ISSUE
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Fall 2018

UNK CYBER SYSTEMS

ANNUAL NEWSLETTER AND REPORT

DEPARTMENT OF CYBER SYSTEMS

About Cyber Systems

- ⇒ **Quality undergraduate education in CS, Cyber Security Operations, Info Networking & Telecommunications, IT, MIS, and online graduate IT Education & Endorsements**
- ⇒ **Student-led projects across the curriculum enable creativity and innovation**
- ⇒ **Experienced faculty**
- ⇒ **Award winning students: CCDC Security competition MICS Robotics competition**

Scholarship Needs

Assistance is needed to support the Kenny *Sogar Scholarship* for IT majors. Make a tax deductible contribution through the University of Nebraska Foundation: nufoundation.org

2017-18 was a year of changes. We are now officially the Cyber Systems Department, as the Computer Science and Information Technology (CSIT) Department merged with the Information Networking and Telecommunications (INT) and Management Information Systems (MIS) programs. In doing so, the CSIT faculty: Dr. John Hastings, Mr. Shahram Alavi, and Dr. Miller and myself welcomed Drs. Angela Hollman (INT), and Ross Taylor and Vijay Agrawal (MIS). We also started a new major program, Cyber Security Operations. In May 2018, UNK held the ground breaking ceremony for our new building, which should open spring 2020.

We appreciate the support that our friends and alumni provide to the Cyber Systems Department, especially for the support of student scholarships. We are fortunate to be able to provide a handful of students with scholarships, as shown on page 7. The family of Kenny Sogar established a scholarship in his name for IT students. Kenny was the director of IT Services for the College of Natural & Social Sciences. Kenny loved helping the IT students learn and grow professionally. He called Kearney and UNK "Heaven on Earth". He was an awesome teacher and mentor for the IT students who worked for him. We need your support to endow this scholarship.

Cyber Systems students were very successful this year, winning the regional North Central Collegiate Cyber Defense Competition; winning the Midwest Instructional Computing Symposium robotics competition; and receiving awards from the UNK Alumni Association and both the College of Business and Technology and the College of Natural and Social Sciences.

The students and faculty participated in many fun activities including senior projects, camps and other outreach activities, business tours, and various other activities, such as the Women in Computing event in Kansas City shown on the left.

P.S. As you can see from the picture above, Dr. Miller knighted the CS and IT graduates with a light saber at the spring graduation (on May the 4th), watch it on Twitter, t.co/bS9qzUH1Ju.

As always, I hope you enjoy reading about our events and happenings.

Sherri Harms

Sherri Harms
Cyber Systems Interim Chair

With jobs in demand, UNK adds new cybersecurity Operations major

Drs. Matt Miller and Angela Hollman

Cyber security experts are in demand. The number of nation state attackers, industrial spies, organized crime groups and hackers is growing, which puts government, companies and others at increased risk of cyber threats.

"This is still new to a lot of companies. They don't have cyber security experts on their IT teams," said Matthew Miller, Cyber Systems assistant professor.

UNK is doing its part to fill the growing need for cyber security experts by adding a new Cyber Security Operations BS Major. The program provides students with a background for protecting and defending networks and systems from cyber attacks. It is based on the NSA's National Center of Academic Excellence in Cyber Operations curriculum. Currently, there are only 15 undergraduate programs in the U.S. with that designation.

"We're also one of the few programs with professors in the classroom teaching hands-on labs. That is a huge thing to be interacting with students at that level," said Angela Hollman, Cyber Systems assistant professor.

The new major gives UNK students hands-on experience in programming languages, software reverse engineering, operating system theory, networking, cellular and mobile technologies, discrete mathematics and algorithms, cyber defense, security fundamental principles, vulnerabilities, and legal issues.

"We are training people who are on the keyboard, building and designing systems, and thinking about it that way. We are sending out the hands-on, in depth, technically-trained student," Miller said.

"Average salaries for cyber security operations careers are $100,000," said Miller. "Companies are issuing huge salaries in this field because there are large deficits in the number of cyber security workers."

Summarized from UNK news release, November 8, 2017 by T. Gottula.

UNK's new Cyber Systems Department Helps Meet Increased Demand for Tech Workers

Intellicom, Xpanxion, Five Nines, Black Brick Software and The Buckle. Those are a few local companies that come to mind when Elizabeth Roetman is asked about the strong demand for workers in technology-related fields. The full list of businesses seeking tech-savvy employees is much longer and is growing, especially at the Tech One Crossing technology park in northeast Kearney.

"Area employers communicate that the hardest jobs to fill are skilled positions requiring a background in science, technology, engineering or mathematics," said Roetman, VP of the Economic Development Council of Buffalo County. "As our community progresses and technology evolves, we'll continue to see the demand for STEM positions increase." High-quality education in these areas is vital to the region's economic growth, according to Roetman.

Comments like these aren't lost on UNK, which is doing its part to train technology workers. The new Cyber Systems Department combines five existing academic programs and adds the cyber security operations major. The new department makes it clear to students and employers where to look for information technology-related programs.

"We have several programs that are unique across Nebraska. There is no place like this," said Sherri Harms, chair of Cyber Systems. She continued, "This move should help strengthen our programs." She noted that curriculum will be reviewed to eliminate redundancies and better serve students.

Bryan Kuntz, VP of operations for Intellicom, likes the direction UNK is heading to address the need for more tech workers. "I believe the new department combined with the new STEM building will help attract more students to these programs. I also believe that combining the programs and redefining curriculum will ultimately result in a student who is better prepared for the workforce." "UNK does a great job of combining classroom education with experiential learning opportunities and produces a well-rounded student who is prepared to jump into their first full-time job and really make an impact," he said.

Summarized from UNK news release, July 5, 2018 by T. Gottula.

FACULTY JOINING CYBER SYSTEMS DEPARTMENT

Dr. Vijay Agrawal, Professor of MIS, joined UNK in 2001. His research areas are MIS, operations management, and accounting. He received his B.S. in mechanical engineering from the University of Indore, MBA from the University of Toledo, and M.S. in computer science from Bowling Green State University. He received his Ph.D. from Jamia Millia Islamia (University of Millia Islamia), New Delhi, India. He has 26 years of experience in academia and 22 years in various industries/consulting organizations.

Dr. A. Ross Taylor, Associate Professor of MIS, joined UNK in 2002. His areas of research interest are computer-aided decision making, rural economic development, business intelligence, and social media. He worked in business analysis for a for 7 years before earning his Ph.D. from the University of Arkansas. He has 17 years of experience in academia and continues to be amazed at the rapid advancements in data analytics and the use of big data.

Dr. Angela Hollman, Asst. Professor of Information Networking and Telecommunications (INT), joined UNK in 2011, first as a Lecturer and then an Assistant Professor in 2014 within the Industrial Technology Department. She is a UNK 2001 alumni, and earned her PhD from the University of Nebraska –Lincoln. She was instrumental in the development of the new Cyber Security Operations major. She enjoys teaching and researching in the cyber security and networking fields. She also looks forward to the bittersweet day when raindrops will no longer fall on her head in the Otto Olsen lab and she moves with the Cyber Systems faculty to the new STEM building!

16TH ANNUAL UNK ROBOTICS COMPETION & MIDWEST REGIONAL ROBOTICS COMPETITION

MICS Robotics Winning Team: Kyle Glandt, Jared Graham, Stephanie Slayden

The UNK CSIT Artificial Intelligence class held the 16th annual robotics competition and competed at the regional Midwest Instructional Computing Symposium (MICS) competition in Duluth, MN in April 2018. Student teams designed, built, and programmed robots to autonomously play capture the flag. The robots had to avoid obstacles along the way. Jared, Kyle, and Stephanie (Team Mr. Noodle) won the MICS competition. The teams shown below also competed in these events. Matt, Preston, and Forrest (Team Helen) won the local competition; and Christian and Alex (Team Mr. Bill) placed third at both the MICS and local competitions. Congratulations to all!

Matt Brunkhorst, Preston Power, Forrest King

Alex Hinkle & Christian Schlief

Scott Bagnell, Evan Folk, Sydney Stadler

CYBERSECURITY TEAM WINS REGIONAL, BUILDS REPUTATION AS TOP TRAINING GROUND FOR HACKING EXPERTS

Back row: Kolten Harshbarger, Angel Yuman, Trenton Chramosta, Jadon Smith. Front Row: Angel Ruiz, Chelsie MacKay, Dr. Angela Hollman, Kolten Morse.

UNK continues to build its reputation as one of the top training grounds for cyber security experts. UNK's Cybersecurity Team took top honors at the 2018 North Central Collegiate Cyber Defense Competition in Madison, South Dakota, placing first in the technical and business categories. UNK outperformed teams from 12 other colleges across the region

The "defensive hacking" event combined real-world hackers with student teams.

"Students acted as a company's IT team trying to fight off the hackers while answering emails and phone calls from their fellow employees," said Angela Hollman, Cyber Systems assistant professor, and team coach and adviser.

This year's scenario was "General Hospital." Students were instructed to keep hackers out of the patient records system, web portal and a variety of other devices such as heart monitors, which were checked every 20 minutes for functionality.

"While this was just a scenario, it does shine a light on a larger issue for health care organizations right now, which are experiencing down time due to hacking attempts such as ransomware and other scary vulnerabilities in which a hacker can remotely control functionality of actual heart monitors and pace makers," said Hollman.

UNK competed as an exhibition team at regionals. The team has a history of high finishes at regionals, winning its first-ever competition in 2015 and followed with a fifth-place finish in 2017.

Summarized from UNK news release, March 30, 2018 by T. Gottula.

2017-2018 HONOR STUDENTS

Kolten Harshbarger, Sujan Shrestha, Stephanie Slayden

Cyber Systems honored several students this year.

Kolten Harshbarger graduated with a degree in Information Technology with an emphasis in system administration and minor in Information Networking and Telecommunications (INT). He accepted a position with Five Nines in Omaha. Harshbarger was active in the Cyber Security Club, serving as president for one year, and as a student worker providing IT support for the College of Natural and Social Sciences, taking a lead administrator role his junior year. Kolten also received the UNK Alumni Association Outstanding Senior award.

Sujan Shrestha graduated Summa Cum Laude with a CS Comprehensive major. He competed at 2016 MICS robotics competition and presented research at MICS in 2018. Sujan works at Buckle as a developer.

Stephanie Slayden graduated with a double major in Comprehensive Computer Science and Mathematics. She taught the CSIT 130 labs as well as tutored for both Computer Science and Math. She represented UNK at MICS 2018 robotics competition as a member of the winning team. Stephanie is pursuing her Ph.D. in Computer Science at Kansas State University.

Jadon Smith graduated with a INT major. He was an active member of the Cyber Security Club and on the competition team 3 years. He was a lot of fun to be around and was always willing to help out in the lab. His piece of advice to incoming students is to get involved however you can because the network you will create is invaluable.

Tyler Cretacci was selected as the INT Outstanding Junior, and received the INT Junior scholarship.

Soren Brunken was selected as the MIS Outstanding graduate.

2017-2018 Cyber Systems Capstone Projects


Bryan Escobar and Armando Perez created a virtualized CISCO network with two Windows 2016 virtual servers, for the print services and for DHCP, DNS, and related services. They also explored a wireless setup with two different privileged networks that authenticated back to a RADIUS server.

Jay Chaudhari and Sujan Shrestha created an android app to track the technical inventory for the UNK College of Education, using Android Studio, Java, and MySQL, with a focus on ease of use inventory management.


Stephanie Slayden measured parallel computation progress by generating random Latin Squares, and implementing a CUDA program with events in C.

Miquel Verdugo created an iOS social media app in Swift, with a focus on ease of use and fun for the users. He plans to continue the project through to deployment on the app store.

Jerod Stutzman, Nate Hunzeker and Jose Mendez experimented with using their own hardware to setup Type I virtualized environments using VMWare's ESXi and Type II using Workstation. Matt Huffman and Harry Wahlgren created a virtual setup with a VPN with RADIUS authentication and a virtual server environment using VMWare at the core and Guacamole.


Nate Hunzeker & Harry Wahlgren set up a VMware ESXi Hypervisor virtualized server environment, with Linux Centos, SpaceWalk, Cacti, & Apache Guacamole.

Brandon Ripp created a Unity 3D game, using Blender to create unique assets. The goal of the game is to guide your friend home while avoiding the enemy, which has some AI characteristics.

Kolten Harshbarger created a Internet of Things Aquaponics sensor system using Raspberry Pi's to monitor air temperature, air humidity, sunlight, and sound levels.


Forrest King and Bryce Newton created a Virtual Reality concussion testing system. It tracks users' reaction times to look for possible symptoms of a concussion.

Chelsie MacKay created a curriculum to be used with middle schoolers and Ozobots (a small robot which introduced children to coding).

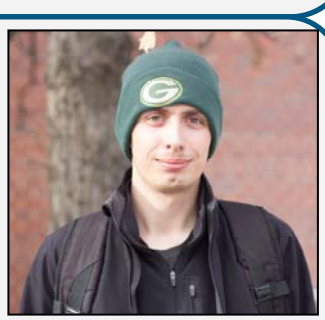
2017-2018 Capstone Projects (continued)

Will Jones created a 3D Java game engine scratch, to gain a deep understanding of ray casting and how game engines are created. Will also conducted research on social media use by central NE organizations, for UNK Student Research Day with funding from the Rural Futures Institute.

Sydney Stadler created a Web-based Camera Checkout system for the UNK Department of Communications, using Laravel and PhP.

Eduardo Salas created a web-based personal logging application that dynamically add entries and visuals data, with encryption.

Ian Albrecht created a Windows Server build and management system.



Josh Jacobsen created a stock market reporting app in Python, that receives updated stock information using the Google finance API and updates the user.

Grant Abel implemented a secure Ubuntu Linux virtual server to automatically deploy web servers, using Vagrant and Python scripts.

Thomas Cossey created tactical RPG game in Unity, with ray casting, physics, animations, and interaction with the environmental and NPCs.

Zayne Kinkade created a neural network system, to recognize individual cats and dogs.

Kyle Halsted created a 3D Unity game, with self-created graphics for the environment, using ray casts and a database backend.

Matt Luther created a Plex media server setup using a Raspberry Pi. Angel Yuman created a Magic Mirror with Alexa incorporated. Jason Schutt used a Raspberry Pi Zero to setup a PoisonTap device to illustrate different network hacking techniques. Leo Wilson experimented with a VoIP setup, researching three different vendors and exploring different setups. Kolten Harshbarger & Jadon Smith completed a complex VoIP setup with an array of virtualized servers with GPOs, DHCP, DNS.

2019 BUCKLE EXCELLENCE SCHOLARSHIP RECIPIENTS

Levi Finkral

Jacob Wayman

Zach Carattini

Levi Finkral of Norfolk, NE, received the $6000 **Buckle Excellence Scholarship** in 2018. He is the son of Rob and Heidi Finkral. Levi's interest in the UNK Computer Science program came from his love of tinkering with anything electronic, especially computers. He is pleased with "the small class sizes and passionate professors," as says "the student placement of almost 100% is very impressive."

Jacob Wayman and **Zach Carattini** were selected for the $3000 **Buckle Excellence Scholarships**. Jacob is the son of Troy and Barb Wayman, of Kearney. Zach is the son of Michael and Chris Carattini, of Chadron. Zach and Jacob both plan on careers in cyber security.

Brooke Scott of Trenton, NE, received the $3,000 sophomore-level **Buckle Scholarship**. She is the daughter of Beth and Craig Scott. She completed a Mancala game for her CSIT 150 course project, and a Color Crazy Android app for her CSIT 180 course project. The drawing can be discarded, saved to your phone, or shared to any social media platform through the app.

BUCKLE SCHOLARSHIP FINALISTS

The 2018 Buckle Scholarship Day was attended by eight finalists shown above, Jacob O'Grady, Tyler Hedman, Shalee Taylor, Levi Finkral, Jacob Wayman, Keenan Rhea, Michael Rahe, and Zach Carattini. In addition to interviews, the finalists met with several CSIT students to learn about their projects and coursework and ate lunch together with CSIT faculty and students.

CSIT FRIENDS AND ALUMNI SCHOLARSHIP IN HONOR OF DR. MARILYN JUSSEL

Trenton Chramosta of Lincoln received the **CSIT friends and alumni scholarship in honor of Marilyn Jussel**. His parents are Steve Chramosta UNK '88 and Janice (Paczosa) Chramosta UNK '88. Trenton, a sophomore CS Comprehensive major, was a member of the winning North Central Collegiate Cyber Defense Competition team and helped with Cyber Camp. His CSIT 180 project was a satirical app about capitalism, socialism, anarchism. Tax deductible contributions to this scholarship can be made at nufoundation.org.

UNK breaks ground on STEM building; Chancellor Kristensen: facility 'will change Nebraska'

Chancellor Doug Kristensen called it a perfect day for a perfect building as UNK broke ground on a $30 million, state-of-the-art facility that will bring science, technology, engineering and math (STEM) programs together.

UNK faculty, staff and supporters gathered at the public event to mark the ceremonial start of construction on the 80,000-square-foot building that will rise on UNK's west campus between West Center and Ockinga/Welch Hall.

The building, which will promote collaboration and innovation has been a "long time coming," Kristensen told the crowd gathered on campus on a gorgeous spring afternoon.

"Some of our best programs are in our worst building," Kristensen said, referencing the aging Otto Olsen building.

Kristensen said these programs will share more than a building, they'll also share ideas, projects and research that advance UNK's mission and benefit the entire state.

"I don't think I'm overstating it when I say this building will change Nebraska," he said.

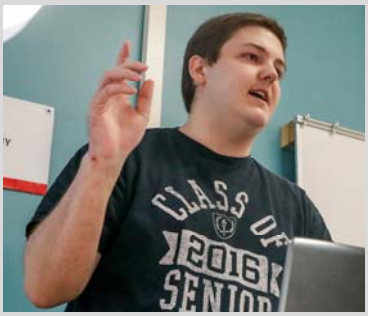
The chancellor said UNK is a driver of economic development and higher education in central and western Nebraska, and this project was developed with that in mind.

"The STEM building will feature "first-rate and cutting-edge" technology, according to Charlie Bicak, senior vice chancellor for academic and student affairs at UNK, who said the project represents a "remarkable collaboration" between the STEM-related colleges on campus.

Kristensen said, "If I was a student and trying to decide where I was going to go to school, I'd want to go somewhere that had high quality, and this STEM building is where it's going to be at," he said.

Summarized from UNK news release, May 9, 2017 by T. Ellyson.

Final projects all fun, games for UNK software engineering students



Many college students spend their free time parked in front of the television playing video games. Software engineering students at UNK take this hobby a step further. Several Computer Science majors designed their own video games for the course, proving some final projects can be all fun and games.

"I've always been a big fan of interactive software and games," said Jared Graham, a sophomore from Fort Collins, Colorado, who created "The Road to Nowhere" using the Unity game development platform.

His game, for computers and mobile devices, challenges users to navigate a vehicle along a busy two-lane road. The concept is simple – collect points by not crashing – but that's complicated by accelerating speeds that make swerving the heavy traffic increasingly difficult.

"Eventually it gets too fast to play," said Graham, who kept the game pretty basic by limiting the controls to a single screen tap to change lanes.

Graham spent more than 30 hours on the project and may make it available through the app store, but it needs some work first. The Blue and Gold Scholarship recipient enjoys the creative aspect of designing video games, but hasn't decided which direction he'd like his career to go.

UNK student Preston Power of Kearney discusses a fishing app he created. The app uses information from previous fishing trips to recommend lures for the current conditions.

Summarized from UNK news, May 8, 2018 by T. Ellyson. Photos by Corbey R Dorsey, UNK Communications.

Camps & Outreach

Campers & Councilors at the Cyber Security Camp in June 2018

In June, CS held a third annual cyber security camp for middle and high school students, organized by Dr. Miller. The campers learned cyber security, App Inventor, Linux, robotics, servers, programming, , and more. They all received Raspberry Pi's.

In July, Dr. Hollman led and Dr. Miller assisted with a summer camp in Vernal, Utah for middle school girls to teach them about cybersecurity and STEM. The camp consisted of 30 girls and seven teachers.

"*I have* never *been in a technical camp environment where so many girls were doing hard technical activities with a smile on their faces. The delight when they got something to work just made my entire summer!*" - Angela Hollman, Ph.D.

CS faculty and students, along with Kearney-area IT professionals held CoderDojos again this year. We meet the third Monday evening in September, October, November, February, March and April. Kids ages 8 and up are welcome.

Advisory Councils

The CSIT Advisory Council met April 13, 2018 with Brad Green Newton, Assoc. Director Recruiting/ Enrollment; with UNK; and with Senator John Lowe to discuss support for UNK/Stem Programs. They also met with CSIT students to discuss recruiting ideas, and to hear about class projects.

CSIT Advisory Council members are: Rob Harbols, Buckle; Scott Weitzel, Sheridan Ross; Ali Oran, Farm Credit Services, Matt Dwyer, chair UNL CSE; Kevin Woolley, PGE; Jay Powell, MathWorks; and students Will Jones and Angel Ruiz.

The INT Advisory Council meet February 7, 2018. Members are: Jon Elliott & Zac Deeds, Intellicom; Shayne Zwiener, Frontier; Bob Krier, NCTC; Cullen Robbins, NPSC; Adam Haeder, Google; Ron Cone, ESU10; Matt Schneel NPPD; Tom Wenzke, KRMC, and student Jerod Paup.

Friend of the Department

Pete Evans, 2002 alum, Douglas-Omaha Technology Commission received 2018 CSIT Friend of the Department awards for service on the Council from 2009 through 2017. He also has hosted annual alumni events in Omaha for the past four years. Thank you Pete for your commitment to UNK!

CYBER SYSTEMS SCHOLARLY PRESENTATIONS AND PUBLICATONS 2017-2018

Agrawal, V.K., **Agrawal, V.K**, Seshadri, S., **Taylor, R.** 2017. Trends in IT Human Resources and End-users Involved in IT Application, *Journal of International Technology and Information Management (JITM)*, Vol. 26, Issue 4, pp. 153-188.

Agrawal, V.K., **Agrawal, V.K**. Nov 2017. Requirements of Off-the-Shelf Software: A Comparison, *Proceedings of* Annual 2017 National Decision Sciences Institute Meeting in Washington, DC.

Barry, N., **Hollman, A.** & Porter, D. 2017. Math skills that don't add up: A comparison between eighth grade and college students. *The Professional Constructor, 42* (1), 33-48.

Bice, M., Bickford, N., Meyer, D., **Hollman, A.**, Bickford, S. & Ringenberg, J. Sept. 2017. Aquaponics: An innovative model to teach science and technology. *UNK Community Early Childhood Conference. Kearney, NE.*

Chaudhari, J., Shrestha, S., Ceridorio, I., **Hastings, J.** April 2018. Water Conservation through Education App, MICS, Duluth, MN.

Forrest, K. D., **Miller, M. J**., Fritson, D. Apr. 2018. Effects of College Student Gender, Employment, and Personality on Online Consumerism, Rocky Mountain Psychological Association, Denver, CO.

Harms, S. K. Oct 2017. Making a Difference with Tech: Careers in the Future, *Hispanic/Latino Summit*, Kearney, NE.

Harms, S. K. Oct 2017. CS Principles on the Prairie: Preparing Teachers to Teach CS, NE Fall Ed Tech Conf, NDE, Kearney, NE.

Harper, S., **Harms, S.K**. Apr. 2018. Recycle Findr: Locate Nearby Recycling Bin (Poster), CCSC: Central Plains, Maryville, MO.

Hollman, A., Bickford, S. & Hollman, T. 2017. Cyber InSecurity: A post-mortem attempt to assess cyber problems from IT and business management perspectives. *Journal of Cases on Information Technology (JCIT), 19*(3), 42-70.

Hollman, A., Torquati, J., Bickford, N., Bickford, S. & Bice, M. June 2017. Growing food and knowledge in the Arctic: combining biological processes with Internet of Things. *Inter. Congress of Arctic Social Science (ICASS) IX, Umeå, Sweden.*

Miller, M. J. 2017. Reverse Engineering: Basics. In M. Sienicka, M. Strzelec, A. Kondzierska (Ed.), *Reverse Engineering and Password Breaking* (10th ed., vol. 12, pp. 11). Hakin9 II Security Magazine.

Miller, M. J. Oct 2017. Reverse Engineering Challenges, DerbyCon, Louisville, KY.

Miller, M. J. Jan 2018. How to investigate an Network Investigative Technique, CAE Tech Talks, Online.

2017-2018 GRADUATES

Spring/Summer 2018 CSIT Graduation Reception. Back row: Rob Harbols, Buckle CIO/CSIT Advisory Council Representative, Kolten Harshbarger, Forrest King, Will Jones, Matt Miller, Jay Chaudhari. Front row: Stephanie Slayden, Nate Hunzeker, Sherri Harms, Shahram Alavi, Sujan Shrestha, Eduardo Salas

Fall 2017 CSIT Graduation Reception. Back row: Ian Albrecht, Josh Jacobsen, Josh Wilson, John Hastings. Front row: Sherri Harms, Shahram Alavi

FALL 2017

Grant Abel	IT, INT minor
Ian Albrecht	IT
Travis Anderson	Applied Computer Science (CS)
Haley Baxter	INT major
Soren Brunken	MIS
Thomas Cossey	Applied CS
AJ Hurtado	MIS
Joshua Jacobsen	Applied CS
Miquel Verdugo Jr	Applied CS/Political Science
Joshua Wilson	CS Comprehensive/ Physics

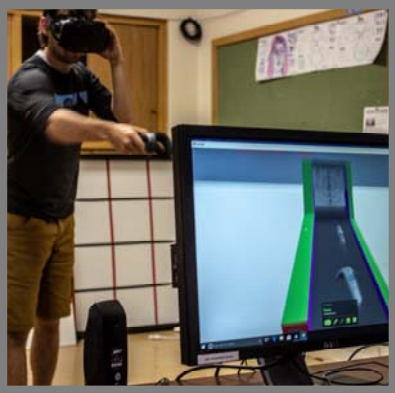
SPRING 2018

Latrice Bond	MIS
Jay Chaudhari	Applied CS
Evan Folk	Physics/Math, CS Minor
Samuel Harper	Multimedia/ VCD, IT minor
Kolten Harshbarger	IT, INT minor
Nate Hunzeker	IT,INT/Music Minors
Will Jones	Applied CS
Forrest King	Applied CS
Matthew Luther	INT
Chelsie MacKay	INT
Sam Middleton	Applied CS
Bryce Newton	Applied CS
Jason Schutt	INT
Sujan Shrestha	CS Comprehensive
Stephanie Slayden	CS Comprehensive, Math Comp
Jadon Smith	INT
Sydney Stadler	Multimedia/IT
Harry Wahlgren	IT, INT Minor

Graduates Travis Anderson, Sam Harper, AJ Hurtado, Matt Luther, Jason Schutt and Leo Wilson. Other graduates appear elsewhere in the newsletter; missing: Latrice Bond and Soren Brunken.

Summer 2018

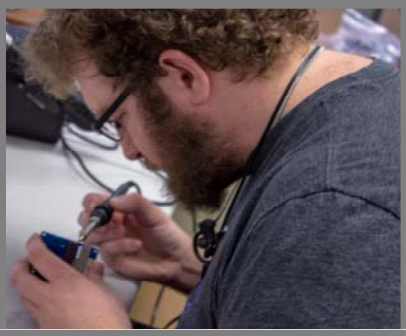
Bryan Escobar	INT
Leo Wilson	IT



Forrest King testing Jared Graham's skee-ball game

Sujan Shrestha & Jay Chaudhari present their research at MICS conference

Zayne Kinkade, Forrest King, and Stephanie Slayden solve their chalk Finite Automata



Zayne Kinkade is modifying Raspberry Pis for ongoing research projects

Sam Middleton teaching a Cyber Camp student how to use VR

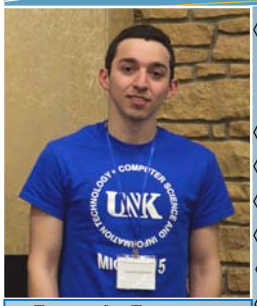
Jon Marvin demoing his VR system to a visitor at the Xpanxion open house for the new Xpanxion facilities

Justin Joyce won a quadcopter for placing 2nd at the MICS 2018 Gaming competition.

Emma Reichle, Preston Power, Justin Joyce, Jay Chaudhari, Dr. Harms, Sujan Shrestha, & Connor Schlautman at Lake Superior for the MICS conference

2017-18 ACTIVITIES

In The News & Around the World



Gerardo Quintero

◊ **Gerardo Quintero** (left), **Applied Computer Science** senior spent a year studying in South Korea and Japan, to complete his Japanese minor program. He says, "I think most difficult thing about studying abroad is deciding to do it."

◊ Silicon Prairie: bringing new tech jobs to Nebraska's next generation, J Stevenson, *Nebraska TV,* 6/13/18

◊ UNK's Kearney Bound program lands Bryan Escobar IT job in cattle industry, T Gottula, *UNK News,* 4/13/18

◊ Wanna fight hackers? Cybersecurity a new major at UNK, K Schmidt, *Kearney Hub* 8/7/18

◊ UNK streamlines many tech-based degrees, K Dickeson, *Local 4 News* 7/11/18

◊ Young NE Scientists program encourages STEM learning NTV, 4/3/18

◊ Level Up on Gaming, pages 10-11, Kearney Hub, UNK Today, 8/18/18

◊ Forget California retiring professor Ron Tuttle found home at UNK

Ron Tuttle thought he wanted to teach in California, then he arrived in Kearney in 1974. More than four decades later, he retired from UNK after a "great career" that included 14 years as a department chair and countless hours in the classroom. "I kind of liked this place. The people were honest and straightforward. It felt like home," said Tuttle. T. Ellyson, *UNK News, 4/24/2018*

Dr. Ron Tuttle

ALUMNI GATHERING

On August 8, 2018, Cyber System alumni and faculty gathered in Omaha to network and learn about the new department, programs, and building. Back row: Oli Avande, Nate Coleman, Tyler Neal, Jeremy Siung, Pete Evans, Natalie Hanisch, Scott Klausen, Harry Ngondo. Front row: Tom Mezger, Steve Chramosta, Sherri Harms, Shahram Alavi, Brian Britten.

WAYS TO SUPPORT CYBER SYSTEMS

- Help endow the *Kenny Sogar Scholarship* for IT students
- Enable research projects through the *Cyber Systems Fund*
- See the University of Nebraska Foundation website for more information: *nufoundation.org*

STAY IN TOUCH WITH CYBER SYSTEMS

- **Join the exclusive "UNK Cyber Systems Alumni" LinkedIn Group:** Post discussions and job announcements. Connect with other alums. All members are verified graduates of KSC/UNK.
- **Give a presentation on-campus**: Students need to hear from successful alumni. Sharing your story can make a difference.
- **Hire Cyber System interns or new employees:** Inform Dr. Harms of your hiring needs and she will post it on the UNK job website and send an announcement to current students.
- **Attend the Fall and/or Spring Career Fairs to meet students:** Sign up to represent your company at the career fair.
- **Share your success story in a video clip:** Inform Dr. Harms if you are willing to be featured in a video of Cyber System alums.
- **Like the "UNK Cyber Systems" Facebook group**
- **Check out the Cyber Systems website cs.unk.edu**
- **Complete the alumni survey** available at **goo.gl/vTLGUD** with a password of "golopers". We are interested in hearing about the events in your life and any change of address.

This newsletter is produced and distributed by the Cyber Systems Department at UNK. Please report any errors to the department. Dr. Sherri Harms wrote and Carol Koch edited the newsletter. The front cover features the Cyber Systems May 2018 graduates with Dr. Matt Miller at the top, and Dr. Harms and female students at the MINK Women in Computing event. Above left, INT graduate Jayden Smith is shown working on a network.