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# Nebraska Broadband

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## Gallup Builds IT Talent Pipeline

By Anne Byers, Nebraska Information Technology Commission

Gallup, like many other businesses in Nebraska, was faced with a huge labor shortage of software developers. Jim Collison, Director of Talent Sourcing for Gallup, found that he could find international students with coding skills, but that the undergrad students they were getting didn't have enough code experience to plug right into the enterprise.

Gallup's solution? Recruit local Omaha area high school students to come to Gallup's Riverfront campus and start teaching them how to code. Gallup's plan called for students to attend learning sessions for six Saturdays in the fall, six Saturdays in the spring and a winter coding team project—a total of over 40 hours of learning.

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—Jim Collison  
Director of Talent Sourcing, Gallup

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“Something changes when they come into the enterprise, and they see real people doing real jobs and real things” said Collison. “It plants the seed of hope. It totally changes the equation. I cannot believe how important that is.”

Participants work to develop project ideas, pitch their ideas, and vote on their favorite projects. “Over the winter they will work together as teams to really develop these products,” said Collison. “This is our fourth year of doing this, and we have seen some amazing work.”

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This year's program has been focusing on Javascript. "We have also seen that a lot of our kids are ready for Java or C#, so we are starting to develop some programs to get them coding in those object-oriented languages as well," explained Collison.

At the end of the program, participants get a chance to interview for a six-week paid summer internship with Gallup.

The program has grown every year. This year nine returning and approximately 30 new students started the program. With some attrition after the fall semester, 35 students will be competing for 15 slots.

"It sounds expensive, but it isn't," said Collison. "It costs roughly \$2,500 per kid per year including the internship."

Returning college interns act as instructors and mentors for the high school participants.

"We have interns training interns," said Collison. "I have my college interns training my high school interns, so that takes the pressure off of the enterprise's full-time staff. And it is a great learning experience for these college students. Then they model to the high school students, and as the kids get older we'll pull some of those out to be the teachers. And it is this self-perpetuating talent machine."

The use of internships and mentors are two factors that help make the program successful. Collison points to the results of the Gallup-Purdue Index Report which found that students with internships and/or mentors were more satisfied with their college experience. Leveraging partnerships with UNO, UNL, AIM, Interface and other organizations has also been critical to the program's success.

Because it is the only program of its type in Omaha, Gallup is attracting the best and the brightest. Some of the participants are getting poached by Google and Microsoft. Keeping participants in Nebraska is also proving to be a challenge with many of the program's graduating high school seniors enrolling in universities out of state.

Gallup is exploring how to best encourage greater diversity in GET HIP participants. This year, the program recruited six African American girls from King Science magnet. The Urban League of Omaha provided transportation for this pilot program.

"We learned a lot about what we can and can't do," said Collison. "The kids were not really ready, so we are going

back to the drawing board with some new ideas."

UNO has a program where current UNO students go to four junior highs in Omaha and work with the students. "We are looking at recruiting students who have completed these programs," said Collison. "We need to make sure that the kids want to be in the program."

Collison challenges other businesses to engage in building the IT workforce pipeline. "Long-term, I want to scale this out," said Collison. "You guys can do this too and give me some competition—really train the next generation of software developers. Jump in and help us get this done."

Can a program like GET HIP be scaled down to smaller communities? Clubs and youth programs, like Girls Who Code or 4-H Robotics program, may offer a model for smaller communities to encourage students to learn coding. "The key is to get local businesses involved," said Collison.

## IT Degree Completions Increase

The need for more IT workers is an issue for many employers in Nebraska. Recent figures on IT degree completions from the National Center for Education indicate the number of IT degree completions is trending upward. Between 2011 and 2015 the total number of IT graduates in Nebraska increased 18%. The percent of female with IT completions in IT is has also increased slightly to 20.5%.

IT Degree Completions in Nebraska				
	Female	Male	TOTAL	% Female
2011	168	715	883	19.02%
2012	178	759	937	18.99%
2013	187	821	1008	18.55%
2014	212	894	1106	19.17%
2015	214	828	1042	20.54%

*Compiled by the Nebraska Department of Economic Development from data from the National Center for Education Statistics*

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## Broadband and Homework: How Do We Address the Homework Gap?

By Tom Rolfes and Anne Byers, Nebraska Information Technology Commission

K-12 education and postsecondary education resources are becoming increasingly digital and web-based. Learning management systems, student information systems, and content management systems all require students, parents, teachers, and administrators to have convenient access to the Internet at ample speeds to download, upload, view, and interact with content, learning activities, grades, formative assessments, and records. Never before in the history of the Internet has it been more necessary for all students to have 24/7 access using an Internet-connected computer or tablet with viewable screen and keyboard.

Students who have difficulty completing homework be-

cause they do not have reliable home Internet face what has been termed a “homework gap.”

Just how many students in Nebraska fall into the homework gap? A 2014 survey of Nebraskans found that 95% of persons with children in their household have broadband service. With over 350,000 K-12 students enrolled in Nebraska schools, the homework gap may affect over 17,500 students.

There are a number of strategies and technologies that can be used to address the homework divide:

**Entry Level Internet Service.** Most Internet Service Providers offer an option for an entry level subscription Internet service known by such terms as Basic, Standard or DSL Lite. With lower bandwidth and a lower monthly cost, it may

## Lincoln Public Schools Hotspot Lending Program Expands Home Access

By Anne Byers, Nebraska Information Technology Commission

Lincoln Public Schools (LPS) Board of Education is addressing the need for expanded evening access to the internet for students through a pilot Wi-Fi hotspot lending program at Southeast High School. The program will soon expand to Northeast High School.

“I’m glad that LPS thought ahead about students who don’t have home access,” said Jean Hellwege, school librarian at Southeast High School.

Fifty devices are available for student checkout. When a teacher or counselor notices a student doesn’t have home Internet access, they tell the student about the program. Students then fill out a form from their counselor. Once approved by the principal, a responsible use agreement is sent home with the student for parents to sign. Students can then check out a hotspot from the school media center.

Mary Reiman, director of library media services at LPS, explained that “relationship building is a key” to identifying students who need additional access to the Internet.

LPS evaluated hot spot devices, looking for a product that offered device management and smart filters. Only District Chromebooks can use the hotspot. Multiple computers can

connect to one device so siblings or groups of students can also use the same hotspot. The devices provide the same filtering as LPS web filtering.

Seventeen of the devices are currently checked out.

The program is a collaboration of the Board of Education, Library Media Services, Computing Services and Business Affairs and was spearheaded by Kirk Langer, chief technology officer; Mary Reiman, the director of library media services; Dr. Jane Stavem, associate superintendent for instruction; Dr. Liz Standish, associate superintendent for business affairs; Tim Hahn, education technology specialist; Brent Toalson, principal of Southeast High School; and Jean Hellwege, school librarian at Southeast High School.

What advice would Hellwege give to another school about starting a similar program?

“Meet and plan how to identify the students who need them and how to get the devices into their hands,” said Hellwege. “For us, the media center was the logical place.”

For more information, contact Jean Hellwege, Southeast High School, (402) 436-1304, [jhellwe@lps.org](mailto:jhellwe@lps.org) or Mary Reiman, Lincoln Public Schools, (402) 436-1627, [mreiman@lps.org](mailto:mreiman@lps.org).

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provide a suitable alternative for households where only one or two computers or smartphones are connected at one time. However, like the higher bandwidth plans, providers will prefer (usually not require) that the customer sign a contract for at least 12-24 months, and also provide access to a checking, savings, or credit card account for automatic withdrawal every month. These last two items (i.e. lengthy contracts and automatic withdrawal) often inhibit participation from mobile families. Charter Communications recently launched a low-cost broadband service for qualified seniors and families for \$14.99 per month. Spectrum Internet Assist provides 30 Mbps down by 4 Mbps up and does not require a contract. In-home Wi-Fi through Charter can be added for an additional \$5 per month.

Support for broadband service for low-income individuals may also be available from the federal universal service fund. On April 27, 2016, the FCC released an order allowing qualifying low-income consumers to apply \$9.25 per month support to stand-alone mobile or fixed broadband service as well as bundled voice and data service.

*Never before in the history of the Internet has it been more necessary for all students to have 24/7 access using an Internet-connected computer or tablet with viewable screen and keyboard.*

The Nebraska Public Service Commission is also taking steps to expand the state universal service lifeline program to include broadband by initiating a broadband adoption pilot program and funding projects in 2015 and 2016.

One of the projects funded in 2016 provides an example of a school district working with a telecommunications provider to address the homework divide. With funding from a Broadband Adoption Grant from the Nebraska Public Service Commission, Allo and Lincoln Public Schools (LPS) are assisting low-income, high-need families with obtaining affordable access to broadband services in their homes, which will further allow LPS students to increase their educational and employment opportunities. The proposed project will initially target children currently attending LPS whose family income qualifies them for the Federal Free

Lunch Program and who will have received or will receive digital hardware from LPS ("Qualified Subscriber") as part of LPS's current initiative to provide digital technology to all children attending LPS in the coming years. Qualified Subscribers will be able to access the new Allo service on a month-to-month basis without a contract, on a prepaid basis. Allo is targeting the new service to cost between \$10 to \$15 per month with a 20x20 Mbps speed. The Commission approved funding up to \$150,000 for the implementation of the proposed project.

**Public Wi-Fi Centers.** One interim strategy to achieving more accessible Internet for economically challenged students is to open up free Internet access points at public or private locations such as:

- School buildings
- Library buildings
- Municipal recreation centers
- Churches
- Cultural centers
- Restaurants and coffee shops

Omaha Public Schools and Cox are taking an innovative approach to addressing the homework divide. Cox, in partnership with Omaha Public Schools (OPS), will bring broadband service to low-income students and families in Omaha by modifying a bus to create a Wi-Fi enabled vehicle offering free broadband connectivity and devices to neighborhoods in north Omaha. Cox plans to target students in the Wakonda and Kennedy Elementary School districts in the Omaha Public Schools system. The Wakonda and Kennedy students reside in some of the lowest-income neighborhoods in Nebraska and thus access to broadband in students' homes is more unlikely. OPS will provide learning opportunities for students on the bus and will schedule after school activities using Common Sense Media for students and their parents. The project is being funded with up to \$114,218 in support from the Nebraska Public Service Commission's Broadband Adoption program.

**Check-out of Portable Wi-Fi Hotspots.** Growing in popularity is a cellular-based appliance or antenna known as a hotspot that can be borrowed or purchased and permits one or more laptops or tablets to connect to the Internet using a cellular service or data plan. Increasingly, schools

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## Norfolk Public Library Lends Hotspots, Starts Community Discussions

*By Jessica Chamberlain, Director of the Norfolk Public Library*

The Norfolk Public Library started loaning out Wi-Fi Hotspots in August 2016. This new program is a response to how people are accessing information, but is also a response to the Nebraska Broadband Study. This study, conducted in 2014, showed that 72% of households in the northeast region of the state had broadband access at home at that time. Unfortunately, this is the same percentage that was shown for 2010, so no growth in at-home broadband access had occurred during that time frame. In addition, the northeast region of the state had the lowest percentage of households with broadband access in the state.

Providing access to information is a central purpose for most libraries, including ours. As the way people access information has changed, we have changed as well. It began with access to computers and the internet in the library and is now transitioning to providing broadband access for mobile devices. While many mobile devices can access the internet through a data plan, those plans are cost-prohibitive for many. We often see people in the library who have their own mobile device, but need access to broadband Wi-Fi. Although we are glad to be able to provide free broadband Wi-Fi for everyone in our building, and average around 110 Wi-Fi sessions per day, we understand that this does not meet everyone's needs. The library can only be open a certain number of hours a week, and for those with limited transportation options, it may be difficult to get to the library no matter when it would be open.

Lending Wi-Fi hotspots is a way to attempt to fill this gap. It gets broadband access into people's homes so they can access the information they need when they need it. Each hotspot can connect up to 15 devices to the internet at one time. Albeit, this program only grants temporary broadband access. In our particular lending program, patrons can borrow a hotspot for three weeks at a time. As soon as the hotspot is returned, they can put their name back on the waiting list to check one out again. Although we started this program with just four hotspots, we quickly increased that to 10 due to the demand for the program. Even with 10 hotspots, we consistently have around 30 people on the waiting list. While we are not currently able to keep up with the demand for this program, it is still providing significant benefits to our community.

In addition to the obvious benefit of increasing the availability of broadband internet access in people's homes, another benefit has been that we've been able to start new conversations about the need for broadband access in our community. Sometimes those conversations start with an explanation of why broadband access is so important for finding government and tax information, answers to health questions, educational research, and communication. More and more, we are finding that those conversations quickly move from explaining why people need it to how we can make it better. Our Wi-Fi lending program is doing just that: Improving broadband access in our corner of the state.

and libraries have begun pilot programs making these devices available for check out via their student library credentials. Most cellular smartphones can double as Wi-Fi hotspots. The Norfolk Public Library and Southeast High School in Lincoln have Wi-Fi hotspot lending programs.

**Educational Broadband Service (EBS).** EBS, formerly known as the Instructional Television Fixed Service (ITFS), is an educational service that has generally been used for the transmission of instructional material to accredited educational institutions and non-educational institutions such

as hospitals, nursing homes, training centers, and rehabilitation centers using high-powered systems. The FCC's recent revamping of the EBS spectrum will now make it possible for EBS licensees to continue their instructional services utilizing low-power broadband systems while also providing students with high-speed internet access with a radius of up to 35 miles. Nebraska educational entities had 32 active EBS licenses at the time of this writing. (FCC 47 C.F.R., Part 27)

**TV White Space (TVWS) Internet.** The use of TV White

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Space channels, portions of licensed UHF radio spectrum that licensees do not use, provides an opportunity to deliver ubiquitous broadband services. UHF radio frequencies are non-line-of sight (NLOS) and are able to penetrate trees and buildings. By positioning a base station and tower connected to a source of Internet, multiple channels are able to transmit Internet access omni-directionally with a radius of up to 10 miles. Each customer premise interacting with the base station must also have a UHF antenna, customer converter, and Wi-Fi router.

The Manhattan Public Library in Manhattan, KS has successfully installed White Space technology in two parks and a community center through the Gigabit Libraries Network TV White Space pilot project. Patrons can access the free WiFi at these locations using their library card number and password.

*For more information, contact Tom Rolfes, Education IT Manager, Nebraska Information Technology Commission, [tom.rolfes@nebraska.gov](mailto:tom.rolfes@nebraska.gov), 402-471-7969.*

## PSC Approves Funding for 11 Towers

*By Cullen Robbins, Nebraska Public Service Commission*

If you have ever traveled through the rural areas of Nebraska, you can probably relate to the problem of poor cellular phone coverage in some of these areas. On December 20, 2016, the Nebraska Public Service Commission (Commission) approved funding for the construction of up to 11 mobile wireless towers totaling \$4 million as part of the Nebraska Universal Service Fund (NUSF) Broadband Program. This program has been used to support wireless tower construction in rural areas of Nebraska since 2009. In the interceding period, the NUSF has funded the construction of over 145 towers in these rural areas of the state.

In February, 2016, the Commission opened the application window for the grant funding, with applications to the Commission due by March 31, 2016. Applications were received from three providers to build a total of 22 towers for 20 projects, and requested approximately \$8.4 million to complete the tower projects. To determine how the \$4 million in available funds would be allocated, the Commission utilized a

distribution methodology to prioritize which projects would receive funding. The Commission developed a methodology that aimed to provide tower support in areas that were high-cost, i.e. rural, and in areas that, absent NUSF support, are least likely to provide sufficient operating revenues to support tower construction or cell site placement. Applicants provided information regarding the location of the site and the coverage area that the project would serve. The Commission first used that information to determine if the project was covering a high-cost area. If so, then each project that covered a high-cost area was ranked according to how many households would be served, how much traffic would be served, and whether there were already towers in close proximity to the proposed location of the tower. To determine the number of households, 2010 US Census data was analyzed to find the number of households within each proposed service area. Those projects that had the potential to serve the most households were assigned a higher priority rank. Similarly, projects that served a higher amount of traffic, determined from traffic information provided by the Department of Roads, were given a higher priority. Finally, proximity from the proposed tower location to the nearest tower of the same technology (CDMA or GSM) was determined, and those towers farthest away from any other towers were assigned a higher priority. These three priority rankings were then used to determine the overall priority of each project with respect to the other projects. Funding was allocated to the projects starting with the highest priority projects and moving down the priority list until funding was exhausted.

For this round of grants, US Cellular was approved for up to \$2,486,525 to construct five towers at locations near Winnebago, Wallace, Kilgore, Wood Lake, and the Prairie Club. Pinpoint Wireless, d/b/a Blaze Wireless, was approved for up to \$597,530.26 to construct three towers at locations near Gothenburg, Jeffery Lake, and Farnam. N. E. Colorado Cellular, d/b/a Viaero Wireless, was approved for up to \$915,944.75 to construct three towers near Ruskin, Deshler, and Humboldt.

In approving these grant funds, the Commission requires the recipients to accommodate collocation and sharing of equipment with other wireless carriers, public safety agencies, and internet providers where technically feasible. The Commission also requires the recipients to permit roaming

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with other carriers, and to maintain Phase II wireless E911 capability, which allows the location of callers (as latitude and longitude coordinates) to be determined by emergency responders.

The Commission has been committed to providing support to unserved and underserved areas to close the broadband availability gap, and will continue to do so through the NUSF moving forward. This is just one of several programs administered under the NUSF that aims to ensure that all Nebraskans have access to quality telecommunications and information services at affordable and comparable rates. Find out more at: <http://psc.nebraska.gov>.

## Connect with the PSC on Social Media

The Nebraska Public Service Commission has a lot going on and wants you to know about it. With that said, the Nebraska Public Service Commission (PSC) is now utilizing social media to expand the way in which it provides information. “We are excited to be broadening our reach,” said Jeff Pursley, PSC Executive Director. “By establishing a social media presence we hope to not only reconnect with our current base, but engage a whole new audience.”

The Commission’s social media presence will be managed by its new Public Information Officer (PIO). Deb Collins, became the Commission’s first PIO in November, having served for the past 13-years as the PIO at the Nebraska State Patrol. “Getting the opportunity to tell the public about the important work being done at the PSC is what drew me to the position,” Collins said. “Raising the Commission’s profile through the use of social media is just one step in our efforts to get the word out.”

Complementing the Commission’s current [website](#), is a new [Facebook](#) page and two Twitter accounts, one focusing on the [Commission](#) and one with a focus on [Next Generation 911](#). “Next Generation 911 (NG911) is just one of the new and exciting projects the PSC has underway,” said Collins. “Social media will allow us to provide information and updates on NG911 to our stakeholders and citizens as the project progresses.”

In addition to information about the Commission and the services it provides, those who engage with the Commission on social media will be given an opportunity to learn about PSC staff through postings highlighting awards, com-

munity service, and Commission functions. The Commission will continue to provide media releases when applicable and looks to expand its social media presence in the future to include a YouTube channel. Connect with the Public Service Commission (PSC) on:

 <http://www.facebook.com/NEPSC/>

 [http://www.twitter.com/Neb\\_PSC](http://www.twitter.com/Neb_PSC)

 <http://www.twitter.com/NEPSCNG911>

## Omaha Joins TechHire Initiative

On Dec. 1, 2016, Opportunity@Work announced that Omaha has been selected as one of 20 TechHire communities dedicated to creating pathways for more Americans to access well-paying tech jobs and expanding local tech sectors in communities across the country. Omaha will be joining a national network of 71 TechHire communities in receiving support to spearhead efforts to help overlooked and underrepresented Americans start technology careers.

“Omaha is an excellent addition to the TechHire initiative. We have a strong business community to provide opportunities in tech careers including a growing, successful tech startup community,” said Mayor Jean Stothert. “My administration supports job and business growth through public-private partnerships, youth education programs, economic inclusion and financial support for community programs that enhance job training and employment. TechHire will be another resource to increase recruiting and training in this important career field.”

Omaha’s designation as a national TechHire Community was made possible due to the collaborative efforts of AIM Institute, Interface Web School, Omaha Code School and the Greater Omaha Chamber.

“For a quarter of a century, building thriving communities and changing lives through technology has been a passion of AIM,” said Dr. Kandace Miller, president and CEO of AIM Institute. “We are pleased to have the opportunity to collaborate with more organizations to grow, connect and inspire tech talent even more through the national TechHire movement.”

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“I have had the privilege of meeting so many ambitious, talented individuals who want to pursue careers in technology,” said Shonna Dorsey, managing director and co-founder of Interface Web School. “With the synergy of the organizations involved within the TechHire community, people in the Greater Omaha area will have expanded opportunities to start tech careers.”

“Greater Omaha’s tech sector is experiencing unprecedented expansion, and we are driving hard to cultivate the necessary tech talent to increase our IT workforce by 4,000 workers,” said David G. Brown, president and CEO of the Greater Omaha Chamber. “Ten Greater Omaha area employers have already joined us in our TechHire initiative, but we’re looking for more to help accelerate our tech talent efforts, strengthen our local economy and build up our region’s Silicon Prairie.”

All TechHire communities go through an intensive and competitive application process to demonstrate their level of commitment and readiness in expanding the technology sector. This TechHire designation shows that Omaha has the partners, employers, training providers, and the civil leadership support needed to implement and scale tech job opportunities for everyone.

## Bills Address eHealth and Broadband Issues

The Nebraska Legislature ([www.nebraskalegislature.gov](http://www.nebraskalegislature.gov)) convened on Jan. 4. Several bills have been introduced which address eHealth and broadband issues. Here is a list

of the bills the NITC Community and eHealth Councils are following:

Bill #	Primary Introducer	Description
<a href="#">LB61</a>	Kolterman	Adopt the Interstate Medical Licensure Compact
<a href="#">LB92</a>	Kolterman	Require health carriers to provide coverage for telehealth services
<a href="#">LB223</a>	Kuehn	Change provisions relating to prescription drug monitoring
<a href="#">LB282</a>	Riepe	Change telehealth provisions related to children’s behavioral health
<a href="#">LB389</a>	Friesen	Adopt the Small Wireless Facilities Act
<a href="#">LB410</a>	Smith	Change boundaries and number of public service commissioner districts and provide for the appointment and election of new commissioners as prescribed
<a href="#">LB523</a>	Walz	Change provisions relating to financial assistance from the Nebraska Internet Enhancement Fund
<a href="#">LB524</a>	Walz	Appropriate funds to supplement financial assistance from the Nebraska Internet Enhancement Fund
<a href="#">LB586</a>	Linehan	Change requirements for the prescription drug monitoring system

**Broadband Nebraska** is produced by the NITC Community Council in partnership with the Nebraska Broadband Initiative. To subscribe go to: <http://nitc.ne.gov/news/community/index.html>



The **Nebraska Information Technology Commission (NITC) Community Council** ([nitc.ne.gov](http://nitc.ne.gov)) promotes the adoption and utilization of broadband technologies in Nebraska and provides recommendations to the NITC.

**Twitter:** @NITCcommunity1

**Facebook:** <https://www.facebook.com/NITCcommunity/>



The **Nebraska Broadband Initiative** ([broadband.nebraska.gov](http://broadband.nebraska.gov)) promotes the adoption and utilization of broadband in Nebraska. Project partners include the Nebraska Public Service Commission, University of Nebraska-Lincoln, Nebraska Information Technology Commission, Nebraska Department of Economic Development, and AIM.