

STAR★*net*

Science-Technology Activities &
Resources For Libraries

Welcome!

NCIL

National Center for
Interactive Learning



**SPACE
SCIENCE
INSTITUTE**

ALA American
Library
Association



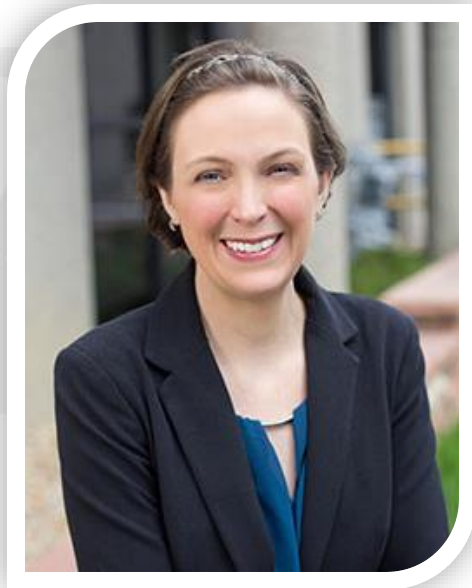
**Institute for
Learning Innovation**

SciGirls



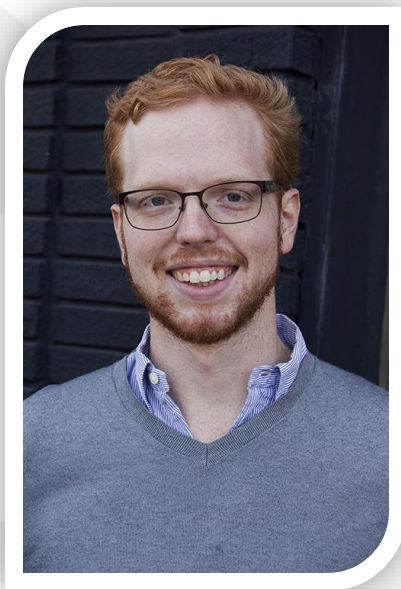
**Education
Development
Center**

Presenters



**Keliann
LaConte**

*National Center for
Interactive Learning
at the Space Science
Institute*



Brooks Mitchell

*National Center for
Interactive Learning at the
Space Science Institute*



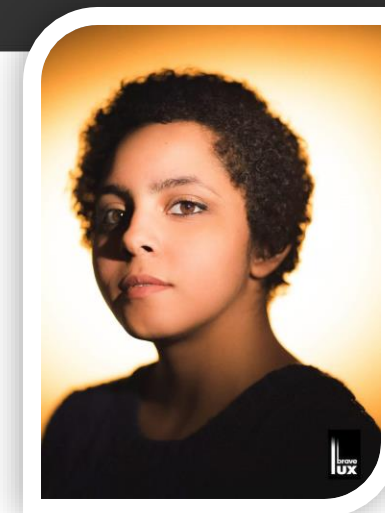
Niki Becker

SciGirls



Kristin Pederson

SciGirls



B.B. Browne

*ALA Public Programs
Office*



Flo Trujillo
*REFORMA de
Nuevo Mexico*



Miguel Ruiz
*Evanston Public
Library*



Veronica Casanova
Tulare County Library System



FREE
**Science-Technology
Activities & Resources**

www.starnetlibraries.org



Engage families to empower tweens in STEAM culture and learning



Learn how libraries can best support tween interest and persistence in STEAM learning in their rural communities

Advancing Informal STEM Learning

This material is based upon work supported by the National Science Foundation under Grant No. DRL-1906172.



Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.



Collaborate and co-create with Latino* populations

*The project team uses the term “Latino” but acknowledges that communities and individuals may identify as Latino/a/x, Hispanic, Chicano/a, or a variety of other terms.

Eligibility

Libraries that serve significant Latino populations* are strongly encouraged to apply.

*For the purposes of this project, a significant Latino population as a percentage greater than the 9% national average for rural America ([USDA Rural America at a Glance, 2018 Edition](#)).

STEAM Learning Pathways for *Your* Community

Exploration Spaces



Credit: Kanawha County Public Library

Programs



Credit: Thelma Parker Library

Outreach Kits



Credit: NCIL/SSI/High Plains Library District



“Community Dialogues and Libraries,” with Lisa Jackson, Librarian, Supervisor and community members at [African American Research Library and Cultural Center](#) (AARLC)



<https://stemforall2020.videohall.com/presentations/1653>

Community Dialogues



Library staff serving rural communities

Credit: Marshall Lyon County Library, STAR Net *Explore Tech* host library



**Develop and share STEAM
strategies for public library workers
in small and rural communities**

Eligibility

For the purposes of this project, rural libraries are defined as those serving communities of under 25,000.



Over the course of 2021-2024, successful applicants will host three traveling STEAM exhibitions, each for a three-month period

Eligibility

- Libraries must have the physical space to host exhibitions:
 - Each exhibition requires 400 square feet
 - Exhibitions are modular

Requirements and Benefits for STEAM Equity Project Partner Libraries



Science-Technology Activities &
Resources For Libraries

- 12 Partner Libraries
- Grant Term:
December 2020 – June 2024

Exhibit Hosting

- STEAM Topics (Earth Science, Space Science, and Engineering)
- 400-square-feet
- Details will be adjusted if/as circumstances related to COVID-19 evolve



Requirements

Programming, Kits, STEAM Space

- Three STEAM programs annually
- Create and lend three STEAM outreach kits
- Sustain a physical STEAM exploration space



Requirements

Community Dialogue and Reporting

- Community Dialogue
- Submit An Online Annual Report
- Participate in Evaluation and Research

Requirements



STEAM Equity Grant Benefits



\$15,000



PROFESSIONAL
DEVELOPMENT
OPPORTUNITIES



VIRTUAL SUPPORT
FROM THE
PROJECT TEAM



COLLABORATIVE
COMMUNITY OF
PRACTICE

How to Apply



Science-Technology Activities &
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Visit the STEAM Equity Project
Web Page

Expressions of a Strong Applicant

- Ability to provide physical space for traveling STEAM exhibitions and ongoing STEAM exploration spaces
- Interest in and/or demonstrated effort to build new and deeper community collaborations
- Cultural responsiveness and willingness to engage with Latino families and collaborating organizations
- The ability to execute Public Programming

Preparing for the Second Round



Science-Technology Activities &
Resources For Libraries

- What to consider after submitting your NOI

Community Outreach



**BEGIN YOUR OUTREACH
AS SOON AS POSSIBLE**



**PLAN A COMMUNITY
CONVERSATION TO
ENGAGE KEY
COLLABORATORS AND
RECRUIT COMMUNITY
PARTNERS.**



**WHAT I TELL PEOPLE
WHEN THEY ASK
ABOUT LATINX
ENGAGEMENT BY
MIGUEL RUIZ**

Programming



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Understand

Understand what type of programming best fits your community's needs and interests.

Explore

Explore STEM programming right now. Check out STAR Net's STEM Activity Clearinghouse

Evaluate

Evaluate your library's capacity and make a strategy



Questions?



SciGirls



Niki Becker

**SciGirls STEM Media and Education
Specialist**

Kristin Pederson

**Senior Director, STEM Media and Education
Project Development**

Produced by:



Made Possible by:



Additional Support from:



PPG
Industries
Foundation

The
Mosaic
Company
Foundation

The Big Idea



Media and education that changes how girls see STEM and how the world sees girls.

Our Approach

- ★ On TV
 - national PBS Kids series
- ★ Online
 - safe, social networking website
- ★ On the Ground
 - activities and professional development



Rationale

Why are we here?

- Boys and girls do not display a significant difference in their **abilities** in STEM. The cause is social and environmental.
- Differences consistently appear in girls' **interest** and **confidence** in STEM subjects, starting at a very young age.
- These differences can be linked to a **negative self-perception**, enhanced by stereotypes.





SciGirls Strategies: How to Engage Girls in STEM

The *SciGirls* approach is rooted in research about how to engage girls in STEM. A quarter of a century of studies have converged on a set of strategies that work, and they have become the framework for *SciGirls*.

- 1 **Connect STEM experiences to girls' lives.**
- 2 **Support girls using STEM practices.**
- 3 **Empower girls to embrace struggles.**
- 4 **Encourage girls to challenge STEM stereotypes.**
- 5 **Emphasize that STEM is collaborative and community-oriented.**
- 6 **Interact with diverse STEM role models & mentors.**

Framework for the SciGirls Strategies

In order to be effective at implementing the ***SciGirls Strategies***, educators need to:

Provide an inclusive learning environment.

TIPS:

- ★ Create a warm and welcoming space that is accessible to all.
- ★ Create an atmosphere of mutual respect.
- ★ Use icebreakers so youth can introduce themselves in a non-threatening manner.
- ★ Provide opportunities for youth to voice their opinions.

Use culturally responsive teaching practices.

TIPS:

- ★ Understand your culture and how it affects others.
- ★ Get to know your youth and build on their life experiences.
- ★ Communicate high expectations for behavior and performance.
- ★ Validate youth's bilingual abilities to leverage learning.

www.scigirlsconnect.org

Produced By:



The SciGirls
Strategies:
How to Engage Girls
in STEM

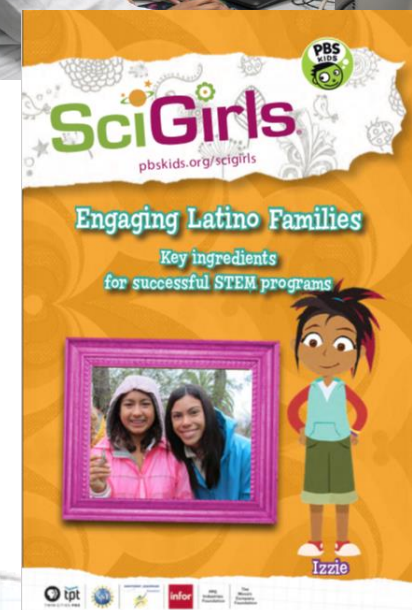
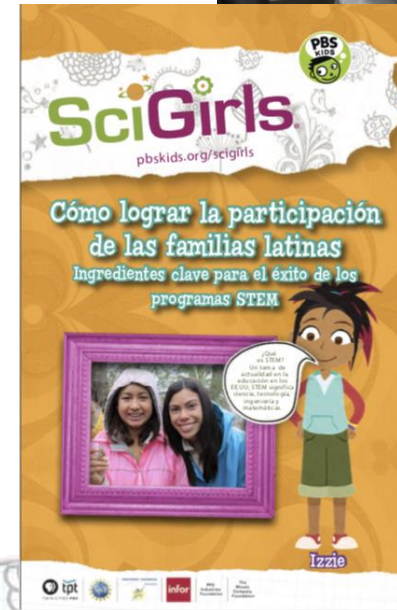
SciGirls and Latinx Audiences

- *Latina SciGirls: Promoting Middle School-Age Hispanic Girls' Positive STEM Identity Development*
 - 6 episode Spanish-first series
 - Two year research and evaluation outreach program
 - 16 partner organizations running STEM programs for Latinas grades 5-8
 - 280+ girls, 560+ Latinx family members reached
 - Findings: girls reported higher rates of emotional connection to STEM (an important component of STEM-related identity development) after exposure to the various Latina SciGirls interventions



SciGirls and Latinx Audiences

- *Latinas At Work* Role Model Series
 - Twelve 3-5 minutes videos showcasing Latinas in STEM Careers
- *Engaging Latino Families Guide*

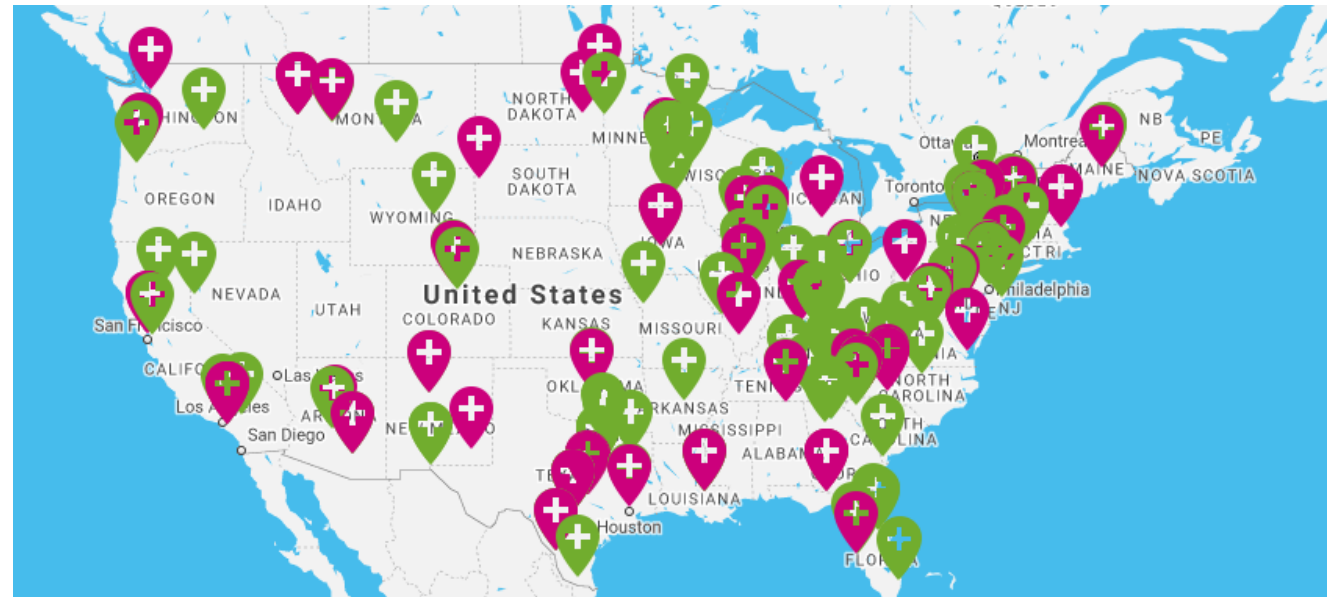


SciGirls: Where Are We?



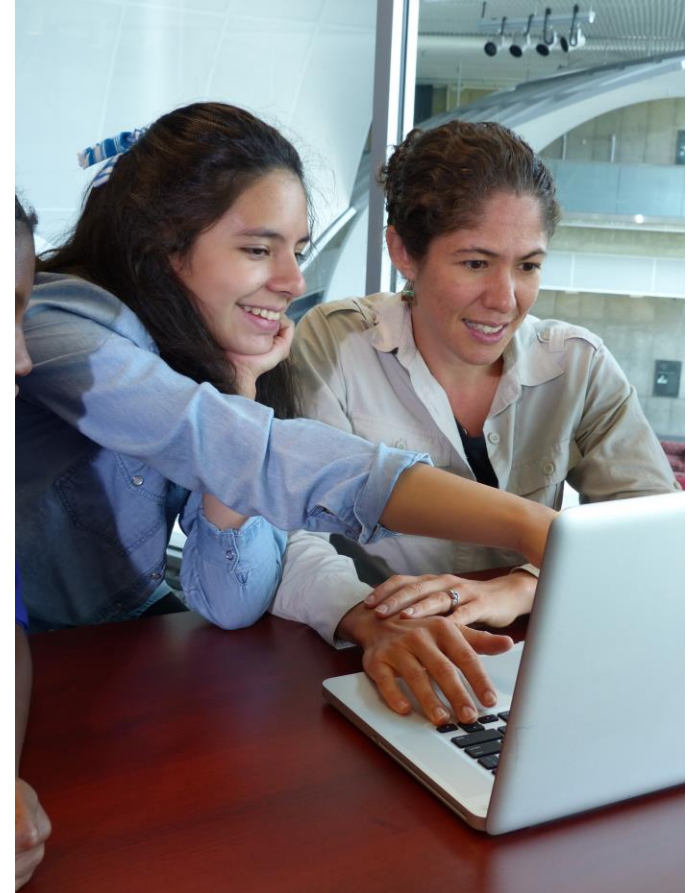
Nationwide:

- Over 200 Partner Organizations
- 82 Certified SciGirls Trainers



Additional Resources

- Family Guide for Engaging Girls in STEM
- SciGirls Games on PBS Kids (pbskids.org/scigirls)
- SciGirls Activities
- Nature Nurture Journal & Dare to Be a SciGirl



Looking for more?

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SciGirls Activities, Videos, and More: scigirlsconnect.org



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SciGirls



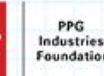
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Additional Support From:



STEAM Resources for NOW

- **STEAM Ahead @ Home Newsletter and Website**
- **STEM Activity Clearinghouse**
- **STAR Net YouTube**



Families at Home

Below is a set of resources that can be provided directly to families without the need of facilitation by library staff.



Hands-on Activity: Daylight in a Bottle

Celebrate Earth Day at home by harnessing the power of natural resources! This [family guide](#) explores how you can read a secret message from a friend or light up a room with just two things: free, clean energy from the Sun and a water bottle.

The activity has a how-to video (below) as well as a short, four minute video, "[A Liter of Light @ Night](#)", showing how this technology has been used practically in other countries.

[View The Facilitation Guide](#)

Refresh Your Skills

Keep your skills sharp by revisiting these professional development resources.



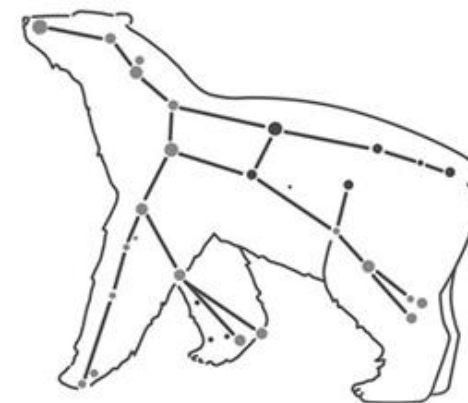
Webinar: Imagine Your Story... with a STEAM Twist!

Join the *STAR Net* team and Luke Kralik, Organizational Coordinator for CSLP, in this recorded webinar to learn all about this year's theme and exciting, hands-on STEAM activities that will help you bring it to life at your library. We'll discuss programming ideas, useful resources, and tips for engaging your community!

[View This Week's Webinar](#)

Virtual Programs

Use this featured resource to add easy, hands-on STEAM activities (using common household materials) to your online Story Time programs. Note: Book recommendations are included.




Virtual Program: Sky Heroes

Participants celebrate their heroes by creating connect-the-dot star patterns to represent them.

[View This Virtual Program Activity](#)

www.clearinghouse.starnetlibraries.org



View larger

Make a Pinwheel Galaxy

Patrons design, cut-out, and assemble their own Pinwheel Galaxy

Open Activity

How-to Video

Rating ★★★★★☆

Participants Enjoyed the Activity ★★★★★☆

Participants Learned from This Activity ★★★★★☆

Activity Instructions Were Clear and Easy to Follow ★★★★★☆

Would Recommend ★★★★★☆

Read reviews (2)
 Write a review

Content Area
Astronomy and Space

Age Group
Family
Early Elementary
Upper Elementary

Time to Complete Activity
10-20 minutes

Time needed to prep Activity
Under 5 minutes

Cost associated with Activity Materials
\$1-\$5

Difficulty Level (by content)
Easy

Mess Level
Low


Report a broken link

Categorized Incorrectly? Let us know!


Tweet Share Google+ Pinterest

Send to a friend


Print




Engineering Design Challenges




Activities for Teens




Activities for Adults




Passive Programming




Computational Thinking




Activities for Pre-K




Activities for Tweens




Citizen Science




The Search for Habitable Worlds



Space Science



Imagine Your Story



Our Planet: EARTH

Activities feature sortable information and a robust review section! Try an activity? Leave a review!

Custom "Collections" help you find an activity that is right for your program.

Coming soon...a "Take and Make" collection!

www.youtube.com/starnetlibraries

- Helpful How-to videos for interactive activities; some designed for "direct to patron" use
- Archived recordings of STAR Net webinars
- Inspirational videos of "STEM in Action"
- Videos about the "STEM in Libraries" movement!

The screenshot displays the STAR Net YouTube channel page. At the top, the channel name "STAR Net" is shown with 343 subscribers. Navigation tabs include HOME, VIDEOS, PLAYLISTS, CHANNELS, and ABOUT. A search icon is also present. Below the navigation, there are two main sections of video recommendations:

Webinars (PLAY ALL)

- Virtual Programs 101: Behind the Scenes with STAR Net** (1:09:05) - 109 views, streamed 1 week ago.
- Community Dialogues for Our Planet: EARTH (Session 4)** (50:54) - 36 views, 1 month ago.
- Bringing the Stories of the Skies to Your Library** (1:05:41) - 519 views, streamed 2 months ago.
- Community Dialogues for Our Planet: EARTH (Session 3)** (49:32) - 16 views, 1 month ago.
- Beg, Borrow, and Steal... Multi-generational STEAM...** (1:00:44) - 256 views, streamed 2 months ago.

STEM Activity Clearinghouse Activities (PLAY ALL)

- Levers at Play** (1:51) - 429 views, 3 years ago.
- Jump to Jupiter** (1:24) - 1.5K views, 3 years ago.
- Wind Streamer** (1:31) - 1.3K views, 3 years ago.
- Can a Toaster Make Wind?** (1:45) - 262 views, 3 years ago.
- Stream Landscapes** (2:00) - 202 views, 2 years ago.

Final Questions and Reflections

