UNIVERSITY OF MASSACHUSETTS BOSTON
CENTER OF SCIENCE AND MATH IN CONTEXT (COSMIC)

WIPRO SEF

YEAR 8
QUARTERLY REPORT
June 2021

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INTRODUCTION

Wipro SEF Program Overview

The Wipro Science Education Fellowship (SEF) is a four-year STEM district transformation program. Cohorts of K-12 teachers participate in a rolling two-year professional development experience designed to improve individual teacher practice, foster teacher leadership opportunities, and create a district corps of teacher leaders. Professional development for fellows is led by a university in partnership with the local school district. The program was developed at the Center of Science and Mathematics in Context (COSMIC) at UMass Boston and is now in 7 universities and 35 partner school districts throughout the United States.

Year One: Thinking About Teaching

› Monthly Fellows Meetings

Fellows from approximately five different school districts gather once a month at the host university to engage in professional development in the areas of instruction, reflective practice, adult learning, and leadership.

› Collaborative Coaching and Learning of Science (CCLS) groups

Fellows engage in research-based, structured inquiry into their own teaching and growth. Fellows meet in CCLS teams to share videos of themselves teaching in their classroom as well as sharing student work to learn from each other, to reflect on science content and pedagogy, and to improve their teaching of science. These small professional learning communities determine their own schedules, courses of study, and the lessons they will all be videotaping and observing with support and guidance from their university partner.

Year Two: Implementing the Individualized Growth Plan System (GPS)

Each fellow develops and carries out an individualized growth plan that has a clear vision and identifiable benchmarks. The 100-hour plan focuses on ways to improve the teacher's own instruction and leadership and is developed in collaboration with a university advisor, the district science coordinator and the fellow's principal. The yearlong project includes the fellow leading professional development for other teachers in their school district and culminates with a report and presentation of a poster session at the end of year conference.

A District Corps of Teacher Leaders

Over a rollout of three successive cohorts of fellows, each participating school district will have as many as 12 fellows who have participated in the extensive 2-year Wipro SEF program. These fellows serve as a leadership group for district science and engineering initiatives.

HOW TO READ THIS REPORT

This report captures the work of the Wipro SEF program from March 2021 thru June 2021, and an evaluation summary. During this time, all sites met the challenges of maintaining and adapting the Wipro SEF program during the Covid-19 pandemic. The chart below summarizes the activities of this quarter and the activities that will take place in this school year. Each site's report includes an overview of the activities that have taken place this quarter. Use the table of contents to locate a site's report. For a quick look at how the program is influencing Wipro Fellows please refer to the vignettes in the sections entitled "Featured Fellows." Throughout each site's report, you will find remarkable stories of Wipro Fellows supporting their students as teachers and supporting other teachers as teacher leaders. This report also includes a summary of the annual end of the year conference for that Wipro SEF program.

Year	CA Stanford University	FL University of South Florida	MA University of Massachusetts Boston	MO University of Missouri	NJ Montclair State University	NY Mercy College	TX University of North Texas Dallas
2019-2020	Year 2	Year 2	Phase II & Lead Institution	Year 2	Phase II	Phase II	Year 3
2020-2021	Year 3	Year 3	Phase II & Lead Institution	Year 3	(Funding ended)	Phase II	Year 4

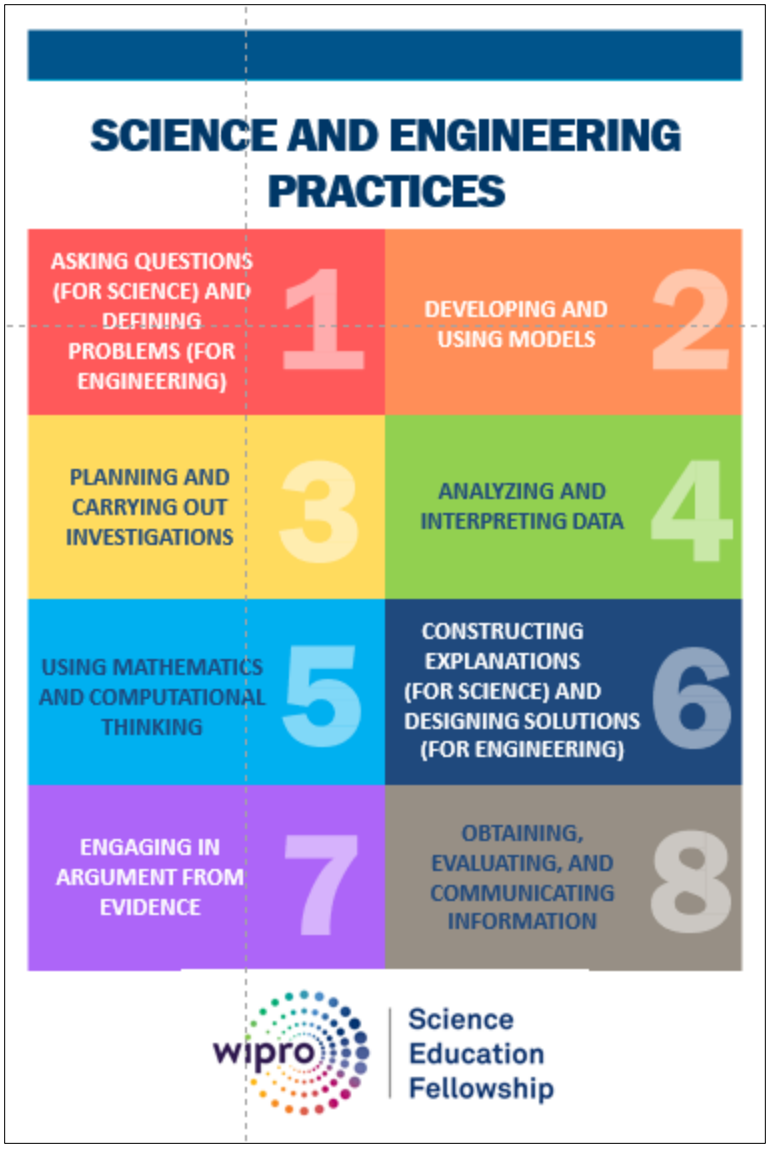
Table of Wipro SEF sites

	Cohort 1	*Cohort 2*	*Cohort 3*	*Phase II*
Year 0	Recruitment			
Year 1	Collaborative coaching and learning in Science (CCLS)	Recruitment		
Year 2	Growth Plan System (GPS)	CCLS	Recruitment	
Year 3		GPS	CCLS	
Year 4			GPS	
Phase II				Activities proposed by individual sites.

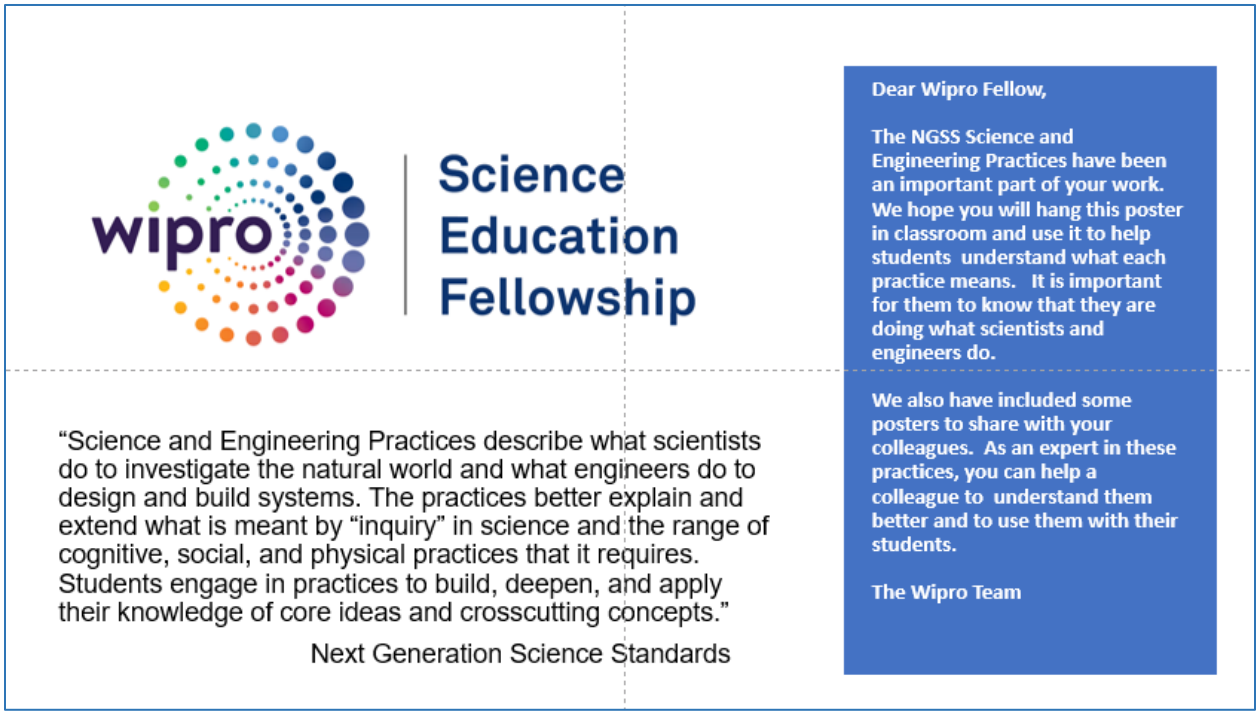
Key to yearly activities

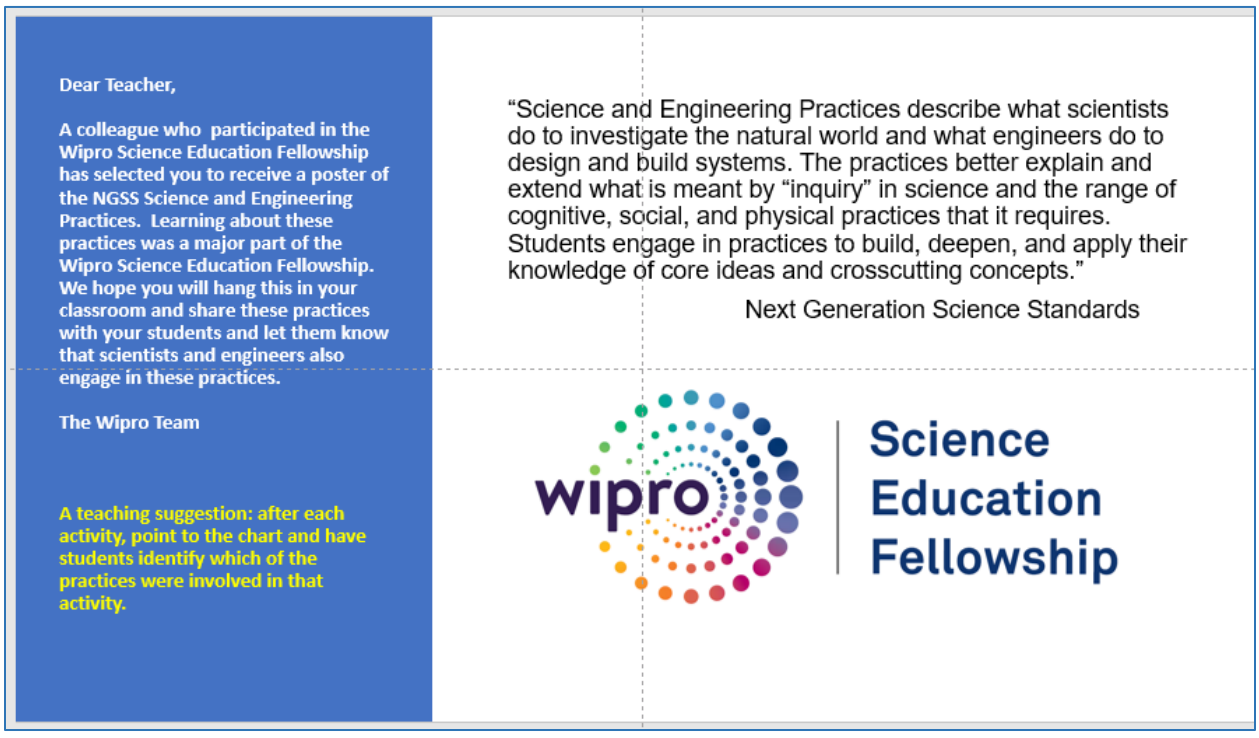
UMass Boston Lead Institution- Building and Supporting a Network of Wipro SEF sites

UMass as the Lead Institution plays a key role in coordinating the work of the sites and in providing opportunities for the sites to exchange information. This role has been particularly important during the Covid Pandemic. In addition to previously scheduled monthly Zoom calls Dr. Eisenkraft scheduled additional zoom calls to prepare for the end of year conference.



One of the goals of the Wipro SEF program is to develop leadership in schools and to share Wipro SEF resources with other teachers within the schools. Posters with the Science and Engineering Practices from the Next Generation Science Standards were sent to all active fellows to post in their classrooms. Each fellow also received 3 additional posters to share with colleagues in their school. Notes were attached to the posters with suggestions on how they could be used in the classroom.





Planning the Wipro SEF June Conference

Planning for the 2021 Wipro End of the Year Conference began soon after the Winter Leadership Conference ended. One of the items that was discussed at the Leadership conference was whether the June conference would be a collaborative effort amongst all of the Wipro SEF sites. At the

conference 80 GPS projects and 15-20 HCCLS presentations would be included. A conference of this size, conducted virtually, is an enormous undertaking. Many decisions would need to be made, many documents would need to be prepared and the logistics of the conference itself required extensive planning.

At the end of March, a lengthy zoom conference call was held with all sites. It was decided that each site would have a distinct role and primary responsibilities.

- Team 1 (MO) – **H-CCLS and Logistics of Conference Hosting**
- Team 2 (TX) – **GPS**
- Team 3 (CA) – **Synchronous Sessions and Conference Brochure**
- Team 4 (FL) – **Exemplars of GPS and H-CCLS**

Conference dates of Tuesday, June 1, 2021, to Tuesday, June 15, 2021, were agreed upon with a conference format of synchronous and asynchronous sessions. Each of the four sites have used different virtual platforms to conduct activities this year. For this conference, however, all sites would need to use the same platform. Dr. Meera Chandrasekhar, Missouri site, had put together a document comparing the pros and cons of each platform. With this information in hand the group decided on the Torsh Talent platform.

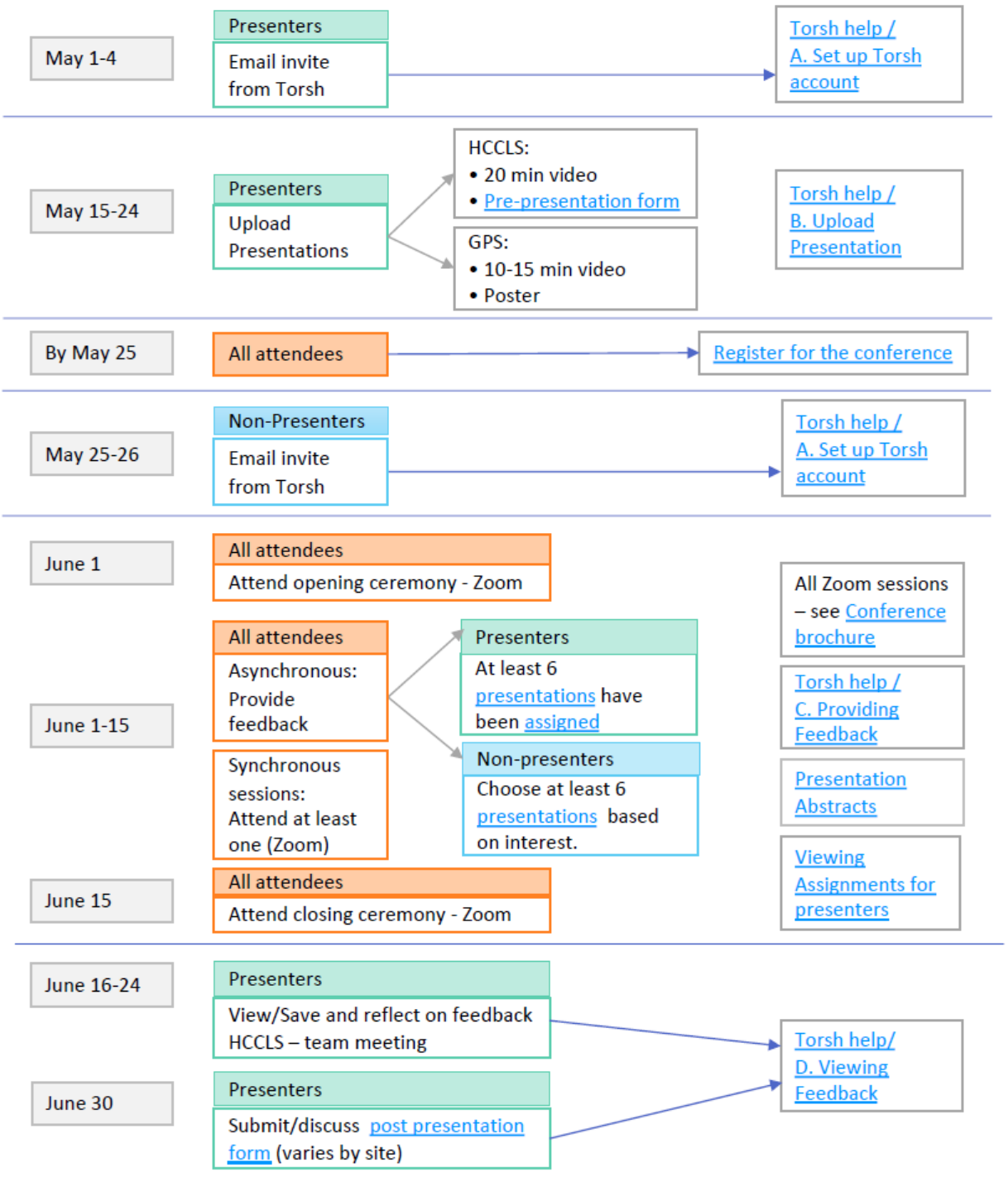
The Elements of the conference:

	Number of presentations	Time allowed	Feedback
H-CCLS presentations including uploaded video and documents	15-20	20minutes	Warm and cool feedback given online by conference participants.
GPS presentations including uploaded video, Poster and supporting documents	80	10-15minutes	Warm and cool feedback given online by conference participants.
Synchronous sessions conducted live with presentation documents	7 plus an opening and closing session	45 minutes to 90 minutes	Post session evaluation forms submitted by participants

To keep the network of Wipro SEF sites informed, weekly conference calls were held from April to the start of the conference in June. To keep Wipro Fellows, DSC's and others informed they were sent frequent emails to remind them of what was due and when. The information for conference participants is summarized below:

Navigating the Wipro SEF Virtual Conference 2021

The Conference will be held on the Torsh platform. The central info center is the conference brochure: https://tinyurl.com/85pvsrde. The documents and videos listed below are linked within the brochure, but are also available in a subsidiary folder, https://tinyurl.com/2021WiproConfAttendees. Torsh help and related documents are at https://torshtalent.com/best.



CONFERENCE SCHEDULE

Presenters: Upload Videos, Forms, and Posters See How to Upload on your Presentation on p. 12	**Sat, May 15-** **Mon, May 24**
Registration Deadline Registration LINK	**Tue, May 25**
Conference Guests: Receive Conference Platform Information See Conference Platform & Account Set-Up on p. 8	**Mon, May 31-** **Tue, June 1**
Opening Session This session will be the official launch for the conference activities that will take place over the course of the two weeks. During this time, participants will interact with other fellows from across the country and get an overview of how to navigate the conference platform and materials. Zoom Link Meeting ID: **984 5708 0211** || PW: **931200**	**Tue, June 1** 4:00-4:45 PDT
Asynchronous Presentation Viewing & Feedback *(on Torsh Platform)* See Asynchronous Viewing & Feedback on pgs. 8-11	**Tue, June 1 -** **Tue, June 15**
Synchronous Session #1: **Chances Are: How Scientific Games of Chance Can Allow Us to Reason (SEP: Math and Computational Thinking)** Facilitated by: Sara Beberman, MA Zoom Link Meeting ID: **931 7684 3634** || PW: **782812**	
Synchronous Session #2: **Working for Equity in Science Education** Facilitated by: Allan Feldman, FL Zoom Link Meeting ID: **930 2141 0920** || PW: **813155**	**Thu, June 3** 4:00-5:30 PDT

Synchronous Session #3: **Using Place-Based Learning to Connect Your Standards & Improve Your Community** Facilitated by: Mike Szydlowski, MO Zoom Link Meeting ID: **985 6578 0933** || PW: **994840**	**Fri, June 4** 4:00-5:00 PDT
Synchronous Session #4: **Reflecting on the H-CCLS Experience** Facilitated by: CA Wipro Leadership Team Zoom Link Meeting ID: **938 3159 8810** || PW: **640795**	**Mon, June 7** 4:00-5:15 PDT
Synchronous Session #5: **Documenting and Applying Evidence-based Teaching Practices** Facilitated by: Dorina Kosztin, MO Zoom Link Meeting ID: **928 0410 8502** || Phttps://stanford.zoom.us/j/92804108502?pwd=NVJuU2lRUzlvbHZ5VjlQUTBnZFlNQT09W: **21080**	**Tue, June 8** 4:00-5:00 PDT
Synchronous Session #6: **What it Means to be a Teacher Leader** Facilitated by: NY Wipro Leadership Team Zoom Link Meeting ID: **931 0789 5500** || PW: **007009**	**Wed, June 9** 4:00-5:30 PDT
Synchronous Session #8: **Tools for Supporting English Language Learners** Facilitated by: Kelsey Mangaña, CA Zoom Link Meeting ID: **964 5340 4096** || PW: **506348**	**Sat, June 12** 8:30-9:30 PDT
Closing Session	**Tue, June 15**

This session will be the culmination of the conference. During this time, fellows will meet with other fellows from across the country and share experiences of their teaching and learning. Zoom Link Meeting ID: **929 1633 1975** || PW: **746352**	4:00-4:45 PDT
Presenters Download Feedback See How to Download Feedback on pg. 11	**Wed, June 16-Thurs, June 17**
Conference Platform Torsh Account Closes	**Wed, June 30**

Wipro SEF June conference 2021

The Wipro Science Education Fellowship (SEF) hosted its 2021 Annual Conference beginning June 1 through 15, a two-week virtual event that registered more than 150 fellows and leaders of the organization from 6 states for the second digital annual gathering in its history.

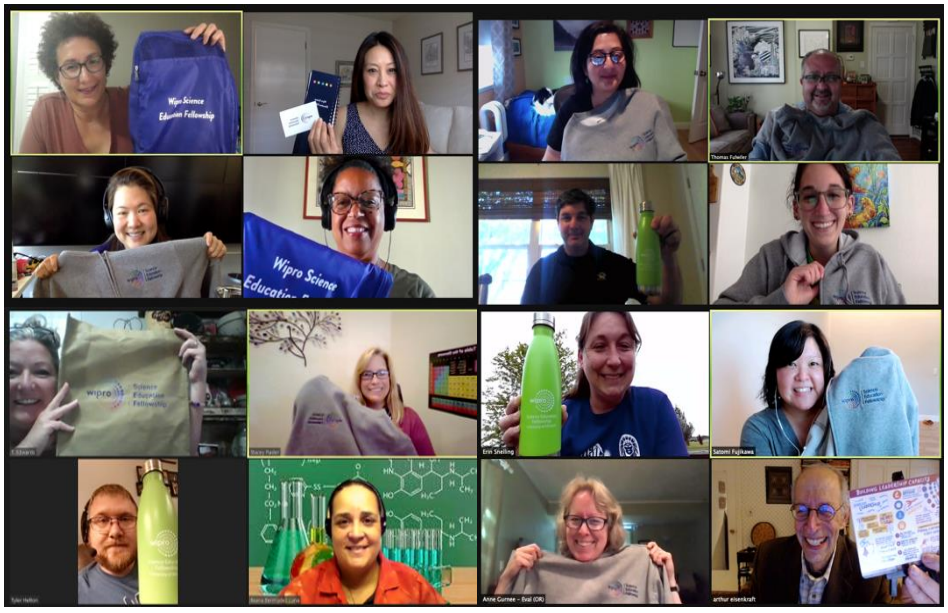
The event featured dynamic conversations with current fellows of the program in addition to university leaders, the backbones of the conference, whose persistent efforts led to an incredibly successful event. Capping the proceedings was a reflection on the GPS projects, H-CCLS presentations, and the synchronous sessions with additional moments to pause and take a breath, recognizing the hard work that led to the closing ceremony.

See the following link for the Conference Brochure.
See the following link for descriptions of the Synchronous Sessions.

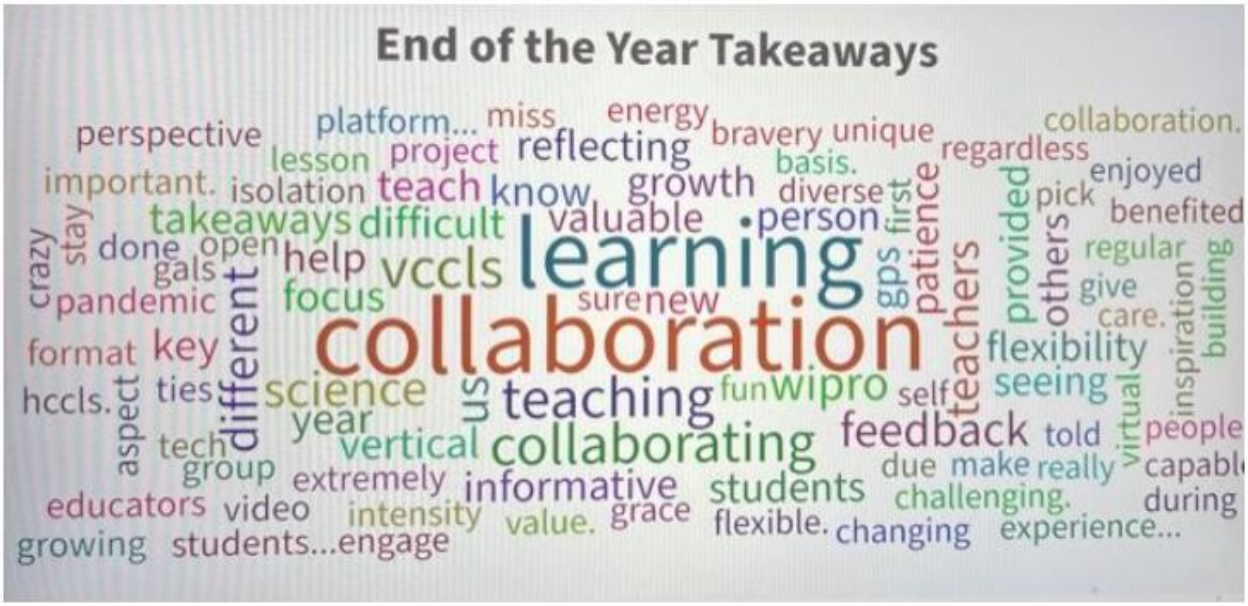
For those who participated, the UMass leadership team wants to thank everyone for their deep commitment to Wipro SEF. We will begin with a brief summary of each synchronous session from the 2021 June conference.

Opening Session

The California Team, led by Tammy Moriarty, Jenn Ray, and Sharon Parker, kicked off the conference with a stress-free fun opening session filled with zoom selfies and cross-site mingling. After a stressful year, it was a much-needed breath of fresh air for the fellows. They had the opportunity to meet with and learn about other fellows from different Wipro sites, an opportunity that would not have been easy without the virtual setting. To begin, participants were asked to grab any Wipro gear or "swag" they had within arm's reach and take a selfie (group photo) with their small breakout group. The results were fun and appealing as participants took to this shared experience .



In a new breakout group, participants then had the opportunity to reflect on their Wipro experience. They were tasked to come up with a word or phrase to describe their experience this past year which was compiled into a word cloud format to share. The results reflected a year of learning, collaboration, and overall growth as everyone bravely overcame the hurdles brought on by the pandemic.

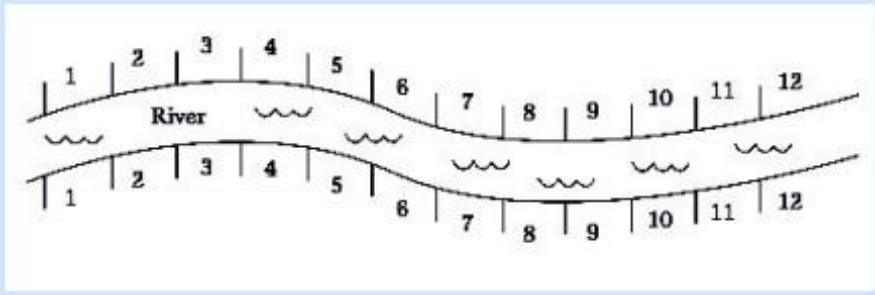


With the word cloud results in mind, the California team could not have chosen a better way to end the session than with a virtual self-care gift for all participants. They thoughtfully created a padlet that included affirmational quotes, artwork, and meditation videos to remind the fellows that everyone deserves some time devoted to self-care. The fellows left the session more relaxed than they began and ready to take on the remaining synchronous sessions and their upcoming work with asynchronous sessions.

Synchronous Session # 1: Chances Are: How Games of Chance Allow Us to Use Mathematics and Computational Thinking

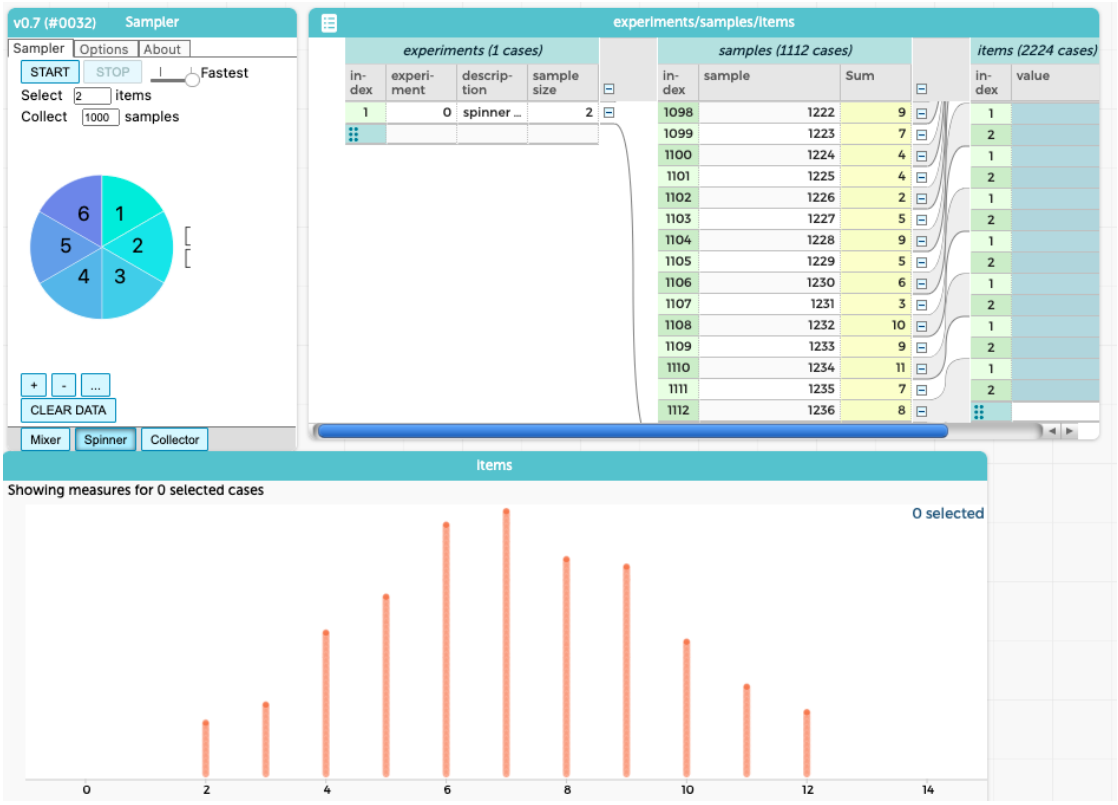
The Wipro fellow teams use one of the eight Next Generation Science Standards (NGSS) Science and Engineering practices as one element of their course of study for their H-CCLS projects. Practices are listed on page 3 of this report. Upon reading through the projects for this year across all districts (CA, MO, FL), it was discovered that no group used the practice of mathematics and computational thinking. Sara Beberman of the Massachusetts team, a math educator and graduate student, introduced participants to a new technology that could also be used in a science classroom as a means to integrate this practice into their teaching.

Ms. Beberman began by stressing the importance of math and computational thinking in today's world. The ACM Pathways Report from 2013 predicted that "By 2020, one of every two jobs in the 'STEM' fields (science, technology, engineering, and math) will be in computing." In other words, half of them. So maybe that problem is that we don't really know what computational thinking is. Ms. Beberman provided participants with a few definitions including, "the process of recognizing aspects of computation in the world that surrounds us and applying tools and techniques from computer science to understand and reason about both natural and artificial systems and processes" (Furber, 2012). Pulling from the NGSS description of the math and computational thinking standard which states that "students are expected to use mathematics to represent physical variables and their relationships, and to make quantitative predictions," Ms. Beberman put participants into breakout rooms to gather some data by playing a game. The River Crossing game is a game of chance in which participants, with their partner (or group) select a location along the river seen on the gameboard to the right. The location represents the result of rolling two dice and taking the sum (i.e., dice 1 = 2 dice 2 = 6, sum = 2 + 6 = 8). If the participant rolls their sum, they can cross the river, otherwise they cannot. In the virtual setting, groups used online dice rolling simulators to complete this task and recorded their results in the table with a few questions to prompt their discussion: 1. Which number(s) is best and why? Why are some number(s) more (or less) likely than others? Can you list all possible outcomes that result from rolling two dice?



The breakout session was very productive as groups completed their game and data collection. When they returned, they discussed the prompts. Ms. Beberman then had a chart for the whole group to fill in together that documented the possible outcomes when rolling two dice i.e., 1,2 or 5,4, etc. Scientists make claims and test them so in completing this activity, the group came to a standstill as to whether a roll of 1,2 was the same as a roll of 2,1. Participants tested this claim using a new computer program, CODAP.

The benefits of using a computer simulation is that it can run many more trials at a much faster speed than we can do by hand. In the first data collection activity, groups were asked to roll the dice 12 times. When the group graphed the 12 data points, they did not have enough evidence to prove one claim over the other. Using CODAP, participants could run hundreds or even thousands of trials in a matter of seconds and when graphed, the supported claim was very clear, 1,2 and 2,1 were different. Participants had the opportunity to try out the simulator in small groups to better acclimate themselves with the new technology.



To conclude the session, Ms. Beberman asked participants to brainstorm lessons where CODAP could be useful in a science classroom. Results included predator and prey, carbon dating, population sampling, and more. Ms. Beberman also showed participants resources for educators and preloaded data sets already in CODAP that they could also consider. Overall, the feedback was positive from the session and participants were introduced to a new technology they had never used before.

Synchronous Session # 2: Working Equity in Science Education

The positive momentum continued into the next synchronous session by highlighting an important issue in science education: equity. It is extremely difficult to not only encourage

minoritized groups to pursue science but an additional challenge to keep their interest and motivation throughout their schooling years. Allan Feldman (FL) and the rest of the Florida team led participants through such inequities by highlighting an important feature in creating a more diverse science education.

Feldman and his team began with a quote by Kimmie Frank to frame the session, "In the United States, science is typically framed as a Western concept that emphasizes the accomplishments of white men. The reality is that people all over the world have made significant contributions to scientific advancement." In other words, white men are the "picture of a scientist." If such a claim is true, how are students from minoritized groups supposed to see themselves as scientists?
As scientists know, you cannot prove a claim without evidence, so the Florida team went to the National Science Foundation to gather some data. The chart below has overwhelming statistical evidence that white men make up almost half the population of scientists and engineers in science and engineering occupations.

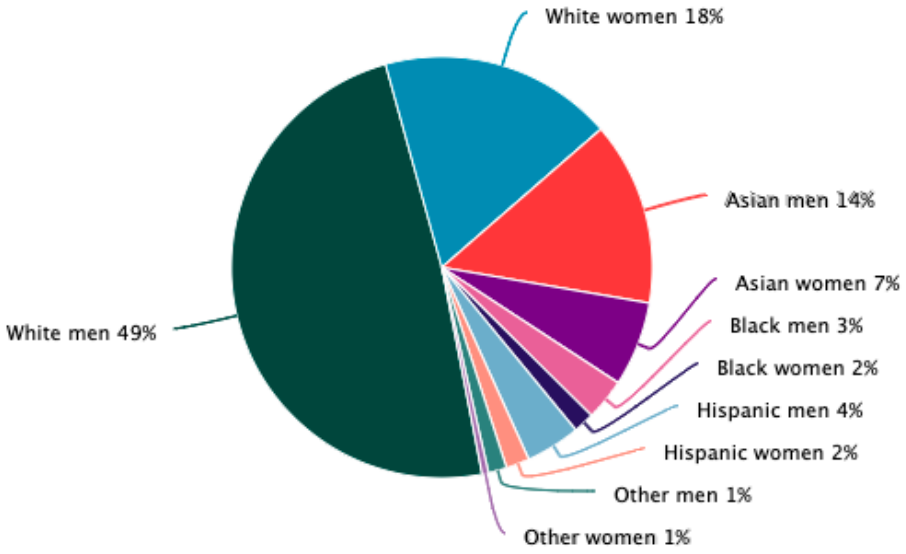


Figure 1: Chart from National Science Foundation (2015)

https://www.nsf.gov/statistics/2017/nsf17310/digest/occupation/overall.cfm

After recognizing that such an issue exists, the Florida team introduced a tool for science educators to use in their classrooms that allows all students to see themselves as scientists as well as other suggestions for incorporating social justice issues in science classrooms.

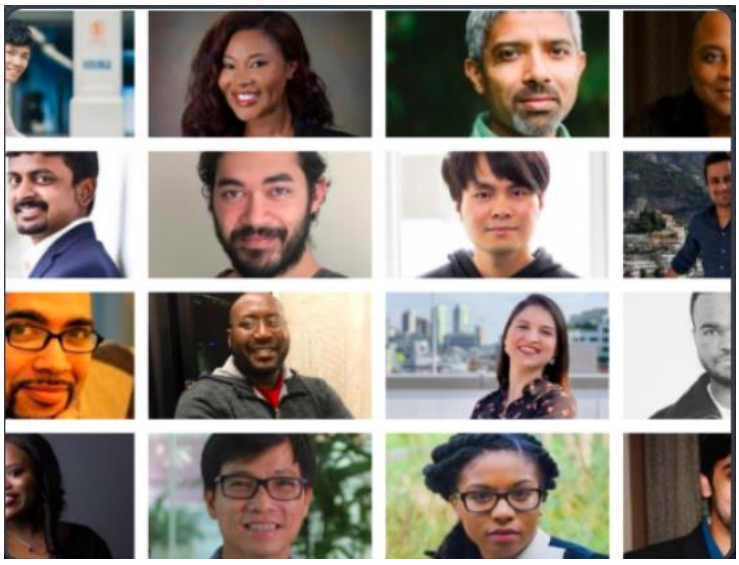
The presentation continued with a suggestion from the Florida team "When we introduce our students to scientists who have helped shape the world around them, they should see faces that look like their own. African American, Asian, Hispanic, Women, to name a few."

So many textbooks fail to highlight the accomplishments of scientists from around the world. David Wong was a Hong-Kong born American neuroscientist who discovered the anti-depressant drug, Prozac. Edward Bouchet "was the first African American to receive a Ph.D. in the United States, the sixth American of any race to receive a Ph.D. in Physics, and a pioneer in science and education" (Center for History of Physics at AIP, 2014). Further, the Florida team introduced George Washington Carver, a botanist, Alice Ball, a chemistry professor, Mae Carol Jemison, an engineer, physician and NASA astronaut, and Katherine Johnson, a major contributor to the U.S. aeronautics and space programs. All scientists from diverse backgrounds with significant contributions to the world and yet, they are not the ones being mentioned in science textbooks or highlighted as scientists to remember.

Clearly, the science field is filled with accomplishments by scientists from diverse backgrounds. No such picture exists of what a scientist should look like, and anyone is capable of being a scientist. Therefore, as science educators we can erase the stigma early on and work to create a more inclusive space for our students. The Florida team concluded the session with a Padlet of other scientists and lessons for participants to add to or learn from as they move forward towards a more equitable science education. This was an excellent and timely session by the Florida team.

Synchronous Session # 3: Using Place-Based Learning to Connect Your Standards & Improve Your Community

Equity in science education requires intentionality to creatively address social justice issues while maintaining science standards in scientific lessons. What better way to transition from creativity in curriculum design to a "think outside the box" science classroom that arguably also creates a more equitable space. Mike Szydlowski of the Missouri team challenged participants to think outside the box by introducing a new type of learning that will have participants wanting to test it out in their classrooms by the end of the session.



Place-Based education uses existing standards in a way that connects students to their place -school, community, etc. using perspectives from the ecological, cultural, and economic components of that place. The Missouri team provided evidence that place-based education increases student engagement, learning, and community impact. Further, place-based learning is not restricted to science, it can also be used in math, ELA, social studies, art, and more. The Missouri team advised that place-based education is not outdoor education. Giving students outdoor experiences is completely different from interconnecting their "place" with the curriculum standards.

The Missouri team mentioned their field trip to the Teton Science School, a k-12 place-based education school. The trip was a great success and was popular among both the staff and students. A problem arose upon returning to Missouri: "We found that some of our teachers who excelled out in the Tetons were coming back to Columbia and never taking kids outside or connecting to place." This highlighted the need for professional development to assist teachers in successfully creating place-based lessons on their own. Place-based learning cannot work if the place (school, community, etc.) surrounding the students is not being used.

Mr. Szydlowski and the Missouri team then provided participants of the session with steps for using place-based learning in their schools or districts.

- Step 1: Don't overcomplicate it! The same standards are being used, one must creatively interconnect the place (it's ecology, culture, and economy) with the standards. This may not be an easy task and may require some "out-of-the-box" thinking but is possible with support and professional development.
- Step 2: Pick one school. Think of a school that might be the most successful based on its location and surrounding community and support that school on its journey. Make sure teachers and students have all the tools they need to succeed. You can always scale-up if that one school is successful.
- Step 3: Make others jealous. If you are not sold yet, here are some photos below to make you jealous of the experiences that these students have had the opportunity to learn and grow from.

- Step 4: Move to another school or classroom. If you are successful with steps 1-3, you can grow your place-based education. Reference these steps for continued success.
- Step 5: Collect Evidence. As scientists, the most important steps in measuring the success of a lesson is to collect evidence that it worked. You want evidence of increased engagement, increased classroom assessment scores, decreased behavioral incidents, increased reading and writing opportunities, and anything else you may notice has changed.

The Missouri team discussed their success and how one of their place-based lessons found its way to being the top story in *The Missourian*, their local news. So why is place-based learning equitable? At the core of place-based education is the need for more equitable learning environments for all students i.e., environments where they are seen, heard, and valued. In these environments, learning is designed for students as individuals of the space. The Missouri team concluded the session with a series of successful lessons for participants to try in their own classrooms. The session concluded with an overwhelming excitement for the future of place-based learning.

Synchronous Session # 4: Reflecting on the H-CCLS Experience

Wipro fellows have expressed how much they appreciated the opportunity to engage in reflective practice and share insights about their teaching practice in their H-CCLS groups. In this virtual setting, participants had the additional benefit of sharing this experience with other Wipro sites. Led by the California team, the fellows began the session with a fun activity to break the ice between groups of fellows who most likely had never met before.

The fellows were put into small groups and instructed to build a story using a list of random items provided (breakfast food, something important, kitchen gear, most unusual hat, furry friend, favorite toiletry, just to name a few). The person chosen to start the story, selected one item, and then passed it on to the next person to continue. The story continued until all items in the list had been used. Although seemingly silly, the activity lightened the mood to create a safe space for deep reflection.

Participants were then put into a new breakout room (#1) where they were given two questions to reflect on:

1. In your H-CCLS work, you were placed into grade level alike groups and were focused on a specific NGSS Science and Engineering Practice. How did you feel about having the time to do a deep dive into one SEP for an extended period of time?
2. What did you learn or apply from the research articles that you used to support your work?

After a brief introduction, fellows were asked to prepare for a debrief following the reflection. The discussions seemed productive, and the fellows found similarities in their discoveries. The fellows also mentioned their overwhelming appreciation for the opportunity to discuss successful practices with other science educators.

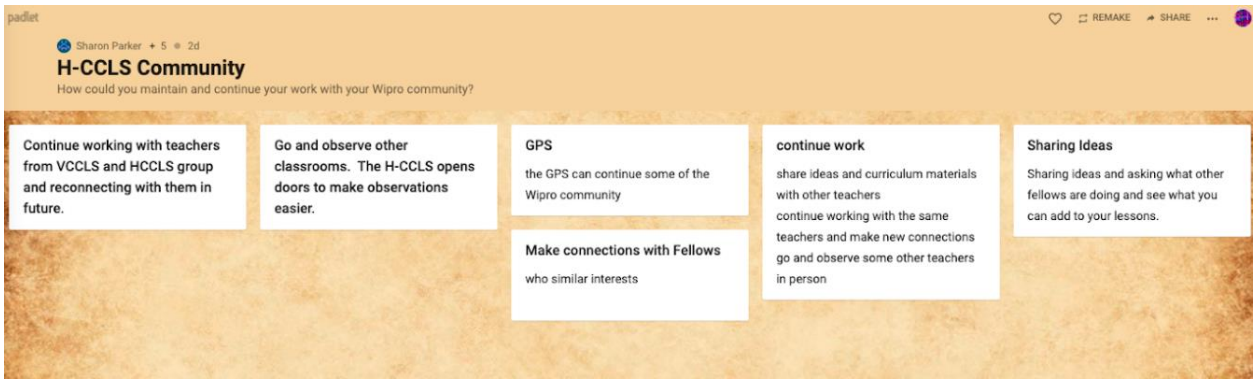
Breakout discussion 2 was similar in nature to the first discussion with a new set of questions to reflect on:

1. During your participation in the Wipro SEF Program, you were involved in both vertical and horizontal teams. What was special about your horizontal community that helped your classroom practice?
2. What did you do to build your H-CCLS community, especially during this past pandemic year?

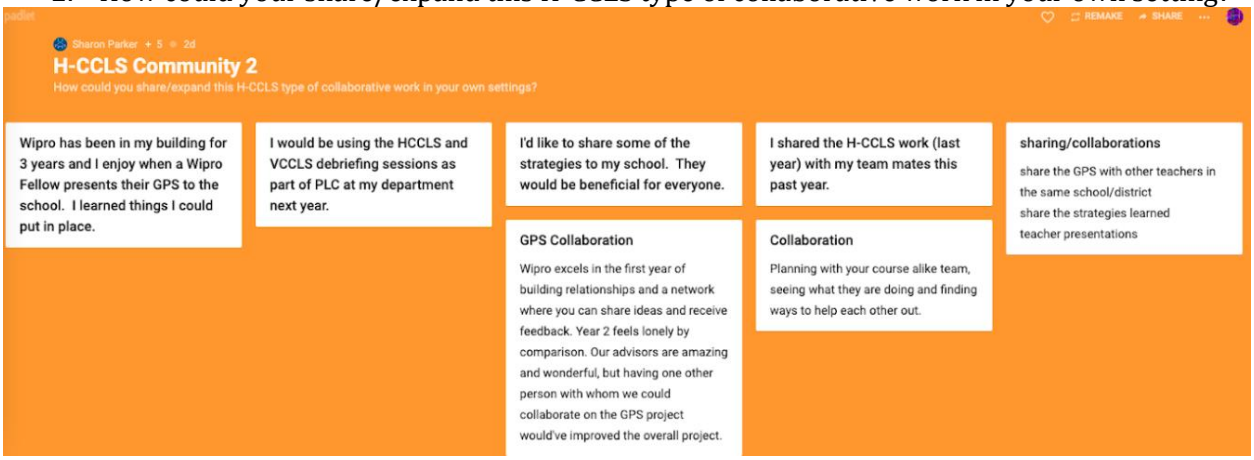
Responses seemed to reflect the success of Wipro in building teacher leaders in certain communities across several districts. One group mentioned the willingness of Wipro fellows to try out new methods of teaching and work hard to improve their methods so that their students receive the best instruction possible. The same does not seem to be true of other science educators at the same schools because of varying experience levels or an unwillingness to change. Further, another group mentions the power of Wipro in sticking to and maintaining protocols to the keep the community going. They schedule their times to meet and have standards for giving and receiving feedback which ultimately keeps the fellows on track and makes the discussions more meaningful. It was clear from this reflection that Wipro is successful in building a strong community of teacher leaders. How can we keep this momentum going?

The final task of the session asked participants to answer 2 questions on separate Padlets regarding the continuation of successful Wipro work and community building practices.

1. How could you maintain and continue your work with your Wipro community?



2. How could your share/expand this H-CCLS type of collaborative work in your own setting?



The thoughtful and positive discussions that came from this session were incredibly rewarding. Kudos to the California team for creating a safe space for reflection.

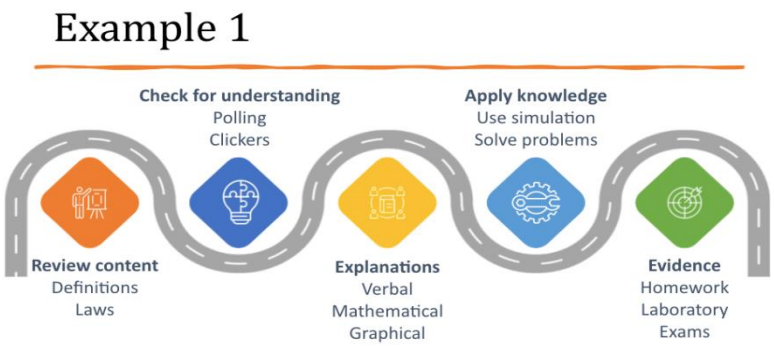
Synchronous Session # 5: Documenting & Applying Evidence-Based Teaching Practices

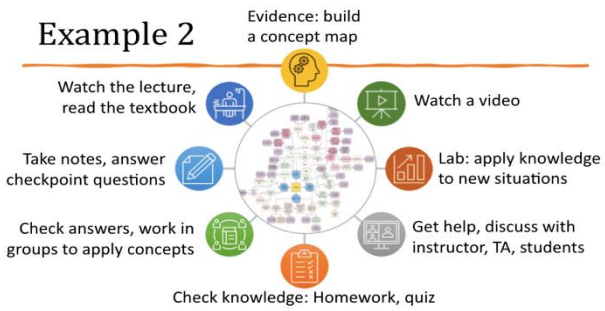
Considering reflection once again, we all just had a year of experimentation with new technologies and teaching tools in a virtual, hybrid, or in-person setting, but how do we know they were successful? Dorina Kosztin of the Missouri team introduced participants to a practice that allows ease in finding the answer.

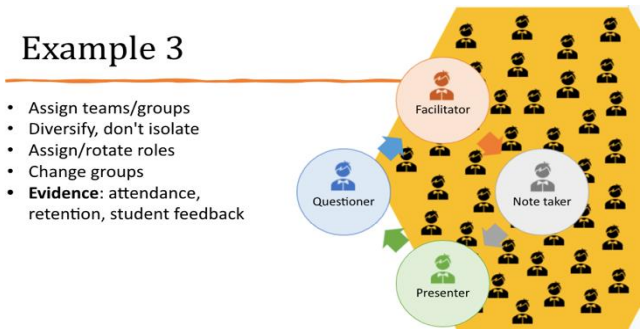
Evidence-based teaching practices are instructional strategies that have been demonstrated to improve student outcomes through rigorous research (Lumen Learning). As part of the process, teachers tag their evidence-based teaching practices with the following keywords in mind:

Figure 2 Source: https://circles.lumenlearning.com/#/tags/tab/tags

Each keyword has a description that helps teachers better assess and tag their practices. Dr. . Kosztin continued by displaying examples of several evidence-based teaching practices.







Dr. Kosztin then allowed participants to discuss this practice in small groups. She asked that they share some lessons or examples from their science classrooms and from the examples used the tags to identify evidence-based teaching practices that are already present.

Gathering and documenting evidence, and then comparing it to the literature can be a daunting task, but Kosztin provided participants with a technique that makes answering questions about effective lessons more easily accessible.

Synchronous Session # 6: What it means to be a Teacher Leader

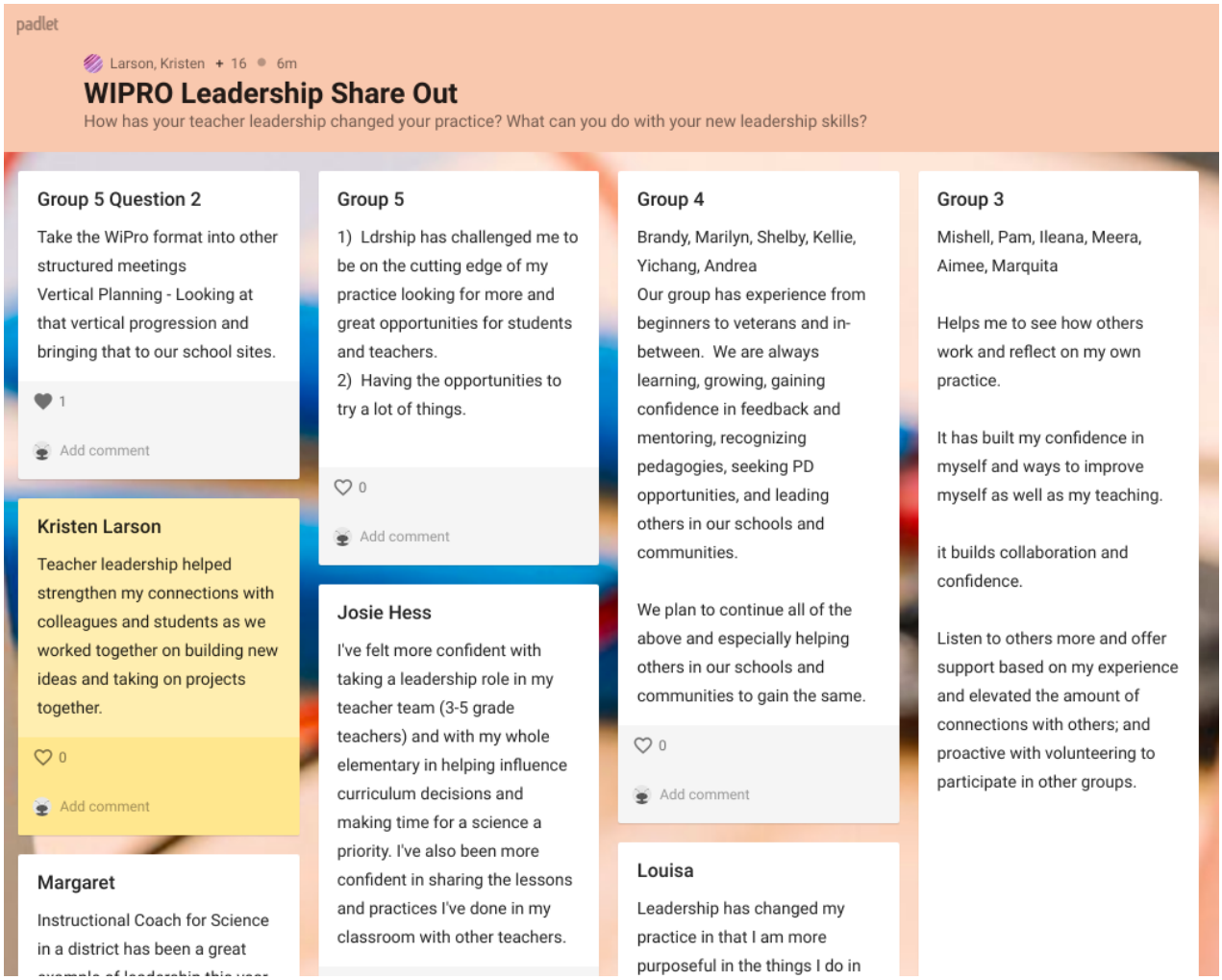
The Wipro SEF program has a goal of creating teacher leaders in specific districts across the United States. The fellows within the program spend an extensive period researching and testing the best possible practices to maximize student learning within their science classrooms. Although, members of the Wipro SEF program, see these fellows as teacher leaders already, it never hurts to be reminded of what it means to take on a leadership role. The New York team provided participants with an amazing session on leadership and an additional reminder on the importance of setting goals.

To start the session, the New York team allowed participants to get to know one another through a common game, two truths and a lie. The twist was that the facts must be about leadership or science teaching practices. Participants rose to the challenge and the activity set the mood for an important session. The New York team then reminded us of the definition of teacher leadership, "that teachers rightly and importantly hold a central position in the ways schools operate and in the core functions of teaching and learning" (York-Barr and Duke, 2004). And further, the importance of this leadership role as teachers seek to create change in their districts and are seen as experts on the students, community, context, teaching, and learning within their district. Opportunities for leadership look like leading a professional development session or book club, sharing a lesson or activity, and sharing work at a conference.

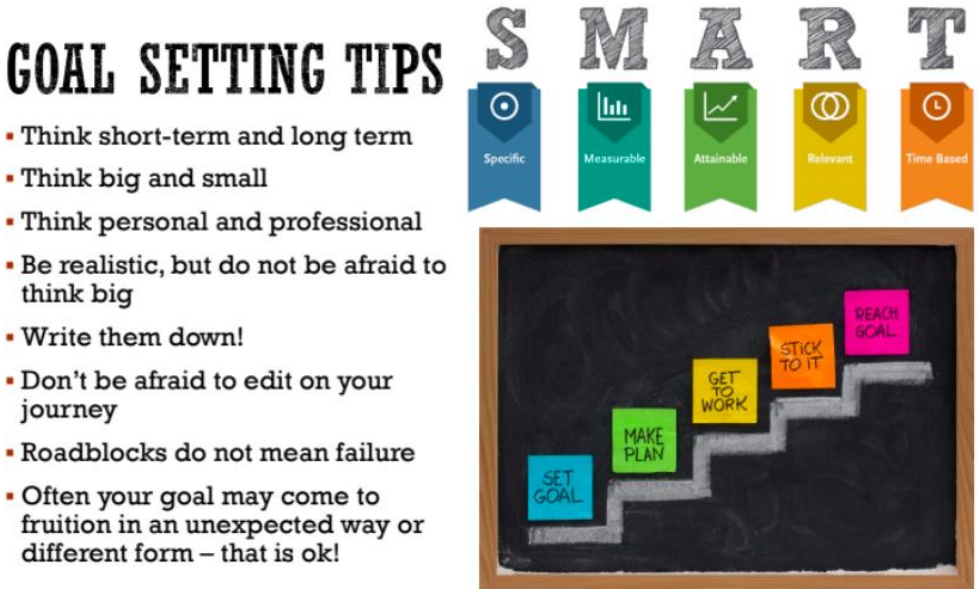
With these important reminders in mind, the New York team then put participants into breakout rooms where they have two prompts to discuss regarding their teacher leader role as a result of participation in the Wipro SEF program:

1. How has teacher leadership changed your practice?
2. What can you do with your new leadership skills?

The results were recorded in a Padlet, part of which can be viewed below.



With results that included strengthening connections, building confidence, and improving practices, the New York team then read us a quote by Helen Keller, “when one door of happiness closes, another opens, but often we look so long at the closed door that we do not see the one that has been opened for us.” The Wipro fellows have so much to be proud of, but the growth shouldn’t stop there. The New York team transitioned the session to goal setting and its importance in motivating growth and planning for the future. They included tips for goal setting which included:



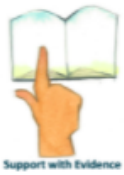
The New York team then allowed some time for reflection. They advised participants to brainstorm some goals on their own- one short term and one long term, either personal or professional. They additionally challenged them to answer the questions, how will you know you have achieved each? And What supports or resources do you need to accomplish these? Sometimes in the chaos of our lives we forget to write down our goals. We add purpose to our daily activities if we know there are steps along our journey to accomplishing our goals. The UMass leaders thank the New York team for an amazing session and for allowing participants this time to think about their goals.

Synchronous Session # 8: Tools for Supporting English Language Learners (ELL)

In the melting pot we live in, we face people of different backgrounds and cultures who also speak different languages. We also see the same diversity among our students. Regardless of these differences, there are tools to support those students whose first language is not English. Kelsey Magaña from the California team offered participants excellent tools for supporting English Language Learners.

To begin the session, Ms. Magaña puts participants into breakout rooms and asks them to try out the silent handshake challenge. They are expected to keep their cameras on but microphones on mute. As a group they were challenged to come up with a handshake without talking. What an incredible start as participants imagined what it must be like for ELLs within an English-speaking classroom. It required participants to use other gestures and movements for communication.

Ms. Magaña stressed the importance of creating norms for ELLs and a standard set of instructions with gestures and their meanings, so the intention is clear. She provided participants with a chart that outlines the conversation move, prompt, and response for each gesture.

Conversation Move	Responses	Prompts
 Initiate	• My Idea is... • I am thinking... • I noticed... • My opinion is...	• What is your idea • Think about... • What did you notice? • What is your opinion?
 Paraphrase	• I heard you say... • Let me see if I heard you right. You said...	• Can you paraphrase what I said? • Did I make myself clear?
 Elaborate and Clarify	• I need to clarify... • I want to say more about... • What I meant was...	• Can you say more about... • Tell me more... • What do you mean by...
 Support with Evidence	• One example is... • In the text/picture... • When the author...	• Can you give me an example from the text? • What would be an example of?

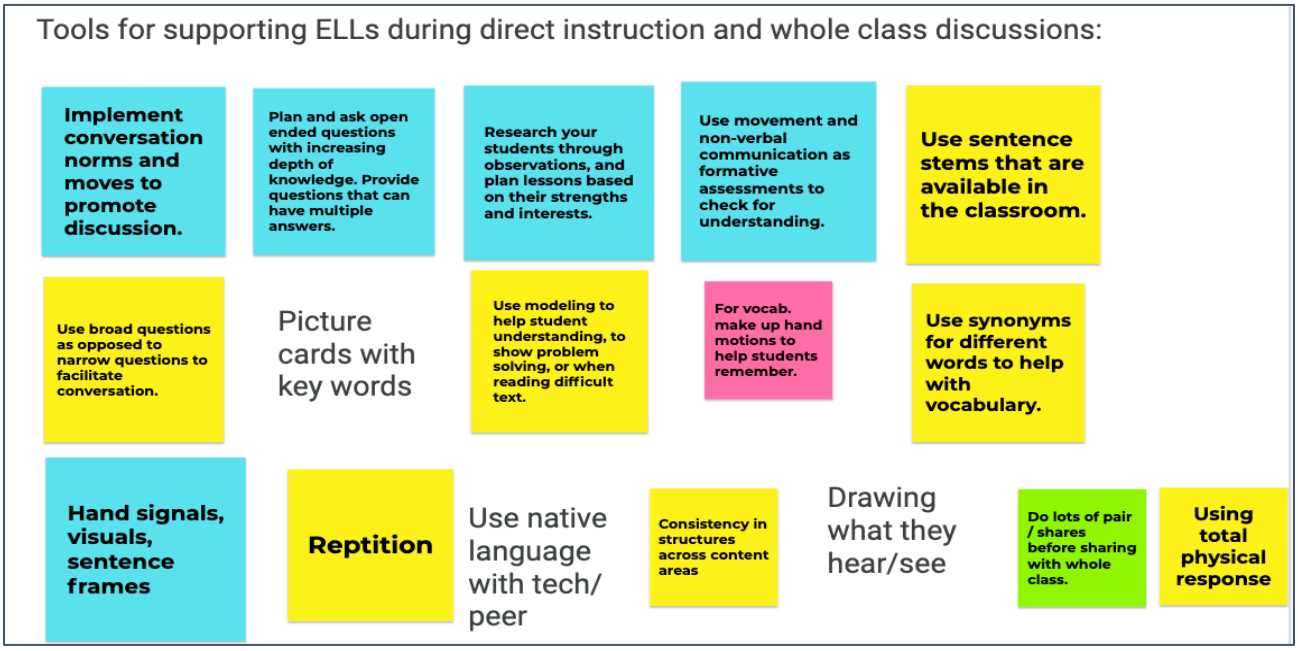
Regardless of age or grade-level, the techniques for working with ELLs look very similar. Ms. Magaña took participants through some of the conversation moves and why they are important.

1. Agree and Build-On
   Important for connecting to someone and building new understandings
2. Challenge Ideas
   Important for growth in learning from people who see things differently than we do.
3. Paraphrase
   Important for clarification and proof that we are listening.
4. Synthesize
   Important for summarizing what we have learned so far.
5. Support Ideas with Evidence
   Important for defending our thinking.

6 Elaborate and Clarify
Important for understanding what others are thinking and expanding our own thinking.

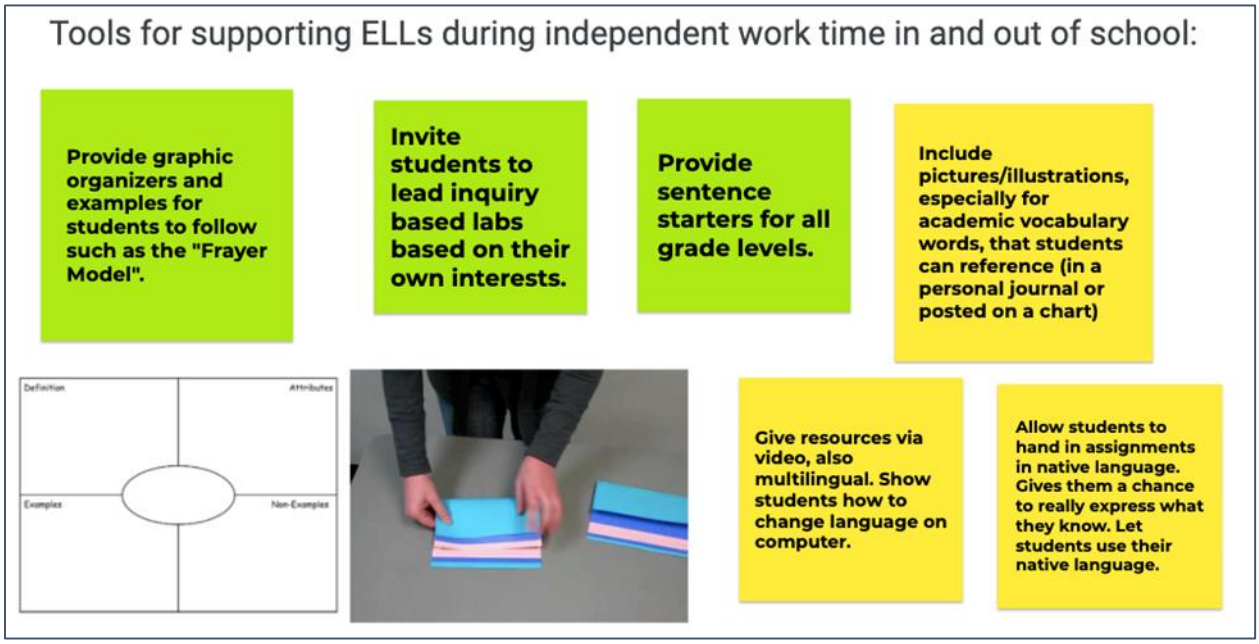
After these excellent suggestions, Ms. Magaña broke participants into groups by grade level to do some brainstorming of their own. She prompted them to think about other ways to support ELLs during:

1. whole group discussions,



2. small group discussions/labs

3. individual work



Ms. Magaña concluded with a reminder that although the time in our classes is limited, it is important to continue creating community with our students on an ongoing basis. We must create a safe space for English Learners to feel supported and capable of success regardless of the language barrier. Leaving the session on a positive note, Ms. Magaña asked participants to type in the chat who or what they were grateful for on that day.

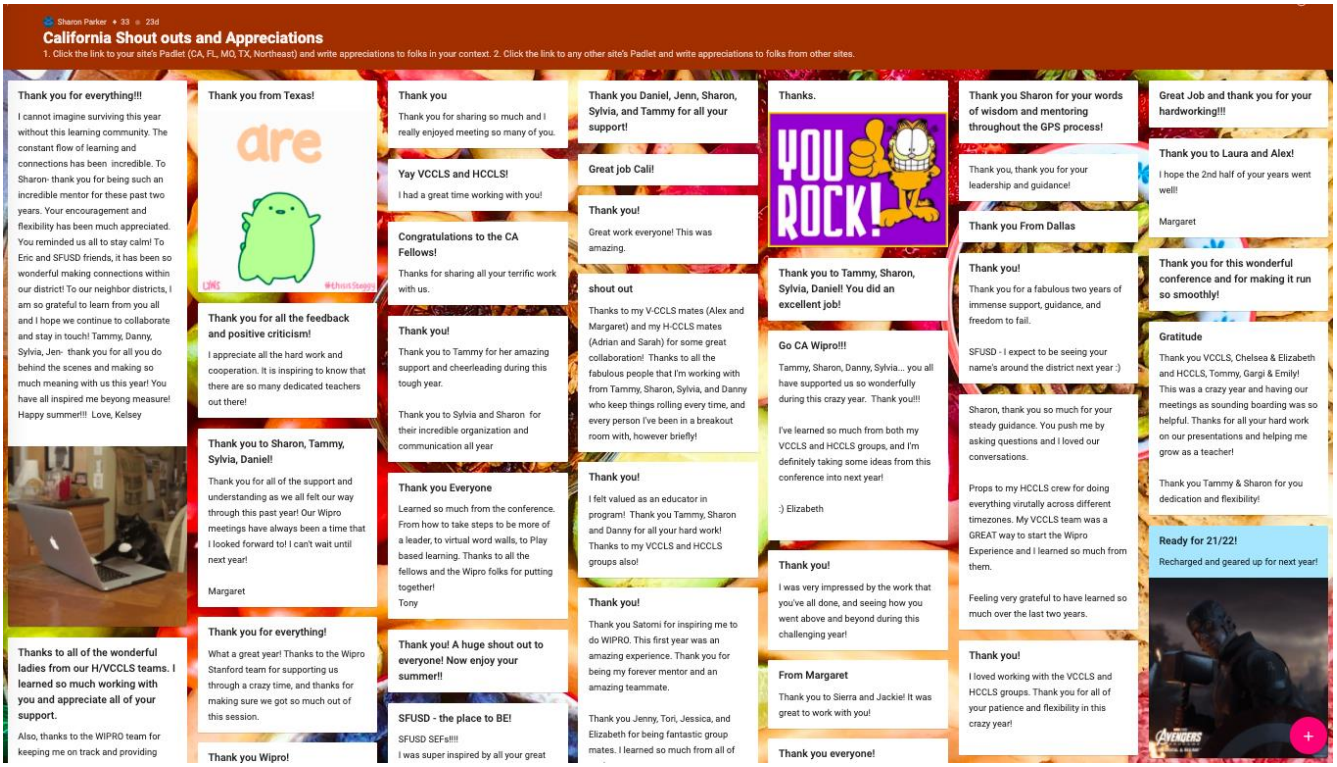
Closing Session

After an incredible series of - synchronous sessions, viewing and providing feedback for the many H-CCLS presentations and the GPS videos and posters - that allowed participants to share, learn, grow and reflect, the California team concluded the conference. To begin, participants were asked to wave goodbye to 2020-2021. After a stressful year, they were praised for all their hard work.

Participants were then put into breakout rooms for discussion. The first breakout room asked them to reflect on the GPS and H-CCLS presentations and projects that they watched. The second breakout room was a reflection on the synchronous sessions. The overall findings were profound. The fellows were so appreciative of the Wipro program and their opportunity to share with one another. Despite the virtual setting, the fellows felt very

connected, not only with their sites but with other Wipro sites as well. They hoped for more cross-site collaboration in the future.

The California team concluded on a positive note by asking all participants to write appreciations to others using a Padlet they had created. The results and thought put into the notes were helpful and novel evaluation of the program.

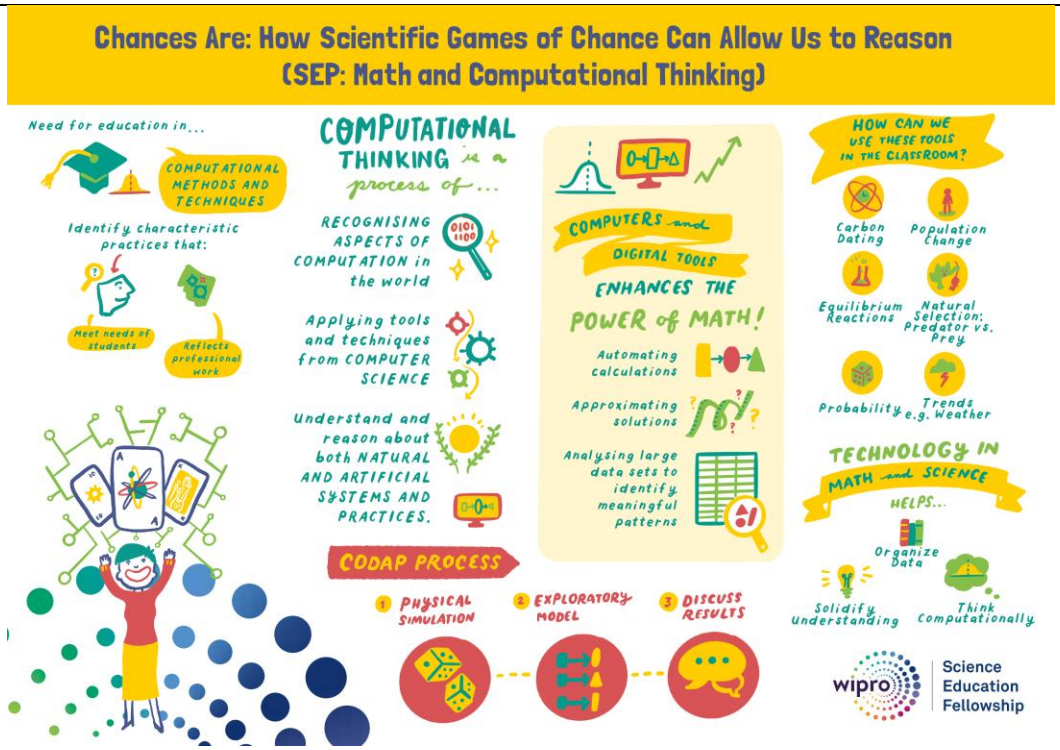


The overall appreciation reflected a successful event that included much growth and learning for all participants. We thank everyone who organized the conference, led a synchronous session, and attended the event. It would not have been possible without your hard work and impeccable collaboration. We look forward to the future of the Wipro SEF program!

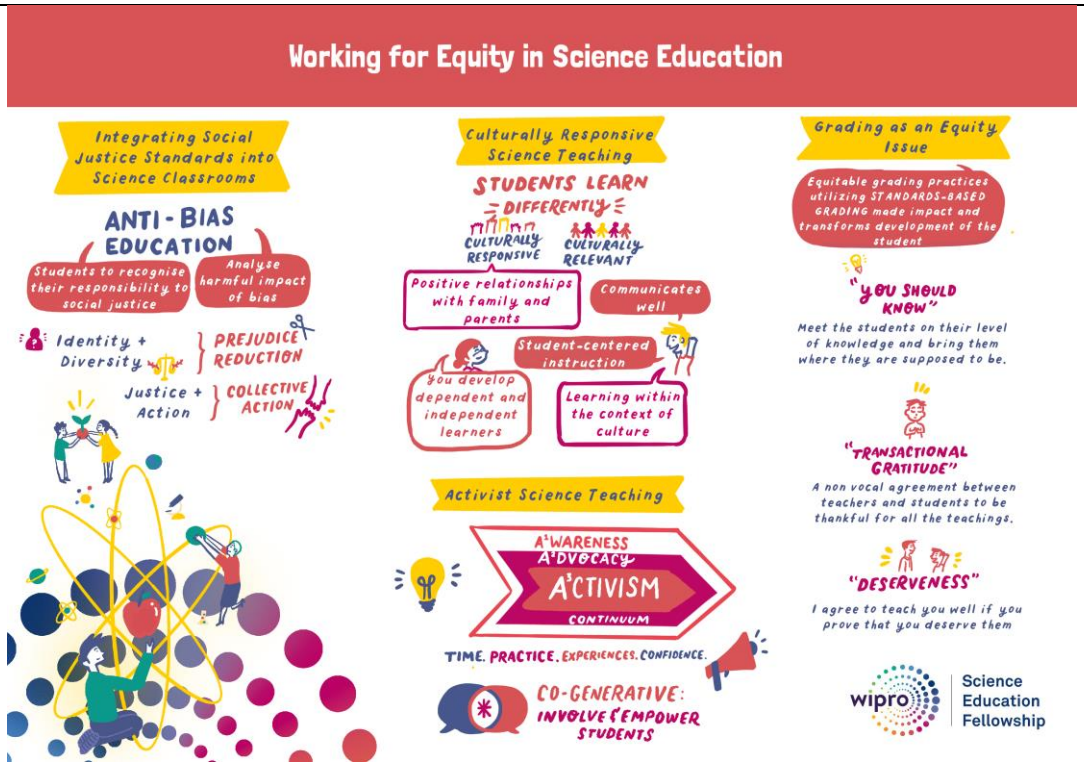
Visual Representations of the Conference

In addition to the formal evaluation of the conference, the essence of each session was captured in a visual representation. The artists who produced these representations listened intently to each session and then drew a visual that represented the key thoughts and ideas expressed by the participants.

Session 1

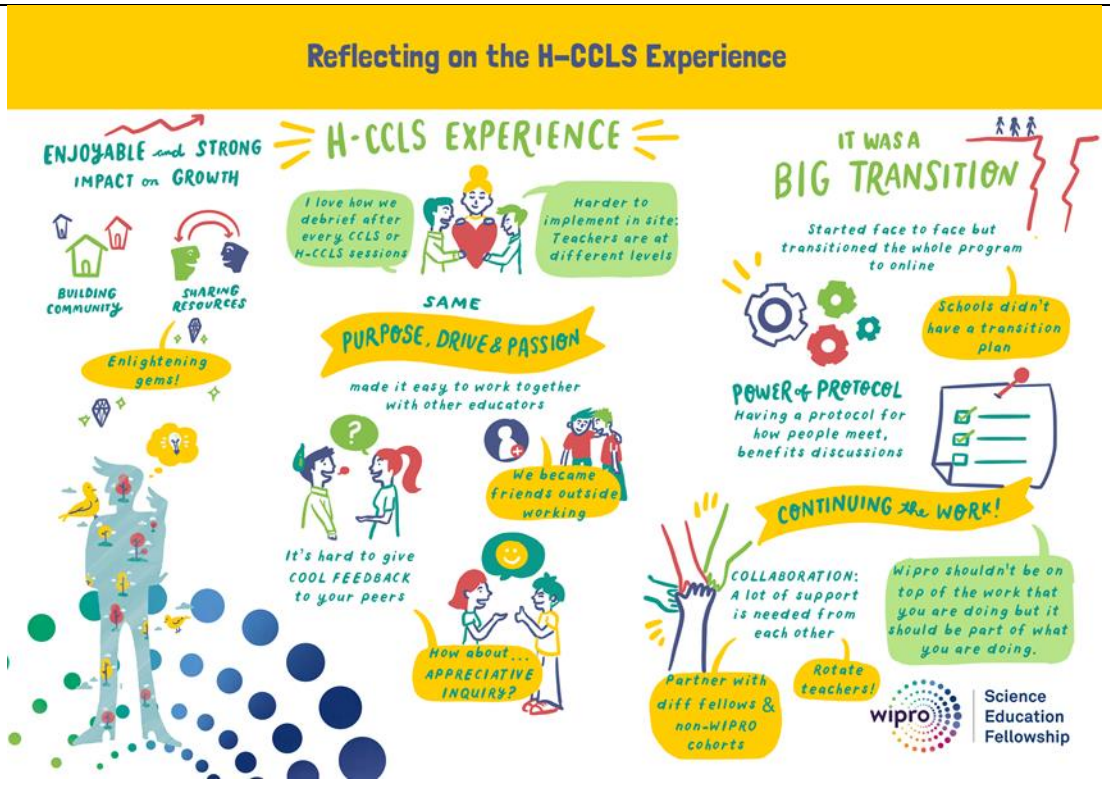


Session 2

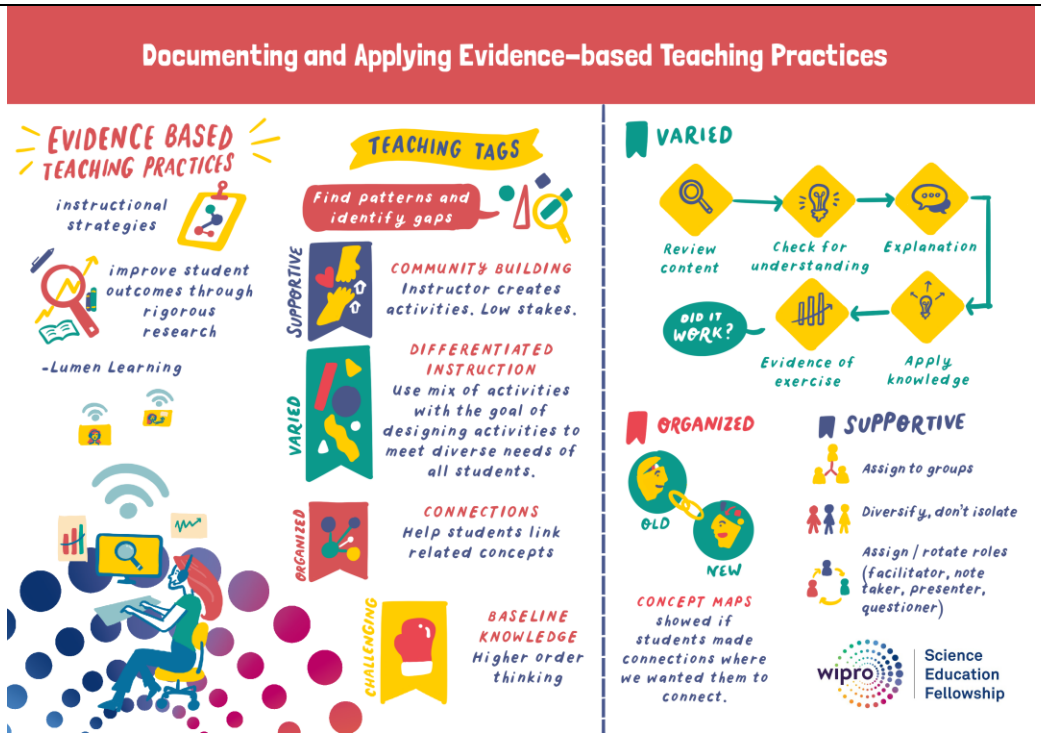


Session 3

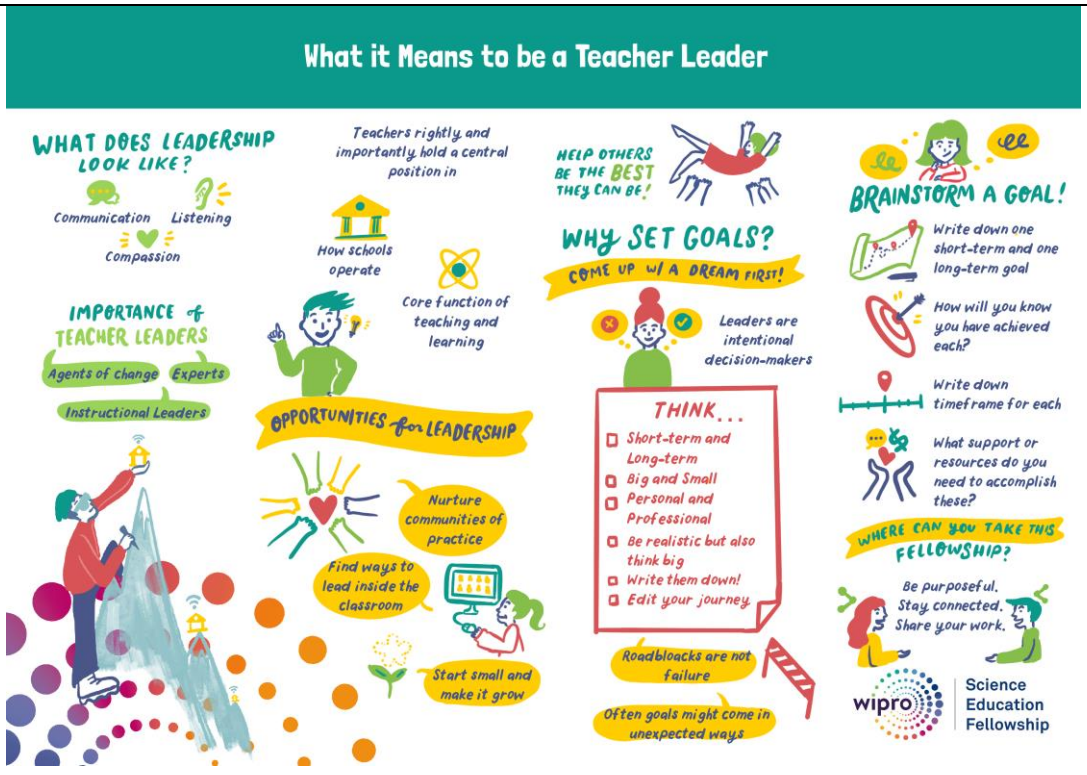
Session 4



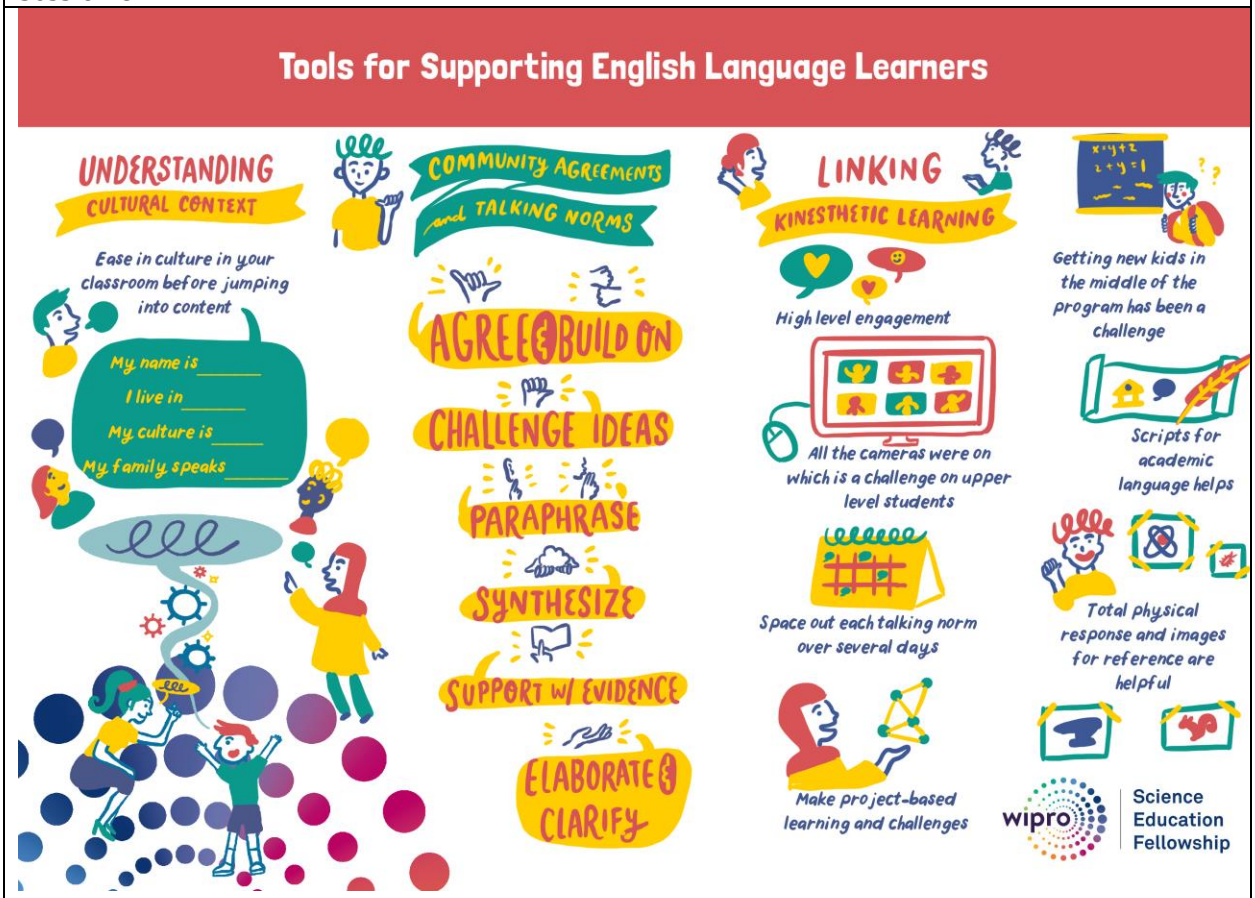
Session 5



Session 6



Session 8

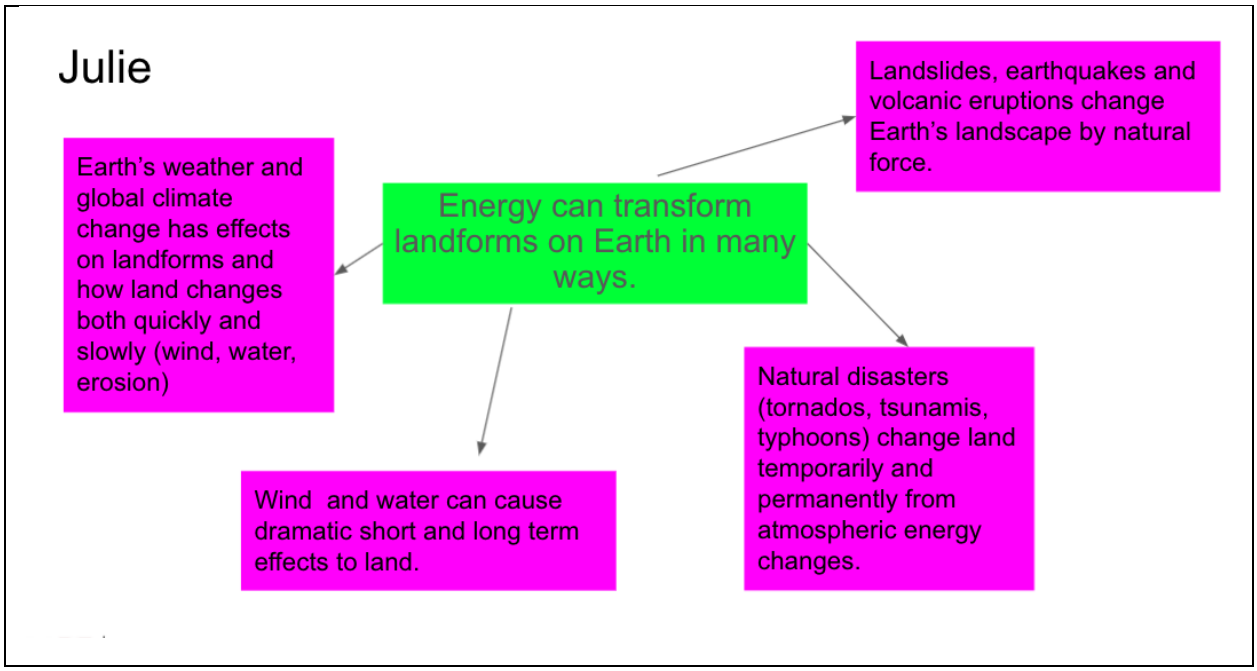

Tools for Supporting English Language Learners
UNDERSTANDING
CULTURAL CONTEXT
Ease in culture in your classroom before jumping into content
My name is _____
I live in _____
My culture is _____
My family speaks _____
COMMUNITY AGREEMENTS
and TALKING NORMS
AGREE & BUILD ON
CHALLENGE IDEAS
PARAPHRASE
SYNTHESIZE
SUPPORT W/ EVIDENCE
ELABORATE & CLARIFY
LINKING
KINESTHETIC LEARNING
High level engagement
All the cameras were on which is a challenge on upper level students
Space out each talking norm over several days
Make project-based learning and challenges
Getting new kids in the middle of the program has been a challenge
Scripts for academic language helps
Total physical response and images for reference are helpful
wipro
Science Education Fellowship

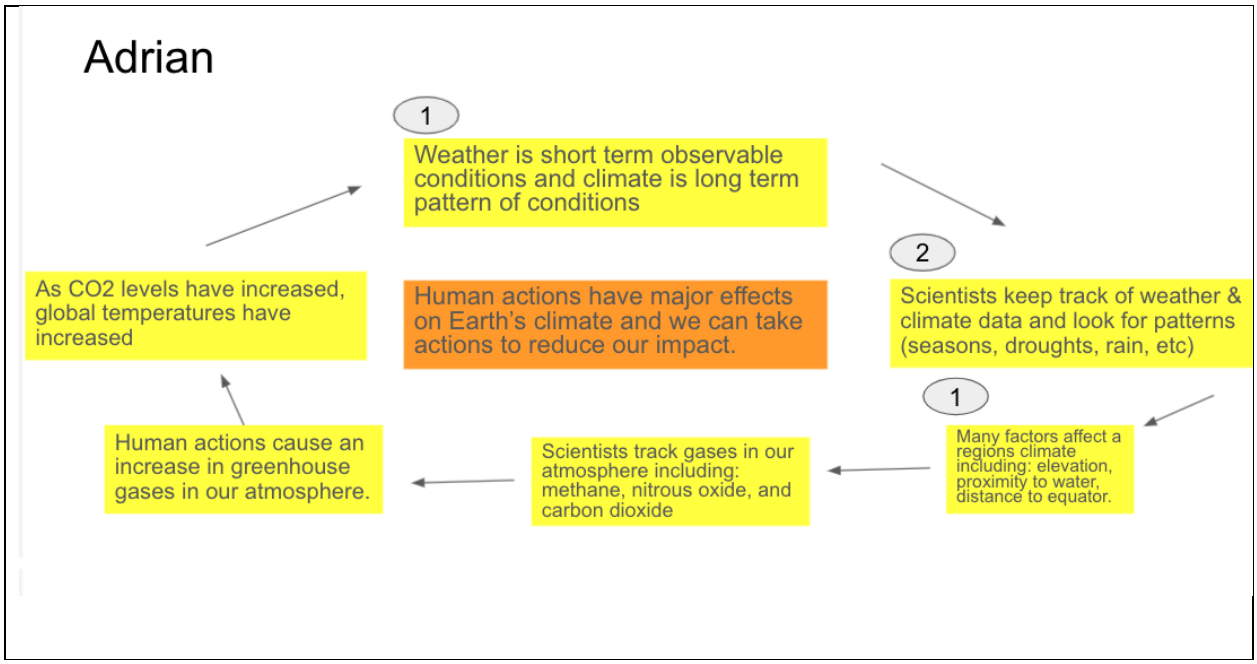
Fellows' meetings (Cohort 2 &3)

At the IHE

The CA Wipro SEF Program has continued to conduct virtual monthly professional learning sessions for both Cohort 2 and Cohort 3 fellows. For Cohort 2 fellows, the focus primarily been on developing their understanding of teacher leadership and offering perspectives on ways that they can practice leadership in their own settings. The CA Team felt it was important for fellows to develop their leadership identities in year two of the program.

For Cohort 3 fellows, the focus has been on helping them understand the storylines in their science units and how to identify and focus in on the big ideas of science in their teaching. Cohort 3 fellows spent several sessions identifying the big ideas in their V-CCLS content areas and creating conceptual flows. In previous years, we have had fellows create conceptual flows for their units and the feedback from these sessions were extremely positive. The CA Team did not want Cohort 3 fellows to miss out on this important learning opportunity, even in a virtual setting. See below for examples of conceptual flows that fellows created on slides. (Please note that this is the first time that fellows have ever done conceptual flows). Feedback from these sessions were extremely positive.





Spring 2021 Professional Learning Sessions – Links to Slide Decks

Month	Cohort 2	Cohort 3
March	------	3/11/21 Session
April	4/20/21 Session	4/22/21 Session
May	5/6/21 Session	5/13/21 Session
June	6/17/21 Session	6/15/21 Session

Within districts (DSC's and Fellows)

District Coordinators met with their fellows as needed throughout the quarter. Most of the five school districts had transitioned back to in-person hybrid school in the spring quarter. Because of these transitions, many District Coordinators were busy with district level responsibilities, so meetings with fellows were mostly informal. Several district coordinators were very supportive of Cohort 2 fellows' GPS projects and met with certain fellows on a regular basis.

Leadership meetings

The CA Leadership Team continued to meet with District Coordinators on a regular basis. During these meetings, there were two major purposes. First, the CA Leadership Team wanted to hear about what districts were doing as they continued to respond to the ever-changing conditions of the Covid-19 pandemic. Second, The CA Team wanted to make sure that the District Coordinators knew what fellows were learning in their professional learning sessions as well as communicate where site leaders thought fellows might need support. The CA Wipro Program has been fortunate to have the same five district coordinators since the inception of the program, except for Diane Aronson who joined the team in the second year. The community built among this group has been particularly important during the pandemic to support one another and share ways to do our work better. See below for the slide decks used for the IHE/District Coordinator Meetings:

IHE/District Coordinator Meetings
8/24/20 Meeting
12/2/20 Meeting
1/14/21 Meeting
3/3/21 Shared Document
4/15/21 Meeting
5/26/21 Meeting

End of the year Conference

The California Team played a large role in the End of Year Virtual Conference. The CA Team was responsible for coordinating and hosting all of the synchronous sessions as well as creating the conference brochure. The CA Team worked closely with the other sites to ensure a variety of synchronous sessions were offered. These sessions were facilitated by IHE members, District Coordinators, and Fellows. The CA Team also worked closely with the other sites to create a brochure that was easy to navigate and gave just the right amount of information to conference participants.

See the following link for the Conference Brochure.
See the following link for descriptions of the Synchronous Sessions.

H-CCLS Presentations (Cohort 3)

Team name (Include grade span)	Team members	Science/ Engineering Practice	Presentation title
Group 1: High School	Yichang Liu Alex Johnson Robert Coverdell-Meneses Stacey Rader	Analyzing and Interpreting Data	Notes from the Field: Helping students analyze and interpret firsthand and secondhand data.
Group 2: High School	Jessica Paulsen Emily Stollmeyer Gargi Verma Tommy Fulwiler	Obtaining, evaluating, and communicating information	Critical Consumers of Digital Sources
Group 3: Middle School	Adrian Tamayo Sarah Huggins Laure Spanier	Arguing from Evidence	Prove it! Helping students move through stages of development in arguing from evidence.
Group 4: Middle School	Elizabeth Reiff Nicholas Guttadauro Amanda Lim Stephanie Yue	Developing and Using Models	Making Student Thinking Visible Through Modeling
Group 5: Elementary School	Jenny DeGraaff Tori Lanterman Chelsea Alvarez	Developing and Using Models	Investigating Whole Group, Small Group and Individual Modeling
Group 6: Elementary School	Brittney O'Brien Mithril Cox Julie McKinley-Reed	Constructing Explanations	Academic Discourse with an Emphasis on Language Acquisition (ELL) Strategies
Group 7: Elementary School	Margaret Poor Sierra Vance Jaclyn Diaz	Analyzing & Interpreting Data	Lifecycle of data analysis

GPS Poster Session (Cohort 2)

Fellow's Name	Title of Poster	GPS Description
Eric Armann	Pandemics: A Primer for Middle School Students	Throughout this school year, my students invariably found themselves coming back to questions about the pandemic during our science classes. Sadly, many of their questions required more background knowledge than they

		possessed, or I had time to provide, and I started working on some labs and lessons to fill in those blanks when possible. This evolved into a short intro lesson that I will be using with my students in the fall at the start of the school year. It covers a range of topics regarding the history of inoculation, viruses and viral transmission and public health measures.
Sohum Bhatt	Positioning Students as Scientists to Gather and Evaluate Community Opinions About Climate Change	Allowing students to be scientists is one way to allow authentic participation and skill development. In this project, students analyze published data sets about climate change from the NY Times and then become investigators as they develop surveys and questions to obtain community opinions about climate change issues. Next, they analyze the results and make claims about what their community members think about climate change and how that compares to published data sets. Through the lens of climate change, students will work on skills to obtain, evaluate and communicate information and also learn to analyze and critique complex data sets. This project is meant to emphasize the skills of data collection and presentation, which are critical skills for budding scientists and engineers to practice.
Krista Berry	Strengthening Community & Engagement Through Student Advisory Groups	I implemented a student advisory group in my 8th grade science classes to bring student voices into conversations surrounding class community, structures, and curriculum. My goal was to provide an organic space for students to express their perspective on our class and grow together as a team. We met every other week to discuss what was working, what could be improved, and what we as a team could do to make our class a more engaging and supportive space. Throughout the course of this project, I was amazed by the authenticity and thoughtfulness of my students' feedback as well as the effect that being a part of an advisory group had on each individual. The advisory group helped me grow as a more effective teacher, while also developing confidence and buy-in amongst the students.
Margaret Dominguez	Project Based Learning Lesson Study Series	Project Based Learning (PBL) supports authentic learning experiences for students to explore Science phenomena in the world around them and centers learning around student voice, advocacy, and choice. While this program sounds attractive for anyone to implement in their classroom, it is difficult to do without a support and collaboration network. PBL Lesson Study Series provided a space for teachers to come together and collaborate about PBL lessons they are teaching. This presentation will go over the success, challenges, protocols, and norms that were used in facilitating the PBL Lesson Study Series.
Melissa Duran	Using Technology to Engage, Organize, Improve Understanding and Assess Students	It has always been a goal of mine to incorporate technology in the classroom. The pandemic has provided a great opportunity to make that happen. My GPS project focuses on the use of technological tools to help students stay organized and engaged in learning. It is also designed to help student understanding as well as how technology can be used to assess and inform practice. Through trial

		and error, student feedback and collaborating with colleagues, I hope to find best practices with technology use in the aforementioned areas. It is my hope that the technological tools used, and information learned will continue to be used in the post-pandemic world.
Joanne Endo	Addressing climate change in elementary classrooms (group project with Satomi Fujikawa)	Although climate change is a current problem that is constantly being addressed in the news and through scientific study, it is not a part of elementary science curriculum. In this project, we organized a vertically aligned set of lessons using district-adopted curriculum and additional materials to support the introduction of climate change to students and to support staff in the teaching of science. Three units, specified by grade or grade band, emphasized standards-based concepts about climate change and how students can take action. Because of our transition from distance to hybrid learning and the subsequent time constraints, we focused more heavily on the third unit, which was about exploring realistic steps K-5 students could follow to address this issue. We suggested topics and activities that related to personal responsibility and urging others to also consider this pressing issue.
Satomi Fujikawa	Addressing climate change in elementary classrooms (group project with Joanne Endo)	Although climate change is a current problem that is constantly being addressed in the news and through scientific study, it is not a part of elementary science curriculum. In this project, we organized a vertically aligned set of lessons using district-adopted curriculum and additional materials to support the introduction of climate change to students and to support staff in the teaching of science. Three units, specified by grade or grade band, emphasized standards-based concepts about climate change and how students can take action. Because of our transition from distance to hybrid learning and the subsequent time constraints, we focused more heavily on the third unit, which was about exploring realistic steps K-5 students could follow to address this issue. We suggested topics and activities that related to personal responsibility and urging others to also consider this pressing issue.
Allison Houghton	Character Through Science: Developing SEL in Science Classrooms	In my GPS project, I explored the importance and implementation of Social and Emotional Learning (SEL) curriculum in science classrooms. Especially in a pandemic, taking time out of class to prioritize character strengths, reflection, and social emotional learning can provide students a safe space and a supporting community. I create resources both used in my classroom and stored on a website based on the periodic table of character strengths. This has been so successful in my classes that the 6th grade science teachers in my school also started this routine as well. In addition, I explored how this can be implemented school wide to create a caring and inclusive school community.
Theresa Lester	Multi-year STEAM project, incorporating place-based	My project uses place-based learning to study the local watershed. Teaching STEAM allows me to meet with students over several years and I am using that

	learning of the local watershed	opportunity to integrate this into a multi-year K-2 STEAM project. We will adopt a portion of the Stevens Creek (less than 2 miles away) that runs into the bay. Students will observe, sketch, study, research, and plan ways to teach other local students about the importance of the health of our local watershed. The goal is for them to create an up-to-date resource for other students across our district to allow for learning either onsite at creek or in their classrooms if they are not able to visit physically. We will start in the Fall of 2021 (due to online and hybrid learning), so I have used this time to take classes, research, gather resources and prepare for our learning.
Jennifer Lim	Google Site to Support English Language Learners in Understanding the Science and Engineering Practices	Begin a Google site to support English language learners to learn about the Science and Engineering practices (SEPs). On the site, a framework for all 8 SEPs will be created. The focus will then shift to mainly SEP #1, Asking Questions and Defining Problems.
Carol Lima	Student voice and sense of belonging in the science classroom	Using student feedback as a tool to increase sense of belonging and science identities in equitable, and joyful science classrooms. Teacher reflection on student feedback will help center learning around joy, belonging, and student collaboration so that BIPOC/IEP students build a positive identity of themselves as scientists.
Kelsey Magaña	Fostering Leadership through S.T.E.A.M. Club	Fostering Leadership through S.T.E.A.M. Club is a snapshot of student and teacher leadership in the age of remote learning and transitions. I worked with two fifth grade student mentees and my student teacher to create an online community for learners (TK-5) to explore science on their terms. Student leaders help pick topics, facilitate discussions, design labs, and choose community partners to collaborate with such as Mission Science Workshop. What we created was a sense of pride in our leadership and ongoing learning. As the student leaders transition to Middle School and my student teacher transitions into her career, they have grown into scientists and future facilitators thanks to this unique experience!
Andrea Martinez	Using scientific phenomenon to build ELD students' language skills in science	For this project I am looking to see how incorporating NGSS standards and the 5Es into my ELD science class helps my students' language development and critical thinking abilities. I am looking at adding the ENGAGE portion of the 5ES by the students asking various phenomenon questions at the beginning and the end of units. I will then see if having them focus on the phenomenon throughout the unit helped with their language skills, confidence in the scientific vocabulary and critical thinking skills by making those real-world connections from the phenomenon.
Gina Maschio	Using Thematic Reading Units to Teach Cross Cutting Concepts	For my GPS project, I designed thematic units to revolve around a series of chapter books. Each book would be used as a read aloud and link one or two NGSS Cross Cutting Concepts as a theme. Students would be asked to identify where we see the CCC appear in the book, as well as in the world around them. Given that we would be completing all of this work during a distance learning

		phase, it both limited and changed what students could "see" as science in the world. Our definition of "world" became much broader than I probably could have seen if we were in person so that students could draw from things they've seen on TV or in movies, things immediately in front of them, or something we saw/experienced on a virtual field trip.
Jessica Overby	Developing Analyzing and Interpreting Data Skill in Core High School Science Courses	During this project, I worked with my department on the analyzing and interpreting data SEP from NGSS. We collaborated in course alike groups for the 3 core science courses: Biology, Chemistry and Physics. Each team of teachers looked at student work from all courses to determine what students could do regarding this SEP. The teams then discussed and planned specific lessons to help students improve their analyzing and interpreting data skill in that course.
Vicente Patino	Quizzes for NGSS: Assessments for Standards-based grading to Supplement NGSS Curricula	When our district, SFUSD, designed new middle school science curricula, we needed new assessments – so I undertook the process of making standards-based mini assessments (quizzes) to supplement individual lesson sequences in the new materials. Authentic, engaging, and better aligned with the practices of real-world scientists than the previous curriculum, our district's materials nonetheless lacked checkpoints to assess students' mastery of NGSS performance expectations in a timely, focused way. With the help of my 6th grade colleague, we developed a growing list of 6th, 7th, and 8th grade assessments in English and Spanish, with attendant rubrics and work samples. Our goal is to share our work with the larger community of middle school teachers in our district; our assessments can fill this critical gap in monitoring and responding to students' strength and shortcomings as they navigate the curriculum. Importantly, we want to provide teachers the means to produce their own such assessments.
Anu Sarkar	Using peer mentors to foster self-confidence and happiness in lower classmen, ultimately leading to increased academic success	During Covid19 pandemic, students are isolated from their peers and friends due to online learning. In general, the American school system does not foster relationships between the different classes unlike other systems where upper classmen act as role models and source of information for lower classmen. Having been schooled in a system where this relationship between students of different grades flourished, I wanted to see if the peer mentorship would help students feel more motivated, self-confident, and ultimately help them do better in school. In this study 10 students were chosen that have not been performing well in school, who have complained of having no motivation, and they have been each paired with a senior who have previously taken the same class, for a period of 6 weeks these students met 1:1 with their mentors and once a week for 6 weeks, we met for a student led happiness course, where students were taught different strategies to foster happiness. It was hypothesized that student academic success would increase because of increased happiness and self-

		confidence obtained when performing the rewiring of the happiness course as well as their friendship with the mentors. At the end of 6 weeks, happiness scores indeed went up across the board for both mentors and mentee, except for the few that did not attend the happiness scores. Academically, 9/10 students improved their scores.
Antony Torres	Bridging science and language arts through scaffolded units.	My GPS project is something I have wanted to do with science for a few years. For my GPS project, I wanted to bridge science and language arts, so it is viewed by students as one subject. Currently my district has STEAM teachers teaching science, which has isolated the two subjects even more. My plan was to create language arts units that incorporated the science curriculum reading materials. The units focused on grade level reading and writing standards and included scaffolds to help students access the content. My goal was to provide an opportunity for students to dig deeper into science concepts, through reading and writing in language arts. By doing so, they have an opportunity to better understand the content and are able to express what they learned.
Roy Walton	Inspiring Communal Creation with a Makerspace	An informative guide in deterring how a school can support a multi-faceted space to use for freely creating student driven investigations and inventions. This guide will showcase some mockups of how a makerspace could be designed but will also focus on the cultural shift needed to ensure fair, equitable, and safe use for all students.

Conference Reflections

Site Leadership Reflections

Considering the circumstances of this past year with the Covid-19 pandemic, the Wipro SEF Conference was a great success. and received positive feedback. From the CA Leadership Team, Tammy Moriarty and Jenn Ray did most of the work organizing the conference brochure and synchronous sessions. This was a much bigger responsibility than the team had initially thought because it took a great deal of coordination with other IHE team members.

Synchronous Sessions

The CA Team asked fellows and IHE members to facilitate a variety of synchronous sessions over the course of the two-week conference. All sessions were well attended and ran quiet seamlessly. The CA Team acted as a host for every synchronous session in terms of handling the logistics and response to participants as they signed into the Zoom sessions.

Asynchronous HCCLS presentations & GPS Presentations

Fellows were able to present their work, watch and learn from other presentations, and give and receive feedback. Again, all of this was quite straight forward, and the CA Team was pleased with the participation of the fellows and the feedback that they received.

Invited Guests- DSC's, Principals, etc.

Dr. Moriarty noted, "Although the conference was well attended by fellows (who are required to participate), I think the other participants were mostly district Coordinators, at least from the California site. I noticed that there were fewer administrators participating in this conference compared to the V-CCLS Presentations earlier in January. I think the nature of this conference was less personal as well, which may have accounted for the decrease in administrator participation."

Conference logistics

Overall, the conference logistics went well. The Torsh platform had many benefits, including the ability to give and receive feedback easily. The messiest part of the platform was the way the fellows had to upload and name their presentations. There were many steps involved and fellows had to pay close attention to all of the details. With that being said, the information videos and PDF instructions were extremely helpful. The CA Team is biased about the conference brochure since it was created by them. However, with that being said, the CA Team believes that the brochure was professional, clean, and gave just the right amount of information without being overwhelming.

Reflections from the CCLS Teams & GPS Presenters

HCCLS Conference Reflections

The CA Team held an informal discussion with Cohort 3 fellows to get feedback about their experience with the conference. Fellows generally had a wonderful experience participating in the conference. In particular, they enjoyed interacting with fellows from other Wipro sites and learning about their context. One area of feedback that they gave was that even though they understood the rationale for viewing assignments, they would have preferred for some of the assignments to have been done by grade level. However, they also said that they knew they could watch any additional presentations of their choice.

GPS Conference Reflections

The CA Team held an informal discussion with Cohort 2 fellows to get feedback about their experience with the conference. Overall, Cohort 2 fellows were impressed by the quality of the GPS Project presentations that they watched from across all Wipro sites. However, fellows particularly appreciated the projects of their own cohort members because they shared similar context with other California fellows and therefore felt more connection to the work that was presented.

Cohort 2 GPS Portfolio Submission

GPS Portfolios were once again done on the WiX website this year. Final GPS Portfolios for CA Cohort 2 fellows were due on June 30, 2021. The Wipro mentors from the CA Team are reviewing each portfolio and will be giving a simple warm and cool feedback to each fellow via email throughout July and early August. GPS Portfolios will be listed on a common Google document and shared (for fellows who are willing for their portfolios to be public) with the entire cohort so that they can see each other's full portfolios sites.

Planning for Cohort 3 GPS

Plans for next year

Cohort 3 fellows have been introduced to the GPS Project requirements and got a good sense of these projects by participating in the Wipro SEF Virtual Conference. Cohort 3 fellows will choose their GPS projects when the CA Wipro Program launches in the fall. Fellows have been asked to keep a journal of ideas that they felt excited about so that they can revisit these ideas September 2021.

Calendar

The CA Team is currently figuring out the Wipro SEF Program calendar for the 2021-2022 school year. Currently, the team has collected all partner school district calendars and will use these calendars to block out school holidays & breaks and/or special meeting dates. Ideally, the CA Wipro Team would like to plan for a mix of in-person professional learning sessions as well as virtual sessions. However, because of campus restrictions, it is still unclear when we will be able to hold meetings for large groups on campus. The team hopes to resolve these issues and have a calendar ready by August 1, 2021. Cohort 3 fellows have been informed about this timeline and know that at the very least, we will continue to meet virtually until we can find a space that allows for us to gather in-person.

Cohort 1 and Cohort 2 Involvement

University Level

At the University level, the CA Wipro Program will continue to keep Cohort 1 and Cohort 2 involved by inviting them to presentations and conferences. The CA Team also hopes to hold an in-person celebration for all cohorts sometime during the school year and once

restrictions have been lifted. Ideally, this celebration would occur at the Wipro business site in Mountain View. Again, because of Covid-19 restrictions and continuing changes to local guidelines as well as Wipro company policies, we are unclear when we will be able to have this celebration, but we anticipate we will be able to do this in the spring of 2022.

District Level

District Science Coordinators as well as site administrators have been very pleased with the Wipro SEF Program and the quality of professional learning that their teachers have engaged in during their two years in the program. As the CA Team re-launches the Wipro Program for the 2021-2022 school year, the Team will be having conversations with District Coordinators about how to best leverage the fellows they have in their districts. The CA Team will be meeting with the District Coordinators as a whole group, but then will follow-up with individual meetings with each site to have a more focused conversation about what they can do with the expertise of the Wipro fellows who are in their individual districts.

Awards & Recognitions

The CA Team would like to present plaques to each district during one of their Board of Education meetings. Currently, all five school districts are still holding Board Meetings virtually. The CA Team would like to wait until the Board Meetings are conducted in-person before presenting these plaques to them. Additionally, we would like all Wipro fellows to be able to attend these Board Meetings so that they can be honored.

Featured Fellows

Andrea Martinez, 6th Grade, San Jose Unified School District
Hello, my name is Andrea Martinez, and I was in the second cohort in the Stanford Wipro program. Over the last two years, I learned a lot about how to be a leader not only in the classroom, but in the school as well. This program has taught me that anyone at a school can be a teacher leader on campus, no matter how many years you have taught, and how important it is to reflect on your experiences in the classroom and try new things to help you grow as an educator.

One of my favorite parts of the WIPRO program was working with my V-CCLS and H-CCLS groups. I liked how we were able to learn about what educators were doing in other districts and seeing how different teachers ran their classroom. This really forced me to see how things were going outside the 'bubble' of my school and district and even learn new strategies that I could use in my own classroom. As teachers, we do not get the opportunity to observe other teachers too much, especially teachers in other schools/districts. I really enjoyed seeing another classroom in action and looking at the different techniques being used and learning how to give feedback to others. I will say, when it was my turn to record my video, I found it challenging to watch the video again, but it gave me time to reflect on my lesson and see where I could improve. This part of the program showed me to not be fearful of feedback and even how to give feedback to others as well. I also really enjoyed getting to explore an area where I wanted to grow in during the GPS project, but I feel V-CCLS and H-CCLS groups pushed me out of my comfort zone and gave me skills that I can use in the future and friends I can rely on if I ever needed help in the future.

Eric Armann, 7th grade, Moreland School District

2018 was an interesting year for me professionally. I had finished my masters degree and had helped pilot the new science curriculum for my district for the Next Generation Science Standards (NGSS). My discussions with teachers from other schools and grade levels astonished me. Where I had excitedly dug into the new standards and set about trying to figure out what I could do with my students, many were extremely apprehensive about what it meant for their "tried and true" lesson plans. My coworker had just finished her first year of the Wipro fellowship and as we talked about my concerns she flat out said, "You have to do Wipro. We are working on this very thing right now." Looking back at the last two years, I can say it might have been some of the best advice I have ever received. When I describe the Wipro Fellowship to people, I almost always default to, "It's the best professional development I've ever done." But in reality, it is so much more than that.

Year one taught me so much about not only how to teach science but why to teach science. When I worked with my vertically aligned group, I could see tiny first and

second graders grappling with the same concepts as my seventh-grade students and hear them ask literally the same questions my students ask every day. We worked together to create scaffolds and language that could be the same throughout elementary and middle school and enrich our lessons. The future held such promise, and then March of 2020 happened.

None of us knew what would happen, we all did our best with the directions and resources we were given and tried to make our students feel safe in truly uncertain times. The problem is, how do you make kids feel safe when you yourself don't? What answers do you give them when you yourself have none? We all were adrift, taking it one day at a time. But our advisors and the other fellows came together and created a support network for each other when we all needed it most. We discussed the pandemic and its implications to teaching and tackled the challenges head on. Was the 2020 - 2021 school year the hardest of any of our careers? Almost assuredly. However, the members of the Wipro fellowship worked together to provide a sounding board for new ideas or a safe space to discuss the issues we were all facing. At the end of my fellowship, as I reflect back on the entire process, I can say unequivocally that I am a better science teacher, teacher leader and teacher in general from the work we have done and thank Tammy, Sharon and Danny for all they have done to help me get there.

Fellows' meetings (Cohort 2 &3)

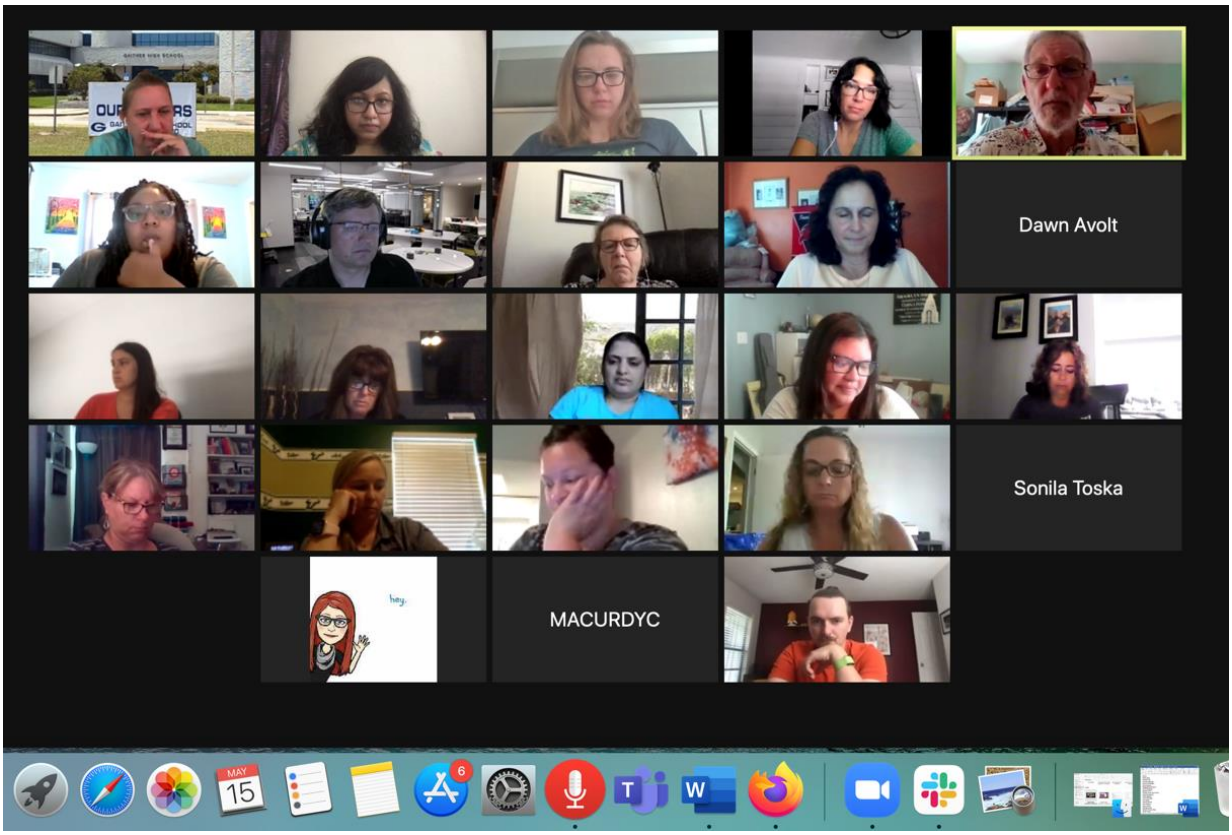
The monthly meetings have been held via Zoom. The TB Wipro monthly meetings focused on building the Fellow's understanding of the science and engineering practices broadly, as well as their understanding of specific practices, both those that the HCCLS groups were focused around, as well as other practices that were not being addressed in the HCCLS groups. Additionally, time was spent focused on beginning to understand the GPS projects, GPS sharing and brainstorming, future leadership scope for cohorts and, the district initiatives to which those projects could connect.

At the IHE

The USF team meets weekly via Zoom.

Within districts (DSC's and Fellows)

DSCs meet with Fellows via Zoom as part of our monthly meetings.



Screen capture of zoom meeting of HCCLS presentation on May 15

Leadership meetings

The leadership meetings for the first part of the spring were focused on the progress of the H-CCLS groups, the cohort 2 GPS projects, and planning for the monthly meetings. Moreover, discussions centered on how to support the fellows in connecting and disseminating their Wipro work to the districts more broadly, and potential avenues for that dissemination to occur. The leadership team's role in assisting fellows' distance/online teaching was also discussed. We also discussed the June conference and required measures to take for a successful completion of the conference. Regular updates on cohort 2 fellows GPS progression as well as meeting with mentors were thoroughly discussed in those meetings.

End of the year Conference

The Annual Wipro Teacher Leadership Virtual Conference took place from June 1-15, 2021. Cohort 2 and Cohort 3 Fellows from four Wipro sites presented the work they have conducted over the past year. Attendees viewed the presentations asynchronously over the two week-period and provided feedback. In addition, we had a number of synchronous sessions conducted by Fellows, District Coordinators and University Leadership on current topics such as Equity and Social Justice and meeting the needs of English language learners in science. Our site provided the example H-CCLS videos and GPS videos for Fellows for the other sites. In addition, we ran one of the synchronous sessions, focusing on equity and social justice.

H-CCLS Presentations (Cohort 3)

Team name	Team members	Science/ Engineering Practice	Presentation title
Elementary 1	Andrea Blomeley, Nicole Caltabellotta, Laura Carlson, Gina Choate, Kathryn Laubach	Obtaining, evaluating, and communicating information	Effectively Integrating Interactive Notebooks into Elementary Science Classrooms
Elementary 2	Dawn Avolt, Lora Darby, Kellie Delgado, Kimberly Fox, Christina Macurdy	Planning and carrying out investigation	Problem-Based Learning could be the Solution
High School	Nicole Holman, Yasmeen Leon, Ileana Bermudez Luna,	Engaging in Argument from Evidence	Argumentation in Inquiry-Based Learning

	Roshaun Reno, Andrea Smoley		
High School	Mishell Thomas-King, Chelsey Swats, Charles Turner, Laurie Vaughn-Grantges, Kelleigh Weeks	Analyzing and interpreting data	Claims, and Evidence, and Reasoning OH MY! Using CER to generate graphs for understanding

GPS Poster Session (Cohort 2)

Fellow's Name	Title of Poster	GPS Description
Sherri Alvarez	Diversity in STEM	My GPS project focused on providing a variety of opportunities for students to learn about diverse individuals currently, in our community, and throughout history who have made important contributions to STEAM. Through zooms, research, individual projects, school TV, and webpages my students were able to gain a better understanding and share their knowledge gained about diverse individuals who are important in the areas of science, technology, engineering, art, and math. These opportunities gave my students knowledge about more diverse people who have made impactful contributions to science. My ultimate goal is for my students of color and females to see actual people through history and currently who look like them in STEAM professions, so that they know they can do anything they want in STEAM if they so choose.
Teresa Buckman	How can elementary STEM education be advanced through content professional development?	My GPS focuses on why grading is an equity issue. I recognized that many educators view grading simply as an instructional process, not an equity issue. On the contrary, the traditional grading system is failing the very students who need us to "get it" the most. This mindset perpetuates the "achievement gap" as our marginalized learners, especially our Black and Brown students, are affected at a much higher rate. I explored how bias and behavior are regularly factored into grades and in turn, how these grades are being used to criminalize our students, especially our Black and Brown students who receive failing grades at a disproportionate rate. Much of my research and data was collected from classroom teachers considering or implementing equitable grading practices. In turn, this data resulted in my creating new professional development that addresses the systemic failures that are endangering the lives of our Black and Brown students.

Karen Bulino	Why is Grading an Equity Issue	My GPS focuses on why grading is an equity issue. I recognized that many educators view grading simply as an instructional process, not an equity issue. On the contrary, the traditional grading system is yet failing the very students who need us to "get it" the most. This mindset perpetuates the "achievement gap" as our marginalized learners, especially our Black and Brown students, are affected at a much higher rate. I explored how bias and behavior are regularly factored into grades and in turn, how these grades are being used to criminalize our students, especially our Black and Brown students who receive failing grades at a disproportionate rate. Much of my research and data was collected from classroom teachers considering or implementing equitable grading practices. In turn, this data resulted in my creating new professional development that addresses the systemic failures that are endangering the lives of our Black and Brown students.
Jennifer Cogan	Growing Success with School Gardens	My GPS project focused on integrating a school garden into the science instruction. The students used the garden to further develop their understanding of observation & inference, plant life cycles & structures, adaptations, weather, & ecosystems. In addition to those standards, they developed their skills of responsibility, patience, and cooperation. The garden was a collaboration with the middle school Unique Needs students who also planted a garden and assisted in maintaining the other gardens.
Carrie Donatelli	STEM awareness	My GPS project focused on making a real-world connection to STEM. Students in grades K-8 researched a STEM leader that portrayed our monthly STEM characteristic. Classes presented their research to rest of the school via our morning meetings each Friday. Students chose men and women in various fields of STEM.
Julie Fine	Storylines in a Biology Classroom	The way biology is typically presented to high school students is in discrete topics as if nothing is connected. Storylines work by incorporating several topics into a single unit all anchored by a common phenomenon. I wanted to incorporate storylines into my class to determine if it increases student attitudes toward science and student achievement in biology class.

Brett Goodrich	Using a Flipped Classroom in Order to Increase Student Engagement	This GPS project is focused on increasing the effectiveness of hands-on learning by use of a flipped classroom. When done correctly, hands-on, and kinesthetic learning can be a driving force to a successful science student. It is largely believed that a student's success in science is based off their interest in the topic. By creating an environment where students can explore, learn, and ask questions to further their understanding on the topic, the more interested they become. When students want to understand the material and enjoy completing tasks because they are related to the real world, they will perform better on standardized tests.
Jennifer Griffone	Computer Science and Student Engagement	My GPS project focused on participating in Computer Science Professional Development in order to deepen my knowledge and transfer that learning to the 5th grade teachers at my school. I wanted to increase student engagement using coding on the Scratch Jr. Platform.
Bhagyashree Kulkarni	Flipped Classroom during remote teaching	My GPS project was to learn to create 10 minute chemistry content videos and use them in a flipped classroom for my AP Chemistry students during remote learning this year. Students watched my video, videos from AP classrooms or took notes from PowerPoint as homework and in class we applied the concepts in solving problems. The Goal was to increase the understanding of chemistry concepts and student's ability to apply the concepts in different problems. Remote teaching/learning was another added factor in this project which was new to students and me. I explored various programs such as Nearpod, AP Classroom, Canvas, Zoom, Mastering Chemistry, Pivot interactives, phot simulations, Gizmo to engage students and assess their understanding of chemistry concepts.
Tara McClintick	Virtual Science Learning	My GPS project focused on using and implementing a variety of science technology resources so students will still have access to quality learning experience that may not otherwise take place due to either distance learning or having to follow CDC guidelines in class. I also used digital devices to integrate learning into the instructional day. This was used for a variety of reasons, including but not limited to, content delivery, research, creativity, innovation, and collaboration. Students were also be able to access technology resources at home since their devices went back and forth between school and home. I created a Science

		Canvas page with digital resources and from there put them onto a Padlet so I can have it for future use.
Cayla Repass	Becoming STEM Focused	My GPS Project focuses on increasing knowledge and understanding of introducing and implementing STEM in elementary classrooms. Becoming STEM focused helps to increase instructional engagement, as well as student success through the use of implementing lessons designed to incorporate various aspects of STEM (science, technology, engineering, mathematics, problem solving, collaboration, etc.). Designing hands-on, effective STEM lessons in grades 3-5 (one per grade level) has provided me with an insight into the impact STEM lessons bring to our students. Furthermore, I have gained teachers' insight into the effectiveness of each lesson and their thoughts on implementing future STEM lessons through the use of a survey. These observations and findings will contribute to future professional developments around implementing STEM lessons effectively.
Ann Salazar	Students Solving Real World Problems	My GPS project uses the IIM (Independent Investigative Method) where students research a real-world problem. They then brainstormed solutions to solve the problem while learning about the Engineering Design Process. While working on the project Culturally Relevant Teaching Strategies were used. This project was designed for 3rd through 5th graders.
Latasha Seay	Differentiating with Menus	My GPS project focuses on why differentiating with menus is an option that improves student learning. When the students are given options, it gives them a chance to shine in the areas they thrive in. On the other end, it pushes students to try something new they may not have known they liked or could do. This project focused on middle school students but can be used in elementary and high school in all subjects.
David Seis	Implementing The Framework: Tools for Success	My project was to develop a toolset for myself to help guide the integration of the framework and practices into my own teaching practice. Aligning the Framework to the Florida standards, as well as the 5e framework expected by our school district I created a suite of tools for easy use and reference. I also wanted to make it available to other teachers and so I worked with a few teacher boards to collect data on what would be the most helpful so I could tailor my support to those needs.

Sonila Toska	Effective Vocabulary Teaching in Science	I chose to do my GPS project on effective vocabulary teaching in science because most science subject matters are vocabulary heavy. Furthermore, many factors affect student achievement, but one key indicators of students' success is their vocabulary knowledge. My personal goal for this project was to support students to develop scientific literacy by helping them process and store information. My second goal was to support teachers in the classroom setting in teaching their students science vocabulary
Anita Ventura	Improving science instruction	My GPS project focused on trying to positively impact teacher science instruction by way of instructional tools and focused conversations with teachers. The goal was to use/develop a tool to help provide critical and beneficial feedback to teachers that could potentially move their practice forward. Feedback to teachers would be given through walkthrough data collected using a science observation tool created with feedback from a small group of teachers at my school site.
Michele Wiehagen	Becoming an Engineer or an Inventor through Science Standards	My project used the Science Standards to ground engineering designs, so the challenges are not something "extra" for teachers to do. Also wrote curriculum along with the Henry Ford Foundation to implement the principles of invention, engineering and scientific thinking to give real world application and design to students and teachers within the context of the science classroom.

Conference Reflections

Site Leadership Reflections

H-CCLS Presentations

The recorded presentations and asynchronous feedback were okay. Site leaders felt that there was a big loss in not having real time warm and cool feedback. They provided that for their Fellows in the May meeting.

Synchronous Sessions

From the site leaders, "We feel that overall, they went well however, it is not clear to us how many Fellows would have attended without the requirement. If we do this in the future, an attempt should be made to canvas the Fellows to see what they want to do in the synchronous sessions."

Asynchronous GPS Presentations

The recorded presentations and asynchronous feedback were okay. Site leaders felt that there was a big loss in not having real time warm and cool feedback. They provided that for their Fellows in the May meeting.

Invited Guests- DSC's, Principals, etc.

Although the leadership team encouraged the Fellows to invite administrators, they were not aware if any attended. For some reason there was little participation among the DSCs.

Conference logistics

Site leaders said, "It was a lot of work to put together the schedule and brochure and we thank Tammy and the others who worked on that. We found the Torsh platform to be highly unintuitive. We recommend that it not be used in the future. We also believe that the complexity of the Torsh system and the need for preregistration impeded the participation of invited guests."

Other

The leadership team, "We strongly believe that the focus of the conference should be on the Fellows themselves and their work, which we believe did not happen because it was not the focus of the synchronous sessions."

Reflections from the CCLS Teams & GPS Presenters

The site did not collect any reflections from the presenters.

Cohort 2 GPS Portfolio Submission

The GPS Portfolio Submission for cohort 2 was originally due on June 15th. However, due to the issues with Covid and projects being updated site leaders are allowing for a degree of flexibility in some cases, thus not all portfolios have been submitted. However, before they get paid, they must submit their portfolio.

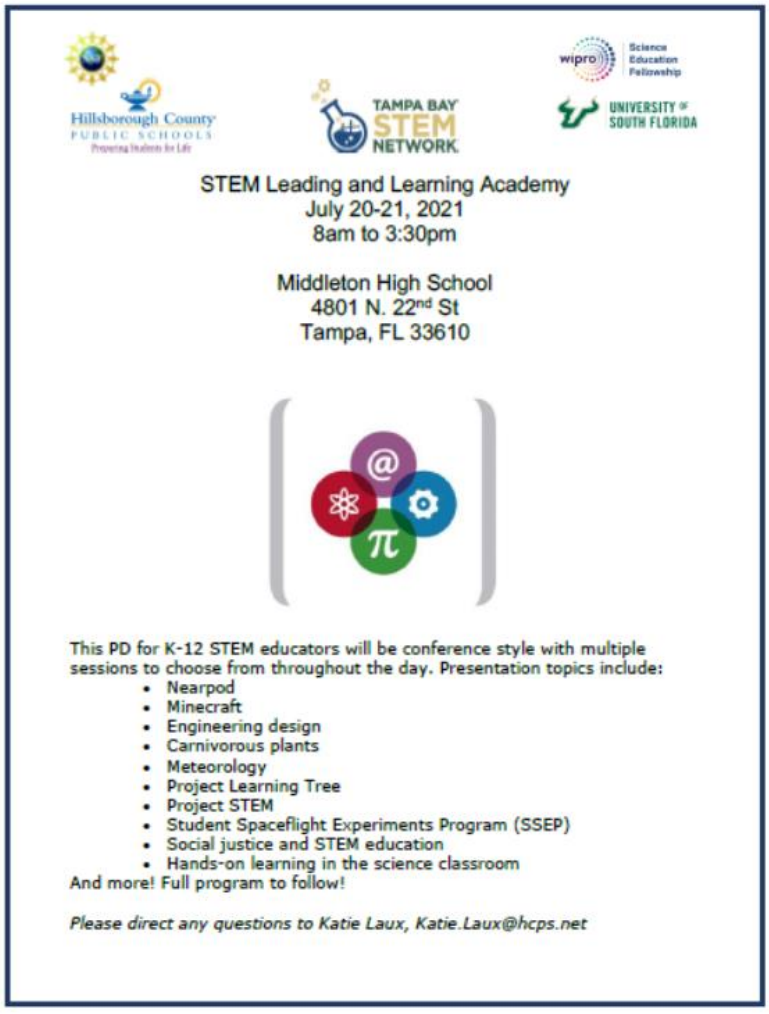
Cohort 2 fellows received feedback in multiple ways. First, every fellow received feedback from the site wide conference held in June. Second, the Florida site held a mini conference for our own fellows in which they received feedback from the group. These two forms of feedback were specific to the videos they made for the conference. For the Portfolio submission, site leadership created a rubric that was shared with the fellows that we use to score their portfolios. Each fellow has their rubric scored by at least two members of the leadership team. In addition to overall scores, they typically receive comments on each section.

Planning for Cohort 3 GPS

The leadership team is meeting with the DSCs on Wednesday June 23rd to create the calendar and plan of events for next year. Deadlines have been set for the fellows and follow a similar timeline from last year.

Currently the Fellows are working on their brainstorming document which is due July 1. That will give the leadership team a week to provide feedback to each fellow. Then, they have until the end of July to send the completed GPS proposal to the leadership team. From there, they will have been expected to meet with their principal regarding the project and have that completed by September 1st.

Cohort 1 and Cohort 2 Involvement



University Level

Florida will be having cohort 1 and 2 fellows present to cohort 3 at the meetings and for webinars sponsored by the Anchin Center. Wipro fellows are also presenting at the Tampa Bay STEM Academy this summer and will be recruited to do so next year.

District Level

The DSCs are using the Fellows in a variety of ways including as formal and informal science teacher leaders. In addition, they are serving as facilitators of PLCs and as PD presenters. Fellows from cohorts 1 and 2 will be presenting at the Tampa Bay STEM Network STEM Academy on July 20 and 21. These roles for Fellows will continue and will most likely expand over the coming year.

Awards & Recognitions

All Fellows and their families from all cohorts will be invited to the St Petersburg Science Festival on October 16. The Florida team will introduce the cohort 3 Fellows and pin the cohort 2 Fellows on the main stage. They will be providing lunch for all our guests.
The leadership team discussed the plaque idea with our DSCs. "They told us it would not be possible to get time at a Board of Education meeting to do this."

The Florida team would also like to hold some type of social event/ceremony in August or September.

Site News

Karen Bulino's GPS work, *Why is Grading an Equity Issue,* has received recognition in her district. Karen was asked to speak and share her work to the Pinellas County Equity Advisory committee last week! She presented to the superintendent and other executive leadership. A wonderful platform to help her project to continue to grow in the future. She will also be giving a keynote address at the STEM Academy in July (see flyer above).

Teresa Buckman, Bhagyashree Kulkarni, Nicole Holman, Kelleigh Weeks, Ileana Bermundez-Luna, and Jacqueline Bromley will be presenting workshops at the STEM Academy (see flyer above).

David Rosengrant has been appointed Interim Director of Education on the USF St. Petersburg Campus.

Fellows' meetings (Cohort 2 &3)

Cohort 3 meeting agendas on the Trello Board: 1st year meeting agendas
https://trello.com/b/ApK8aFNe -- posted

The Missouri team met with Cohort 2 Fellows on April 6, 2021, and with Cohort 3 Fellows on April 8. The meeting with Cohort 2 Fellows included discussion about their continued leadership, meetings with their advisors, a presentation by Kosztin about guidelines for producing a video, a discussion about the presentation requirements for the conference, and group discussions to share GPS successes and challenges.

During the leadership discussion fellows revisited the document *A Systematic Approach to Elevating Teacher Leadership*, and discussed two topics each and recorded their discussions in google drive documents (https://drive.google.com/drive/folders/16N2lEW7wYrc5-rgXQu0nZ4n-5fILbJPr?usp=sharing).

Some of the big takeaways from this discussion are:

- increased leadership roles in their schools/districts in the realm of technology-based learning, fostering of collaboration,
- courage in "spades" and
- encouraging students to become problem-solvers.

The meeting with Cohort 3 Fellows focused on three topics: the conference, a review of their leadership growth over the academic year and an introduction to year 2's GPS. Following a short intro to the structure of the conference and presentation requirements, Kosztin presented guidelines on creating a video (slides included on Trello). Fellows then went into HCCLS-based breakout rooms and spent about 30 minutes planning their conference presentations and scheduled meetings to create and finalize their videos. This discussion led to further questions that were answered by IHE members.

During the second segment fellows collected their notes about leadership on google drive (https://drive.google.com/drive/folders/1dtEl2kLDLqFeN9vZCXp9iqUpHOvMzedg?usp=sharing). These discussion notes reveal the rich discussions that took place among all breakout groups – which was particularly heartening given that this cohort has not met face-to-face (this report's author encourages the reader to visit the folder). The major takeaways include: other teachers in their districts have implemented practices and strategies Fellows learned from the Wipro project, and have received PD from Fellows; that

others have noticed when they "jump in" to help their building/district be successful; that CCLS feedback and collaboration has helped them improve; building principals have offered support and resources, such as Swivl; worked on curriculum selection teams; taking formal and informal lead to find solutions rather than pass problems off to admins. For the third segment, fellows had been asked to watch two short videos about the structure of GPS (made by Chandrasekhar) and about how to use Wix for their portfolios (made by Kelley). This meeting provided a venue for fellows to ask questions about the next year's projects. A more detailed meeting about GPS will be held on June 29.

Leadership meetings

Discussions with DC's has focused on the May/June conference. Several of Missouri DCs attended the District Coordinator Leadership conference in Feb/March and contributed to the structuring of the conference.

End of the year Conference

The Missouri site managed the asynchronous presentations for the conference. This task included

- Setting up the site (torshtalent.com) with folders for HCCLS and GPS presenters by grade band.
- Setting up Torsh email invites to presenters, IHE members and attendees that registered.
- Providing HCCLS and GPS exemplar videos for presenters.
- Creating help videos and accompanying slides in pdf format. Four videos were created:
    - A. Setting up a Torsh account (for all attendees).
    - B. Uploading presentations (for cohort 2 and 3 presenters).
    - C. Providing warm and cool feedback (all attendees); and
    - D. Downloading feedback (for presenters). These videos and documents were placed on the conference google drive site and on Torsh.
- Providing Zoom and email help, primarily for presenters who needed help with various aspects of either setting up their accounts or uploading presentations.
- Monitoring analytics to ensure that participation and feedback stayed on schedule, so that reminders could be sent to attendees.
- Downloading feedback provided for the project's records
- Closing out conference attendee accounts.

The Missouri site worked in concert with the 5-site team (CA, FL, MO, MA, and TX) to coordinate the conference. The collaborative tasks included:

- Attending weekly meetings to coordinate tasks (late April-mid June 2021)

- Helping set up criteria for presenters, and a management plan for materials and communication.
- Setting up a calendar with tasks where various sites led different tasks.
- Gathering initial presentation information from cohort 2 and cohort 3 fellows in California, Florida and Missouri, and cohort 3 fellows in Texas (titles and abstracts of 15 HCCLS and 67 GPS presentations).
- Creating naming a convention and a list of names for all presentations This document was placed on the conference google drive site and on Torsh.
- Gathering presentation abstracts into a document publishable on the conference google drive site and on Torsh.
- Creating a list of viewing assignments for all cohort 2 and cohort 3 fellow. These documents were placed on the conference google drive site and on Torsh.

An introduction to the conference presenters is available in this video: https://youtu.be/58JhwKZlils

H-CCLS Presentations (Cohort 3)

Team name (include grade span)	Team members	Science/ Engineering Practice	Presentation title
K-2 team	Brandy Albrecht, Melissa Baker, Robin Bishop, Katy Canote, Natalie Dixon, Christie Zoeller	Planning and carrying out investigations	What's Gonna Work? Teamwork!
3-5 team	Kayla Eads, Nicole Golden, Josie Hess, Rachel Walk	Developing and using models	A Modeling Mindset
6-8 team	Jennifer Bacon, Melanie Manning, Amanda Sauerwein, Chelsea Simon	Engaging in argument from evidence	Using the Claim, Evidence, and Reasoning Model
9-12 team	Rex Beltz, David Ganey, Tyler Helton, Steven McMullin, Erin Snelling	Analyzing and Interpreting Data	Getting into Graphing

GPS Poster Session (Cohort 2)

Fellow's Name	Title of Poster	GPS Description
Jennipher Adams	"A Moment of Science, Please"	I developed fifth grade standards-based science assessments. I collected data from third, fourth, and sixth grade teachers to narrow priority and essential standards for the assessments. After

Fellow's Name	Title of Poster	GPS Description
		consulting with the fifth-grade team, I also included performance-based assessments for each unit.
Amy Bartlett	Educational Technology Tools	Incorporating the NGSS science and engineering practice of argumentation for evidence into my science instruction was the focus of my GPS project. This presentation will take you through what, how and why of using argumentation in the classroom. I will share my learning of the process as well as the challenges in engaging students in this format of critical thinking.
Stacey Bishop	Bitmoji Classrooms	My focus was to help make distance learning fun and engaging for my kindergarten students. I used our Collaborative Classrooms curriculum to develop bitmoji lessons to deliver reading content and assessments to our virtual kindergarten learners. My in-seat students also participated in my weekly bitmoji assignments to prepare for virtual learning. I learned to use and incorporate other technology tools within my bitmoji classrooms, such as Screencastify, so my kindergarten students could complete their assignments independently. I enjoyed watching the students manipulate their bitmoji assignments to learning various reading concepts.
Candance Campbell	Elementary Science Night	I hosted a virtual science night for all PreK-5th grade students. I made and sent home 135 science kits along with step-by-step directions the day of the event. I had the event on Facebook live but students who do not have access to internet could still participate using the step-by-step directions. We had a lot of fun doing the experiments and showing off the prize baskets online! I sent surveys to collect data and used the views, likes, comments for part of my data as well. The Science Night was a huge success, and I plan to hold this event annually in the future.
Becky Eckerle	Utilizing Screencastify During Virtual Teaching	The focus of my GPS was to teach students how to use platforms such as Screencastify, Google Classroom and Clever to participate in remote learning without the help of their parents or another adult. By creating lessons using Screencastify and uploading them to Google Classroom, teachers will be able to provide students in-seat-like learning experiences.
Teresa Edwards	Google Classroom	With the possibility of needing to go virtual at any time, I focused my GPS project on using Google Classroom with my students. Google Classroom works with Gmail, Google Calendar, and Google Docs, which I was already using. This suite provides a place for me to streamline assignments, announcements, and student work all in one place. I was able to create classes, post assignments, and communicate with students easily. I will continue to use this suite, which will allow me to save time, since assignments can be easily modified and used again in the future.
Stephanie Harman	Transitioning to Standards Referenced Grading	As our district is moving towards using Standards Referenced Grading system, I have been collaborating with a group of chemistry teachers to develop scoring scales. My GPS project was to implement the scoring scales with my honors chemistry course.

Fellow's Name	Title of Poster	GPS Description
		I will present the scoring scales that were implemented along with a tracking sheet that I developed for students to gauge their understandings of the objectives.
Kristen Harris	Seamless transitioning from In seat to virtual learning	Coming into a year of COVID and anticipating rolling distance learning weeks, I wanted to make sure my students would be able to transition easily from in-seat learning into distance learning. My GPS focused on utilizing digital resources for labs, notes, and formative assessments. When students return from distance learning, I survey them on good vs. bad strategies and tools used, so that I can make adjustments for the next cycle. I also utilized Power Tools from the book title, Powerful Teaching so that students can formally assess their own learning.
Maggie Hunter	You Can't Pour From an Empty Cup Encouraging Educator Self-Care Through Journaling	Throughout the pandemic, student self-care has been looked upon as a priority, while teacher self-care has been woefully ignored. I decided to take matters into my own hands and set out to find ways to make self-care a priority. After reading Brendon Burchard's "High Performance Habits," I settled on a research-based approach: journaling. Each day I journaled the things I was thankful for, intentions, and affirmations. I tracked my feelings and attitudes month to month and set goals accordingly. I am proud to say that prioritizing myself and my needs helped me become a more effective educator.
Jessica Johnson	Virtual Learning Tools	Building relationships with students is critical to having a successful year. When you build positive relationships and take an interest in students their engagement increases, and they are more likely to behave better in class. I read several books on building relationships with students and parents and then applied the strategies to my own classroom. I did self-reflections on how the implementation of the strategies was going with my students. I had monthly check-ins where I assessed my relationships with each student and developed a plan to improve them.
Melissa Milius	Making Morning Work STEAMtastic	"Making Morning Work STEAMtastic" provided 4th grade students with hands-on materials that were used during our "morning work" time each day. I put together a STEAM cart, gave students opportunities to interact socially with others, create, explore the classroom, and use critical thinking skills to build a foundation of higher-level thinking. By providing them with STEAM materials that were geared toward creative thinking, I saw more engagement among students and significant improvements in their reading and math iReady scores. My school has now written a grant to duplicate the STEAM cart for other classrooms in my school.
Beth Newton	Providing meaningful place-based curriculum motivating	The mindful grizzly wasn't planned - it just happened. I had planned on creating an online resource for students to use, but found it quite stagnant and unmotivating. I needed more. Place-based education is my passion and I wanted to create a project that connected students to the community and natural world. The

Fellow's Name	Title of Poster	GPS Description
	students to become engaged citizens and create projects that matter.	project begins with students learning about sustainability and finding a sustainable goal that they are passionate about. Then throughout the year the students research their problem, connect to the community by participating in or creating a community service project. Students also define academic goals while developing their capstone ideas. The project was presented to stakeholders in my school community and overwhelmingly my administrator and colleagues have adopted the project as the RTI curriculum for 2021-22 school year. Our 8th grade team is working to develop the progression and background content materials.
Gable Nichols	Promoting Human Impact with Place Based Education	My GPS project focused on how placed-based education can bring a topic or issue found in the curriculum and apply it in a meaningful form to students. I developed a project around the climate problem of urban heat islands. Within this project, students had to come up with individualized solutions to help mitigate their contribution to urban heat islands, given their current life situation. In addition to the research behind the scientific processes of the issue, I used this project to help promote the concepts of sustainability, individual responsibility, and the impact of influencing others through example. In parallel, students worked together to develop an outdoor classroom space it what was an old trailer court on our school campus. This space was developed alongside individual projects in order to help inspire individual solutions, as well as to help model how urban spaces can be reclaimed to mitigate the problems of urban heat islands.
Susan Saracini-Cram	Learning How to Learn Well: Increasing Rigor and Student Engagement through Active Learning Strategies	My GPS Project focused on the research and development of active learning strategies to enhance students' retrieval skills and metacognitive prowess, encouraging critical thinking and problem solving in science and other disciplines. Through text-based research, collaborative development, and implementation of concept mapping and systems diagramming in my biology classrooms, I created novel formative and summative assessment tools. These active learning strategies encouraged critical thinking and scaffolded problem-solving by facilitating student learning (encoding skills) and concept connections (retrieval and application skills). Students also developed and improved their metacognitive skills, fostering more autonomy as diverse and cognizant learners. Through this project, I better understand that learning how to learn well will serve my students in all disciplines and avenues of their futures as life-long learners. My students are maturing as independent learners, now expressing that they value these activities (continuum of survey data). The key takeaways my students and I have gained through this project are that meaningful learning is often difficult and effortful, and that striving, and setbacks will build expertise.
Liz Schwab	Keeping Science Fun	My goal is to help all my science classes be engaged through the use of technology and advancements in scientific learning both in-

Fellow's Name	Title of Poster	GPS Description
	as Technology Evolves	person and through distance learning. Using different programs and moving to a mainly digital format, students are able to keep all their knowledge in a digital form. We have used an array of programs to help students be engaged and learn whether they are in-seat or virtually learning. My GPS project pushed me to look into more applications that our students have access to, and to work with the students so that they become proficient in those applications.
Lucy Shrout	Digital Learning Tools for Science Classrooms	At the end of 2020 I was thrown for a loop when I had to teach science virtually. I had no idea what or how to teach my students or easily communicate with them about the work they have completed. My GPS project gave me the opportunity to research various online websites and platforms as well as get ideas from my peers. The project helped me learn and put into practice strategies and ideas that can make student learning in a virtual setting happen.
Kelsey Strubel	Achievement for All	This year educators worked through many new practices and faced many different challenges. One of the largest struggles faced was the substantial learning deficits students had after closing schools last year. My GPS project allowed me to learn about many different interventions designed to help improve student learning and achievement in my classroom. This project motivated me to try new things in the classroom. It also allowed me to dive into student data individually as well as with my team in an effort to help close some of the large gaps we were seeing.
Rachel Tinsley	Building Relationships during Remote Learning	My strength as a teacher has always been building relationships with my students. In knowing who I am and that I understand who they are, I laid the foundation for learning. I had no idea about how to do that during virtual learning. My GPS project allowed me to research, use peers and condense my practical learning during the pandemic into successful relationship building strategies during virtual and hybrid learning.
Seth Willenberg	Digital Learning Tools for a virtual (or not) teaching environment.	I was the teacher that resisted going all digital - I still liked my students having a physical science notebook in which they could record notes, labs and other items. To me the use of paper and pencil was important for them to make the connection to the content. When I found out that I was going to have to teach my students virtually, I realized that I had some learning to do. My GPS project was centered around learning about and using a variety of different digital resources to help me with teaching in a digital learning environment. I will go through the different digital resources I used along with the pros and cons of each.

Conference Reflections

Site Leadership Reflections

- **H-CCLS Presentations**
- **Synchronous Sessions**
- **Asynchronous HCCLS presentations**
- **Asynchronous GPS Presentations**
- **Invited Guests- DSC's, Principals, etc.**
- **Conference logistics (Scheduling, Brochure, Torsh Platform)**
- **Other**

Overall, the conference was perceived to have gone off well.
The synchronous sessions were well attended (more people came than had signed up for some of the sessions). The conversations in the breakout rooms were brisk. All fellows were engaged. The sessions were well run and covered a wide range of interesting topics. The presenters were uniformly excellent – all of them had put a lot of thought into their talks/discussion questions, and we came away learning a lot from each session. There was a wide variety of session styles- panels, a single presentation or short discussion segments. While some attendees may have found it hard to attend a series of sessions each evening, I personally got into the groove of it, and did not find it onerous.

The asynchronous sessions were hosted on the Torsh platform (https://torshtalent.com) , which was the website the Missouri and California sites use for their teachers' video uploads, debriefs and collaboration. It was well attended, and the analytics showed that there were 860+ feedback forms submitted for 82 presentations (15 HCCLS and 67 GPS). The hard work and care Fellows put into their HCCLS/GPS work was evident. Several GPS projects showcased out-of-the-ordinary projects, such as a children's book and place-based learning outdoor gardens. More than the usual number of Fellows discussed digital learning, which is not surprising in this year of Covid. Aside from the content, presenters had worked to create attractive videos well. Several videos were just outstanding.
A total of 196 people registered for the conference, of whom 183 were active on the Torsh site. The primary involvement in the conference was from fellows and IHE personnel. Several guests attended, including a few graduated fellows, principals, DSC's, and GPS advisors. Their involvement was mixed, as shown in the Torsh site analytics. One of the graduated fellows spent an astounding 296 minutes watching 23 videos (she takes second place in the video usage chart). Some district admins made sure to visit their own fellows' presentations, while other guests were cursory in their involvement. A breakdown of registrants by site and role is shown below.

Site	Role						
	Active Fellow	IHE	District Coordinator	Graduated Wipro Fellow	School Administrator	Other Guest	Total by site
CA	43	5	4	2	4	4	62
FL	37	4	4	0	0	5	50
MA	0	3	0	3	0	1	7
MO	37	4	6	1	1	3	52
NJ	0	0	0	0	0	0	0
NY	0	3	2	0	0	0	5
TX	12	3	4	0	0	1	20
Total by role	129	22	20	6	5	14	196

The stress level among Fellows revealed itself as a slight impatience among presenters for watching and following tutorial videos about the steps required to set up accounts and upload videos to the Torsh platform. Thus, we had more than the usual number of emails and one-on-one zoom calls to troubleshoot problems. In the end, things resolved themselves, so all was well.

The two-week timeframe and scheduling appeared to be convenient. Required information (e.g., viewing assignments, presentation abstracts, etc.) and was available through at least 3 pathways, and seemed adequate. The brochure was excellent and worked well as a primary venue to locate information. The Torsh platform did require some learning, but once attendees learned the process, we received few requests for help.
Altogether the two-week period of the conference was busy, things worked smoothly. Several Fellows mentioned that the conference was an excellent learning opportunity.

Reflections from the CCLS Teams & GPS Presenters

Missouri site leaders have few reflections from the Missouri fellows at this point (deadline for the post-presentation form is June 30).

Cohort 2 GPS Portfolio Submission

Portfolios are due August 1. Several fellows have already submitted their portfolios. We will provide feedback by email, with comments from their advisors.

Planning for Cohort 3 GPS

Plans for next year

Cohort 3 Fellows were introduced GPS at the April 8 virtual monthly meeting. What would usually be an hourlong discussion was modified, and before the meeting, Fellows were provided with a 15-minute video introducing GPS, and a 15-minute video about Wix, their portfolio platform. They were also given two documents to read – the GPS description that included the coming year's calendar, and a sample of GPS goals. At the meeting we fielded questions about their GPS project based on these resources.
The cohort will meet with us on Zoom in June 28 to discuss their preliminary goals and ask questions. We have invited three Cohort 2 fellows to answer questions. In response to comments about the isolation GPS Fellows felt (especially after the collaboration of the CCLS year that they loved), we have asked Fellows to pair up as buddies, so they can discuss the GPS projects among themselves. We plan to have buddy-session time during our bimonthly meetings next year, as well as buddy check-ins during the academic year. In addition, we have asked them to identify a Cohort 1 or 2 buddy.

Calendar

The GPS calendar for next year will be similar to that used last year. We expect a draft of their goals to be turned in in August. Our 2021-22 meeting schedule is:
Cohort 3 Meetings: Thursdays, maybe 5-8 pm, maybe face to face at MU.

September 16, 2021
November 11, 2021
February 17, 2022 (February 24, 2022– snow date)
April 7, 2022

Cohort 1 and Cohort 2 Involvement

- University Level
  If the phase 2 funding is approved, we plan to use graduated Phase 1 Wipro fellows to conduct meetings and function as advisors for Fellows' projects.
- District Level

Several Fellows report that their districts are identifying them for leadership roles in curriculum and digital learning committees and working with them to write grants.

Awards & Recognitions

We plan to conduct recognition ceremonies after districts open for face-to-face Bord meetings in Fall 2021.

Featured Fellows

Katy Canote, McIntire Elementary, Fulton Public Schools in Fulton, Missouri

I have been teaching for six years, all of which have been in second grade at Fulton, MO. This is a self-contained classroom, so I teach all subjects throughout the day. Through the Wipro program, I have been able to implement a few different teaching methods into my classroom. During the first semester I was able to teach my students about Concept Mapping to reinforce the unit we had just completed on weathering and erosion. I was pleasantly surprised by how well my young students were able to visually display what they had learned by arranging their vocabulary words with connecting arrows and words. This semester I am working to teach my students "workplace" skills (teamwork, problem solving, information processing, and critical thinking) through targeted STEM lessons and activities. I am excited to see how many students grow in this area through the semester, as these are important skills for my students to learn to use. I have been very grateful for the Wipro program this year. I do not usually get the opportunity to work with teachers from other grade levels, or especially other school districts. I have learned so many great techniques through watching these other teachers teach their lessons, and from them observing my own teaching. It has been very beneficial to my teaching to talk with a wide variety of teachers and see things from a wide variety of points of view. They have changed my perspective on how much my students are capable of and how I can teach them new skills. If given the opportunity I would highly recommend the program to inquiring teachers.

Amanda Sauerwein, 7th and 8th grades, Bland Middle School, Maries County R-2 district

My vision is that each student continues to be curious about concepts and practices related to science and STEM and accesses information that sparks their curiosity without being assigned to do so. Our school serves a cluster of post-industrial rural communities and agricultural farms,

with many of our families living in relative poverty. About 11% of adults in the community hold a college degree. The science classroom provides a space for students to take risks and persevere in problem solving, so innovation and support are important as students master these skills. WIPRO has provided a means to help develop my pedagogical and practical science teaching, for which I strive to be innovative and culturally responsive. Locating, discussing, and using relevant empirical resources from the scholastic record has been invaluable to my practice. Last semester, students used the engineering design process, their physics knowledge of forces, and geometry to construct balsa wood bridges. Then, they participated in a competition to determine which one would support the most mass. This semester, my horizontal team, which includes another teacher at the school, Jennifer Bacon, will use the Claim, Evidence, and Reasoning model to strengthen argumentation skills during all steps in the scientific process, with special focus on analytical reasoning while sharing ideas with others. Without WIPRO, I would not have the support to implement these advanced strategies. Thank you for providing this opportunity in our region.

Site News

Melissa Milius (Cohort 2) won a $2000 Pierce STEM Grant (2021-22) for her school district to implement STEAM carts for all 4th grade classes. This grant was spurred by her GPS project "Making Morning Work STEAMtastic."

Jennipher Adams (Cohort 2) 5th grade teacher, published a book based on her GPS project, "When the World Was Sick." The book is a story of a child during Covid times and includes six labs that children can do at home. The book is available in hard copy and kindle formats on Amazon, https://www.amazon.com/~/e/B09474RFYY

NEW YORK -MERCY COLLEGE

Conferences

Fall Conference

The Mercy College site did not host a spring conference. The Mercy College team hosts a fall conference for K-12 STEM teachers, including Wipro Fellows.

Wipro 7 Site Virtual Conference

The Mercy College team hosted *Session #6: What it means to be a teacher leader* on June 9th, the second week of the conference. During this session, the Mercy College IHE team led Fellows through a series of small-group discussions and collaborative activities to think deeply about leadership and goal setting. Throughout the session, Fellows worked on defining leadership as a team, considering varying routes for teacher leadership within their schools, and setting goals for leadership opportunities ahead.

Wipro 7 Site Virtual Conference Reflections

The Torsh Platform made viewing and providing feedback to Fellows simple and streamlined. The HCCLS presentations that the Mercy College team viewed were well-organized using presentation slides and prepared notes. Fellows presented their material clearly and some even provided each other feedback using the comment feature that was embedded in the video sharing platform. This made the process of reviewing HCCLS presentations interactive and collaborative. The asynchronous presentations were especially useful because viewers were able to pause videos, rewind sections of the presentation, and spend more time digesting the material in each.

The Mercy College team attended two synchronous sessions and conducted Session #6. The two sessions that the team attended were engaging and informative. Both sessions offered time for small group discussions, activities related to our practice and leadership, and reflection.

Overall, conference logistics ran smoothly and worked very well for the Mercy College team in attendance. The brochure was easy to navigate, the daily reminder emails about sessions were helpful, and the Torsh platform was straightforward for first time users.

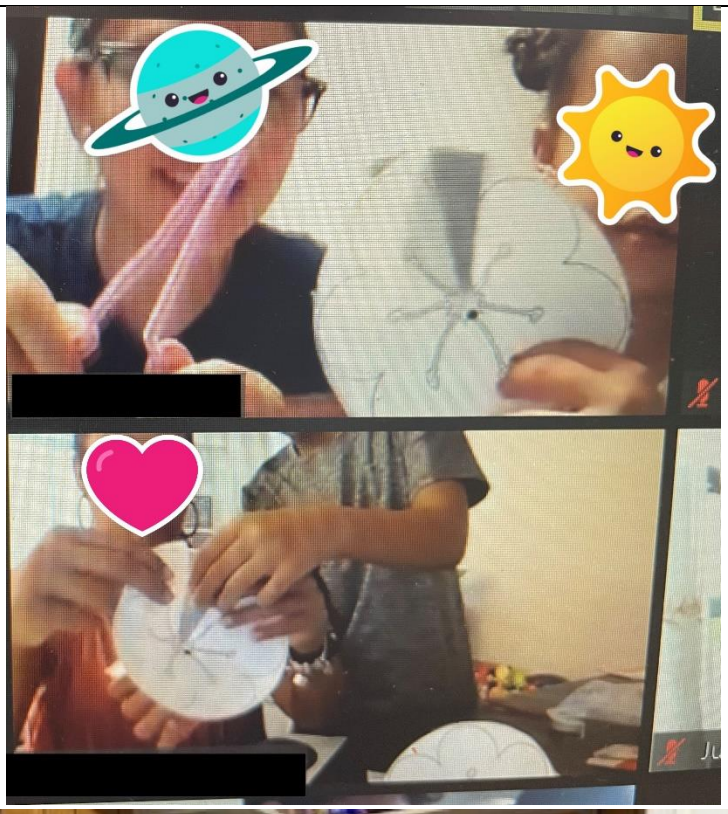
Cohorts 1, 2 and 3 Involvement

Earlier in the spring, the Mercy College team received a New York State Smart Start grant to facilitate professional development for STEM teacher leadership in our local school districts. The team reached out to all Fellows from prior Cohorts and their DSCs to make this opportunity available to them for the Fall 2021 launch. So far, four GNY Wipro Fellows have been accepted into the Smart Start program and will continue their leadership with us in the 2021-22 AY. The Mercy College team hopes to continue these partnerships with Wipro Fellows for the entirety of the five-year Smart Start program. In addition to Wipro Fellow participation, the Smart Start program at Mercy College has been designed to integrate lessons learned from the Wipro program including VCCLS-inspired projects and activities. Through this vertically aligned professional development, the team hopes to see similar gains for participants as those experiences by Fellows.

Mercy College has had four Fellows retire this year—Chuck Sincerbeaux, Elizabeth Barret-Zahn, Karen Lent, and Diane Delgado. Even in their retirement, these Fellows have dedicated much of their time to the Center for STEM Education at Mercy College. Chuck Sincerbeaux has agreed to take on a Lego Mindstorm robotics class in Fall 2021 for the MCCSE Saturday STEM Academy. Elizabeth Barret-Zahn led the Mercy College Master Teacher Fellows in a professional development on publishing their work in practitioner journals and she has agreed to extend this presentation to the GNY in the upcoming October 2021 K-12 STEM Teacher Conference at Mercy College. She continues to serve as Editor of *Science and Children,* the NSTA publication for K-5 teachers. Both Chuck and Elizabeth will also be working as instructors for the MCCSE Smart Start Program in the Fall 2021. Diane Delgado has taken on a new role leading STEAM nights for her school district and continues to be involved with the MCCSE. In her email announcing her retirement to MCCSE, Karen mentioned “My association with all of you at Mercy, and with Wipro, both as a science fellow and as a DC, has truly been one of the highlights of my career”.

Featured Fellows

Ann Marie Manganiello and Diane Delgado, New Rochelle, NY
Ann Marie Maganiello and Diane Delgado of New Rochelle School District, NY partnered up to design and conduct a STEAM night for families in their community to share STEAM activities with their children and other families. Families received a STEAM bag that contained materials to help them accomplish different STEAM challenges. Together, families worked together at 30-minute stations at home on pollination, the moon landing, DNA and genetics, skeletons, and structure/function. Photos shared below show the program in action.




Love

Site News

The Mercy College site is pleased to announce that Aimee Ferguson has accepted a position as District Science Coordinator for the New Rochelle School District. Mercy College is proud to bring Aimee into this leadership position after many years of her demonstrated commitment to the program and STEM teacher leadership in her district. Mercy College is also happy to welcome Felipe Orozco as the new DSC for the Port Chester School District. Felipe is the Director of ELL programs for the district and has been extremely supportive of Wipro Fellows' initiatives.

Fellows' meetings (Cohort 3)

Meetings this quarter with Cohort 3 have been conducted via zoom both collectively as a group as well as individually with each Fellow
There were several things site leaders focused on during the meetings

a. The requirements and deadlines for the Wipro conference. They met as a group and set deadlines and expectations for their presentations. Dr. Narayan also met with each Fellow individually and gave them feedback on their poster and PowerPoint for their video.
b. The SW Collaborative Conference. Site leaders discussed Fellows presenting and facilitating sessions at the SW Collaborative conference
c. Completing their GPS WIX Portfolio. They have met twice about this. At each meeting Dr. Narayan set deadlines for what she expected them to complete for their GPS Wix portfolio. I will give them feedback on it. All Cohort 3 GPS Wix portfolios are due to me Aug 15th, 2021, grades for the course will be submitted on August 30th, 2021, to the UNTD Registrar's office. The final installment of the stipend will be paid after grades are submitted.
d. Wipro Phase 2 proposal was submitted to the UMass Boston leadership team.

Leadership meetings

Meetings with the DSC's have mainly focused on the SW conference. It is a truly collaborative effort with the 5 participating districts.

End of the year Conference

All of the Texas C3 Fellows presented their GPS projects at the conference. They provided feedback on the posters and attended the opening and closing ceremonies as well as synchronous sessions.

GPS Poster Session (Cohort 3)

Fellow's Name	Title of Poster	GPS Description
Olaide Ajakaye, Elementary, Cedar Hill ISD	The Impact of Hands-on Minds-on activities on Science Learning.	In this poster presentation I will describe progress made on my GPS Personal goal. The research question I investigated was to determine the impact of hands-on minds-on activities on the science learning of 5th grade students. Doing science, as opposed to simply hearing or reading about it, engages students and allows them to test their own ideas and build their own understanding (Ewers, 2001). Participants included 18 5th graders, 16 face to face and 2 online students. The topics addressed were mixtures

		and solutions, properties of matter and adaptation. Pre and post content tests were administered for each topic. Pre and post surveys regarding participants' perceptions about science and science learning were also collected.
Shelby Allen, Elementary, Lancaster ISD	After School STEM Club	My personal goal was to determine the impact of an after-school STEM/ Science club on grade 4-5 students' interest in STEM/science. In this poster presentation, I will be discussing the research regarding STEM and STEM clubs, the process of setting up the STEM club and the data collection and the results I obtained. For this goal, I collaborated with the Perot Museum of Nature and Science as well as a C1 Fellow at another elementary campus at Lancaster ISD. Participants consisted of 4th-5th grade scholars across both campuses. The scholars participated in several hands-on virtual activities for which materials were provided to them. Data consisted of open-ended student surveys, I looked at the progression in participants' interest and understanding of the definition and meaning of STEM.
Tamesha Brown, Elementary, DeSoto ISD	Connecting STEM to The External World	My district goal was to research how hands-on activities through STEM impacted students' knowledge of the world around them. Research suggests that hands-on STEM activities positively impacted students' perceptions about science. Further, it fosters student motivation to learn about the world around them and about STEM related careers. Participants were fifty-seven 5th Graders from Katherine Johnson Technology Magnet Academy; both campus supervised and online learners due to Covid-19. Data collected consisted of observations, pre/post student content tests and pre/post student surveys. Preliminary results revealed a 43% increase in student content scores. Students reported an increased motivation to learn about STEM careers and more connections being made to STEM and the world around them.
Markus Burkhalter, Elementary, Lancaster ISD	Thematic Units	My district goal was to determine the impact teaching integrated thematic units has on 1st grade student's content knowledge. Impact will be determined by various key factors such as their grades, how well they retain the information, and their overall engagement throughout the thematic units. Participants included twenty-four 1st grade students enrolled in my class, 14 face to face and 10 online. I designed four week-long thematic units, Amazing Animals, Habitats, Deserts and Water Cycle. Data collected consisted of pre/post content tests administered after each thematic unit and a post survey regarding how they felt about each unit using Flipgrid. Preliminary results

		revealed an increase in student engagement as well as content knowledge.
Tiffanie Johnson, Elementary, Cedar Hill ISD	Use questioning to activate prior knowledge to build science content knowledge through Collins Writing	For my district goal, the research question I investigated was: how questioning activated prior knowledge through Collins Writing to build science content knowledge. Participants were fourteen 4th grade students attending my class face to face in spring 2021. The unit the study was about Matter. Guided questions were asked to provoke participants to think about the topics. Guidelines regarding the inclusion of certain vocabulary words were provided. A pre and a post content test was administered, and results revealed that student scores increased by an average of 35%. Classroom observations showed participants were able to hold longer conversations on a topic after writing about it. Further, participants started to ask more in-depth questions about the topic
Linda O'Bryan, Elementary, Irving ISD	Using Education Technology During the COVID-19 Pandemic: Elementary Teacher and student perceptions	In this poster presentation I will present results of my GPS District Goal. The research question I investigated was to learn how elementary teachers at my school in Irving ISD incorporated technology in their classes during the COVID-19 pandemic and how their students responded to these efforts. Participants included twenty elementary teachers teaching ELAR, Science, Math and Social Studies who taught both in-school and online classes. I also surveyed thirty 4th grade students to learn how they responded to the technology their teachers choose to incorporate into the classroom. Data was collected mainly via online surveys administered to all participants. Many teacher participants reported that while they were always ready for the next new challenge, the sudden dependency on technology left many of them feeling overwhelmed.
Maria Soto, Elementary, Irving ISD	Close Reading in Elementary Science	The purpose of this research study was to test the efficacy of reading intervention, specifically, “close reading” during science to raise students’ reading test scores. In second grade students learn to read, although “close reading” is a reading-to-learn strategy some research suggests that students would benefit from it. Lessons were designed to include a scientific passage for use during “close reading” practice with my 2nd grade students. Additionally, a bookmark with annotation symbols was provided to all participants. Participants demonstrated early annotation skills in science and other content areas. However, the accruing of “close reading” skills did not translate to an increase in reading scores. On the contrary, participants showed a measurable decline in reading scores followed by an upward trend toward but not attaining their original levels.

Sherry Thomson, Elementary, Irving ISD	Make Your Word Wall Rock Remotely!	Are you ready to spice up your word wall? The word wall is designed to be an interactive tool for students to build upon their vocabulary comprehension. In this presentation, I will describe the project for my district goal. The research question I investigated was to determine the impact of student created word walls on the retention of science content during online learning. Participants included 16 students in my 5th grade class, 4 in person, 12 online. I focused on three topics: a) Properties of Matter b) Earth and Space c) Changes to the Environment. Materials were provided to the participants prior to the project. Pre and post content tests and post surveys were administered. Participants enjoyed creating and revisiting the interactive word walls.
Julien Yacho, Elementary, Irving ISD	Using Your Hands to Learn Science and English: Creating a Library	One of the hardest things to build in a district curriculum is consistency. In our district, there are several teams made up of teachers from different grade levels who do not always have the luxury of cross grade level collaboration. In an effort to create some consistency, a fellow teacher and myself created TPR (Total Physical Response) based hand motion videos for each science standard (TEKS) from kindergarten through 5th grade. These videos were created in both English and Spanish. In this presentation, I will describe how selected elementary teachers in my school district used the TPR videos and the impact it had on their students. Data consisted of interviews with teachers and pre/post tests and surveys administered to students
Marquita Muhammad, Middle School, DeSoto ISD	Bridging the Science Gap with Coding APPs	My personal goal involved the integration of science and technology using student-built apps. Through my research, I investigated the impact coding had on my 6th grade students' science content retention. In our current virtual setting, the need to incorporate virtual hands-on tools is crucial. The site of my research was a technology magnet academy,73% of participants reported experience with coding, though only 18% had ever created an app. Data consisted of pre/post surveys. Using apps obtained through STEMScopes, participants were able to build on their science content knowledge by creating their own connections using computational thinking. Merging coding and science also built interest for the targeted participants who are underrepresented in the computer science field.
Marsha Bolden, High School, Irving ISD	Using Technology Integration to Advance	It is common belief that the use of technology enhances a student's ability to learn and that developing technological skills will transfer into adulthood as students become productive citizens. The research I conducted for my Personal Goal investigated how high school teachers in my

	Science Learning	district integrated technology in their IPC classes. The study focused on 1) availability of technology, 2) teacher proficiency with technology integration, and 3) impact of technology integration on student learning. Participants included teachers and students from Irving High School. Data collected included teacher and student surveys. Sixty-seven percent of teachers and 50% of students agreed that technology integration improves student learning
Yesenia Vasquez, High School, Irving ISD	Using QSSSA in a Science Classroom	My personal goal was to implement the use of QSSSA (Question, Signal, Stem, Share, Assess) in a hybrid ESL biology classroom. The student population in my district is 72% Hispanic with my campus having the highest ELL population. The need for academic language acquisition is crucial, especially when faced with upcoming state tests that evaluate their reading, writing, listening, and speaking in English. QSSSA is a structured conversation strategy and total participation technique that provided the needed scaffolds and supports that guide English learners in discourse. Participants included 16 students, 6 in person and 10 online. Data consisted of pre and posttests and participants mentioned that the use of the QSSSA strategy helped their reading, writing and conversational abilities

Conference Reflections

Site Leadership Reflections

Dr. Narayan liked how the conference went, it was well organized, and she liked how easy Torsh was to use. She liked the presentations that she watched. They were very informative, and a variety of topics. She liked how the brochure was a living document that was being added to and she liked how the fellows had 2 weeks to give feedback. She will work harder to improve my Fellows' presentations.

At some point it would be nice to see cross site presentations. For instance, the HCCLS presentations are based on the Science and Engineering standards. Assuming a group from CA, FL and MO chose "Planning and conducting investigations" as their topic, it would be nice to see what that would have looked like across multiple sites. Also, our Phase 2 Proposals are all collaborative, it would be nice to see cross site GPS and / or Phase 2 projects.

Reflections from the GPS Presenters

At Present, site leaders have not collected any feedback from the fellows about the conference. They will be downloading the feedback they received from the other fellows

during the conference and uploading it to their Wix site with a reflection. All Wix portfolios are due on August 15th, 2021.

Cohort 3 GPS Portfolio Submission

All C3 GPS portfolios are due August 15th, 2021. Fellows have already started uploading material to it. All portfolios already have the About Me section, the District, and Personal goal and Leadership Task uploaded. They are working on the remaining parts such as Professional Development page, Adult Learning Statement, Impact statement and Teacher Leader Continuum. For their grant requirement, Dr. Narayan has told the Fellows if they apply for Wipro Phase 2, they can upload their proposal to fulfill that requirement.
Dr. Narayan will read each document, check each link and email them about what works and what does not and needs to be fixed. This is the procedure Dr. Narayan always follows.

Cohort 1,2,3 Involvement

Dr. Narayan plans to keep Cohort 1, 2 & 3 Fellows involved by presenting them with opportunities that they can avail of such as Wipro Phase 2, presenting at CAST and the summer annual professional development conference.

Awards & Recognitions

Dr. Narayan does not plan to have a recognition ceremony at UNT Dallas unless things improve with regards to Covid in the next few months. In the fall semester, only 1000 and 2000 level classes are meeting face to face, 3000, 4000 and 5000 level classes are all online and everyone needs special permission to go on campus.

Dr. Narayan plans to have a Wipro Get Together in February where she will invite everyone connected to Wipro: Superintendents, Principals, Fellows, DSCs, Informal Science Institutions, Wipro Dallas representatives as well as everyone who is involved with Wipro behind the scenes.

Dr. Narayan has emailed all the superintendents with regards to getting on their agenda for their September Board meeting. She plans to present plaques to all the C1. C2 and C3 Fellows and the DSCs during their respective board meetings. Kendra Brown is in contact with the person UMass ordered their plaques from and have already gotten quotes and samples of what they want and will place the order shortly.

Featured Fellows

Maria Louisa Soto, (formerly in Irving ISD, will be in Arlington ISD in the Fall) 3rd grade

Maria Louisa Soto is a bilingual teacher for Arlington ISD. She earned an associate's degree in elementary education from Mountainview College in 2008. Maria completed her bachelor's degree in Interdisciplinary Studies at the University of Texas in Arlington in 2010. She holds an EC-4 generalist certificate as well as an EC-4 bilingual generalist certificate. Maria has ten years of teaching experience in 2nd, 3rd, and 4th grades, primarily math and science. She has served as a curriculum writer for ELAR and science and a curriculum and interactive journaling trainer. Maria is a teacher-leader on campus by coordinating impromptu training to support teachers in technology, curriculum, and pedagogy. Currently, she is a Wipro fellow at the University of Texas at Dallas. Maria was a fellow in Cohort 1 and had to drop out of the program due to illness. However, she got better and joined C3 to complete her Wipro Fellowship. Maria is passionate about teaching and learning. She believes that teacher collaboration and self-reflection are essential to developing effective educators. Her hobbies include reading, research, and helping other educators learn how to be "teacher awesome."

Shelby Allen, Lancaster ISD, 4th grade

I am an Educator at Rosa Parks/Millbrook. I teach 4th grade science. I also run the STEM club for the campus and manage the science labs.
I believe science education is key to developing successful, lifelong learning scholars. My classroom is bursting with excitement, questions, and experiences. We are constantly exploring the natural world and discovering how things work. I am consistently implementing hands-on investigations, PBLs, and labs for my scholars. I believe the best learning comes from experiences. I was blessed to be able to provide material bags for my scholars this year to continue these vital experiences throughout the Covid-19 pandemic! We also used various online platforms to create and assess our knowledge. Although science education was different, the experiences were still apparent.

I love to travel and bring personal experiences into my classroom. I want my scholars to gain an understanding of our diverse world! I also tie in my travel photographs into our lesson and give the scholars a personal tie into the learning. I believe it is important to showcase other places and build curiosity in our young scholars. I am constantly using my experience to show that you can do anything if you work hard and believe in yourself. Many of the families I serve have never left the Dallas area, thus the scholars have a very narrow view of what the world is like. I hope to continue to build strong connections, curiosity, and drive in my classroom.

Site News

The UNT Dallas Program manager, Ms. Kendra Brown will be taking a full-time job at UNT System, her last day is July 1st, 2021. The Wipro Fellows, DSC and Dr. Narayan will miss her dearly. There are a few tasks pending as we complete the Wipro Science Education fellowship Grant on Aug 31st, 2021, and transition to Wipro Phase 2 in Sept 2021. Kendra has very graciously agreed to help Dr. Narayan complete these tasks as UNT System has a policy regarding supplemental pay for employees. They have identified the tasks to be completed, the time needed for completion and have submitted the forms to the higher ups (Dean, Provost, Grants Office, HR, President).

Dr. Narayan is going to India on July 11th and back august 23rd to visit her parents. She will be working on Wipro SEF and Wipro Phase 2 while she is there. When she returns, she will hire a Part time Coordinator to help with Wipro Phase 2

Wipro Phase 2

UNT Dallas has been awarded the Wipro Phase 2 grant ($100,000 for Sept 2021 - Aug 2022). Dr. Narayan is very grateful to Wipro and Dr. Eisenkraft for his continued belief and support. Thank you!

The Wipro Phase 2 at UNT Dallas will take the form of "Collaborative Mini Grants". Requirements for the proposals are a) they must focus on an aspect of science teacher leadership, b) they must be collaborative, but the lead must be taken by a Wipro fellow. Each member of the Collaborative Mini-Grant Project group will receive a stipend of $1,000 for their work. They are also eligible to receive additional funds (towards material and travel to present at conferences) to support their work if their project is selected. As this is the first time, they have written a proposal, Dr. Narayan will meet with each team and help them with their proposals. The Collaborative Mini Grants Advising committee (consisting of faculty from the colleges of Education and Liberal arts and Sciences as well as DSCs and informal science educators) will select the proposals to be funded.

The Second Annual Southwest Collaborative Professional Development Conference: June 29th & 30th

This idea came out of the Wipro leadership meeting last year and this year all 5 partnering ISDs are collaborating with Wipro SEF @ UNT Dallas. STEMscopes and Region 10 will offer teachers in the metropolis 2 days of FREE PD with 72 sessions. Attendees will get professional development (PD) credit for each session attended.

The conference website can be accessed through the link below:
https://app.planhero.com/gatherings/8747-southwest-dallas-collaborative-virtual-professional-development-2021

The Conference at a Glance can be accessed below:
https://swdallascollaborative.org/Conferenceataglance

Welcome Letter from President and Provost of UNT Dallas
http://swdallascollaborative.org/PresidentandProvostLetter

Superintendent Video Montage
http://swdallascollaborative.org/UNTDallasYoutubelink

Our Collaborative Committee 2021
http://swdallascollaborative.org/CollaborativeCommittee

Southwest Collaborative Professional Development Conference Reflections

The Southwest Collaborative Professional development conference was held on June 29th and 30th 2021. Seventy-two sessions were offered over two days, with 224 participants and over 1100 hours of professional development credit offered. The Conference was truly collaborative with all 5 DSCs participating compared to just to three last year. 16 Wipro Fellows presented 29 sessions at the conference (10 C3 Fellows, 3 C2 fellows and 3 C1 fellows). Wipro fellows also facilitated 50 of the 72 sessions. Each fellow will receive a certificate for each session presented / facilitated. The conference did not have any of the technology issues that they had last year, the leadership team worked with both zoom and Plan Hero (the conference platform to eliminate problems). Conference organizers made 72 swag bags consisting of swag from the 5 Independent School Districts (ISDs) UNT Dallas, Region 10 and STEMscopes. At each session, the facilitator used a random number generator to select a winner from the attendees. All the bags have been sent to the DSCs who are responsible for getting them to the winners. To quote Dr. Narayan, "We worked really hard on this, I am proud of this collaboration, and we are looking forward to doing something similar next year (hopefully Face to face)."

A summary of the evaluation report follows.

Evaluation Update – April 2021

Anne Gurnee Consulting, LLC

Tasks this Month

- Finalized drafts of year-end surveys for Fellows, DSCs and former Fellows. Survey will be administered in early May.
- Began planning for year-end interviews/focus groups.
- Participated in monthly call with IHE leadership held on April 21, 2021.
- Participated in year-end conference planning call held on April 28, 2021.

What's Next?

During the month of May, AGC will be working on the following:

- Administering the year-end surveys (early May).
- Finalizing all spring evaluation documents including:
  - Interview scripts
  - Focus group scripts
  - Conference survey
- Scheduling all year-end interviews/focus groups.
- Offering input as needed with year-end conference planning.
- Participating in monthly call with IHE leadership.

Evaluation Update – May 2021

Anne Gurnee Consulting, LLC

Tasks this Month

- Completed administration of year-end surveys.
- Continued to finalize other year-end evaluation instruments (e.g., interview scripts, focus group scripts).
- Finalized the June conference survey.
- Began planning for year-end interview/focus group scheduling (will begin scheduling near the end of the conference).
- Participated in June conference-related team planning calls.
- Began analysis of year-end survey data.

What's Next?

During the month of June, AGC will be working on the following:

- Participating/observing the year-end conference.
- Administering the June conference survey at end of conference.
- Continuing analysis of year-end survey data & June conference data.
- Completing scheduling of year-end interviews and focus groups.
- Drafting the annual report.
- Participating in monthly call with IHE leadership.

Evaluation Update – June 2021

Anne Gurnee Consulting, LLC

Tasks this Month

- Participated in/observed the year-end conference from June 1-15, 2021. Administered the survey at end of conference.
- Conducted two virtual focus groups with Year 1 Fellows from CA, FL and MO (June 24 & 25).
- Scheduled and conducted interviews with IHE leaders and district administrators in CA, FL, & MO.
- Continued the analysis of collected data in anticipation of drafting the annual report.
- Participated in monthly leadership team call on June 16, 2021.

What's Next?

During the month of July, AGC will be working on the following:

- Completing scheduling/administration of year-end interviews.
- Continuing/completing the analysis of year-end survey, focus group, interview & conference data.
- Drafting the annual report.
- Participating in monthly call with IHE leadership (if scheduled).