

# TNTech acm

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# Upcoming Events

11/09 - Alumni/ ACM-W Speaker	11am - 12pm
11/18 - Student Meeting	11am - 12pm
11/23 - TVA Speakers	11am - 12pm
11/23 - Game Night	6pm - 8pm
12/07 - Final Meeting	11am - 12pm

\*All meetings in Bruner 228



## Final Game Night

by Megan Young

This month on the 23rd we will be having the final game night of this semester, hosted in a joint venture between ACM-W and WiCYS.

It will feature plenty of board games, games on the Nintendo Switch (Mario Kart!), and other games like Among Us. Pizza and refreshments will of course be provided. It is from 6:00pm to 8:00pm, but may last longer if people want to stay!

Come by and unwind as you gear up for finals!



## ACM-W Spotlight

### Elena Becker

Elena is the Treasurer of ACM. Her concentration is in Cybersecurity, and she is a senior in her last undergraduate semester, who loves to play video games and read science fiction books. She's a DoD CySP Scholar, which has led her to already having her dream job: working for the DoD on Digital Forensics. She will be working for this agency when she graduates, so her goal is to excel in her employment and meet as many like-minded individuals as she can there!

She has had an internship with them once, in the Summer of 2021, where she was able to work on various Cybersecurity projects to find what she liked best. She loves that Computer Science covers so many aspects and is present in almost every place of employment.

She knows it can be difficult for women to fit in within the male-dominated field. Her advice to any women looking to get involved in Computer Science is to be confident in your abilities and don't be afraid to stand up for yourself.

## Officer Spotlight

### Braxton Westbrook

Braxton is the Secretary of ACM, and is a Computer Science (cybersecurity)/Political Science Double Major who is in his third year at Tech.

He hopes to work with the Federal Government once he graduates, and as he is a member of the CyberCorps/DoD CySP group here at Tech, he plans to turn those aspirations into reality.

Last summer, he interned with the Department of Defense. He said it was a thoroughly enjoyable experience, and he loved getting to meet a variety of new people. The work was very interesting as well. Additionally, he has participated in some research here at Tech with Dr. Ulybyshev in his first year, which was an excellent learning experience for a freshman. He found the research to be really accessible and helpful for his professional growth and development.

The thing he enjoys the most about programming is the multitude of ways to express your goal. There are tons of programming languages and methodologies available to assist you in accomplishing whatever your objectives are (and some of those are more suited to your tasks than others). The freeform nature of programming is truly what makes it so unique and enjoyable.

One fun fact about him is that he used to play the French Horn pretty regularly (and still enjoys getting the opportunity to do so whenever one presents itself)!

# New Technology Streamlines the Development of Gene Therapy for Genetic Blinding Disorders

by Kashaina Nucum

Vision loss can adversely affect people and cause many problems in their lives, but researchers from the University of Pittsburgh School of Medicine took another step in the field of vision restoration. They recently identified viral vectors, or modified viruses that can deliver genetic material to cells, which can effectively transfer gene therapies to an affected area of the retina. However, there is an obstacle of ensuring the vector enters the specific cells that are targeted by scientists. As a possible solution, researchers developed computational platform scAAVengr that uses single-celled RNA sequencing to choose which adeno-associated virus vector (AAV) is best to implement gene therapy to the specific area of the retina. However, this approach can take several years to evaluate. Although this is a challenge to overcome, viral vectors can be more effective for gene therapy, and this is progress towards repairing vision loss.

## SIG Highlight

by Kashaina Nucum



SIGWEB is an ACM Special Interest Group that focuses on Hypertext, Hypermedia and Web. Initially named SIGLINK before changing its name in 1988, SIGWEB specializes in network-based approaches and provides several conferences a year to discuss research and application within the field.

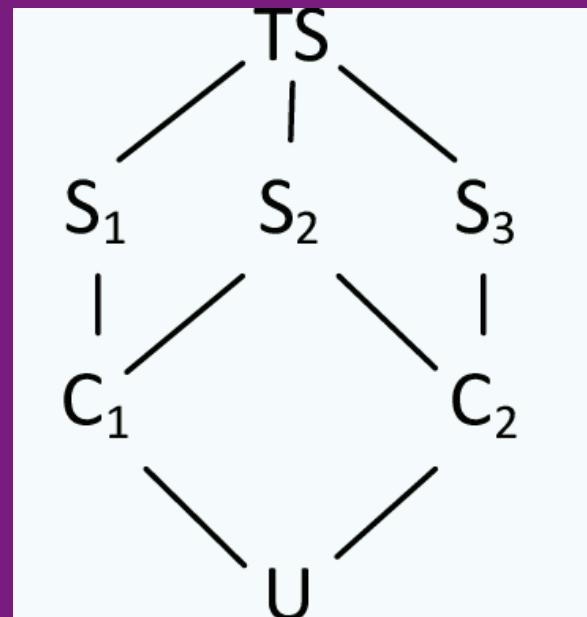
SIGWEB will host its next conference, the Conference on Information and Knowledge Management (CIKM), from November 1-5, 2021 in Queensland, Australia, in which presenters will discuss challenges of developing future information and knowledge systems.

You can read more about SIGWEB [here](#).

## Liquid Information Flow Control

by Megan Young

Information flow in programs refers to how sensitive data moves through a program. Tools exist for programmers to see this flow, but even better are tools that allow a programmer to specify the security policies for a piece of data. Lifty is a domain-specific language for data-centric applications that can do just that. Lifty will verify that the specified policies are followed throughout the application, and if it fails, then it will suggest an appropriate repair that will ensure the policies are met. This can greatly ease the burden of the programmer having to implement those policies themselves. Lifty works by utilizing liquid types, and expressive and decidable type system, which enables the automated checking of the policies and powers the repairing of errors. Additionally, if the programmer leaves out policy enforcing code, Lifty will still manage to identify and fix leaks. You can read more about Lifty and the research behind it [here](#).





## Member Spotlight

### Kashaina Nucum

Kashaina is a new member of ACM, and is a freshman at Tech with a concentration in Data Science.

Outside of ACM she is an active member in several other clubs, among them the Data Science League, Badminton Club, Swing Dance Club, and University Catholic. She is also a member of the Honors Program here at Tech.

Her primary interest currently is AI, but she is excited to explore what other options exist in Computer Science while here at Tech. She particularly enjoys using logic and algorithms to solve problems.

## IEEE

by Megan Young

The IEEE (Institute of Electrical and Electronics Engineers) chapter here on campus has a focus on introducing students to various topics and viewpoints in STEM from Electrical and Computer Engineering to Computer Science.

Being a member can give students several resources to use, including an expansive digital library of research papers and access to IEEE magazines. Additionally, members will have the opportunity to take part in SECON, a conference that will be taking place in Alabama in April. It will be a great chance to hear researchers present their work as well as participate in competitions, among which include a software competition.

IEEE meets every Monday at 5:30, and occasionally has a guest speaker during dead hour. If you are interested in joining the organization or participating in the competition, you can check out their discord in the school Hub.



# IEEE

# Faculty Spotlights

## Denis Ulybyshev

Denis Ulybyshev is an Assistant Professor in the Department of Computer Science. His area of concentration is cybersecurity and since 2012 he conducts research in the areas of data privacy, cryptography, Web/OS/Cloud/Database/Cyber-Physical Systems security, software accessibility, and blockchain-based technologies. He earned his PhD and Master's degrees in Computer Science from Purdue University in 2019; a Bachelor's and Master's degrees in Automatic Control Systems from Bauman Moscow State Technical University in 2002 and 2004. From 2004 till 2012 Denis worked as a Software Engineer for companies, including Schneider Electric and Samsung Electronics. His research at Tennessee Tech is funded by NASA and DENSO North American Foundation.

Denis developed a new cybersecurity course CSC 6590 "Application Security" that will be offered in Spring 2022. He started teaching as an assistant in the Department of Computer Science at Purdue University in 2012 and joined Tennessee Tech as an Assistant Professor in 2019. He is a member of Computer Science Diversity Committee. His diverse research group includes female and male, graduate and undergraduate, domestic and international students. In 2019 his group won a 1st place award in the student presentations competition of the ACM Mid-Southeast Chapter Conference.

In his research, Dr. Ulybyshev enjoys designing novel solutions for cyber-related problems and sharing them with the world. The best part of teaching is observing students' progress and their career accomplishments. Advice for current students: "Become an expert in one area of Computer Science. Participate in programming contests, such as "Capture the Flag" (CTF) and International Collegiate Programming Contest (ICPC). This type of experience is highly valued by employers."

## Travis Brummett

Travis Brummett is a Lecturer for the Computer Science Department who has been teaching for three years. His primary area of interest is in Cloud Computing, which he was first introduced to by his former advisor, Michael Galloway. He has worked some with model driven code development research and distributed stream processing.

Prior to teaching here at Tech, he was a TA at both Western Kentucky University and Vanderbilt University, where he got his Master's. For a time, he also taught middle and elementary school kids how to code with Python on weekends and during the summer. He has taught several different courses while here at Tech, among them Data Structures and Algorithms, Databases, DevOps, and Analysis of Algorithms.

Dr. Brummett loves teaching because he has the opportunity to interact with students and watch them succeed, grow, and go on to do amazing things in life.

The biggest piece of advice he would have is to never stop learning, as there is much that instructors are not able to teach. Picking up new things and improving yourself ensures constant growth. Additionally, he advises to never let a mistake or failure deter you from trying to reach your goals. These are what allow you to grow and learn. You only truly fail when you stop trying and give up.

# International Collegiate Programming Contest

by Megan Young

ICPC is a world-wide programming competition designed for college students to work in teams of three to solve real-world problems. There are several levels to the contest: the Local Contest, Regionals, and finally the World Finals.

Teams at Tech have regularly placed in the top 20% of the Mid-Central Regionals, and is looking for students interested in participating in the next contest in the Spring. It would be a great opportunity to utilize what you've learned and hone your skills!

If you are interested in joining, you can contact Ahsan Ayub at [mayub42@tntech.edu](mailto:mayub42@tntech.edu).



**acm** International Collegiate Programming Contest

## QR Codes

Discord Server



Membership Form



Have any thoughts on additions or changes to the newsletter?  
Email meyoung43@tnstate.edu with your suggestions!

