carolina State University (NCSU) recognize that ISPE is a gateway into the pharmaceutical and biotech industry as well as a resource for industry information, networking, and career development.

The NCSU Student Chapter currently has 20 members. The majors

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NCSU participation in the 2007 East Coast Student Leadership Forum.

represented in this Chapter include chemical and biomolecular engineering, microbiology, and food science. The NCSU Student Chapter has monthly dinner meetings providing free food and industry speakers. The marketing for student involvement includes word of mouth, e-mail, and flyers across campus. The Student Chapter also utilizes the student-focused Carolina-South Atlantic Chapter events to promote the benefits of membership. Student Chapter activities include monthly meetings and CASA Chapter sponsored events. Recently, the Student Chapter held a joint meeting with the CASA

Chapter and the NCSU American Institute of Chemical Engineers (AIChE) in which 80 industry professionals (NCSU and Campbell University faculty) and students attended.

The NCSU Student Chapter hosted the 2007 ISPE East Coast Student Leadership Forum on its campus and had the privilege of working with industry professionals who offered support to students and organized the event. Within the community, the Student Chapter holds an annual toy drive outside of a local Toys "R" Us and has collected hundreds of toys to support the local CASA Chapter Toys for Tots toy drive. Members of the Student Chapter also participated as volunteers at the local Walk for Life event in 2006 and plan to volunteer again this year.

The NCSU Student Chapter has many outstanding accomplishments. There are several ISPE International Student Poster Competition winners from the Chapter, including Ryan Hill and Kristen Jones. NCSU student Jeffrey Stowe won the 2007 CASA Chapter regional poster competition in the undergraduate category. Young alumni, including Jennifer Brown-Chin, Jennifer



NCSU alumni.

Lauria Clark, Kari Lauria Delahunty, Sherry Nelson, and Ryan Hill have stayed highly involved in student development for ISPE since their graduation. The continued involvement of these former students is proof that the goal for founding the Student Chapters has been realized.

Current officers are Shannon Manning, President; Stephen Gregory and Chad Thompson, Vice Presidents; Lisa Saxon, Treasurer (and former President); Christine Virgilio, Secretary; and Kimberly Shearer, Publicity Chair. Advisors include Industry Advisors Joel Youngblood, (Talecris - Planning and Production Scheduling, Supply Chain) and Ryan Hill, (Talecris - PAT Engineer), and Faculty Advisor Marcello Tellez, Assistant Director for Student Coordination of the Golden LEAF Biomufacturing Training and Education Center (BTEC).

The BTEC is an exciting new facility being built on NCSU's Centennial Campus. This facility will provide students the opportunity to learn about biomufacturing at the pilot scale in a cGMP modeled environment. For more information on BTEC please visit <http://www.engr.ncsu.edu/btec/index.php>. With this new facility and the support of its faculty, the NCSU Student Chapter expects to see accelerated growth within the next five years.



NCSU students collect toys for the CASA Chapter Toys for Tots drive.

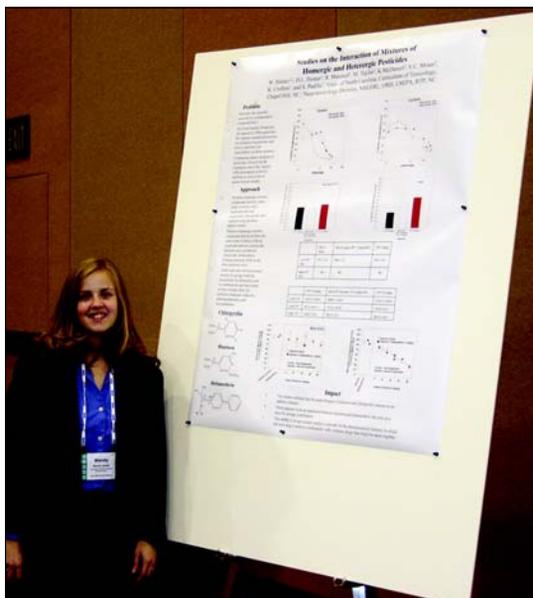
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University of North Carolina-Chapel Hill Student Chapter

The University of North Carolina-Chapel Hill (UNC-CH) Student Chapter of ISPE had a unique start. One of the founding members of the Campbell University Student Chapter helped to start the UNC-CH Student Chapter. Along with the help of Jane Brown, currently the ISPE Chairman, Wendy Haines started a Student Chapter at the University where she was pursuing her graduate degree. Haines enlisted her toxicology classmates: Anicka Bissahoya, Elmarie Bodes, Sharon Oxendine, and Checo Rorie to make up the first five members and officers of the UNC-CH Student Chapter in 1999. These students helped to find the first Faculty Advisor, Dr. Catherine Hammett-Stabler. Dr. Hammett-Stabler was a new faculty member of the Pathology Department and thought that ISPE would be a good way to introduce students and herself to the pharmaceutical/biotechnology industry. With the help of ISPE Headquarters, the students were also able to ask an eager UNC-CH alumna, Jennifer Williams, to be their Industry Advisor. Williams was then employed at Bayer



2001 Student Poster Competition Graduate Winner: Wendy Haines, University of North Carolina.

and pursuing a Masters degree at North Carolina State University. After UNC had interested Student Members and advisors, they were on their way to having a successful ISPE Student Chapter.

There is another component that makes the UNC-CH Student Chapter of ISPE unique – graduate students. The UNC-CH Student Chapter was first made up predominately of graduate students pursuing a wide-variety of scientific Doctorate degrees. Most of these students were interested in obtaining jobs in the pharmaceutical industry and being involved in ISPE was a step in the right direction. Not many student organizations can help scientific graduate students learn more about industry, go on plant tours, and network with professionals working in industry. ISPE Student Chapters provide all of these things and more.

Since the UNC-CH Student Chapter is made up of mostly PhD candidates, this Student Chapter has had some very interesting meetings. Chief Toxicologist for the Medical Examiner, Dr. Ruth Winecker, took students through crime-scene photos and toxicological results to determine cause of death. UNC-CH has had a former FBI agent, Cecil Yates, discuss espionage cases and describe what it is like to work for the FBI. There have been other discussions with published authors on how to give scientific presentations. HR managers have given tips on resume writing and interviewing skills. Former students come back to talk about their jobs in industry.

In 2000, ISPE unveiled the first ever Student Poster Competition. The competition was for a current full-time undergraduate or graduate student. The Carolina-South Atlantic (CASA) Chapter had about 20 students compete at the local level. Susan Bielmeier, gradu-



2004 Student Poster Competition Graduate Winner: Gillian S. Backus, University of North Carolina Chapel Hill.

ate student in Toxicology at UNC-CH, won the CASA Chapter competition and went on to win the International Student Poster Competition. Since then, the UNC-CH has had three other graduate students win at the International Student Poster Competition. UNC-CH has had a total of four International Student Poster winners.

Today, UNC-CH is trying to focus on recruiting undergraduate students to be involved in ISPE. The Student Chapter feels that more undergraduate students would make the decision to pursue jobs in industry if only someone told and showed them this great opportunity. Due to the current Faculty Advisor pursuing a career opportunity elsewhere, UNC-CH is looking for a new Faculty Advisor. Patrick Buckner, of NNE, is an alumnus of UNC-CH and the current Industry Advisor for the UNC-CH Student Chapter.

The CASA Chapter recently had a local student poster competition and a UNC-CH graduate student, Stacey Foti, won in the graduate category. The UNC-CH Student Chapter wishes her luck at the International Student Poster Competition at the 2007 ISPE Annual Meeting in Las Vegas, Nevada. Student Chapter Members are the future of ISPE and ISPE leadership. The UNC-CH Student Chapter would like to thank all who have supported ISPE students and encourages continued support. 