

# Student Achievement

An undergraduate (BSFS) degree in our program is the foundation for success, professionally as well as academically. Program success can be determined through scholarship, internship, and career placement, etc.

## Scholarship

An important measure of student achievement is our ability to publish and present original research in the field of forensic science at local, regional, national, and international forums. Our students not only presented but won awards for their research presentations.

- Nia Cohen, Marion Gray-Lion, BS, Jessie Cook, Ky'ara Carr, Shamar Wallace, Coby Schal, Ph.D., Subir Nagdas, Ph.D., and Khalid Lodhi, DSc. Isolation, Identification and Time-Course of Human Glycophorin A from Bed Bugs. Poster presentation at Forensic Symposium at NCSU, April 18, 2019.
- Marion Gray-Lion BS, Nia Cohen, Natalia Czado MS, Coby Schal Ph.D., and Khalid Lodhi DSc. Isolation, Identification, and Time Course Human Male DNA Typing from Bed Bugs Fed on Human Male and Pooled Blood Meals. Poster presentation at Forensic Symposium at NCSU, April 18, 2019.
- Lieceng Zhu. Molecular-basis of heat-induced loss of wheat resistance to Hessian fly. 2019 Annual Meeting of ESA (Entomological Society of America). St. Louis MO. November 19, 2019.
- Lieceng Zhu. Analyzing Molecular Basis of Heat-Induced Loss of Wheat Resistance to Hessian Fly Infestation Using RNA-Sequencing. 33rd North Carolina Molecular Biology Retreat. Wilmington, NC. September 13, 2019.
- Lieceng Zhu. Wheat Resistance to Hessian Fly & Molecular Mechanisms of Heat-Induced Loss of Wheat Resistance. Northwest A&F University. Yangling, Shaanxi, China. June 24, 2019.
- Lieceng Zhu. Wheat Resistance to Hessian Fly & Molecular Mechanisms of Heat-Induced Loss of Wheat Resistance. College of Life Sciences and Oceanography, ShenZhen University, Shenzhen, Guangdong, China. July 19, 2019.
- Lieceng Zhu, JiaZhen Yuan, Jordan O'Neal, Darian Brown, Ming-Shun Chen, and Fred Gould. Poster presentation. Mechanisms of Heat-Induced Loss of Plant Resistance to Insects. 2019 HBCU-UP/CREST/PI/PD meeting. Washington DC. Feb. 20, 2019.
- JiaZheng Yuan, Lieceng Zhu (Corresponding author), Jordan O'Neal, Daria Brown. Poster presentation. Transcriptome analysis of wheat cultivar Molly under heat stress and Hessian fly infestation. International Plant and Animal Genome Conference XXVII. San Diego. CA. January 14, 2019.
- Two students gave a poster presentation on their undergraduate research project "*The Isolation, Identification, and Time Course Human Male DNA Typing from Cimex lectularius L. (Bed bugs), Fed on Human Male and Pooled Blood Meals*" at 2018 STEM Research Symposium, Fayetteville State University, April 19, 2018.

- Two undergraduate research students gave a poster presentation entitled “Recovering Human Male DNA from Fired Casings Using YFiler”: 2018 STEM Research Symposium, Fayetteville State University, April 19, 2018.
- One student gave a poster presentation on her undergraduate research project “Understanding Jury Verdicts using Logistic Regression Modeling” organized by the Center for Statistics and Application in Forensic Science (CSAFE) at Iowa State University, Ames, Iowa, August 2, 2018
- One student gave a poster presentation on her undergraduate research project “Development of an Initial Handwritten Letter Classifier for use in Forensic Document Analysis” organized by the Center for Statistics and Application in Forensic Science (CSAFE) at Iowa State University, Ames, Iowa, August 2, 2018
- State of North Carolina Undergraduate Research & Creativity Symposium at Campbell University (November 4, 2017)
- NC-LSAMP Annual Research Conference at North Carolina State University (November 17, 2017). **First prize winner.**
- Two students gave a joint poster presentation on their undergraduate research " at FSU Board of Governors meeting on October 23, 2017.
- FSU Undergraduate Research Symposium on January 28, 2016
- 113<sup>th</sup> North Carolina Academy of Sciences at Methodist University, NC April 1, 2016
- FSU Graduate School Student Research Conference April 1, 2016
- 26<sup>th</sup> International Symposium on Human Identification at Grapevine, TX October 2015
- NC-LSAMP Annual Research Conference at UNC Pembroke, October 2015
- 25<sup>th</sup> International Symposium on Human Identification at Phoenix, AZ October 2014
- 24<sup>th</sup> International Symposium on Human Identification at Atlanta, GA October 2013
- Spring Symposium & Research Conference in STEM at Chicago, IL January 20, 2012

## Student Research

Several students have completed or are conducting undergraduate research with FSU faculty. Students’ research and stipend are sponsored through NSF funding award #1719511. Following are the students and their research fields:

- **Two students** are conducting undergraduate research on a joint project “**Recovery of DNA from Fired Ammunition Using YFiler**” under Ms. Natalia Czado
- **One student** is working on a research project title "*Isolation, Identification and Time-Course of Human Glycophorin A from Bed Bugs*" under Dr. Khalid Lodhi.
- **One student** is working on a research project title “**Identification of Microbes in Various Soil Types Using Hyperspectral Remote Sensing**” under Dr. Khalid Lodhi.
- **Two students** are conducting undergraduate research on a project "**The study of the effectiveness of Cannamix, a compound derived from hemp, at controlling the Alphitobius Diaperinus population**" under Dr. Shirley Chao
- **Six students have** either completed or are conducting undergraduate research on various materials science discipline projects under Dr. Zhiping Luo

- **Two students** have completed a joint research project title "*The Isolation, Identification, and Time Course Human Male DNA Typing from Cimex lectularius L. (Bed bugs), Fed on Human Blood Meals*" under Dr. Khalid Lodhi.

## Student Publication

Four forensic students are among the co-authors on published papers in peer reviewed journals:

- Isolation, identification, and time course of human DNA typing from bed bugs, *Cimex lectularius*. Coby Schal, Natalia Czado, **Richard Gamble, Amy Barrett, Kiera Weathers**, Khalid Mahmud Lodhi. Published in the Forensic Science International 293 (2018) 1–6.
- Zariana R Mobley (undergraduate), **Shanell L Jackson** (undergraduate), Gibin George, Zhiping Luo. Chemical Microanalysis of SnO<sub>2</sub>-MnO<sub>2</sub> Nanofibers in an Electron Probe Microanalyzer. Microsc. Microanal. 24 (S1), 2052-2053 (2018).
- Gibin George, **Shanell L Jackson** (undergraduate), Zariana R Mobley (undergraduate), Bhoj Gautam, Dong Fang, Jinfang Peng, Duan Luo, Jianguo Wen, Jason E Davis, Daryush Ila, Zhiping Luo. Fast luminescence from rare-earth-codoped BaSiF<sub>6</sub> nanowires with high aspect ratios. J. Mater. Chem. C 6, 7285-7294 (2018).
- Gibin George, **Shanell L. Jackson** (undergraduate), Charles Q. Luo (undergraduate), Dong Fang, Duan Luo, Dongli Hu, Jianguo Wen, Zhiping Luo\*. Effect of doping on the performance of high-crystalline SrMnO<sub>3</sub> perovskite nanofibers as a supercapacitor electrode. Ceram. Inter. 44, 21982-21992 (2018).

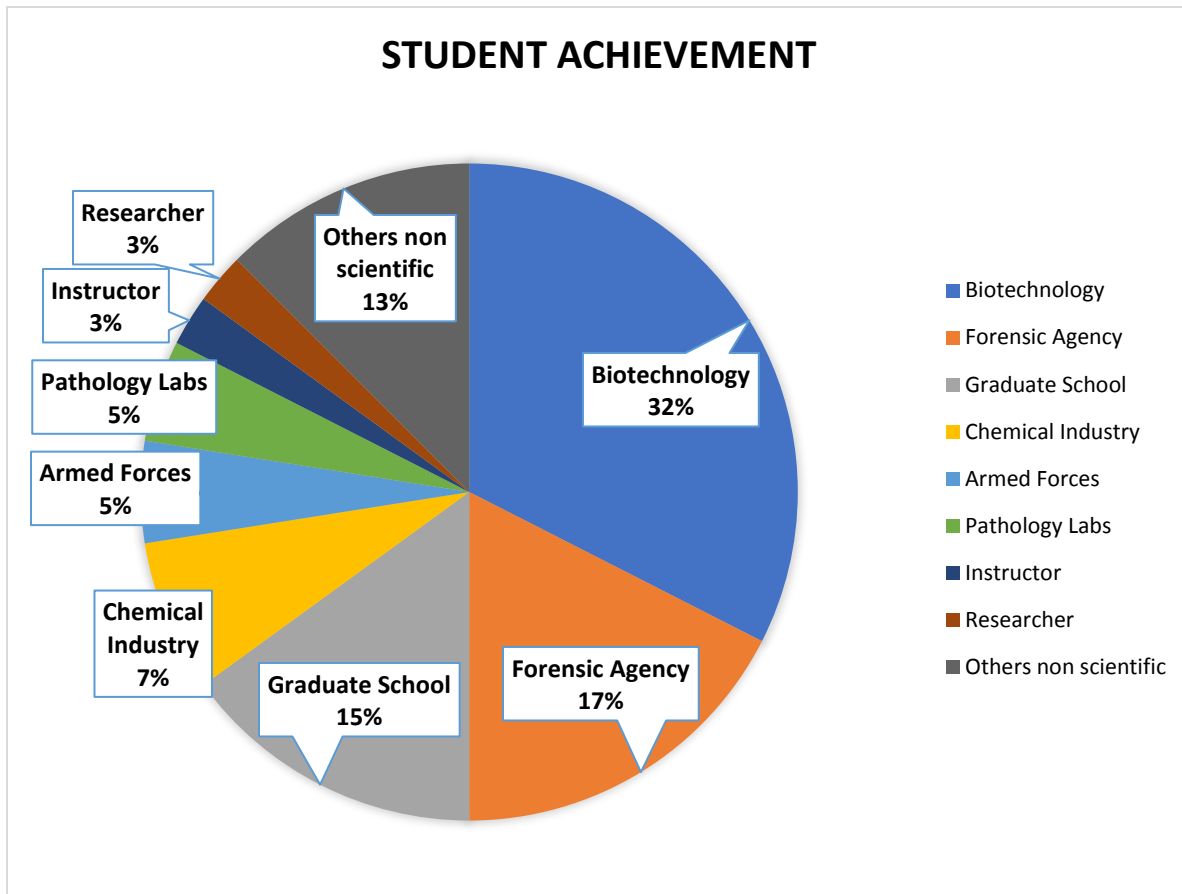
## Undergraduate Internships

Forensic science students participated in summer internships at various agencies in North Carolina, at Iowa State University, and at Federal Bureau of Investigation (FBI).

- **One student** completed her summer internship at FBI in summer 2019.
- **Two students** completed their summer (2019) internship at the Fayetteville Police Department, Fayetteville, NC.
- **Two students** completed their summer Center for Statistics and Application in Forensic Science (CSAFE) at Iowa State University, Ames, Iowa, June 3-August 3, 2018.
- **One student** completed her summer (2018) internship at the Fayetteville Police Department, Fayetteville, NC.
- **One student** completed her summer (2018) internship in the Pathology laboratory at the Cape Fear Valley Hospital, Fayetteville, NC.
- **Five students** completed 6-week summer internship sponsored by the CSAFE at Carnegie Mellon University and Iowa State University June-July 2017.
- **Two students** completed their summer (2015) Cumberland County Sheriff's Office.
- **Two students** completed their summer (2014) Fayetteville Police Latent Evidence Unit.
- **One student** completed her summer (2012) Charlotte-Mecklenburg Police Department.
- **Six students** completed their summer (2010) State Bureau of Investigation.

## Career Placement

Since the inception of the Program in 2006, 69 students have graduated with a degree in Forensic Science. A survey of the graduates showed that of the 40 respondents, 13 entered into the biotechnology industry (32%); 7 are confirmed working in forensic agencies (17%); 6 went to graduate school (15%); 3 entered into the chemical industry (7%); 2 entered into the Armed Forces (5%); 2 are employed in pathology labs (5%); 1 works as an instructor (3%); 1 is working as a researcher in a university research laboratory (2%); 5 are working nonscientific jobs (12%); and 29 did not respond to our survey (42%). Therefore, 87% of respondents confirmed career placements or graduate school admissions.



Note: Data from 29 students that did not respond are not included.

## Five Year Success Rate

The five-year (2015-19) success rate of the 25 graduate respondents of the Forensic Science Program showed that on average, 56.8% of the graduates entered into career pathways or pursued graduate/professional school. The remaining 19 (43.2%) graduates did not share their post-graduation status.

Field of work	Years	2015	2016	2017	2018	2019	Total
	No of Graduates	6	6	8	10	14	44
Crime Laboratory		1					1
Crime Scene Investigation (CSI)				1			1
Biotechnology		1	2	2	5	1	11
Chemical Industry			1				1
Research				1			1
Graduate/Professional School		1		1	2	2	6
Law Enforcement/ Military		1		1	1		3
*Others				1			1
<b>Success rate (%)</b>		<b>66.7</b>	<b>50.0</b>	<b>87.5</b>	<b>80</b>	<b>21.4</b>	<b>56.8</b>

\*Non-STEM fields