



**Chat Transcript for NGCP webinar:  
Gender Equity in Online STEM Learning**  
September 2, 2020

Marisa Garcia: I'm Marisa with the National Girls Collaborative Project joining from Seattle, WA

Amanda Sullivan: Hi - I'm Amanda Sullivan, one of the researchers presenting today. I'm joining from Oahu, Hawaii. If anyone wants to connect after the webinar, find me on Twitter @AASully

Cheri Burch (AAUW Tech Trek NM): From Albuquerque, NM.

William Fee: William Fee, Lead Instructor in the STEMLab at the State Library of PA

Jon Mannion: Jon Mannion of Bronx Academy for Software Engineering (BASE) open to collaboration and learning adventures <https://jon3636.wixsite.com/website>

Jon Mannion: [www.bronxsoftware.org](http://www.bronxsoftware.org)

Adrienne Provenzano: Hello! Adrienne, Indiana, NASA Solar System Ambassador. Informal educator!

Jon Mannion: Cheers

Lecia Barker: Hi! Lecia Barker joining from beautiful Boulder Colorado and it's a lovely day here.

Claudia Poglitsch: Claudia Poglitsch (AAUW Tech Trek NM) Albuquerque

Trish Marquez - Explora: Trish from Explora Science Center in Albuquerque, NM. I am the youth intern program manager. Nice to be here

Katie: Hello everyone, I'm Katie from Wisconsin!!

Sue Fajer: Hello. Sue from the Children's science center in Virginia

Trina Porter: East Coast, Canada

Chris Beimborn: STEM Outreach Specialist for the UW-Milwaukee College of Engineering & Applied Science, I coordinate EnQuest, our all-girl summer engineering camp for high school students. Nice to be here!

Laura Schmidl: Hi everyone! Laura from Discovery Cube in Southern California.

M.Major: Hello from Lilburn. GA.

Kate Van Dellen: Hello I'm with the Society of Women Engineers and the Center for Initiatives in Jewish Education in Dallas, Texas

Cyra Sadowl: I'm the education director for Airway Science for Kids in Portland, Oregon

Karen North: Hi, Karen - NCWIT Aspirations.org Houston Coordinator.

Mallory R: Space Center Houston - Houston, TX

D'Nae Hearn - Detroit Zoological Society: Good Afternoon everyone. I am an Education Specialist at the Detroit Zoological Society.

Katie Worthen: Education Coordinator at the Natural History Museum of Utah

Dale McCreedy: Dale McCreedy from Discovery Center at Murfree Spring, MTSU, & the TN Girls Collaborative

Cyra Sadowl 2: Education Director for Airway Science for Kids in Portland, Oregon

Pamela Jenny: Hello from Grayson GA

Scott Killough: Regional Science Administrator from Olympia, WA

Victoria Hrdina: Exec Director, Career Connect SW in Vancouver WA

Jolene Gustafson: <http://ngcproject.org/>

Kate Van Dellen: yes they are speaking

Samir: Hello! My name is Samir and I'm the Monthly Programs Coordinator at Assemble in Pittsburgh, PA.

Jason Bohrer: Hi, I'm Jason Bohrer, the Chapter Relations Manager for the Computer Science Teachers Association (CSTA)

Jolene Gustafson: [www.theconnectory.org](http://www.theconnectory.org)

Jennie Mathur: Hi! Jennie Mathur, Senior Learning Manager, Girls Inc.

Jolene Gustafson: [www.fabfems.org](http://www.fabfems.org)

Jon Mannion: Open to partnership in learning opportunities. Connect via [jon@bronxsoftware.org](mailto:jon@bronxsoftware.org) and <https://jon3636.wixsite.com/website>

Jolene Gustafson: <https://ifthencollection.org/>

Sally Crockett: Sally Crockett, Executive Director of the Kuma Foundation

Jeff McConaughy: Jeff McConaughy, New Mexico Out-of-School Time Network.

Cori Araza-GCU: Hi- Cori Araza here from Grand Canyon University-Director of K12 STEM Outreach

Madeline Frawley: Hello! I am a Lead Counselor for Girls Inc. at YWCA Minneapolis.

Maura Connolly: Hi! I'm with the Fleet Science Center in San Diego, also the backbone of the San Diego STEM Ecosystem

Linda Chen: Linda Chen, inventor and founder from Baby Monster Group (<http://babymonstergroup.com>)

Kam Yee: Kam Yee, Regional Support Manager, Robotics Education & Competition Foundation.

Jolene Gustafson: <https://www.amandaalzenasullivan.com/>

Diane Levitt: I'm Diane Levitt, Sr. Director of K-12 Education at Cornell Tech

Jolene Gustafson: <https://www.ncwit.org/>

Jean Fahy: Jean Fahy, Girl Scouts of Northern California

Karen Peterson: Relax and enjoy!

Louann Cormier: Louann Cormeier, Regional Support Manager, Robotics Education & Competition Foundation

Jolene Gustafson: <https://www.amandaalzenasullivan.com/publications>

Cori Araza-GCU: Q: How many participants are on this webinar?

Marisa Garcia: Feel free to ask questions here in the chat

Snehal Bhakta: Happy Wednesday Everyone! Snehal from Las Vegas. I lead CCSD's #GirlsInSTEM #GirlsInTECH experiences as well as equity, diversity, inclusion, and access work in STEM and CTE.

Karen Peterson: Happy Wednesday Snehal!

Katherine Weber: Hello Karen! Hope you are doing well!

Karen Peterson: Hi Katherine!

Karen Peterson: Cori, we had 200+ registered and tend to have about 50% of registrants attend in real time.

Snehal Bhakta: Hi Karen! Hope you are doing well!

Jolene Gustafson: <https://www.amandaalzenasullivan.com/publications>

Jannie Fernandez: Hi all! Jannie Fernandez from Boulder, CO (NCWIT) -

Connie: Stereotypes are the worst. When my bestfriend was expecting, I got a NASA spacesuit onesie for the new baby. At the Christening, one of our friends asked how I knew the baby would be a boy. My friend answered, "Do you really think Connie cared?"

Snehal Bhakta: Dr. Sullivan - ABSOLUTELY AGREE! We have to build confidence early and often with girls.

Connie: Stereotypes are nasty and inhibiting.

Connie: As a pilot, Ham, electrical engineer, I have had to fight stereotypes since I was 8 yo and got my first ham license.

Cori Araza-GCU: Thanks, Karen. Impressive number--I'm always looking to see how many are engaging in this topic.

Snehal Bhakta: I've found that using LEGO and Nintendo SWITCH has been a game-changer in increasing interest and engagement of girls in middle school.

Jolene Gustafson: <https://www.amandaalzenasullivan.com/publications>

Connie: For Christmas and birthdays, all of the girls get the same gifts as the boys! No difference. From the earliest age.

Snehal Bhakta: LEGO Spike PRIME kits are awesome!

Katherine Weber: Hands-on activities in a box can work in a virtual setting.

Marisa Garcia: what have you tried when doing virtual learning with young girls?

Linda Chen: I think about how equity plays in today's homeschooling. how parents choose to spend money even on gender differences if they have limited budget.

Kate Van Dellen: We did a pattern game

Connie: CAP Aerospace Excellence has simple activities that can be done at home like the Ring Wing airplane which only needs paper a straw, tape, and scissors. You can spend an entire afternoon learning how the size and shape of the rings affect how it flies.

Cori Araza-GCU: Love these ideas! We have a YouTube Channel that we share with our K12 audiences--College Knowledge and STEM College Knowledge Playlists for educators:

<https://www.youtube.com/playlist?list=PLz033qCRITQwGjLnIUdYkyWngz3cHrb0g>

Adrienne Provenzano: see <https://www.nasa.gov/specials/nasaathome/index.html>

Karen North: Yes, facilitators are the key - have been trying to build stone houses in classroom for decades, and with a 4 1/2 grand-daughter find the need even greater now.

Anne: Hello, Anne from NYC FIRST here. We ran a remote STEM camp this summer and found that sending home a kit of parts (including rapid prototyping materials such as cardboard, crafting supplies, Legos, etc) made camp run very smoothly and allowed us to conduct impromptu engineering challenges everyday. We were also able to find very cheap 3d pens to send home and \$17 microcontrollers (microbit)

Maura O'Neill: So many great ideas and helpful information! To confirm, will these slides and/or chat transcript be available after the webinar?

Snehal Bhakta: There are some great STEM/STEAM Origami activities. Love the BEAM = Bigelow Educational Activity Module where they build a lunar capsule

Cori Araza-GCU: Parenting Practices to support parents:

<https://www.youtube.com/playlist?list=PLz033qCRITQzf0Hv-25-zPfcVZctsqr8>

April Browne: For coding, I love ozobot. The cheap one is less than 50 and can be "coded" with markers. For the youngest, I give a number line and have them figure out how many they have to fill in to make the robot go from 2 to 5 and all of a sudden they have added 2+3 to make 5

Marisa Garcia: Maura, yes chat, recording, resources etc. will all be shared!

Maura O'Neill: Thank you!

Marisa Garcia: so many great additional resources and ideas coming here in the chat! thanks, everyone

Deanna Kocher: I've done a variation of this virtual "Coder says" activity with kids practicing giving directions virtually. It worked really well, and really made kids think about the directions they give!

Anne: I love running a coding activity where students have to direct me to make peanut butter or teach me a new dance.

Connie: Civil Air Patrol Aerospace Education has free STEM kits which are indicated grade level appropriate. They are free to keep and cover everything from the Coding Bee to model rockets.

Cori Araza-GCU: And live webinars for Teachers: Summer STEM Activities:

[https://www.youtube.com/watch?v=OiRLLLYIBRg&list=PLz033qCRITQxU4\\_oRDO\\_u6Z-fLIJcmPIK&index=13&t=1589s](https://www.youtube.com/watch?v=OiRLLLYIBRg&list=PLz033qCRITQxU4_oRDO_u6Z-fLIJcmPIK&index=13&t=1589s)

Connie: I am very used to having mal/female in my AE classes. The Girls are typically more focused and better than the boys.

April Browne: I love codespark (not free) for pre readers. It teaches high level programming (functions, loops, decisions) without any reading.

Adrienne Provenzano: Books read on the International Space Station!

Adrienne Provenzano: <https://storytimefromspace.com>

Sue Fajer: "This is What an Engineer Looks Like" fantastic book

Rachael MacKeigan: I have found that incorporating empathy into the building challenge helps to engage girls. Making shelters for homeless animals, or playground equipment for someone with a disability.

Cheri Burch (AAUW Tech Trek NM): There are great games that teach coding concepts, too.  
Connie: IEEE has a series of grade appropriate EE activities and lessons at TryEngineering.org. This material is also completely free.

Jennie Mathur: "Mira Forecasts the Future" by Kell Andrews

Linda Chen: in addition to those books, I recommended these. The Spacesuit:

<https://medium.com/@BabyMonsterToys/a-stem-book-review-the-spacesuit-b54ea4d18f21>

Snehal Bhakta: Great ideas being shared!

Dale McCreedy: Discovery Center at Murfree Spring's Facebook page has 14 early childhood read alouds with hands on activities. Each video is ~12 minutes and suggests at home follow ups

Linda Chen: My First Coding Book: <https://medium.com/@BabyMonsterToys/a-stem-book-review-my-first-coding-book-f1c0d3766793>

Katherine Weber: The Engineering is Elementary has some great resources too -

<https://www.eie.org/>

Cori Araza-GCU: Great links--love the NASA link and the Spacesuit! Thank you all for sharing

Connie: I got interested in engineering at age 7 when I read "Kay Everet called CQ" about a young girl who got her ham license. The following year I got mine then went into engineering. We need more books like this.

Jannie Fernandez: bitsbox (not free) is also great

Rachael MacKeigan: Brilliant Labs has put together some great resources during remote learning

<https://www.brilliantlabs.ca/makerfun>

Jolene Gustafson: <https://www.ncwit.org/resources/how-do-you-recruit-or-retain-women-through-inclusive-pedagogy/framing-supportive-classroom>

Amanda Sullivan: So many great resources you all are sharing!

Karen North: Karen, can you do a poll to find out how many do not know about NCWIT?

Jeff McConaughy: I used to work at Intel and a number of female co-workers reported positive experiences with NCWIT.

Karen Peterson: Good idea - Karen! Just say YES or NO based on if you know about NCWIT.

Lynna Lawson 2: Lynna Lawson, Missouri AfterSchool Network that provided technical assistance to out of school time programs.

Cori Araza-GCU: Absolutely LOVE and teachers in my PD sessions have really enjoyed the Virtual Classroom Decor for STEM teachers! Thank you NCWIT!

Maura Connolly: context

Linda Chen: credibility

Jennie Mathur: context

Char Moss: Location

Jeff McConaughy: Name association

Scott Killough: The art museum provided Banksy with credibility

Sue Fajer: audience

Snehal Bhakta: Perception and Value

Cori Araza-GCU: Museum presents credibility and the ooh la la factor

Kate Van Dellen: Because one was cheap street stuff

Rachael MacKeigan: credibility

Chris Beimborn: setting filled with people looking for art vs. people busy with other things

Connie: People didn't believe it was really his.

D'Nae Hearn - Detroit Zoological Society: setting: museum vs. "street art"

Rosalynn Sarvi: credibility/value

Cori Araza-GCU: Or maybe simply because others bought it.

Anniece Isler: Different culture on the street instead of in the museum.

Katie Worthen: context - people with that much money to spend I would imagine aren't the average person walking around

Char Moss: Presentation of art work

Jolene Gustafson: <https://www.ncwit.org/resources/how-do-you-recruit-or-retain-women-through-inclusive-pedagogy/framing-supportive-classroom>

Jolene Gustafson: <http://dx.doi.org/10.1145/2538862.2538959>

Karen North: Did a GirlTech Workshop at Rice University in 1990s that sent observers into the classroom to help teachers change. Wish those STEM facilitators were available for every school.

Snehal Bhakta: How do replace, replicate, or revise the "in class" to virtual or distance learning?

Cindy Ziker: Hello, I am Cindy Ziker with Ziker Research in San Jose, California. Great to be here!

Amanda Sullivan: This is great, I'm teaching an online class at Tufts this fall and will absolutely be giving this type of survey and visualizing of results a try!

Connie: IEEE has a program called EPICS in IEEE K-12 in which IEEE engineers are paired with a classroom and visit a few times a month to teach engineering thought and design process which culminates in a major hands on project. This is aimed at middle through high school.

Connie: EPICS is Engineering Projects in Community Service and IEEE College students take on these project with the help of the local high school

Connie: There is also the Try Engineering Together program which is a virtual mentoring of 3rd to 4 graders. Engineers are matched one to one to go through engineering oriented material under the watch of the classroom teachers. It is designed to get students interested in engineering.

Amanda Sullivan: Are there any different/additional survey questions we think should be added or changed for virtual classes?

Snehal Bhakta: This questions are great, however, how would you adjust or change them for a distance learning, virtual, or hybrid model for education?

Connie: CAP AE Excellence provides grade normed activities to do as a group. When a set number of activities has been completed all students get a certificate and the class gets a plaque.

Snehal Bhakta: Have these questions been presented in a high school, middle school, or K-12 settings? I heard that it was presented to undergraduates, but not sure about younger students...

Karen North: Connie, I tried to get that IEEE program going in my elementary school, but alas, the principal would not support. How can we bring that back. We have amazing programs that are not scaled, and new ones started. Change is too slow, and opening to find exponential growth in equity in STEM.

Connie: Karen, my email is [ckelly@ieee.org](mailto:ckelly@ieee.org). Contact me and we can see what we can get started. There is a lot of material than can be slid into the curriculum. With things going virtual schools are becoming a lot more receptive.

Snehal Bhakta: Are there digital trading card platforms that could be used in a virtual environment?

Linda Chen: This is so helpful for all teachers. I like to share these tips with my kids' teachers.

Marisa Garcia: Linda you are welcome to share the webinar recording and resource pages we will send out

Cori Araza-GCU: Thank you , Lecia for these excellent resources for K12 teachers!

Rachael MacKeigan: maybe asking about familiarity with tech?

Karen North: Do you have students create the questions?

Snehal Bhakta: When we can't require students to turn on cameras during distance learning, how can teachers ensure they have Gender Equity with STEM learning?

Cori Araza-GCU: In synchronous learning, I would not change this for virtual learning. Setting these frames up in the beginning would be super helpful in virtual learning.

Connie: I have a presentation I have used for the Illinois Math an dScience Teachers Association I am willing to share. I am updating it for an October meeting and it should be updated shortly. [ckelly@ieee.org](mailto:ckelly@ieee.org)

Amanda Sullivan: @Snehal - perhaps they can share / email pictures of projects etc? Not a perfect solution what do others think

Snehal Bhakta: Have K-12 students provided feedback on the questions, results, data, etc...

Adrienne Provenzano: thank you! take care everyone!

Katherine Weber: This was an excellent webinar! Thank you!

Connie: Great Chat All!

Amanda Sullivan: Thank you everyone!

Amanda Sullivan: I hope we can continue to connect on social media :)

Lecia Barker: Thank you everyone!!!!!!!!!!!!!!

Karen Peterson: Good to see everyone!

Trish Marquez - Explora: Thank you!

Snehal Bhakta: Thank you everyone and sharing the resources!

Rachael MacKeigan: This was a really fantastic session, thanks so much

Jennifer Kolbauer: Thank you this was so helpful!