

Women in STEM Mentoring Program Benefits and Resources as a Result of the Program Virginia Western Community College Academic year 2015 – 2016

Yvonne Campbell, STEM Program Advisor; Sandy Workman, Mentoring Program Coordinator

### Previous to Women in STEM Mentoring Program Pairing Ceremony:

- **Women in STEM Club meeting dates** (We used this as a way to reach out to students for the mentorship program). Faculty Advisors: Dr. Ashley Gess and Heather Butler
  - September 9, 2015 Some of the STEM staff set up a table at the Student Activities Fair to reach out to students. 8 students signed up for more student club information, 2 of those applied for the Mentorship Program, with 1 participating in the Mentoring Program.
  - October 13, 2015 Initial Women in STEM Club meeting. Speaker Sarah Glenn, P.E. LEED AP, professional structural engineer and project manager with AECOM. 24 in attendance; 13 students, 6 of which are in the Mentoring Program; 3 guests.
  - October 27, 2015 Women in STEM Club meeting; elected officers and determined activities for the year. 9 students in attendance and 3 faculty / staff.
  - November 10, 2015 Women in STEM Club meeting; 9 students in attendance and 2 faculty / staff.
  - November 17, 2015 Women in STEM Club craft event to create mock-ups of 3D posters; 8 students in attendance and 3 faculty / staff. We also discussed schedule for meetings next semester and it was impossible to find a time that all could attend.

### **Opportunities shared with students:**

 November 12, 2016 – shared with students by email - "Roadtrip Nation, a careerexploration organization that sends young people on road trips to discover careers aligned with their interests. We make a documentary series on public television, interactive online tools, a best-selling career guide, and a curriculum for middle and high school. We've partnered with AT&T through their signature educational initiative AT&T Aspire to offer this opportunity."

\*At least one of our students has applied and been selected to advance to the next round, Evelyn Williams. She has sent in her video and expects to hear if she was selected on or around March 21, 2016.

### January 2016

### January 19, 2016 - Women in STEM Mentoring Program Celebration - (see Appendix A)

Link to video produced by Media Geeks: https://youtu.be/zFEnfalFDfl

There are 10 mentor / student pairs, 8 of which were present at the Women in STEM Program Celebration on January 19, 2016 held in The Fralin Center on the VWCC campus. Following is a list of the pairings:

- VT Carilion Research Institute Sarah Adams, Mentor & Angela Johnson, Mentee (Graduates VWCC 2016 - attend Radford University - major in Health Science to become an Occupational Therapist)
- Consultant (Self-Employed) Mary Ann (Conroy) Brenchick, Mentor & Carol Ann Bailey, Mentee (Graduates VWCC May 2017 – attend VA Tech – pursuing Master's Degree in Mathematics; serves as Co-President of Women in STEM Club)
- AEP Hydro Generation April D Connel, Mentor & Anna Falls, Mentee (Graduates in VWCC Spring 2017 – attend VA Tech – undecided on a major but is interested in Physics, Chemistry & Engineering)
- Level 3 Communications LLC Angelica Espinoza, Mentor & Erica Shafer, Mentee (Graduates VWCC June 2017 – attend University of VA –major in Biology)
- AECOM Sarah Glenn, Mentor & Alexie Jean Jacques, Mentee (Graduates VWCC Summer 2017 – Engineering, pursuing a Master's degree – serves as Public Relations Officer for Women in STEM Club)
- Virginia Tech Vianne Greek, Mentor & Thea Avila, Mentee (Graduates VWCC 2018 attend VA Tech major in Engineering (Computer or Chemical)
- Formerly with IBM Sandra Kilpatrick, Mentor & Jordan Oliver, Mentee (Graduates VWCC 2017 major in Engineering; wants to get more people involved with STEM and make their lives better)
- QualiChem, Inc Athena Spencer, Mentor & Evelyn Williams, Mentee (Graduates VWCC 2018 major in Engineering (Chemical) wants to work in the medical industry and be hands on, creative and solve problems)
- AEP Human Resources Elizabeth Testerman, Mentor & Carly Jones, Mentee (Graduates VWCC Spring 2017 major in Communications/Public Relations wants to be a spokesperson for a company; serves as Co-President of Women in STEM Club). Elizabeth also brought with her an additional potential mentor for the future.
- VWCC Sandy Workman, Mentor & Rose Sufralien, Mentee (Graduates VWCC May 2016 – major in Administration of Justice - plans to attend law school)

### Opportunities shared with mentors and students:

- FREE January 30 Jefferson College Undergraduate Programs Information Fair For more information and to register: <u>http://www.jchs.edu/jefferson-college-undergraduateprograms-information-fair</u>
- Scholarship opportunities for STEM students: <u>http://www.vsgc.odu.edu/sf/ccstem/</u>
- FREE March 23-25, "A Chip on Her Shoulder" a documentary play (see details in March listing) (See Appendix B)
- FREE to Women in STEM April 22 Southgate Drive, a project tour. (see details in April listing) (See Appendix C)

### Mentors reported 7 additional meetings with mentees

### Quotes from mentor pairs:

"Angela and I have met three times since orientation. The first time we met was on 1/26 around 5:30. We met on Virginia Western's campus and went through the interview you all provided. We also talked about her goals in finding a shadowing opportunity and we walked around campus looking for the career center – I suggested she talk with them about any shadowing opportunities they knew about. We found out that Jefferson College was hosting an information session that Saturday and decided to go. ":

- Sarah Adams mentoring Angela Johnson; received February 25, 2016.



"I met with my mentee yesterday for the second time and she is absolutely adorable. She is so eager to learn and I am ready to teach her. I really want to thank VWCC for taking on the Mentoring program for these young ladies. I am also truly grateful to be a part of the program and want it to be a success. At the end of the day, it is about helping the next generation succeed. Please let me know how I can assist and once again thank you for all that you and your faculty are doing for the upcoming ladies in STEM."

- Elizabeth Testerman mentoring Carly Jones; received January 28, 2016



### February 2016

Recognition from the Perkins Administrator, James Antonick at the VCCS, who shared our WIS Mentoring Program Ceremony video with 23 Virginia schools. February 2, 2016 – from Chris Porter

Resume template from Athena Spencer for Evelyn Williams - February 16, 2016

- Article published in WiNUP quarterly newsletter February 24, 2016 (See Appendix D)
- Job secured for Alexie Jean Jacques with local Realtor, Elizabeth Bowles first day of work February 29, 2016

Alexie Jean Jacques created a Facebook page for VWCC Women in STEM

Mentor Vianne Greek introduced the Mentoring Program Coordinator to Marie Bliss, who volunteered to participate on a Women in STEM Speaker Series panel.

### Mentors reported 9 meetings with mentees

### **Quotes from mentor pairs:**



"I was honored to be with Carol Ann today from 2 to 330 at the VWCC Student Center (very nice!). We did the first exercise together and talked through my current educational resume. I encouraged her to look into a student level Association Group (for math teachers).

Carol Ann is going to contact Ann Driscoll, a friend of mine who agreed to meet & let her sit in on a college math class at VT:). I encouraged her to look up what classes Ann was teaching and read her bio."

- Mary Ann Brenchick mentoring Carol Ann Bailey; received February 1, 2016

"Just wanted to let you know that Liz and I met tonight at Virginia Western for 1 hour. It was a great meeting, she had a lot of great questions. We talked about pros/cons of Bachelor's and Master's and PhD's. We also discussed working for a big company versus working for a small company. She also shared with me what she has been doing in her Chemistry class.

I spoke with my bosses and they have agreed to allow me to invite the entire group to tour our facility and learn about QualiChem! The only bad thing is that we have to wait until the end of April to arrange the visit. We have a big project going on right now that will wrap up at the beginning of April. I was thinking maybe Thursday April 21st. Why don't you bring this up to the girls and see if that works."



- Athena Spencer mentoring Evelyn "Liz" Williams; received February 2, 2016

"Jordan and I met on campus on 1/28 for an hour. We started outside the ceremony room. My main objective in this meeting was to further establish rapport with Jordan. She enthusiastically agreed to give me a tour of campus, ending in the student life center at Subway, complete with a chocolate chip cookie. She definitely has a sweet tooth J! We're meeting there at our next meeting on 2/9.

She really wanted to hear about my career experiences. I began taking her through my college days and early career, sharing both some of the technical work, as well as some of the challenges of being a female in a nearly all male world. I also shared my perspective on the importance of work ethic, attitude and



professionalism. We will continue our overview of my career during our next sessions.

For next time, I asked her to think about the following:

- what she'd like to accomplish with this mentor/mentee relationship
- summer job possibilities
- college after Virginia Western
- something she thinks she is really good at
- an area or 2 she'd like to grow in

Your program materials were a great guide!"

- Sandy Kilpatrick mentoring Jordan Oliver; received February 25, 2016

"I wanted to give you a quick update on Ms. Anna Falls and I. Due to inclement weather and class schedule changes, we were unable to meet on Tuesday, January 26th. We do have another meeting scheduled for this Thursday at the Library there on campus. I have sent her an assignment to complete and report back to me on Thursday. At this point she isn't really clear on which direction she would like to take her studies and career path. She knows she would like to transfer to Virginia Tech, so part of the assignment is to research 3 possible degree programs she would be interested in there. It's also scholarship season, so another part of the assignment was to investigate scholarships there at VWCC. The last part of the assignment is to identify 2 possible careers.



I'm also working with her to do a site visit at one of our Hydroelectric Plants. I appreciate the feedback on the subject of mentees riding with us mentors. I'm hoping to have her out to do a plant visit for our meeting on Tuesday February 16th."

- April Connel mentoring Anna Falls, received February 9, 2016

"Please meet my friend, Marie Bliss.

Marie and I visited with Thea in Bedford today so Thea could meet another woman with a background in technology. We talked about the Women in STEM club at VWCC and Marie asked me to make an introduction because she is interested in speaking at one of your upcoming STEM panel discussions. "

- Thea Avila being mentored by Vianne Greek, received on February 20, 2016



"Our meetings were awesome! I showed off my ambassador skills on our first meet by giving Sarah a tour of our campus. We actually met yesterday and she treated me to a delicious Indian lunch. We talked quite a bit, and though I can't remember everything exactly, I just know that we went with the flow. We are trying to work out a relationship that is not too formal but is also centered on me being successful in school. :)

So far we have met for 2 hours. Those fell on January 27th, and February 24th. Next Wednesday I intend on visiting her work place to sort of get a feel of what her day to day schedule is like. Then, the week after we will be visiting Virginia Tech."

- Alexie Jean Jacques being mentored by Sarah Glenn, received on February 25, 2016



"Carly and I have met twice since I have spoken to you. She is an incredible young lady.

I brought her in for a few hours on Feb 5th in which I introduced her to our Corporate Communications spokeswoman Teresa Hall. Carly also got to meet some other employees that shared what they do on an everyday basis with AEP.

She also spent the last several hours with me in a ladies networking group that I am involved in. (WiNUP- Women's International Network of Utility Professionals). She met some wonderful professional ladies in all different levels of their careers and was really energized when she left.

We are having an awesome meeting in April and I hope I can count on some of you ladies joining us. We will have a powerful speaker by the name of Jennifer Wishon Gilbert and she will be speaking on the "Power of Mentoring". I will send you the information on our April mentoring meeting once I have all the details. Carly will be joining with me as well.

As you can see, I am truly honored to be Carly's mentor and a part of VWCC Mentoring program. We are off to a great start. "

- Elizabeth Testerman, mentor to Carly Jones, Received February 25, 2016

### Opportunities shared with mentors and students:

- Summer STEM camp that will be offered at VWCC Samantha Steidle asked if the members of our WIS club would like to participate in some way - maybe help with the activities? Camps being offered: https://www.virginiawestern.edu/kidscollege/summercamps.php
- FREE Wednesday, March 30, 7:15 p.m. the Grandin Theater is doing a showing of 'He Named Me Malala.' (see details in March listing)
- FREE April 14, 2016 WiNUP sponsored event: "The Power of Mentoring" presented by Jennifer Wishon Gilbert, the White House Correspondent for CBN News (see details in April listing)

### March 2016

- March 1, 2016 Roanoke Business Magazine Virginia Western Community College Mentoring Program mentioned; Yvonne Campbell and Sandy Workman quoted in an article, Where are the Women?, pp 14-16, by Beth JoJack. (This contact was made through the Roanoke Blacksburg Technology Council, Heather Baum Fay). (See Appendix E) https://issuu.com/virginiabusiness3/docs/digitalrb0316/11?e=18112613/33818109
- March 3, 2016 **Yvonne Campbell and Stacy Deaver held a phone conference with Dr. Jennifer Groh, Associate Director, Women in Engineering Program at Purdue University**. VWCC's Women in STEM plans to collaborate with Dr. Groh for participation in the Women In STEM Speaker Series and several other topics to include professional mentoring programs, academic success coaching, and best practices for faculty teaching female students in STEM related programs.
- March 16, 2016 Women in STEM Club, 3:30 4:30 p.m. women students only, Room HP 338, refreshments served!
- March 21, 2016 **FREE Women in STEM Club Speaker Series** 3:30 4:30 p.m. open to all students and the public. Natural Science Center; **Refreshments served**!

- FREE March 23-25, 7:30 pm in Theatre 101 (200 College Avenue, Blacksburg, VA) "A Chip on Her Shoulder" – a documentary play about women in engineering with stories of adversity, identity, diversity and passion composed by Kristin Rose Kelly with interviews by women and men in Engineering at Virginia Tech including students, faculty, and professionals in the field. For more information or to make a reservation, email <u>krkelly@vt.edu</u>.Here is the link to the Smart Bus information: <u>http://www.smartwaybus.com/busmap.htm</u>
- FREE Wednesday, March 30, 7:15 p.m. the Grandin Theater is doing a showing of 'He Named Me Malala.' It's a "look at the events leading up to the Taliban's attack on Pakistani schoolgirl, Malala Yousafzai, for speaking out on girls' education followed by the aftermath, including her speech to the United Nations." There will be a Q/A session afterwards hosted by Hollins University's Gender & Women's Studies Program and Community School. Here is a link for the event: https://www.grandintheatre.com/shows/he-named-me-malala

### April 2016

- April 13, 2016 Women in STEM Club, 3:30 4:30 p.m. women students only, Room HP 338, refreshments served!
- April 14, 2016 WiNUP sponsored event: "The Power of Mentoring" presented by Jennifer Wishon Gilbert, the White House Correspondent for CBN News based in the network's Washington, D.C. Bureau. Jennifer joined CBN in December of 2008 and was assigned to the White House in January of 2011. (More details to follow)

Before taking over the White House beat, Jennifer covered Capitol Hill and other national news, from the economy to the 2010 oil spill in the Gulf of Mexico.

Before joining CBN News, Jennifer worked as Richmond Bureau Chief and Capitol Correspondent for WDBJ7, the CBS affiliate in Roanoke, Va. In Richmond she covered state government and politics full time. Her assignments included the 2008 presidential race, the administrations of Gov. Mark Warner and Gov. Tim Kaine and the shootings at Virginia Tech.

Jennifer graduated from Virginia Tech with a degree in Communications Studies and is a proud Hokie! She's also a member of Kappa Kappa Gamma Fraternity. Jennifer and her husband Todd live on a farm in Virginia.

Delegate Todd Gilbert represents the 15th district in the Virginia House of Delegates; ... Todd is married to the lovely and talented Jennifer Wishon Gilbert.

April 19, 2016 – FREE to Women in STEM - Mentorship Program Reception. 4:30 – 6:00 p.m., The Fralin Center, Room HP208/210. Mentors, mentees, mentee parents and significant others will be invited to an event celebrating this semester of mentorships!

April 21, 2016 – (date may change) – FREE - Because of the mentorship between Athena Spencer and Evelyn "Liz" Williams, QualiChem has invited the whole mentoring group to tour their facility! It will need to be near the end of April or beyond, they are suggesting Thursday, April 21<sup>st</sup>!

April 22, 2016 - FREE to Women in STEM – Southgate Drive, a project tour. This is specifically offered because of our Mentoring Program! This \$46.7 Million project will replace the signalized intersection at Route 460 and Southgate Drive at the entrance to Virginia Tech with a Diverging Diamond Interchange. April 25, 2016 – **FREE - Women in STEM Club Speaker Series** – 3:30 – 4:30 p.m. - open to all students and the public. Natural Science Center; **Refreshments served**!

# Appendix

### Appendix A



Agenda January 19, 2016

### Women in STEM Mentor Program Celebration

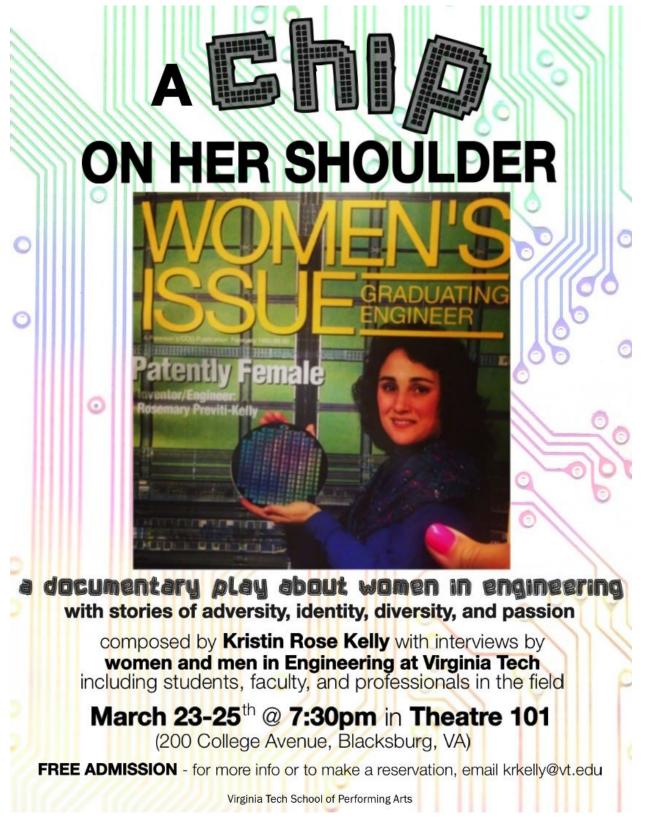
Date/Time: Location: Conference Room:	January 19, 2016, 5:00 p.m. – 7:30 p.m. Virginia Western Community College, The Fralin Center, HP208/210	
4:50 p.m.	Registration	
5:00 p.m. 5:10 p.m.	Greeting Dinner	Yvonne Campbell
5:50 p.m.	Welcome and Opening Remarks	Dr. Robert Sandel
6:00 p.m.	Mentor Speaker	Elizabeth Testerman

6:15 p.m. Mentor Pairing Ceremony

#### **Orientation for the mentors and students**

6:30 p.m.	Orientation	Mentors and Mentees
7:00 p.m.	Mentor pairs meet	Mentors and Mentees
7:30 p.m.	Adjourn	

### Appendix B



Appendix C

## SOUTHGATE DRIVE SAVE THE DATE! APRIL 22, 2016 MORE DETAILS TO FOLLOW



For a Project Tour Blacksburg, Va \$46.7MILLION PROJECT WILL REPLACE THE SIGNALIZED INTERSECTION AT ROUTE 460 AND SOUTHGATE DRIVE AT THE ENTRANCE TO VIRGINIA TECH WITH A ◊ DIVERGING DIAMOND INTERCHANGE ◊ Two NEW BRIDGES WILL BE CONSTRUCTED OVER U.S. ROUTE 460 ◊ HUCKLEBERRY TRAIL WILL BE RELOCATED ◊



Appendix D – WiNUP Newsletter, 1<sup>st</sup> Quarter 2016

### **Empowering Times**

STEM Information

2016-17 Community College STEM Scholarship Program meeting - January 19. 2016

The 2016-17 Community College STEM Scholarship Program meeting took place on January 19, 2016.

During the meeting, Sandy Workman, Women in STEM Mentoring Coordinator, and Yvonne Campbell, STEM Program Advisor, and Dr.



Robert Sandel, President, Virginia Western Community College, welcomed several organizations.

(WiNUP and AEP were represented by Elizabeth Testerman, April Connel and Teresa Rogers.)

The ceremony was held on campus to connect women trailblazers in STEM fields with students.

Virginia Western Community College's Women in STEM initiative includes our mentoring program, a campus club, a speaker series, a campus workgroup with faculty and staff, and relationships with business partners.

The goals behind the Women in STEM initiative are to provide a supportive environment for female students in their STEM education, assist in educational resources, and facilitate career networking opportunities.

Programs supported by the initiative include: Science/Health Science/Engineering; Electrical Engineering Technology; Mechanical Engineering Technology; Mechatronics Systems Engineering Technology; Computer Science & ARC/CIV Engineering Technology

If interested in more information or joining our Mentoring Program, please contact Yvonne Campbell at ycampbell@virginiawestern.edu or Sandy Workman at sworkman@virginiawestern.edu.

Scheduled FREE opportunities:

March 23-25, 7:30 pm Theatre 101 (200 College Ave, Blacksburg, VA - A CHIP ON HER SHOULDER) Contact krkelly@vt.edu.

April 22 - Southgate Drive entrance - VA TECH - WOMEN IN STEM - a \$46.7 million project replaces the signalized intersection at Rt 460 and Southgate Dr.

Women in STEM Club meetings are open to all students: Wed., Feb 24th (3:30-4:30-Nat Science Ctr) Mon., Mar 21st (3:30-4:30-Nat Science Ctr) Mon., Apr 25th (3:30-4:30-Nat Science Ctr)

MENTORS: Please let Sandy know which day you can serve on the panel. Members meetings only are March 16 and April 13 (all in HP338 from 3:30-4:30).





Women in STEM Mentoring Program Pairings :

VT Carilion Research Institute - Sarah Adams, Mentor & Angela Johnson, Mentee (Graduates VWCC 2016 - attend Radford University - major in Health Science to become an Occupational Therapist)

Consultant (Self-Employed) - Mary Ann (Conroy) Brenchick, Mentor & Carol Ann Bailey, Mentee (Graduates VWCC May 2017 – attend VA Tech –pursuing Master's Degree in Mathematics)

AEP Hydro Generation - April D Connel, Mentor & Anna Falls, Mentee (Graduates in VWCC Spring 2017 – attend VA Tech – undecided on a major but is interested in Physics, Chemistry & Engineering)

Level 3 Communications LLC – Angelica Espinoza, Mentor & Erica Shafer, Mentee (Graduates VWCC June 2017 – attend University of VA –major in Biology)

AECOM – Sarah Glenn, Mentor & Alexie Jean Jacques, Mentee (Graduates VWCC Summer 2017 - pursuing a Master's degree – serves as Public Relations Officer for Women in STEM Club)

Virginia Tech – Vianne Greek, Mentor & Thea Avila, Mentee (Graduates VWCC 2018 – attend VA Tech – major in Engineering (Computer or Chemical)

Formerly with IBM – Sandra Kilpatrick, Mentor & Jordan Oliver, Mentee (Graduates VWCC 2017 – major in Engineering - wants to get more people involved with STEM and make their lives better)

QualiChem, Inc – Athena Spencer, Mentor & Evelyn Williams, Mentee (Graduates VWCC 2018 – major in Engineering (Chemical) - wants to work in the medical industry and be hands on, creative and solve problems)

AEP Human Resources – Elizabeth Testerman, Mentor & Carly Jones, Mentee (Graduates VWCC Spring 2017 – major in Communications/Public Relations - wants to be a spokesperson for a company - serves as Co-President of Women in STEM Club)

VWCC – Sandy Workman, Mentor & Rose Sufralien, Mentee (Graduates VWCC May 2016 – major in Administration of Justice - plans to attend law school)

Link to video produced by Media Geeks: https://youtu.be/zFEnfaIFDfl Page 10

### Appendix D (continued)

### Appendix E – Roanoke Business, March 2016 (partial page)

See full article at: https://issuu.com/virginiabusiness3/docs/digitalrb0316/11?e=18112613/33818109



## Where are the women?

Southwest Virginia works to put more women in STEM jobs

### by Beth JoJack

A ational numbers are pretty grim. Women fill close to half of the jobs in this country but hold fewer than a quarter of the jobs in science, technology, engineering and math, according to a 2011 report by the U.S. Department of Commerce.

That's bad for women's wallets since women in STEM professions earn 33 percent more than women in other types of jobs, says the report.

The gender disparity, those researchers theorize, may be attributed to a variety of factors. "STEM career paths may be less accommodating to people cycling in and out discourage women from pursuing STEM education and STEM jobs," the report says.

Many women who do choose careers as software developers or database administrators don't stay in those careers. Women in science, engineering and technology are 45 percent more likely than men to leave the field within a year, according to a 2014 report by The Center for Talent Innovation, a. U.S.-based think tank. Those researchers found the motivations for the exodus includes a lack of female role models, a perceived bias in evaluations and being excluded from incent of bachelor's degrees awarded in computer sciences and 19.2 percent in engineering, according to a 2015 report from the National Science Foundation.

Technology professionals and educators interviewed by Roanoke Business in Southwest Virginia largely agree that the national numbers play out here. However, there are several efforts underway to change that. For one thing, the region is home to the NRV chapter of 100 Girls of Code, the only chapter in Virginia. Plus, there are professional groups for women already in technology fields and mentoring opportuniAppendix E – Roanoke Business, March 2016 (continued - partial page)

See full article at: <u>https://issuu.com/virginiabusiness3/docs/digitalrb0316/11?e=18112613/33818109</u>



this, too. It's not a boy's game.""

The pair already has held several workshops, including the one in December where girls learned about computer algorithms by telling one another the steps involved in crafting paper airplanes. The group also made necklaces, using beads to spell their names in binary code.

Jeff Pittges, chair of information technology at Radford University, was happy to arrange for the university to host the workshops. The group's mission fits with his personal agenda of getting more women in STEM fields. "I've got a 13-year-old daughter," he says.

Of the nearly 400 students studying in his department, Pittges says, only about 30 are women. He's working to increase that number through a campus Women in Computing Club, which in September organized a Sit With Me event. An initiative launched by the National Center for Women and Information Technology, Sit With Me events are designed to put a spotlight on the contributions women make in technology and inspire other women to go into tech fields.

Nancy Artis, a Radford alumna and co-owner of the information technology company Performance Associates, based in Colorado, shared her experiences working in tech with students last fall. "It was really inspiring," Pittges says.

Female students studying STEM fields at Virginia Western Community College also get the chance to rub elbows with professionals working in the industry. A pairing ceremony held in January matched students with a professional mentor.

"Networking helps," says Yvonne Campbell, a program adviser for the STEM department at VWCC. "If you're a student and you have a connection to the business world, that can get you pretty far. Men have been doing this for years."

VWCC also recently launched a Women in STEM club that regularly brings professionals in those fields to campus. In October, for instance, students got to hear from the deputy director of the National Nanotechnology Coordination Office. Last summer, the college hosted two girls-only day camps; one focused on construction and the other on gaming. The point with both initiatives is to get more female students interested in STEM.

When Sandy Workman joined Virginia Western last fall as an academic success coach and coordinator for the Women in STEM mentoring program, she was surprised

ROANOKE BUSINESS

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Appendix E – Roanoke Business, March 2016 (continued - partial page)

in the engineering classes. "They're lower than I ever expected," she says. Of the degree-seeking engineering students at VWCC in 2013-2014, about 13 percent were women, according to data provided by Campbell.

Workman hadn't expected the gender breakdown of classrooms to look so similar to the late 1970s when she studied industrial technology at East Carolina University. "I really did not think it would take this long," she says.

Workman's résumé tells of a distinguished career working as an AutoCAD trainer, 3D Modeler and CADD Manager, as well as vice president for the architectural and engineering firm Hayes, Seay, Mattern & Mattern, which became Aecom after a merger.

A key to getting more women interested in engineering and technology, she believes, is showing female students how careers in those people. "They don't respond to the robot that's going to crush a foe," she says.

Instead, Workman asserts that female students need to hear they can make a robot that helps rescue people after an earthquake. "It makes perfect sense to me," she says. "Women are more relational."

If a female student fails to run into a Workman or Pittges to encourage them to get a STEM degree, that doesn't mean she won't end up doing something in the tech industry. It's the rare field that doesn't always require a specialized degree. Ask Mark Zuckerberg, founder of Facebook, who dropped out of Harvard.

Niki Sebastino took the selftaught route to a career as a web developer. She was working as the only in-house graphic designer at Shenandoah Life Insurance Co. when a judge placed the company in receivership in 2009. The company so Sebastino had nothing to do. She used the time to teach herself HTML and CSS, computer languages that control how a website looks.

Learning to design websites, Sebastino hoped, might give her a way to get out of graphic design, a field where it can be difficult to make clier ts happy. "It's so subjective," says Sebastino. "Programming is very objective. It's very black and white. It works or it doesn't."

Currently working as a Boteto art County freelancer, Sebastino likes that her Web designs seem to bring clients joy. "It's like magic to people," she explains. "They love the fart that you can write this simple code and this website appears."

Although much has been written of a 'brogramming culture' in Si icon Valley, so testosterone-fueled that women struggle to fit in, Sebastino says she's doesn't feel the techrology industry is much different than the rest of corporate America. Women hold only a small number, 4.2 percent, of the CEO positions at