Mountain Air Radio Broadcast, April 6, 2021

Steve L: Well good morning once again. Lincoln County, welcome to Mountain Air where we have interesting conversations with interesting people each week. My name is Steve Lestarjette and I'm your host today and every week.

Thanks to KRUI Radio and our sponsor, ENMU-Ruidoso. Today we are talking to Stephen Miller, Director of ENMU-Ruidoso's premier Cybersecurity program - about new things percolating in the program that will provide opportunities for residents in Lincoln County. Perhaps few people know that our local community college here has one of the nation's best and most-acclaimed Cybersecurity programs and that our own Dr. Miller is considered perhaps the nation's top Cybersecurity educator. He is responsible for beginning the program here and for helping it become a Cybersecurity Center of Excellence, one of only a few such colleges in the nation attain that status. As designated by the Department of Homeland Security, the program is certified by the DHS and the National Security Agency.

So, welcome to the program Dr. Miller.

Stephen M: Thanks, Steve. It's great to be here again; look forward to sharing all of our exciting activities coming up and what's going on as well in Cybersecurity.

Steve L: Well thank you. It's always a pleasure to have you on the program; always get a lot of interest and a lot of calls, 'cause this is a big field and it's cutting edge. It's wonderful to know that the college here is playing such a big role in training Cybersecurity experts for the future. So, first of all, let's get started with talking about the program How is the program at ENMU-Ruidoso these days? How's the pandemic and the economy impacting the enrollment there?

Stephen M: Well, of course our programs are 100% online, so we were already in a great position to take on training for across the nation and we' basically have done that. Our enrollment for the... from 2020 to 2021 is up 39%. That's a huge number compared to most community colleges around the U.S., so...

Steve L: Did you say 39%?

Stephen M: We're up 39% in enrollment.

Steve L: Oh my - how wonderful.

Stephen M: So, we can attribute that to, I think, having our onli… our system online and it's been online since we piloted the program back in 2010. But we also have several grants that help provide a... for funds - primarily those funds to go scholarships but we also have other funds that will have even an indirect impact on the community as well as a direct impact on the college. An example might... that we have is we just received a National Science… National Security agency grant that is called the CAE Southwestern Region Grant and we are designated as the regional state coordinator for New Mexico and Oklahoma for Center of Academic Excelle... Institutions. What that means to our school is that we will be hosting Cyber competitions for institu... CAE institutions and students that are in New Mexico as well as in Oklahoma. So, that'll bring some people to the Ruidoso area; hopefully when things open up. We'll do it virtually to start with, then when we finish this pandemic and we get everybody well and going again, we'll have face-to-face competitions. We'll also be providing workshops in Cybersecurity for faculty members at those institutions. We'll also be helping to reach out to the institutions in New Mexico that are not CAE, but we... but want… would like to be a CAE – and we'll have workshops to help facilitate getting them onboard with the CAE program.

Steve L: You raised an interesting point real quick - let me just jump in here, Dr. Miller. Where do your students come from?

Stephen M: Okay, so we have students from all over the world, basically. Because of articulation agreements we have with some private schools, like EC Council University in Albuquerque, they primarily focus on international students in Cybersecurity. We have students in India, South Africa and in Nigeria, as one of the areas for international students. As far as our U.S.-based students, we have students from Hawaii all the way to the east coast and New York. So it's, it's varied in the number of people... since we're online it really makes no difference where you're located, as long as you have

internet access. We have military as well as Department of Defense contractors, and National Guard in our student population - part of that is DOD... Department of Defense grant where they actually recruit the students for us that are working for DOD or in the National Guard that want to move... transition from a... their traditional job into a cyber job. So that's part of our population right there.

We also just re... recently received another National Security Agency grant called the Workforce Development Cybersecurity Grant. That grant provides a... a stipend for veterans, or first responders or Native Americans to participate in a pilot that we have right now. Since we already had a certificate program, we were offered to join this grant, it's a 6-million-dollar grant, there's nine institutions involved in the grant, and the goal of the grant overall, is to establish Best Practices, a nationally-scalable and sustainable certificate-based program with verifiable credentials that we can place candidates into the... into the workforce and this particular grant is concentrated on the areas around the critical infrastructure in the financial services, the energy sector and also in the critical infrastructure defense industry.

So we have over sixty industry partners that have agreed to... to work with us and provide a... a guidance on the... on the curriculum so,... the nine institutions will take their pilot programs and then we'll try to see what's working and what's not working and then try to come up with a national certificate in year two; so year one is we're using what we have now with some additional input as it goes along in... and then there are some options that... in courses that run anywhere from Artificial Intelligence to Quantum Computing to Status Systems - which we... Control Systems you might say, Internet of Things-type systems. So, all of those different types of courses could be available in the future for our program, so this would be a national certified... certification.

The schools that make this up are Augusta University, Dakota State University, our institution, Florida International University, Western State, Metropolitan State University, San Antonio College, Texas at San Antonio and the lead program director is the University of West Florida - they're coordinating this entire grant, but it's going to really make a big difference for our students. They basically receive 6,000 dollars in stipends for this program, and then it takes two semesters.

The first semester, they take four courses and they end up with up to three industry certifications. And then in the fall semester, they'll take three courses, and will end up with as many as three industry certifications. Those certifications will be like an… a CompTIA A+ or Network+ or Security+, an Ethical Hacking Network+ or Ethical Hacking... the AC Council Disaster Recovery Certification.

We're also are... have... we're working with the New Mexico Workforce Development - those students will be taking Work Keys and they'll have... be accredited and have a certification and be work ready - that means they... they have the skills that it takes to be a good employee.

Steve L: So, you get paid to go to school and learn Cybersecurity.

Stephen M: That's correct.

Steve L: That's a wonderful thing. I heard you say veterans and first responders and Native Americans are eligible for this scholarship, is that correct?

Stephen M: That's correct.

Steve L: So, Dr. Miller, we got a... we got many of those in our area especially I'm thinking about the Native Americans that live in Mescalero area and all through Ruidoso, Ruidoso Downs - tell them, if any are listening, how they can get in touch with you about this particular scholarship program.

Stephen M: Well, they can go on our website. If they would go on the website and kind of scroll down, you'll see a link for the Cybersecurity Center of Excellence and they can click on that link and it'll take them to our Cybersecurity page; from that Cybersecurity Center of Excellence page, there's something that says 'New - CAE Cybersecurity Workforce Development Certificate Program and Scholarship'. If they click on that link, it'll give them the details of the scholarship; it'll talk about what the requirements are - you do have to be a U.S. citizen; you will have to maintain a grade point average; you have to have at least a high school diploma and a GED. And then it has the application process; it has my email address and my phone

number so they can contact me directly. And then we'll get them the paperwork to apply and then once we get the paperwork, we can work through and make sure they meet the requirements for the grant.

Steve L: So, they get paid for going to school and what kind of job can they expect coming out the other end, Dr. Miller?

Stephen M: Okay, so our program... that's a real good question... so our program really focuses on the National Initiative in Cyber Education Workforce work roles and in those work roles that we have they basically... each course kind of focuses in on the different requirements, the knowledge skills and abilities that a student needs to work in that work role, and... and basically it's set up into seven different categories, and the main categories that we actually teach to in our program is the Operate and Maintain; Protect and Defend... and then, there's some of the skills around Operations... Operate... or a Security Operations (inaudible).

So those are the kinds of areas that we really focus in on. The... If you look at in more detail, if you drill down on the… the work roles that we look at it's... would be under Operate and Maintain as the data... a Database Administrator, you could get a Data Analyst; a Knowledge Manager; a Technical Support Specialist - that could be a Help Tech... a Desk Technician; a Network Operator or Systems Administrator or Systems Security Analyst. So, a lot of times your title, your work role may not say cyber or security but that doesn't mean you're not going to be working and have to have the knowledge that we teach in Security - that would be like Database Administrator or a Technician, a specialist, or a Systems Administrator, because you're having to put in the security when you set up and develop as a Systems Administrator, for example - or a Network Operations Specialist, where you're setting up and monitoring the network.

The other areas around Protect and Defend, the other work roles there we teach Cyber Defense Analyst; Cyber Defense Infrastructure Support Specialist; a Cyber Defense Incident Responder and a Vulnerability Assessment Analyst. And then, out of the Cyber Operations area, the Collect and Operate is basically a Cyber Operator. And so, we basically go over all this in one of the courses,

we actually cover is Career Development Professionalism and the Cyber Ethics. So, they learn... you kind of need to know what you're going to be working in and so we try to bring that to the students so they understand that. We actually use Competency-Based Instructions and Competency-Based Assessments to make sure that the students are going to be able to really do the work when they… when they finish the program.

[Steve L] You know, these... these certificates and job titles that you've been talking about, Dr. Miller, sound very technical and the language, so, I'm always - I guess I'm just curious about the type of person that would be a good candidate for jobs like this. Just suppose I'm listening and I'm a young person - what kind of criteria... what kind of background, or aptitudes make a good candidate for these jobs and for the Workforce... I mean for the Cybersecurity Training Program?

[Stephen M] Ok, that's a good question; that's why we have the Work Keys Assessment and we're also, I told you this is a pilot, so one of things we're working with is IBM - IBM actually has an assessment tool that they use to help understand and... if you're a good fit for a cyber job, and so we're going to be using that along with the Work Keys and a lot of people don't realize that IBM has this program right now where they're actually hiring high school students to work in their cyber environment. So, this test will help us identify who is eligible for this (inaudible). So that's part of that application process.

But all you really need is the ability to think... have some good critical analysis ability; be able to work on your own as well as work with other people and have good communication skills - in other words, be able... don't be afraid to ask questions and work with a team. And, if you don't have those skills, we're going to develop those skills, so we have had several... we have a dual credit program, have to have a lot of math skills. We do have math, but it's not really critical that you have a lot of math skills. It depends - there's so many various jobs in Cyber that I would say that you need to... you need to contact me if you have any kind of interest and then we'll help assess whether you're a good fit or not. But don't just count yourself out because we've seen some very successful students that had no clue about IT or even computers and have turned out to be fantastic cyber professionals.

And as far as the jobs, okay - you mentioned the jobs and I forgot to mention a little bit about... you can go out to s... Google CyberSeek.org, it will show you the different jobs that are available in the workplace, and if you look at the... the last... if you just look in... at your metropolitan area, and so, in... in New Mexico, you can look and see what kind of job openings there are in that area, but I was looking at it just from Operate and Maintain - so, this is from last year - I did a snapshot you can go out on CyberSeek.org and get a real-time snapshot but there was 307 thousand jobs... openings right now in Operate and Maintain. So, that's our primary area - there's 155 thousand in Protect and Defend and so... and then in the Operations area there's somewhere around 300, but right now if you talk to... there's various numbers but right now, the federal government's saying there's like 1.2 million job openings in Cybersecurity. We just don't have enough trained professionals or technicians. So, it's a... that's why we have these grants to try to put more people into the work force.

[Steve L] What I'm hearing you say, too, it sounds like a tremendous opportunity for young people in this area, Dr. Miller, - you... you'll pay for our school if we... if we qualify, you'll help us get the training at a low cost or... or scholarshipped; and you'll... you'll test us to see if we have the aptitude, and you'll train us and then you'll help us find that job, one of 1.2 million jobs out there - you'll help us find the right job in the right area that fits us once we get out, so it's... you're taking us all the way through the program and helping us be... taking that step that transition into a new future - that's a wonderful opportunity, I think.

[Stephen M] And, I mentioned we have... we have a real robust industry partner network at ENMU-Ruidoso. In the Financial Services area, we have relationships with like Capital One, Deutsch Bank, the Federal Reserve Bank of Atlanta... we have U.S. Bank; we have, locally, and this is under Financial Services, the Inn of the Mountain Gods because they're kind of under that category, from our perspective. In Defense industry, we have Accenture Federal Services; we have Booz Allen - one of the things, I mention Booz Allen because one of the supporters of this grant is retired Admiral, Michael McConnell, who used to be the security advisor in the Bush administration, and

so, we have a lot of clout behind this grant and he has helped us secure a lot of these industry partners and government partners.

We also have several of the military bases like Fort Bliss, Holloman Air Force Base... we have General Dynamics; we have Harris Technologies; Raytheon; Sandia Labs; Northrop Gran... Grumman; White Sands; Nasa - so, just to name a... that's just in the industry... and just a few that I'm naming... in the energy and other partners, we have Florida Power and Light; Exxon Mobile; Gulf Power; Pattern Energy is doing some local energy for us here in the Lincoln County area with the wind. So, those are just a few. And then in the other industries, we have like black... Blackberry; IBM - so, those type of high tech organizations.

[Steve L] Great companies to work for. Awesome program.

[Stephen M] And we have local... I know that we've had support from like Region IX and NMMI and some of the local... the Inn of the Mountain Gods as I mentioned before, so we... we do have some local support in that area of hiring as well.

[Steve L] You and I were talking earlier Dr. Miller, about opportunities that are becoming available for small businesses - let's just say I'm a small business and I want to work with, or I have a product that I want to talk to the government about, can you help me make that connection?

[Stephen M] We definitely can - that's... that's real timely because we just recently through a National Science Foundation grant that ENMU-Ruidoso is a co-partner on this grant and it's through something called the National Cybersecurity Training and Education Center. So, we have been... as faculty, we have been given instruction on this new requirement from the Department of Defense, so if you're a small business or business, you have… have to, by the end of this year, have a level one certification... Cybersecurity Maturity Model Certification, so they call it... that's CMMC and what that is, it's set up to classify documentation. It's significant because the compromises of sensitive U.S. Defense information on vendor computers and networks have prompted these new rules from Congress so, over 300 thousand new and existing DOD contractors seeking contracts will

have to comply with this by the end of this year as far as level one. And the model is designed to protect our nation's supply chain from the DOD perspective and from cyber criminals and state-sponsored PACs. The requirement is... of this standard is set up to where there's five levels of maturity.

In this course, we're going to offer a community education course - it'll be all online, it's going to be like a Bootcamp. So, we're going... it'll probably be over a week to a week and a half, at... only have two-hour segments, so it will provide information on the... each level of the certification and how to... how to obtain those levels. It will also help small businesses if they want to perform their own self-assessment for those levels, but we also are going to be partnering with another cyber company out of Albuquerque that can help them with... actually providing consulting information if they need it, or consulting for meeting those requirements doing the risk assessments. So, we're actually in... incorporating this in our own Risk Assessment curriculum in our Associates and our certificate programs as well, but this one is mainly... this course is mainly for those small business that are going to contract with the DOD or already have contracts that have to meet this requirement. The cost is going to be around 250 dollars for the course. We're not trying to take any money on this course; what we're trying to do is the funds will go primarily to the Foundation for scholarships in Cybersecurity, so we're going to help the local community by... by sponsoring this and we're helping those small businesses obtain the information they need to meet the requirements of this CMMC certificate.

[Steve L] Wonderful to know and it's wonderful to know that the local college here can help me get prepared to do business with the government and can help assess my computer networks to make sure that they're safe and compliant to do that kind of... those kinds of transactions, That's wonderful. And again, if... if I'm that small business, and I need a question answered or how to get started, all I have to do is reach out to you personally, Dr. Miller?

[Stephen M] That's correct. They can just contact me... again, they can go to that Cybersecurity link on the main... on our main webpage and my contact information is on that page.

[Steve L] Wow. A lot of stuff to digest. We're almost out of time, but before we go, I want to give you some opportunity to brag sufficiently about the Cybersecurity program at the college and what you've been able to accomplish the last few years through your leadership. What are some of the key advantages local students have for getting their Cybersecurity training through ENMU-Ruidoso, Dr. Miller?

[Stephen M] Well, first of all, if you're interested in just getting a job, we have several, like I mentioned, we have a... a huge network of industry partners and government partners that we can provide students access to. Also, we have several articulation agreements with other four-year universities in New Mexico and then outside of New Mexico. In addition to that... those... those are...some of those are face-to-face, but if you're wanting to stay in the area, we have MOUs, or Memorandums of Understanding, with colleges that teach only online, so, for example, a lot of the military use a... Excelsior College as a... for their four-year degrees, so we have an articulation with them, so it's a two-plus-two. You get our Associates degree, you automatically just go right on into Excelsior to get your Bachelors degree. We also help work with you on that, so we have several students that have gone that pathway.

The other thing is that we do have... every one of our students gets some hand-on experience through the National Cyber League Competition. So, we have a competition… Last year, there were over 12,000 students participated in the NCL Competition.

[Steve L] Wow.

[Stephen M] We have had students in the top 5 percent in that competition. So, it's a... it gives them some real... it's basically... the competition is based on real world attacks and real world challenges that you... that you would see in the workplace and so, it helps measure your competency and you actually... they... students come out of there with a scouting report that they can share with industry partners whenever they try to... whenever they go in for an interview.

[Steve L] All those are great advantages and I know there's... there's one more at least. I know that ENM... ENMU-Ruidoso's tuition is probably as good or better than most colleges in the country.

[Stephen M] That's true. We are probably one of the most cost-effective solutions in Cyber education that... that you could find. The overall... also the... I guess the quality of our programs... everything is... we have QM or Quality Managed Certif... Certified courses, so they're really geared toward making it easier... as easy as possible when you're online. We actually have... in... in these grants, we actually have tutors that are part of the grant, to help tutor students that need that. And we offer that for all of our classes - you could sign up for that if... if you're in... if you're concerned about a certain area.

The other... I would say the other thing about our... our... is our labs. We have some of the best labs that are around. We're actually doing a pilot for the National Security Agency on the NICE, they call the NICE challenge - so, it's basically a simulator - it simulates real world attacks, and then the students have to apply what they've learned in those... in those attacks. So, ya - I think you can't hardly beat our program and you can talk to Lynn Clark at the NSA, and she... she even came to Ruidoso as a... as a guest for our Industry Night, so to bring those... this caliber of people... she's the Chief NSA Director for that organization, she is willing to come out to Ruidoso and enjoy... course, she said... she live... she was in the Air Force... she's retired Air Force so she was at Holloman and she was happy to come out to Ruidoso.

[Steve L] Fantastic. Well, there's a lot of great things going on out there at ENMU-Ruidoso. It's... I would say it's probably one of the best kept secrets around. That... that little college has one of the best programs in the country and it's all, in part, because of you, Dr. Miller, and because of your expertise and the way you've applied it and built a program that the whole nation can look to and take as a model.

Before we get off the phone today, tell people one more time how they can reach to you... if I were to go to the ENMU website, I can get all the information I need and even enroll in Cybersecurity - is that correct?

[Stephen M] That's correct. So, if you go to the ENMU-Ruidoso web... website, the main page, just scroll down, and you'll see a link that says Cybersecurity Center of Excellence.

[Steve L] Gotcha.

[Stephen M] Click... click on that link and it will show you all of the programs that we... we have in place; it has... it also has some key links for Cybersecurity Awareness or other activities; some of our partnerships and what not are on there, but al... and then as far as the Workforce Development Scholarship, there's a link there says "New CAE Cybersecurity Workforce"... you can click on that link, and it has the... it has... click on that link, it'll... it'll have my information at the bottom on my email address and my phone number, so you can contact me either way, either on the... with the phone number or send me an email to Stephen dot... S-t-e-p-h-e-n dot Miller... M-i-l-l-e-r at enmu dot edu.

[Steve L] Wonderful.

[Stephen M] One other thing I wouldn't... I don't want to forget is that our important... we have some of the best faculty around for this as well, and... you take Joel Hutchins is a... has the highest certification you can get in Cybersecurity; he's retired from White Sands/NASA - he works for the... he's a contractor for the Department of Defense and he's... he's been one of our adjuncts since about 2012 and he... he's been a... a really great asset for us. We also have Juan Gonzalez and Juan is... is at NASA at White Sands; he's a... a veteran and one of... one of the great things about his education - both of them have masters degrees - but, I would say the University of Maryland is probably one of the top Cyber universities and Juan has both his bachelors and his masters in Cybersecurity from the University of Maryland, so they've done a lot; they... they're on our advisory committee for Cyber along with our industry and government, and other academic partners that we have, so they've done a lot to help contribute to the program and they continue to do that plus they're great professors and work really well with our... with our students.

[Steve L] Wonderful. Well, we thank you; we're out of time and just need to go but I want to tell you how much I appreciate you being on the call and wish you all the luck in the world building that program and encouraging students to take advantage of this again. ENMU-Ruidoso has a... a scholarship program that local Native Americans

and First Responders and Veterans can apply for. Go to the ENMU-Ruidoso webpage; scroll down - you'll see all the information listed there when you find that Cybersecurity program on the... page one on the web. We've been talking today with Dr. Stephen Miller who's head of ENMU-Ruidoso's outstanding Cybersecurity program. Thank you, Dr. Miller, for being our guest and best wishes to you. And we want to thank our sponsor: ENMU-Ruidoso.

For more information about what's happening at ENMU-Ruidoso, you can always check out the website: ruidoso dot emu dot edu or you can call the college at 575 315 1120. Goodbye for now.

[Voice-over] ENMU-Ruidoso brings you Mountain Air every Tuesday morning at 8 a.m. on KRUI 1490 a.m., The Mountain.