The East Tennessee State University School of Graduate Studies is proud to present ILLUMINATED, a magazine that showcases the excellent work of our graduate students and their faculty advisors. There are over 2200 students enrolled in graduate programs at ETSU. ILLUMINATED presents some of our students’ research and creative works that make meaningful contributions to various disciplines, and contribute to our strong graduate programs. ILLUMINATED features research and creative projects that are currently happening on campus, and provides updates on alumni of ETSU graduate programs.

For current graduate students and their advisors:

- Are you or one of your graduate students working on a culminating experience (e.g., thesis, dissertation, capstone)? Your research could receive additional exposure through ILLUMINATED and help educate the rest of the campus about your department and program. This is a unique opportunity to get your work recognized!

- Did you or one of your students get accepted into an excellent doctoral program or received an excellent career opportunity? We want to hear about it! Share your story in the “Where Are They Going?” section.

For former graduate students and their advisors:

- Do you know an outstanding student who graduated from ETSU more than a year ago? We want to hear from them! The “Where Are They Now?” section features former ETSU graduate students who are now professionals in positions across the country.


For more information on nominating students or getting featured in ILLUMINATED, please contact:

Dr. Karin Bartoszuk, bartoszu@etsu.edu
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East Tennessee State University is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award baccalaureate, masters, and doctorate degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of East Tennessee State University.

ETSU in an AA/EEO employer. TBR 260-016-13. 2M
Richard Sante, a graduate student in the Biological Sciences Department, has a passion for plants and a desire to improve crop growth. His research focuses on how lipids are involved in providing plants the ability to tolerate stressors such as drought and severe cold.

Lipids have a variety of functions in living organisms. They help structure cell membranes, store energy, and transmit information within cells. Richard is mainly interested in how lipids work in signaling processes. His main focus is studying the role of signaling lipids in mediating stress responses in moss, since it is shown that the moss plant can tolerate high levels of metabolic stress.

Mosses are an intermediate group of plants in the evolutionary cycle, which may explain why they are tolerant to stress. “The plants before moss were living in water and the plants after were living on land, so mosses evolved means to adapt,” said Dr. Aruna Kilaru.

Richard is currently testing his hypothesis that acylethanolamines (NAEs) occur in moss and that they play a significant role in its development. NAEs are small, bioactive lipid molecules that play a role in physiological processes such as seed germination, seedling development, and mediating stress responses in some plants.

Richard’s research focuses on how lipids are involved in providing plants the ability to tolerate stressors such as drought and severe cold.
Richard has found two results thus far in his research. The first aspect he investigated was whether the lipid molecules [NAEs] were present in moss. While examining the moss for NAEs, Richard discovered a unique lipid profile that contains a lipid that is also found in mammalian systems.

This lipid, anandamide, plays an important role in regulation of feeding behaviors and neural stimulations of feelings such as motivation and pleasure. Richard found that anandamide present in this moss, but it has not yet been reported in other plants. This finding leads to the question: why is it present in this moss? Dr. Kilaru noted that “this is the first time we were able to identify that moss plants actually synthesize anandamide and that gets us interested in what exactly it does in moss.” This finding leads them to the question of whether it enables the moss to have higher tolerance for stress and if so, how?

Richard hopes to go back to Cameroon, his home country, and grow crops that are more tolerant to harsh conditions.

Dr. Kilaru and Richard think it is possible that moss has a cannabinoid receptor to which the anandamide binds, forming a signaling mechanism that allows it to tolerate drought. Once plants made the transition and settled on land they may not have required the same harsh adaptation that moss required. “Mosses have had unique ways to adapt to harsh environments that may have been lost in higher plants,” Dr. Kilaru explained. “If you want to develop plants that are cold resistant or drought resistant it is required to look back at the plants that were able to tolerate or had the mechanisms to beat these harsh conditions.”

The second finding in Richard’s research is the identification of genes likely involved in the NAE metabolic pathway, which appears to be highly similar among plants and animals. He is currently studying the effects of NAE on drought tolerance in order to better understand how it could be replicated in plants such as corn and other crops.

Richard’s research earned him first place in the oral presentation competition at the Appalachian Student Research Forum. He also recently received a travel grant which allowed him to travel to Rhode Island and present his research at the annual meeting of the American Society for Plant Biologists. Richard hopes to go back to Cameroon, his home country, and grow crops that are more tolerant to harsh conditions.

NEAL CALVIN PETERSON
Degree: Master of Arts
Program/Department: New Media Studio
Year of graduation: 2013

WHERE ARE THEY NOW?

Where do you work or go to school?
I am currently a full-time artist in Minneapolis, MN.

What is your job/research about?
I am in the process of releasing and promoting a conceptual album that merges art and music.

What’s your favorite part about the research?
Creating something new out of two things that have never previously been connected.

How has your master’s degree helped you?
Graduate education is most beneficial for helping a person really focus on a particular topic, while contributing something new to the greater knowledge.

What advice would you give to current graduate students?
If you find your true passion, success will follow and person really focus on a particular topic, while contributing something new to the greater knowledge.

Anything else you’d like to share?
www.nealcalvinpeterson.com

HAVING A STUDENT CORRECTLY COMPLETES A FAFSA, HELPS THE STUDENT PROCEED TO THE NEXT STEP IN THE FINANCIAL AID PROCESS, AND IMPROVES THE OVERALL SATISFACTION OF STUDENTS. THIS REQUIRES THE DEDICATION AND COMMITMENT OF ADVISORS, ADVISORS, AND STUDENTS.

The Free Application for Federal Student Aid (FAFSA) is the first step to receiving federal financial aid. This application is completely free and becomes available after January 1st of each year. The earlier a student correctly completes a FAFSA, follows up, and completes the student requirements, the more successful he/she may be in securing funds and meeting important deadlines. If the FAFSA and student requirements are completed late, the funds might not be processed before the fall semester begins.

1. HOW DO I APPLY FOR AID?

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2. HOW DO I KNOW THE OFFICE OF FINANCIAL AID HAS RECEIVED MY FAFSA?

GoldLink and GoldMail are essential to tracking your financial aid progress! GoldLink will alert you to any additional information needed as well as indicate whether your aid has been processed. Your FAFSA may be selected for verification and require you to bring in additional documentation. The best way to find out is to check GoldLink frequently to see if any additional requirements are needed to process your aid. If additional information is needed, your aid will not be processed until those requirements are met. If you have not been selected for verification, you may still need to complete forms or submit further documentation. It is important to keep a continuous check on your financial aid status within GoldLink throughout the year.
The Office of Financial Aid also communicates with students through GoldMail. Anytime you receive an email from financial aid open it immediately! “Every student needs to do this,” said Lisa Bell, Assistant Director of Financial Aid. “Even after you graduate or quit attending school, you need to check it because we send things out about repayment.” Emails from financial aid will be detailed and provide the necessary information to complete all requirements.

### IS AID DIFFERENT FOR GRADUATE STUDENTS?
Yes, the types of grants and loans for graduate students differ from the ones undergraduates receive. Graduate students cannot receive Federal Pell Grants. Graduate students can only get Federal Direct Unsubsidized Loans, which means the interest will begin to accumulate as soon as the student takes out the loan. You can choose not to pay the interest as it accrues, but it will still be added to the total amount to be repaid. Ms. Miller also explained that being a graduate student alone automatically makes you an independent student, which increases your cost of attendance and could qualify you for more aid than the aid you automatically make an independent student, which increases the amount of money you can receive each academic year. Perkins loans allow nine months before repayment begins and interest does not start accruing until you start repayment. These loans have a very consistent interest rate of 5 percent.

### 2.4. Private Loans
For a private loan, students go to a bank of their choosing and take out a loan for their educational expenses. Ms. Miller recommends taking federal loans first because they are going to be more considerate of your financial need. Federal loans allow nine months before repayment begins and interest does not start accruring until you start repayment. These loans have a very consistent interest rate of 5 percent. If you are planning to take out a private loan, look for a bank that offers a program for students. Interest rates and repayment options for these loans will vary according to the student’s income, job requirements, and whole loan forgiveness for work in certain public service fields.

### 3. REPAYMENT
Students may be eligible for large amounts of money but they may not need the whole amount. When deciding how much money to borrow take into account your future career plans, and think about how much money you will actually need. Make sure you read all the terms of the loan you choose and learn about all possible repayment options. Some loans may offer deferment of payment or periods of leniency. The Public Service Loan Forgiveness program offers partial and whole loan forgiveness for work in certain public service fields.

### 4. WORK-STUDY PROGRAMS
Graduate Students are also eligible for Federal Work-Study. The Federal Work-Study program provides students with part-time jobs to help with educational expenses. Open positions can be found on the Office of Financial Aid’s website under “student work positions.”

### 4.2. Tuition Scholarships
Tuition scholarships are renewable merit-based scholarships for graduate students admitted into a graduate degree program for the first time. A tuition scholarship requires eight service hours per week within the department that provides the funding.

### HOW DO I KNOW WHEN I HAVE RECEIVED AN AWARD?
The Office of Financial Aid begins sending out award letters after April 30th. Students can also check on GoldLink to see how much they have been awarded and accept their awards. It is important to make sure you fulfill all requirements and accept your awards by June 1st in order to ensure that funds will be available by the beginning of the fall semester.

### WHAT IS THE DIFFERENCE BETWEEN THE OFFICE OF FINANCIAL AID AND THE BURSAR’S OFFICE?
Graduate Assistantships and Tuition Scholarships are decided on departmental level. Students will be contacted by the department when they receive either of these positions.
PREGNANCY AND VIOLENCE IN APPALACHIA

Improving the detection of intimate partner violence during pregnancy

by Jordan Powers

Dr. Clements. “Now we have an interested student to do it.”

Tifani has been investigating her topic using mini studies in order to see what information is available for her journal articles. During the first phase of her studies, she hypotheses that rurality will also be an indicator of intimate partner violence. Rurality deals with the rural nature of the location in which these women live. Rural locations are non-metropolitan areas where the population is more sparsely distributed and socioeconomic status may be low. The findings of this study will help inform her first article on demographics.

The data Tifani is analyzing was collected over a five year period by the TIPS program from almost 2000 participants. The TIPS program focused mainly on smoking during pregnancy for her third journal article. This will be a new learning experience for her because she will be using different predictive analytic software.

Dr. Clements praised Tifani’s ability to help her independent study students complete a research project from start to finish and present their findings at the Appalachian Student Research Forum. "I had the opportunity to help some undergraduates do poster presentations at the Appalachian Student Research Forum and I really enjoy doing projects like that."

After completing her research, Tifani hopes to be able to help healthcare professionals use the best assessment to identify intimate partner violence so they can help victims of abuse. She plans to focus on working with nursing departments because they see the patients first and many patients develop good relationships with their nurses.

Tifani has travelled with Dr. Clements to present her research to the Society for Behavioral Medicine. It is an international conference made primarily of medical professionals. She has also presented at the Appalachian Student Research Forum, Midwestern Psychological Association, and will be attending a teaching conference at James Madison University over the summer. Tifani won second place at the Appalachian Student Research Forum for presenting about IPV.

Teaching is Tifani’s first love and she currently teaches in the Psychology department. Her teaching abilities earned her a Departmental Teaching Award and the School of Graduate Studies Teaching Associate Award. Dr. Clements praised Tifani’s ability to help her independent study students complete a research project from start to finish and present their findings at the Appalachian Student Research Forum.

Working in academia and fostering an interest in research within undergraduate students is Tifani’s long-term goal. “I don’t like launching into my own big project, I like helping others with their analysis or write up and helping them prepare,” she said. “I had the opportunity to help some undergraduates do poster presentations at the Appalachian Student Research Forum and I really enjoy doing projects like that.”

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The benefits of building a stronger interdisciplinary relationship between dietetics and dental hygiene

For most individuals, a trip to the dentist is just about the health of their teeth. But, as Monique Richard, a master’s student in clinical nutrition, has discovered, it can unearth so much more. Dietetics and nutrition start in the mouth (oral cavity) so dentists can identify many nutrition related manifestations and diseases such as diabetes, eating disorders, infections, and cardiovascular disease. Collaboration between dietitians and dental hygienists might be beneficial to both the patient’s dental and nutritional health. Monique describes this collaboration as “practical and phenomenal at the same time.”

After reading an article on how interdisciplinary education and professional roles work well with dietetics and dental hygiene, Monique’s interest was sparked. “I thought it was really interesting and unique because you wouldn’t think about a dental hygienist and a registered dietitian working together,” she said. For her thesis, Monique was interested to see whether having an interdisciplinary program between dietitians and dental hygiene would improve each field’s knowledge and understanding of the other. She compared ETSU’s dental hygiene and dietetics students and faculty to Baylor University’s. Baylor offers an interdisciplinary approach that requires dietetic interns complete a three hour supervised practice rotation in the dental hygiene clinic. She compared and examined the differences between the two universities in nutrition knowledge, perceived roles of the other profession, attitudes about interdisciplinary education, and the value of the other profession to their field.

With the help of her advisor, Dr. Michelle Lee, Monique developed her own survey using a framework from a variety of existing surveys dealing with similar topics. Her survey had a total of 78 questions that made up four sections and also included a qualitative component. The sections focused on nutritional knowledge, perceived roles of what a dental hygienist and a dietitian actually do, attitudes about interdisciplinary education and the value of the other profession. The qualitative section asked participants about what they would like and expect the other field to know regarding their specialty. The questions on the survey included 54 Likert scale items, 14 true/false, 6 multiple choice, and 2 open ended qualitative questions. To ensure the questions were clear and could be easily answered by a dietetics student or a dental hygiene student, Monique had ETSU faculty and experts from other universities in dental hygiene and nutrition review the survey. After including the feedback, the survey was distributed to dietetics interns, dental hygiene seniors, and dietetic and dental faculty at Baylor and ETSU. Once the data was received the three groups were compared. The sample included 26 dietetic interns, 49 dental hygiene students, 23 dietetic faculty, and 19 dental hygiene faculty.

Monique found her results regarding interdisciplinary knowledge very interesting. She found that the dental hygiene students at ETSU who did not have the interdisciplinary experience answered 46% of the nutrition knowledge questions correctly; while students from Baylor who had exposure to both dentistry and nutrition answered 96% of the questions correctly. Therefore, dental hygiene students at Baylor may have expanded their knowledge of nutrition by working with dietetics students.

To better understand these results, Monique looked at specific nutritional questions. She found that some students who stated they were providing nutritional counseling to patients did not provide correct answers to general nutrition questions. For instance, one of the ETSU dental hygiene students missed a true/false question about whether a dietitian was trained to treat eating disorders. “Only 14 out 24 stu...
The two qualitative questions asked each group (dental hygiene and dietitian) what they would like and expect the other to know. The results of these questions were similar and focused on the importance of team collaboration, communication, and learning in order to enhance patient care.

Monique’s results support her hypothesis and indicate that a nutritional component may be beneficial to both dental hygiene and dietetic students. “Faculty at ETSU are examining a way to have dental hygiene and dietetic students in the classroom working on case studies together and teaching each other what they do, so there will be more understanding and interprofessional experiences,” said Dr. Lee.

During her time at ETSU, Monique served as the Vice President of the first interdisciplinary organization at ETSU, called the Association of Interdisciplinary Healthcare Students (AIMEES). This organization was formed in conjunction with ETSU’s inaugural interdisciplinary curriculum pilot program, and hopes to meld six major colleges together in order to reverse “compartmentalized” teaching and to recognize ETSU as an interprofessional education institution (IPE).

Monique will be presenting her research this fall in Houston, Texas at the Academy of Nutrition and Dietetics national meeting. Monique and Dr. Lee are also currently working on a manuscript for submission. Dr. Lee described Monique as inspirational and full of great ideas. “She really took off with this and she made the contacts with Baylor and initiated the whole process.”

Monique has been accepted into George Washington University for a second master’s degree, and she hopes to later receive her doctoral degree in public health. Her future plans include a continued focus on public health and relaying important information to the public. A majority of participants from Baylor recognized the dietitian as being an expert on nutrition. Baylor dental hygiene students had a better understanding of their own role regarding nutrition, while some of the participants at ETSU were unsure about their role and the dietitian’s role regarding nutrition and oral health. In the sections pertaining to values and attitudes, participants were asked questions regarding how important they believed the role of a dental hygienist or a registered dietitian was, along with questions about whether they believed an interdisciplinary education was important. Students and faculty from both Baylor and ETSU indicated that interdisciplinary education was important and indicated a strong appreciation of the other profession.

Dietetics and nutrition start in the oral cavity so dentists can identify many nutrition related manifestations and diseases.

The perceived roles section of the survey asked questions regarding what the participant believed the role of a registered dietitian and a dental hygienist was and how it related to oral health. A majority of participants from Baylor recognized the dietitian as being an expert on nutrition. Baylor dental hygiene students had a better understanding of their own role regarding nutrition, while some of the participants at ETSU were unsure about their role and the dietitian’s role regarding nutrition and oral health. In the sections pertaining to values and attitudes, participants were asked questions regarding how important they believed the role of a dental hygienist or a registered dietitian was, along with questions about whether they believed an interdisciplinary education was important. Students and faculty from both Baylor and ETSU indicated that interdisciplinary education was important and indicated a strong appreciation of the other profession.

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Dietetics and nutrition start in the oral cavity so dentists can identify many nutrition related manifestations and diseases.
Mariam focused her thesis research on discovering whether political ads and the reader’s political affiliation impact perceptions of news credibility.

Under Dr. Dunn’s guidance Mariam learned the necessary skills she needed to conduct her study. "I think Mariam did a great job taking on an ambitious project with not a lot of prep," said Dr. Dunn. "She had to do a lot of the job running".

After running the data gathered from the three conditions, the results were surprising. No significant effect for the type of ad, the three conditions, the results were surprising. Mariam focused her thesis research on discovering whether political ads and the reader’s political affiliation impact perceptions of news credibility.

Although Mariam did not find what she was looking for, her research brings up questions for further studies. "The findings could mean one of two things: either people don’t notice banner ads anymore because those are the ads I used (one above the article and 2 embedded in the article) or they do not affect what people think of articles, so news organizations should not be as worried about ads," said Mariam.

"I think this is enriching research we could take somewhere else and use in a different scenario," stated Dunn. He also noted the importance in the trends they found. "Within the project itself there were some things that weren’t significant but there were some trends, and if we had even more participants and the ability to use different populations, they may have been even stronger.”

Mariam presented her research at the Appalachian Student Research Forum. She also received the Outstanding Contribution by a Graduate Student award from the Department of Communication for her work producing a TV show through the department’s RTVF Division.

Over the summer, Mariam will be moving to Wichita Falls, Texas and plans to use the time in this program has given me better critical thinking skills, which helps me to ask better questions as I am interviewing," she said.

"I hadn’t had a quantitative research class yet and he helped guide me through how to lay out the paper and what statistics to use and how to interpret them," stated Mariam.

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Left, Dr. Dunn, Right, Mariam Ayad.