



Happy (pre)Spring! This month we're highlighting two of our liaison sites with Dr. Jamie Little of Radford City Public Schools and Ms. Kim Keith of Floyd County Public Schools.

We also introduce Ms. Danielle Murray, the new educational director at the Science Museum of Western Virginia in Roanoke, and provide updates on the wide-ranging outreach and engagement activities between Virginia Tech and the community.

Please share these highlights from Virginia Tech's efforts toward fulfilling its land grant mission. Let us know if you have announcements for next month, and keep in touch!

Lisa McNair
Director, CENI
Professor, Engineering Education



p.s. Catch CENI's ICAT playdate **"Outreach in the Time of COVID"** on Friday, March 12, 9-9:30am: <https://icat.vt.edu/live.html>

CENI's new student video production team to bring outreach online

Videos from the learning meet-ups between VT researchers and groups of amazing learners will soon be available on #GoOpenVA. Look for preK-12 offerings from Radford High School's Bobcat Career Talks, the Science Festival, Girls Launch! and more. We are also shooting a video tour of lunch at D-2 for this year's *Hokie for a Day* and other outreach events that bring people to campus.

#GoOpenVA is a free online platform that teachers use to share and curate openly-licensed digital resources. Virginia Tech offerings will be vetted and clearly labeled using a rubric protocol designed by our educational researchers.

CENI is seeking preK-12 Content to share with Virginia's teachers online. Please contact Phyllis Newbill (PNewbill@vt.edu) if you and/or your students are creating content this semester that you would like to share.

[Vibrant Virginia: Engaging the Commonwealth to Expand Economic Vitality and Inclusivity](#) is open for comment. This book is edited by Margaret Cowell and Sarah Lyon-Hill and includes chapters by CENI researchers.

Highlights

- 1 VT/RCPS liaison Jamie Little syncs up in Radford
- 2 VT/FCPS liaison Kim Keith cleans up with *Girls Launch!*
- 3 CENI Community & Liaison Check-ins

Save the Dates

INSTITUTE FOR CREATIVITY, ARTS, AND TECHNOLOGY

Creativity + Innovation Day
Mar 19 • [Call for Proposals](#)

Funding in Arts and Design Workshops
Mar 18 • [Registration](#) ICAT & a2Ru

Engineering Visibility Podcasts
March podcast edition: ["I'm in it for me! – Being a woman in ECE"](#) - Annie Patrick

May 7 • ACCelerate [call for proposals](#)

MOSS ARTS CENTER

Ephrat Asherie Dance, *Odeon*
Free School-Day Stream.
Recommended for grades 4-8.
Mar 31 • 10-11 am

Kaneeza Schaal & Christopher Myers,
Cartography
Free School-Day Stream
Apr 15 • 10:00 – 11:30 am



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1

CENI liaison Dr. Jamie Little syncs up and brings art, science, and engineering together in Radford City schools

On a walk through University Libraries in Fall 2019, VT-MCPS Liaison Julee Farley introduced VT-RCPS Liaison Jamie Little to Craig Arthur and learned about #VTDITC – the program in which he brings together the university and the community through Hip-Hop music and culture. Later on, when Radford High School students negotiated for a Hip-Hop studio space, Jamie called up Craig to ask if he would like to be involved. He has since helped write a successful CENI Jones SEAD grant for equipment and educational programming, donated his own equipment, worked on the physical space of the studio, and arranged for (and funded) the mural.



This year, Craig and CENI are continuing this work with assistant principal Allyster Blanks at Lucy Addison Middle School in Roanoke, VA.



VT-RCPS Liaison Dr. Jamie Little (left) with students Whyheam Edmonds and James Woodward and Bobcat Studio coach, Nikki Greco, discussing James’ original “Ring! Ring!” track.

Radford High School Bobcat Hip-Hop Studio

- ◆ CENI Jones grant funded equipment and educational programming
- ◆ **Jamie Little** partnered with
 - ◇ **Craig Arthur**, head of Community Engagement for University Libraries
 - ◇ **Dr. Freddy Paige**, professor, Civil and Environmental Engineering
 - ◇ **VT Diggin’ in the Crates** (#VTDITC) studio
- ◆ Curriculum focuses on media literacy and the history of Hip-Hop
- ◆ **Students** produce creative works and messaging for school and wider community
- ◆ VT partnership provides mentorship, sharing of skills, expertise, passion
- ◆ **VTDITC workshop in Spring 2020** provided hands-on experience with instruction in all aspects of music production resulted in the creation of an original Hip-Hop song and music track.

Jamie is facilitating a virtual reality (VR) project at Radford High School with Dr. Freddy Paige and graduate student Joseph James, both in civil engineering at Virginia Tech. The **VR experience** will combine introductions to **a variety of workplaces with practical applications of the 5 C’s** related to computer science – *critical thinking, communication, cooperation, creativity, and citizenship*.

The project is part of an Advancing Computer Science Education grant awarded by the VDOE in spring 2020.



Dr. Jamie Little is in her fifth year working as an education specialist for Radford City Public Schools (RCPS) and her second year serving as a Virginia Tech-RCPS liaison through CENI. “Being a VT graduate (Go Hokies!) and a Radford High School alumna, I’m thrilled to be in a position to develop and foster relationships between two entities so near to my heart. Through this liaison position, the university has access to preK-12 classrooms and teachers for research and programming purposes, and the public school system has access to university-level resources and university-led learning experiences. A win-win for all!”



Dr. Little is also the community partner for two student projects in Dr. Chelsea Lyles’ service learning course at Virginia Tech.

- Raising Awareness of Homelessness in the New River Valley
- Promoting Mental Health through Biophilia

Bobcat Career Chats

Virtual career sessions hosted by VT-affiliated presenters for RHS and area high school students

In Fall 2020 the Radford High School in-person Lunch & Learn career series was halted due to COVID-related school closures. Dr. Little and Margaret Sproule (RHS Career Coach) responded by partnering with CENI and Natasha Watts (VT Engineering Online) to bring in professionals for live Zoom chats. Thanks to all!

Erica Bennet – Dominion Power

Aisling Kelliher – Information Technology

Sarah Parker – VT Health Sciences

Vince Houston – VT Police

Donna Wertalik – Marketing

Jaime Camelio – Manufacturing

Capt. James McGrath – Military

Coming this Spring: CENI’s new video crew is editing these videos to share via #GoOpenVA and virtual career fairs.



2

CENI liaison Kim Keith cleans up with *Girls Launch!* in Floyd County schools health and computer science learning

As shared in our January/February 21 Newsletter, a team of ten women graduate students working with Dr. Carrie Kroehler, associate director of the Center for Communicating Science, created [Girls Launch! Science Videos for KIDS](#), funded by a grant from the [Institute for Creativity, Arts, and Technology](#). These videos and their accompanying activity guides are available on the [Center for Communicating Science YouTube channel](#).

This month we look into how CENI's preK-12 liaison Ms. Kim Keith and her team at Floyd County Public Schools integrated the timely video on [Infections, Germs and Immune Cells](#) with teaching handwashing and computer science.

Girls Launch! Science videos for kids – with female role models

Study: Gender Gap For Women In Tech Is Worsening. Forbes (3/3/21) Council Member Pamela Maynard writes that a recent study by Accenture and Girls Who Code "concluded that the gender gap for women in technology as a whole is actually worse today than it was in 1984." The research "showed that 50% of women abandon technology careers by the age of 35 and that women are leaving tech roles at a 45% higher rate than men." Maynard adds only "21% of women in the study said they believed the technology industry was a place they could thrive; sadly, that number falls precipitously to 8% for women of color." Maynard outlines "three areas where I would like to see us focus our efforts."

Since teachers are emphasizing safety, health, and hand-washing techniques in lower elementary grades with increased urgency during the pandemic, the video featuring handwashing is a perfect fit. Ms. Keith saw the opportunity to offer more than standalone video and worked with teachers at Check Elementary, Floyd Elementary, Willis Elementary, and Indian Valley Elementary to link concepts necessary for the primary grades (oral communication, health, healthy decisions, advocacy, and health promotion) with computer science concepts (algorithms and sequencing).



Udaya Sree Datla, a Virginia Tech doctoral student in translational biology, medicine, and health, explains immune cells with science equipment behind her in a Virginia Tech laboratory.

In addition to these subject areas, the videos and Ms. Keith's professional development and lesson plans [celebrate diversity in STEM](#) and career and college-going awareness by showing a real science experiment done by a woman of color scientist in a real university laboratory located near Floyd. One teacher reflected, *"I loved how she was showing herself in her lab using her scientific tools. I think kids would love to see that. I also like that she is an example of a woman of color, so the video is promoting diversity in scientific career opportunities."*



Activity Guide* Graduate student Kaitlin Read used everyday materials such as bowls, water, and black pepper to demonstrate the spread of germs (illustrated by black pepper) and the positive impact handwashing has on stopping that spread.

Lesson One: Walks teachers and students through dialogue and an activity to encourage kids to wash their hands with soap and understand the reasons why it is important.

Lesson Two: Introduces students to the career path of computer programming. In this lesson, students create a set of step-by-step instructions (**algorithms**) either independently or collaboratively to **sequence** the steps of handwashing.

* These resources are part of the Advancing Computer Science Education Grant to support the implementation of Virginia's Computer Science Standards of Learning in partnership with Floyd County Public Schools, with additional support from Virginia Tech's Center for Communicating Science and the Institute for Creativity, Arts, and Technology.

Why We Wash Our Hands

Student View Save Remix Edit Report

Details Standards Resource Library

Education Standards (6)

VA.CS.K.1
Virginia Computer Science Standards of Learning
Kindergarten
Learning Domain: Algorithms and Programming
Standard: General Curriculum
Indicator: The student will construct sets of step-by-step instructions (algorithms) either independently or collaboratively including sequencing, emphasizing the beginning, middle, and end.

Overview

Can you remember a time you've been sick? Why aren't you still sick? How did you get better?

Join Udaya Sree Datla, a doctoral student in translational biology, medicine, and health at Virginia Tech, as she presents **Infections, Germs, and Immune Cells**. The accompanying lessons and resources provide students with an introduction to germs, the immune system, and the career path of an immunologist, all while emphasizing the importance of handwashing and incorporating a computer science twist.

Lesson one walks teachers and students through dialogue and an activity to promote and understand the reason for handwashing with soap.

The second lesson capitalizes on an opportunity to integrate computer science by introducing students to the career path of computer programming and constructing a set of step-by-step instructions (algorithms) either independently or collaboratively to sequence the steps of handwashing.

These resources are part of the Advancing Computer Science Education Grant to support the implementation of Virginia's Computer Science Standards of Learning in partnership with Floyd County Public Schools with additional support from Virginia Tech's Center for Communicating Science and the Institute for Creativity, Arts, and Technology.

Ms. Keith created a [lesson plan and handwashing sequencing cards](#) for primary grades that used the germs video and activity. With Dr. Kroehler's permission, the resources will be shared using [#GoOpenVA](#). #GoOpenVA is a library where open-licensed digital resources are organized by grade level, subject, and Virginia Standards of Learning.

In our next newsletter, CENI will be unveiling a newly developed rubric to help Virginia Tech faculty and students share open-licensed digital resources with preK-12 teachers across the state of Virginia.



3

CENI Community and Liaison Check-ins

Partner Updates

Dr. Kim Carlson, Director of the [Business Leadership Center](#), is hosting [Ethics Week March 29-April 8](#)

A group of **4-H Extension Agents** has developed a Virginia Cooperative Extension Speaker’s Bureau. The aim of these presentations is to connect experts from VCE with classrooms and other groups of youth throughout the commonwealth: <https://sites.google.com/vt.edu/vce-speakers-bureau/virginia-cooperative-extension-speakers-bureau>.

Dr. Amy Azano: [VT News story](#) about her recent projects that are supporting rural education. Hosting **Advancing Equity in Rural Education** Webinars [on Zoom](#). Fridays in March at 4pm: Mar 12-Indigenous Rural Ed, Mar 19-Latinx Rural Ed, Mar 26-Policy & Partnerships.

2021 Bugfest set for October 2 – fingers crossed for an in-person event!



We want to promote connections.

Please send your ‘save the date’ information, education and outreach opportunities, and announcements by Noon on Friday of the third full week each month and we’ll do our best to include it in the newsletter.

Opportunities

- ICAT GA Positions 2021-22 [info](#)
- Apr 8 CHCI Research Grant [rfp](#)
- An internship experience with the Science Museum of Western Virginia
- Paid internships in [needs and wants](#) for Summer 2021 boy scout camps
- Blacksburg New School is seeking a [full-time 2nd Grade Teacher for the 2021-2022 school year](#).
- Virginia Cooperative Extension Internships for rising Juniors, Seniors and graduating Seniors. <https://ext.vt.edu/internship/location.html>
- Scholarship prizes for winners of VT Ethics Bowl! [Signup by March 26](#).

Liaison Corner

Montgomery County Public Schools has established its own IRB.

Floyd County Public Schools implemented a digital literacies professional development for grades 6-12 teachers of English and librarians, with Jessica Cromer (FCPS Assistant Superintendent of Instruction and Innovation) working together with Kayla McNabb, Craig Arthur, and Julia Feerrar of University Libraries.

Radford City Public Schools welcomed VTTI’s Sharing the Road presentations to RHS P.E./Driver’s Ed classes.

The Science Museum of Western Virginia (SMWV)

- TBMH 5964: Field Studies in Translational Medicine - Communicating Science internship. Complete coursework then internship at SMWV, with focus on advocacy, education or philanthropy. Contact Veronica van Montfrans (vanmonv@vtc.vt.edu) for more info.
- The Science Museum of Western Virginia welcomes **Danielle Murray** as the new director of education. Danielle came to the museum as part of The LAB when it opened in the fall. We welcome her energy and skill and look forward to collaborations.



Danielle Murray –New Director of Education for the Science Museum of Western Virginia