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

WIPRO SEF

YEAR 9
QUARTERLY REPORT
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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 Sept 2021 thru December 2021. 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	Phase II	Phase II	Year 4
2021-2022	Year 4	Year 4	Phase II & Lead Institution	Year 4	Funding ended	Phase II	Phase II

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

Wipro Book

In an effort to "share our story" and provide guidance for other universities and school districts to replicate this successful model promoting teacher leadership, some site leaders are collaborating on a book. The working title is Nurturing Teacher Leadership. The proposed chapters are:

Chapter 1 - Vision of Wipro SEF
Chapter 2 - What is Teacher Leadership
Chapter 3 - V-CCLS
Chapter 4 - H-CCLS
Chapter 5 - GPS
Chapter 6 - DSC roles
Chapter 7 - IHE roles
Chapter 8 - Getting Started - Operating Manual - Join the Community

Providing Wipro SEF Fellows with National Opportunities to Lead

One of the goals of the Wipro SEF program is to provide teachers with opportunities to develop their leadership skills. Through their 2 years in the program, they are often called upon to lead in their districts and in their state. Dr. Eisenkraft worked with 4 fellows who presented their work on a national stage as part of The STEM Teacher Leadership Network (STEMLnet) on November 10.

The STEM Teacher Leadership Network (STEMTLnet) is an interactive learning community and collegial network where STEM teacher leaders and aspiring teacher leaders can share their paths, challenges, strategies, lessons learned, and resources with each other. The professional learning community provides resources, networking tools, and events throughout the year to help members explore topics related to STEM teacher leadership in depth.
https://www.terc.edu/projects/the-stem-teacher-leadership-network-stemtlnet/

STEM TEACHER LEADERSHIP NETWORK

Home / theme /

Theme of the Month

Suggest a Theme

Join us each month as we focus on a topic of interest to STEM Teacher Leaders with a webinar panel, open discussion, resources and blog post.

Overview | Resources | Intro Blog | Discussion | Webinar Panel | Synthesis Brief

November 2021

How Science and Engineering Practices Enhance STEM Teaching and Further Teacher Leadership

November's theme, moderated by Arthur Eisenkraft, will explore how a deep dive (i.e. one semester) into a single science and engineering practice helps build the path from teacher to teacher leader. Be sure to read the intro blog, view the webinar recording, join the online discussion, & browse related resources.

How Science and Engineering Practices Enhance STEM Teaching and Further Teacher Leadership
Recorded: November 10th at 7pm ET
Moderator: Arthur Eisenkraft
Panelists: Katy Canote, Ileana Bermudez Luna, Amanda Lim, and Maria Louisa Soto

View the Recording | Join the Discussion!

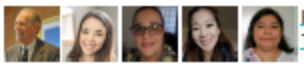
Intro Blog

How Science and Engineering Practices Enhance STEM Teaching and Further Teacher Leadership
Arthur Eisenkraft kicks off the November theme with a blog post that highlights the Wipro Science Education Fellowship program, a two-year program where each of the teachers becomes a teacher leader.

Discussion

Join the Discussion: How Science and Engineering Practices Enhance STEM Teaching and Further Teacher Leadership
In this facilitated discussion, we will explore how a deep dive (i.e. one semester) into a single science and engineering practice helps build the path from teacher to teacher leader. We invite your participation!

Webinar Panel



How Science & Engineering Practices Enhance STEM Teaching

Recorded: November 10th at 7pm ET
Moderator: Arthur Eisenkraft
Panelists: Katy Canote, Ileana Bermudez Luna, Amanda Lim, and Maria Louisa Soto

Join the Discussion! | View the Recording

Upcoming Themes

Past Themes

October 2021
Call to Action for Science Education: How Teacher Leaders Can Help

September 2021
Partnering Culturally Responsive Teaching and Place-Based Science Education

August 2021
Rebooting the Science Classroom: Sensemaking and Phenomena-driven Instruction

July 2021
Next Generation STEM Mentoring: An Important Lever in Elevating the Profession

April 2021

Synthesis Brief

Synthesis Brief: How Science and Engineering Practices Enhance STEM Teaching and Further Teacher Leadership

In this brief, Brian Drayton provides a synthesis of this month's theme "How Science and Engineering Practices Enhance STEM Teaching and Further Teacher Leadership," that highlights key points and suggested recommendations discussed by those who participated in this month's discussion and webinar panel.

CALIFORNIA- STANFORD UNIVERSITY

Introduction

Cohort 3 Fellows from the California Wipro SEF are in their second year of the program. The cohort consists of 24 fellows from the five partnering school districts and all have returned to the program again this year. The CA Leadership Team continues to meet regularly with fellows during the monthly professional learning sessions. For much of the fall of 2021, the sessions took place virtually over Zoom. In December, the Cohort had its first full-day in-person session at Stanford University. The professional learning sessions will alternate between virtual and in-person sessions for the remainder of the school year.

Cohort 3 fellows have begun planning and implementing their GPS Projects. Project team coaches have been meeting regularly with each fellow to advise and provide support for fellows as they navigate their projects. See below for a general description of each fellow's project idea.

GPS Progress- Cohort 3

Site location (State)	Cohort #
CA	3

Fellow	Project Description
Chelsea Alvarez	Implement and lead a "kit training" and a reflection cycle in Grades 2 and 3, to help these grade levels teach science and implement STEMScopes , the newly adopted science curriculum.
Robert Coverdell-Meneses	Ground high school biology teachers in project-based learning and help teachers design and implement a project.
Mithril Cox	Develop mini units that will integrate diverse scientists and activists into existing 3rd grade AMPLIFY units (SFUSD elementary curriculum).
Jennifer DeGraaff	Develop a process of using Summary Tables (example) with students. These anchor charts use sketches as well as written explanations of essential questions, activities, evidence, and science concepts. One goal of Summary Tables is to keep the class and the teacher focused on the Unit Phenomenon and Storyline. Another is to help students with their sensemaking as the unit progresses. The process of creating these charts can be shared with other STEAM teachers in my district, but it can also be modified for other (non-science) teachers

	to use during curricular units. In the end, I hope that my students will be able to develop their own Summary Tables and use them to assist in their CER argumentation.
Jaclyn Diaz	Transition the Science Fair experience to an equitable Science Inquiry Conference, focusing on the inquiry process and allowing multiple types of science exploration. The Science Inquiry projects will provide an opportunity for students who are excited to explore an area of science they are interested in and feel passionate about to become an expert on their topic during class time. The Conference would be an opportunity for students to present their ideas and demonstrate their investigations in front of a small audience.
Thomas Fulwiler	Create and implement meaningful science department meetings (high school department chair at an SFUSD school)
Nicholas Guttadauro	Create a variety of science skill videos for Moreland Middle school to use for introduction, review, and explanation of scientific tools and lab safety. Video topics will include the following: safety in lab space, PPE, measuring mass and volume, measurement, etc. These videos will be shared at the school site and will also be made available to teachers throughout the district.
Sarah Huggins	Create and lead a team to develop an 8th grade Project Based Learning (PBL) unit in space science. The team will include 1 science teacher, 1 math teacher, and 2 ELA/Social Studies teachers.
Alex Johnson	As a new high school department chair, the GPS project will focus on becoming an effective science department chair by leading meaningful professional learning for the science teachers at the school site, particularly in the area of equity in the science classroom.
Victoria Lanterman	Create and support a teacher mentoring program to help new teachers integrate science instruction.
Amanda Lim	Develop & plan lessons/activities to engage students specifically in SEP skills in collaboration with Stanford's Radiology Department.
Yichang Liu	Design improved versions of hands-on science lessons (2.0 versions)- create better labs, create rubrics with more details, and organize all materials in more efficient ways. Ex: Students will do final presentations about a project instead of just finishing labs, students will evaluate each other's work instead of just writing a reflection, etc. In the project's version 2.0, students will explore more physics knowledge, cooperate better with teammates, and improve their project capabilities to a greater extent.
Julie McKinley Reed	Use thinking maps to support English Learners in the science content areas.

Brittney O'Brien	Create outdoor learning environments and experiences for TK -5 students. Nature is a benefit to children's social wellbeing, social consciousness around climate change, and provides unique science learning opportunities. Because of Covid social distance requirements, the need for social emotional regulation, as well as real world application of STEAM, creating outdoor learning environments and experiences for children and staff will be a great resource for our community.
Jessica Paulsen	Allow for student collaboration on assessments to increase engagement in content learning, improve student performance and reduce test anxiety.
Margaret Poor	Create a student leadership team which fosters the spirit of "servant leadership" in its members and uses the mindset of an engineer to solve school challenges as identified by the study body. Members of the group are representative of their peers with regard to ethnicities, social groups, academic achievement, and behavior patterns. The group will lay the foundation for a growing atmosphere of student empowerment at the school.
Stacey Rader	Improve an intervention program that already exists for chemistry, biology (newest), and physics. This program is aimed at students who are lost but are trying their best in these subject areas. This project would be about refinement and growth of an existing program that has been successful in the chemistry content area.
Elizabeth Reiff	Provide outdoor and place-based learning for both elementary and middle school students. The project aims to bring outdoor classrooms to life and support teachers in using the spaces to engage students in hands-on, place-based, meaningful and fun science learning.
Laura Spanier	Develop and implement a series of nature journaling activities to help students develop their ability to ask questions, foster curiosity, and develop brain-flexibility to engage in this process joyfully and independently. I believe that this will further the district's goals of graduating scientifically and ecologically literate citizens of the world, as well as my own personal goals of fostering curiosity, self-motivation, and engagement in students.
Emily Stollmeyer	Learn more about and try out standards-based grading by creating the standards for SFUSD NGSS Physics & Astronomy. There has been a huge push at our school and in the district to switch to standards-based grading. However, there are no good examples or starting places for people to actually implement it. I personally believe in the equity provided by standards-based grading and want to implement it, so aligning that vision and creating a really good thought through example would be very helpful.

Adrian Tamayo	I plan to create 4 lessons focused on different science career profiles. I want students to explore different careers in science and practice using some of the SEPs different scientists use in their job/career. In the past, I have had scientists from UCSF join our classroom and we develop science lessons around a general theme (body systems, cells, etc.). I would like to do something similar for my project but expand on science beyond just health sciences. By the end of next summer, I would like for my students to explore science careers and engage in science and engineering practices based on different science careers. To foster curiosity and exploration, I plan to create opportunities for students to interview scientists, have scientist guest speakers, and watch educational videos with the purpose of learning about different science careers. Along with the career exploration focus, I would create a learning activity that allows students to practice an SEP that a scientist might use for their daily job.
Sierra Vance	Plan and create Thinking Maps for each unit in the first grade STEMscopes curriculum. I want to focus on supporting English Learners by creating scaffolded maps that allow them to understand the content and feel confident sharing their work with their classmates. I will also share my plans and ideas with the first-grade district ELD committee. My goal is to help primary teachers feel more comfortable with teaching science on a regular basis.
Gargi Verma	GPS Project will be focused on creating and implementing authentic assessments in the chemistry classrooms. This project is aimed at providing opportunities for students to demonstrate their understanding of chemistry through real-life application and problem solving.
Stephanie Yue	Make science visual and make sense to students, including English Language Learners. During Year 1 V-CCLS, our focus was modeling and how to make student thinking visible. This GPS project will explore another way to make student thinking visible, in a way that can be accessible to all students.

Cohort 3 Meetings

The professional learning focus for Year 2 of the CA Wipro SEF Program is described below:

Practicing Leadership in Science Teaching and Learning in Your Context

- *Deepen your understanding of what it means to practice leadership in your setting/context*
- *Deepen your understanding of how to help others' understanding of science teaching and learning*
- *Strengthen your ability to provide equitable opportunities for all learners*
- *Build community with other science fellows within and beyond your school districts*
- *Continue reflective practice in your own classroom practice*

The following table lists the whole group professional learning sessions that have taken place up to this point in the school year. Slide decks are linked and key ideas from each session are outlined.

Meeting Date	**Goal(s) of Meeting**	**Virtual or In-Person Sessions**
Sept 11, 9:00am-12:00pm	Kick-Off Session: Slide Deck ● Science Teaching and Learning- Reflecting on Year 1 ● Teacher Leadership: Exploring Definitions of Teacher Leadership ● GPS Projects	Virtual
Oct 14, 4:00-5:30pm	Slide deck ● Teacher Leadership: Stages of Group Development, Adaptive & Technical Challenges ● GPS Projects	Virtual
Nov 18, 4:00-5:30pm	Slide deck • GPS Projects • Deep dive into Adaptive & Technical Challenges	Virtual
Dec 11, 9:00am-2:30pm	Slide deck • Teaching Science: Using Routines • Considering Multilingual Learners • Educational Journey- Part One	In-person at Stanford

Reflections on your meetings with GPS fellows

Professional learning sessions with fellows have been well-received and fellows continue to show engagement in all aspects of the program, despite the challenges brought on by the pandemic. On December 11th, Cohort 3 fellows met for their first in-person session at Stanford University. See photos and captions below.

Photo 1: V-CCLS teammates reuniting

Photo 2: Cohort 3 fellows doing science together

Photo 3: SFUSD District Team

Adult Learning

The CA Wipro SEF Program to support fellows in their growth and development in science teaching and learning as well and equity. New content in professional learning sessions include the introduction of Science Routines and Coherence from the Student Perspective.

Reflective Practice

As fellows implement their GPS Projects, they are required to write reflections about their progress on their projects as well as their decision-making based on how things are going so far. Fellows continue to reflect on their own teaching practice and begin to influence others in their school systems.

Leadership

Whole group professional learning sessions introduce fellows to key leadership ideas. These ideas help fellows develop a greater perspective about their work and how to influence others in their setting. These ideas are revisited and referenced during monthly coaching sessions.

Additional Cohort 3 meetings

Meetings of Cohort 3 with Mentors

Fellows meet monthly with their GPS Mentors. Mentors and fellows use the following Benchmarks document (LINK) to help guide their discussions and keep track of what was

discussed during each meeting. Fellows have the same CSET mentors from last year with only a few exceptions where fellows have been assigned a different mentor because of the mentor's area of expertise. This year, the CA Wipro Leadership Team brought on Preetha Menon who is an expert in English Language Learner and Multilingual Learner development. Several fellows who have chosen projects that specifically address English Learners have been assigned to Preetha.

Meetings of Cohort 3 with District Science Coordinators

District Science Coordinators keep in contact with the Wipro fellows on their own, with little involvement from the CA Wipro Leadership Team. District Science Coordinators offer support to fellows as they implement their GPS projects. This support varies from being a thought-partner to providing opportunities for fellows to lead professional learning sessions within the district.

Cohort 1 & 2 Fellows

The CA Wipro Leadership Team has not done very much to involve Cohort 1 and Cohort 2 fellows in the formal aspects of the program. The Leadership Team has kept in contact with fellows from Cohorts 1 and 2 through email as well as an informal virtual happy hour events. The Leadership Team will continue to think of ways to involve Cohort 1 and 2 fellows in future events and opportunities.

District Science Coordinator meetings

District Coordinator meetings have focused on sharing updates with each other about what is happening within each district as well as hearing about what fellows are doing in the program. All District Coordinator meetings have been held virtually. It is also important to note that the CA Wipro District Coordinators have been the same district coordinators from the start of the Wipro SEF program at Stanford, contributing to the ongoing support of fellows in their districts.

Please see the slide decks linked below for the meeting notes from the sessions that have been held so far.

September 21, 2021 DC Meeting
November 10, 2021 DC Meeting

District Coordinators have been checking in with their fellows regularly, especially with the development and implementation of fellows' GPS projects. These check-ins vary from district to district and are very dependent on the individual District Coordinator's efforts to reach out to fellows.

Board of Education Presentations

The CA Wipro SEF Team plans on getting on the Board of Education agendas for each of the partnering school districts to present the Wipro program and honor the fellows for their work. Most board meetings in California remain virtual at this time. We will know more in the coming months about what this could look like in each district.

Featured Fellows

Margaret Poor

K-5 STEAM Teacher, Mountain View Whisman School District

I chose teaching as a second career because I believed that every child should be able to pursue their goals and dreams, and I wanted to help them get there. Since not all students start off in the same place, it is essential that students are taught at school how to interpret the world around them, think rationally, and use their thinking to tell a compelling story in service of their goals.

I started off teaching English Language Development but was soon lucky enough to be part of a new "STEAM Team" in our district - a team of elementary science teaching specialists. This was perfect for me, as it joined my computer science background, my interest in science, and teaching. I could now teach the most engaging material and help to develop students' understanding of the world around them. The only problem was that I knew nothing about teaching science!

I stumbled through most of the first year, and thankfully was able to join Cohort 3 of the WIPRO Stanford program, along with three other STEAM teachers in my district. The program has made an enormous difference to me, as I have joined a community of similarly motivated teachers. We have delved deeply into the NGSS standards, and learned about storylines, and 5E teaching from experts in science education.

We spent Year One meeting, teaching, and living virtually, creating a special bond which blended simultaneously pushing each other to improve our practice, and supporting each other through a uniquely difficult time. The opportunity to collaborate with teachers of different grade bands has shown me how much we all have in common, in reaching young

people at different stages of their education. We all aim to provide environments where students can feel safe to grapple with difficult unknowns and problems, can investigate them, and can make sense of them. Having this network of teachers as a resource to bounce ideas off of, and call on for advice is enormously valuable. The team at WIPRO Stanford have created this wonderful environment and are part of the valued community that we are all so thankful for. I still have many days where I stumble, but at least I do not stumble alone!

Chelsea Alvarez
2nd Grade Teacher, Moreland School District

The WIPRO fellowship program has been one of the best experiences of my professional life. I went into the program with excitement, and some trepidation. As a K-5 teacher, I never felt that science was an area of strength for me. When I joined the Moreland School District it was time for a change. I was over the moon when I learned that Moreland had partnered with WIPRO. The WIPRO fellowship presented the perfect opportunity to grow my skill set as a science teacher and has encouraged me to help others do the same through teacher leadership and collective reflection.

My experiences in WIPRO have been invaluable, especially working with my VCCLS and HCCLS reflective groups. The most amazing thing about the VCCLS group was the opportunity to learn about what science curriculum and expectations look like at the middle and high school level. I felt like I could finally see the through line of science instruction from the elementary level up to high school, which further encouraged me to give a strong science foundation to my elementary students. Not only that, but I could see that the struggles science teachers faced at the middle and high school level were not too dissimilar from my own; constantly wanting for time and an increase in student engagement. As a group we decided to tackle increasing student engagement and discourse through the facilitation of small group work.

This was especially challenging during distance learning, but we gained some valuable insights during our debrief sessions. A few things that stuck out to us were the importance of providing equitable learning experiences for all students through science exploration and encouraging student discourse and engagement through the use of group roles. It was interesting to compare how students engaged with one another in academic discourse through the exploration process. We also were able to discuss how different group roles could be utilized across the grade levels based on grade level expectations as well as students' expected deliverables. Truly, the comparison of student outcomes across grade

levels, and the overall reflective cycle that went along with our VCCLS work was one of the most valuable parts of the WIPRO program.

It felt as though we left every meeting with tangible ideas to enact in the classroom, but more than that, I personally always felt a sense of renewal, rejuvenation, after every debrief. Being able to talk through ideas and experiences with the lens of a science teacher, not just a primary grade teacher, was so powerful. I felt emboldened to take risks with my teaching, that ultimately led to me taking my skill set as a science teacher to a new level. For the first time, I felt capable as a science teacher, not just a teacher who also happened to teach science. I think speaking with like-minded colleagues who approached the work with the same sense of wonder and eagerness to explore was a main reason for this change. This was something I had yet to experience in my career prior to WIPRO, and something that I'll be forever grateful for.

There is something so different about working together within a space where fellow educators have chosen to allocate their time, not out of mandatory district obligations, but out of a true desire to improve practice. Now, as a Year 2 fellow, I hope to encourage this same sense of excitement and growth among my colleagues through teacher leadership at my school site; yet another step that I do not think I would have taken without the encouragement of the WIPRO team. I am so thankful to be a WIPRO fellow and am excited to see what is ahead for my fellow cohort members and I as we complete Year 2 of the program.

Other News

California Wipro Cohort 2 Fellow, Satomi Fujikawa, was awarded with the 2021 Texas Instruments STEM Leadership Award in October 2021. See the announcement from the Moreland School District here: https://www.moreland.org/apps/news/article/1514286 as well as the announcement from the Santa Clara County Office of Education below"

Santa Clara County Office of Education

October 29 ·

Congratulations to the 2021 Texas Instruments STEM Leadership Award Winners David Salles (Gilroy Unified School District), Candace Love (MPESD), Scott Hoffman (Oak Grove School District), Satomi Fujikawa and Joseph Sinn (Moreland School District.) This award is given to educators who demonstrate excellence in teaching STEM subjects, science, technology, engineering, and math.

More information on the Santa Clara County Teacher Recognition Celebration can be found on the SCCOE website: www.sccoe.org/trc

#SCCStarTeachers #WeAreSCCOE

FLORIDA- UNIVERSITY OF SOUTH FLORIDA

Introduction

The Fellows in the TB Wipro SEF program are all teaching in person currently, as Florida returned to normal classroom instruction at the start of the 2021-2022 academic year. All members of cohort 3 who finished year 1 have continued into year 2, and one cohort 1 Fellow (Loretta La More) who was unable to finish her GPS due to the start of the pandemic is continuing her work along with cohort 3. All meetings this fall semester have been conducted virtually via Zoom. Project personnel have continued to support both the fellows progress on their GPS work as well as their professional learning through those virtual meetings. There are plans to return to in-person meetings beginning in February. Beyond moving to having virtual meetings, there have not been any additional modifications to the project this year due to COVID-19.

GPS Progress- Cohort 3

Site location (State)	Cohort #
Florida	3

Fellow	Personal Goal	District Goal
Andrea Blomeley	How can taking care of plants positively impact science learning in the classroom?	Can plants enhance SEL education in the classroom?
Andrea Smoley	Increasing STEM Lab Comprehension	Increasing STEM Fair Participation
Charles Turner	Increase my knowledge of, and skill in, employing modeling in the classroom.	Demonstrate the student advantages of modeling as a lesson delivery tool and establish regular use of modeling as a lesson delivery tool.
Chelsey Swats	Learn how to use discussion to create deeper understanding of content for students.	My goal is to facilitate discussion in the classroom.
Christina Macurdy	Learn about and inform students about STEM related fields of study.	Learn to implement Stem to supplement science standards for student to have rich learning

		experiences that also enhance grade level science standards.
Dawn Avolt	Increase knowledge of research-based strategies on ways to increase student vocabulary usage.	Implement 1 project-based STEM lesson during each of the science units throughout the school year in order to increase student understanding of the 4th grade science content, especially as it relates to the Nature of Science.
Gina Choate	Professional Development and collaboration to learn the Flip-grid program.	Implement the use of Flip-grid in Science with my 1st grade students.
Ileana Bermudez Luna	To gain confidence as a public speaker and as a teacher leader as well as to have the opportunity to train new science teachers thru PD and curriculum development.	To provide Conceptual Chemistry high school students with a more meaningful learning experience in science throughout Inquiry-based Activities and Labs that will foster their critical thinking and problem-solving skills.
Kathryn Laubach	Learn how to use coding to increase student engagement and learning.	Utilize small group instruction to monitor student learning and increase student mastery.
Kelleigh Weeks	To increase my knowledge of physics, astrophysics, and astronomy.	To increase engagement and interest in physics, astrophysics, astronomy, and planetary sciences among students who are in the middle.
Kellie Delgado	Partner with Fellow colleagues and community members who may be able to contribute to building equity in the Elementary Science Classroom.	Highlight Diverse Scientists in each Science Content Area (Life Science, Physical Science, Earth Science, Scientific Process Skills).
Kimberly Fox	During the 2021-2022school year, I will gain a clearer understanding of why some groups of people lack representation in the science community.	During the 2021-2022school year, I will create lessons for staff and students which bring underrepresented scientists to light.

Laura Lacy-Carlson	Learn more about the fine arts to incorporate into the science curriculum.	Building a culturally responsive science classroom.
Laura Vaughn-Grantges	Learn how to use argumentation to help strength the ability to communicate.	By integrating my argumentation lessons throughout my school, I will increase awareness of AP Capstone & STEAM.
Lora Darby	Learn how to use a school garden to impact the entire school.	Create a sustainable garden to supply vegetables to our pack-a-sack program.
Loretta La More	I would like to be able to demonstrate to my colleagues at school that grading students based on mastery of content and not behaviors, extra credit or sheer compliance is doable and ultimately in the students' best interest.	Foster a culture of learning in my classroom supported by a grading system that is based on student mastery of the course content.
Mishell Thomas-King	Learn about NGSS, and how to incorporate the practices into my classroom.	Design and facilitate professional development sessions for science teachers that cover both science content, as well as culturally responsive teaching as it relates to the science classroom.
Nicole Caltabellotta	Learn how to help minimize the achievement gap between black and non-black learners.	Increase interest and confidence in STEM disciplines for elementary age girls, in order to begin addressing the gender gap in professional STEM fields.
Nicole Holman	Learn how to increase the everyday connections of Biology to my students.	Achieve higher biology EOC scores through acceleration versus remediation.
Roshaun Reno	Develop teacher leadership skills.	Develop at least 3-4 ADI activities with integration of technology to implement in the classroom.

Cohort 3 Meetings

Date	Focus of Meeting	Attendees (Fellows, DSC's, mentors, etc.)
08/21/2021	Reintroduction, celebration, name tags, GPS work, teacher leadership work, affinity groups	Andi Blomeley, Andrea Smoley, Charles Turner, Chelsey Swats, Christina Macurdy, Dawn Avolt, Gina Choate, Ileana Bermudez, Kat Laubach, Kelleigh Weeks, Kellie Delgado, Kim Fox, Laura Carlson, Lora Darby, Loretta La More, Mishell Thomas-King, Nicole Caltabellotta, Nicole Holman, Roshaun Reno, Allan Feldman, David Rosengrant, Karl Jung, Sharfun Islam Nancy, Lesley Kirkley, Fawnia Schultz, Larry Plank, Katie Laux, Pam Pelletier
10/16/2021	Affinity group venture-vexation activity, designing and facilitating effective PD	Kelleigh Weeks, Kim Fox, Kellie Delgado, Nicole Caltabellotta, Christina Macurdy, Mishell Thomas King, Andi Blomeley, Andrea Smoley, Charles Turner, Gina Choate, Dawn Avolt, Lora Darby, Ileana Bermudez Luna, Laura Carlson, Loretta La More, Nicole Holman, Chelsey Swats, Laurie Vaughn-Grantges, Roshaun Reno, Katie Laux, Pam Pelletier, Karl Jung, Allan Feldman, David Rosengrant, Sharfun Islam Nancy, Fawnia Schultz, Larry Plank, Lesley Kirkley,
12/04/2021	Inquiry teaching, GPS project deliverables (poster, portfolio), GPS affinity group	Andrea Smoley, Charles Turner, Chelsey swats, Andrea Smoley, Dawn Avolt, Gina Choate, Ileana Bermudez Luna, Kat, Kelleigh weeks, Kellie Delgado, Kimberly Fox, Laura lacy Carlson, Laurie Vaughn-Grantges, Loretta La More, Christina Macurdy, Mishell Thomas-King, Nicole Holman, Katie Laux, Pam Pelletier, Karl Jung, Allan Feldman, David Rosengrant, Sharfun Islam Nancy, Fawnia Schultz, Larry Plank, Lesley Kirkley, Daina Kelly.

Reflections on your meetings with GPS Fellows

There have been two meetings since the last report: October 16th and December 4th. The October 16th meeting was originally planned to coincide with the St. Petersburg Science Festival in which all Fellows would have received special recognition, however, that in-person activity was cancelled, and the meeting was held virtually.

- In that meeting, Fellows engaged in dialogue with each other using a method called Venture Vexation. This is a very specific format that Fellows had to follow when presenting their work thus far:
- Sharing of Venture – Vexation – 3 minutes
- Sharing your progress and your vexation
- Clarification Questions from Audience – 3 minutes
- Audience asks clarifying questions to help them understand the work and vexation. Not a time for discussion or problem solving.
- Audience Discussion of Venture –Vexation – 5 minutes
- Presenter must sit quietly and listen while audience discusses possibly ways to address the vexation.
- Silent Reflection – 1 minute
- Moment for personal reflections by all.
- Presenter Response – 2 minutes
- Chance for presenter to respond to your vexation and new thinking you have. This is not intended to be time to defend against small criticisms that may have come up, but broader reflection of new thinking.

After that session, one of the DSC's led a session on how to conduct and run effective Professional Development sessions. This session was very well received with cohort 2 and thus it was offered to cohort 3. The feedback was that it was also well received this time.

In the most recent session (Saturday, December 4th), Cohort 1 Fellow Jessica Strauss discussed her work with Dr. Rosengrant that started from Wipro. This session included a professional development workshop where the Fellows learned a different way to promote inquiry in their classroom: The Investigative Science Learning Environment (ISLE). (See screen shots at end of this report)

After that, the Fellows were given the requirements for the poster and final portfolio. It helped the Fellows greatly having this information now so they could be working more effectively towards their end goal. The last part of this session was having the Fellows in their affinity groups to answer the following:

- What are you particularly proud of/pleased with in your progress so far?

- What progress have you made in the last couple months?
- How is your vexation going?
- Is there something your affinity group can help you in problem solving today?

All of these activities in some way address one or more of the three core pillars above.

Additional Cohort 3 meetings

For cohort 3, as with cohort 2, the mentors for our Fellows are members of the leadership team. This means they could have one of the Project PIs or Co-PIs, a DSC, or another team leader such as Pam Pelletier or the project graduate assistant. This has continued to work well because the leadership team is more responsive and can better communicate with the Fellows to address their needs, especially if it is something university related.

Having their mentors be part of the leadership team means that not every Fellow may meet additionally with their DSC. However, what this does mean is that they are constantly meeting with a mentor and at times, they may be directed to someone else to further help them based upon the Fellows needs at their particular times. Mentors meet at least once per month with their mentees

Cohort 1 & 2 Fellows

Cohort 1 and 2 Fellows continue to take part in cohort 3 year 2 meetings in several ways. First, Cohort 1 or 2 Fellows lead PD sessions during those meetings, either sharing key takeaways from the work they completed during their GPS, or by sharing other passions and projects they are working on. Cohort 1 and 3 are also encouraged to attend the meetings and join and participate in those PD sessions to share in the learning across the full set of Fellows in the TB Wipro SEF project. Some cohort 1 and 2 Fellows are informally mentoring cohort 3 Fellows who are in their schools.

Additionally, all Fellows will be invited to attend the end of year poster presentation and celebration that we will hold in the beginning of June.

District Science Coordinator meetings

Before each meeting the DSCs meet with the USF team to discuss multiple aspects of the project including the progress of the Fellows. The bulk of these meetings are devoted to planning out the different TB Wipro SEF activities, including the agendas for the Cohort 3 meetings. This year we have also been discussing the future of the TB Wipro SEF. We met on August 3, September 20, and November 18.

The DSCs meet with the Cohort 3 Fellows during the bimonthly meetings on October 16 and December 4, and will meet on the following dates: 2/12/22, 4/9/22, and 6/4/22. The DSCs are also serving as mentors to the Fellows and interact with their mentees at least monthly. The bimonthly meetings will be face-to-face or virtual depending on the pandemic.

Hillsborough County Fellows have been working with DSC Larry Plank in curriculum writing, professional development design and facilitation, as well as serving as out-of-school time mentors and coaches for student-centric activities such as Science Olympics and STEM Fair.

The Pasco WIPRO Fellows serve on district curriculum teams helping to review, revise and create instructional resources for their peers. They also assist in creating our new student-facing Canvas science courses. The Fellows also assist in facilitating professional development and judging our Science and Engineering Showcase. The District Science team leverages the Fellows as an informal advisory board to share and collaborate on new initiatives still in development.

Pinellas County Fellows' district activities:

Cohort/ Year	**Fellow Name**	**Grade/Subject**	**Accolades/Projects/District work**
Cohort 1 2019-2020	Tonia Flippen	Elementary Science	STEM Academy Facilitator
	Diana Mills	6-8 Science	STEM Academy Facilitator, Middle School STEM Focus Group
	Katie Slifkin	Assistant Principal 6-8	
	Sarah Swoch	6-8 Science	STEM Academy Facilitator, Strategic Instructional Model Coach and Professional Development
	Loretta La More	Chemistry	Facilitator of Professional Development for 9-12 science
Cohort 2 2020-2021	Karen Bulino	6-8 Science	STEM Academy Facilitator, Equity Professional Development
	Tara McClintick	Elementary Science	STEM Academy Facilitator
	Ann Salazar	Elementary Science	
	Latasha Seay	6-8 Science	
Cohort 3	Dawn Avolt	Elementary Science	

2021-2022	Nicole Caltabellotta	Elementary Science	
	Christina Macurdy	Elementary Science	
	Roshaun Reno	Biology	High School STEM Focus Group, Plan and Deliver ADI professional development
	Laurie Vaughn-Grantges	Chemistry	High School STEM Focus Group, Facilitator of Professional Development for 9-12 science

Board of Education Presentations

There were extensive discussions between the USF team and DSCs about this. The DSCs gave strong reasons why it would not be possible to get time at a Board of Education meeting to make presentations.

Featured Fellows

Lora Darby (Cohort 3)

My name is Lora Darby and I have been teaching elementary school for 13 years. I have taught all grades at one point or another, and I currently teach 5th grade Science. This year, I was given the opportunity to teach my passion, Science, using a middle school model in elementary school, and it has been an interesting and successful journey, so far.

I teach through a Blended Learning model, meaning students use videos or meet me in small group to learn the information and I make sure my students are in charge of their own learning. They document and track their successes and failures, as I teach them early on, failure is okay. It is a learning experience and an opportunity to teach others, but to learn by doing so. I teach my students how to focus on a J-curve mindset, knowing that all students can learn, however they may be on a slower or faster path than others, and that is okay.

I am a teacher leader at my school and have been for seven years, and I oversee new teachers who choose our school. I teach them total participation techniques and guide them on how to ensure the students are doing the majority of the work and coming to them for guidance or to fill gaps in their learning. I meet with them once a month and always include some sort of gaming or technology component during our meeting.

I have also presented to the district on how to teach others to use a facilitation grid to track students learning and quickly see any gaps or successes with their students. I also show them how to put students in charge of the facilitation grid. This way the students are truly in charge of what they are learning, and the teacher can spend more time in small groups. I have also presented at FETC, a technology conference, explaining how students can learn and be successful using the Blended Model of instruction. Recently, I led a presentation on how to "gamify" classrooms in order to achieve 100% participation. I demonstrated how using ordinary games, such as Battleship, Candy Land, Trouble, I could enhance lessons and create an environment where kids want to learn and come to school. When I was approached at the end of last year with the choice to only teach science, I was elated! Science is my passion and was my first career choice when I was going through college. By only teaching science, it affords me the opportunity in elementary school to build a passion in my "mini-scientists". Finally, it afforded me the opportunity to enhance my lessons, which increased my involvement in Wipro, as I only had to focus on science and no other subjects. I chose to plant a school garden for my Wipro project this year and since I only have to focus on science, I am able to immerse the students in the lessons. I feel Wipro is making me a better science teacher by affording me the opportunity to meet with other "like-minded" teachers and share ideas in a collaborative environment.

Students doing science in Lora Darby's class

Karen Bulino (Cohort 1)

My name is Karen Bulino and this is my ninth year with Pinellas County Schools. Currently I teach 6th, 7th, an 8th grade STEM at Seminole Middle School. I am grateful for all the opportunities that the WIPRO Fellowship provided me. After my first year in the Fellowship, I accepted a position as a Science Instructional Staff Developer at two Title 1 middle schools in Pinellas County. This led to tremendous professional growth as I transitioned to working predominantly with teachers. As much as I loved this position,

the opportunity to return to my previous school to serve as a STEM teacher and develop a flagship STEM academy lured me back to the classroom.

Karen Bulino when she was teacher of the year finalist.

In my final year as a Fellow, I was excited to be able to focus my GPS project on the equity work I am so passionate about. My research delved into the relationship between equity and grading and my final project was "Why is Grading an Equity Issue?" I couldn't have predicted how valuable this work would be. Upon completion, I was invited to present my work to the Pinellas County Schools Equity Advisory Committee, comprised of district leadership.

Additionally, I was invited to present professional development on the topic to our Fellows and Leadership, and had the opportunity to present at the Wipro Conference, and most recently was selected to present at the David C. Anchin Center Education for Justice Conference in October. My GPS project may be completed but the work is not, and I continue to learn and pursue opportunities to create more equitable outcomes for all students.

It was my passion for professional growth that led me to pursue the Wipro Science Education Fellowship in Tampa Bay. My involvement in the Wipro Fellowship served to further fuel that passion. It was a tremendous learning experience that I will forever be thankful for.

Other News

Ileana Bermudez Luna was part of the panel discussion "How Science and Engineering Practices Enhance STEM Teaching and Further Teacher Leadership" sponsored by the STEM Teacher Leadership Network on November 10, 2021.

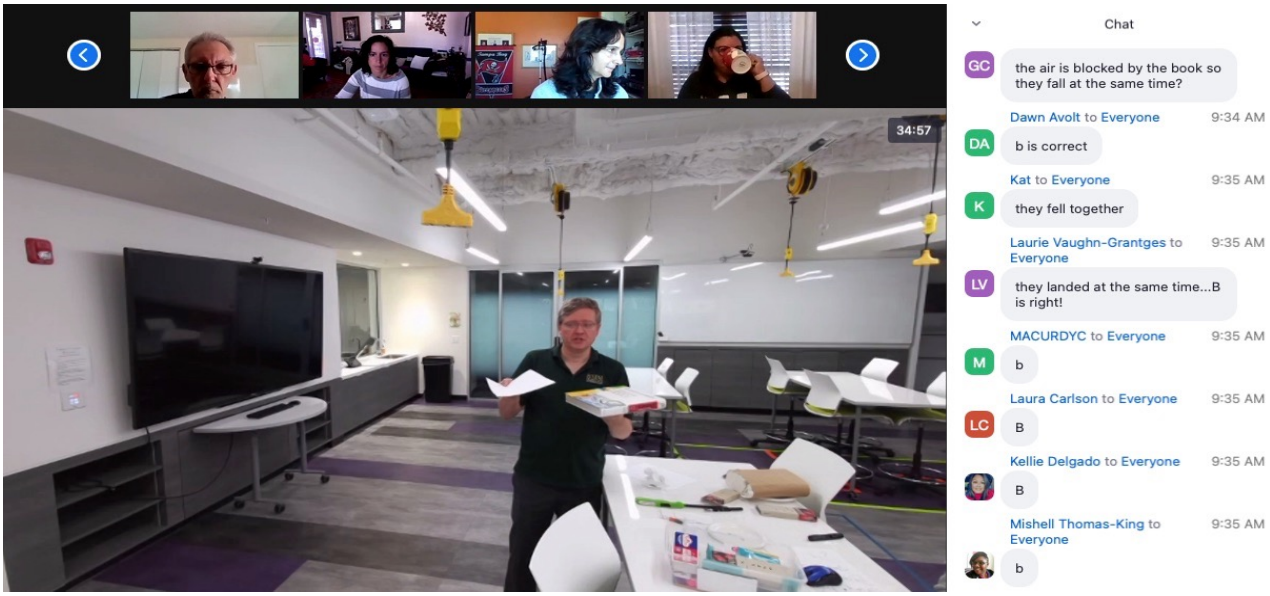
Sarah Swoch was a Top 10 Finalist for Teacher of the Year for Pinellas County Schools https://youtu.be/nvVaLxUz9bU?t=140

Press release:
https://www.pcsb.org/site/default.aspx?PageType=3&DomainID=5930&ModuleInstanceID=64271&ViewID=6446EE88-D30C-497E-9316-3F8874B3E108&RenderLoc=0&FlexDataID=110879&PageID=36506&Comments=true

Kelleigh Weeks aided the Osceola County Schools, FL. Osceola is going to be offering Astronomy Honors but do not yet have a textbook. They were having trouble with resources. She assisted the DRT and team working on the Astronomy Honors curriculum with resources and ideas for some of the standards they were struggling finding resources for. She also assisted Wharton High School (HCPS). They have had several teachers leave/take leave and needed assistance with lessons in Astronomy Honors and Earth Space Science. She has been supporting them with Canvas modules and lessons with all resources for several months.

Daniel Rice, who was a cohort 2 Fellow but moved to Delaware reported that he was the STEM Teacher of the Year, presented by the Delaware STEM Council and the Delaware Foundation for Science and Mathematics Education. The award was directly tied to the Code Club that he sponsored, which was part of his proposed GPS project.
https://delawarestem.org/2021/11/16/the-seventh-delaware-stem-educator-awards-recognizing-exceptional-educators-state-wide/

Screen shot from December 4th inquiry workshop:



David Rosengrant dropping a book and piece of paper. Fellows' comments are in the chat to the right of the screen.

MISSOURI- UNIVERSITY OF MISSOURI

Introduction

Missouri fellows are teaching face-to-face. A total of four Cohort 3 fellows have left the program. David Ganey and Rachel Walk have moved to districts not in the Wipro project. Amanda Sauerwein has resigned her position and is working on her doctorate. Steve McMullin dropped just prior to the September meeting. He said that the school year has proven to be too demanding, and he does not have the time or energy to continue in the Wipro project.

Cohort 2 fellows have been making progress with submitting their PD videos (they were given a Dec 31deadline). One fellow (Stephanie Harman) said she would not submit a PD video. This leaves four fellows who are yet to submit their videos by the end of the year.

GPS Progress- Cohort 3

Site location (State)	Cohort #
Missouri	3

Fellow	Personal Goal	District Goal
Brandy Albrecht	Brandy has completed the first chapter of her children's book and shared it with her class and received positive feedback. She is on course to meet her current goal of completing 3 chapters of the book by winter break.	After having researched Passion Projects and purchasing materials in November, Brandy's students learned and utilized the 'bracket system' to narrow down students' purpose and passion.
Jennifer Bacon	Jennifer is in the process of modifying her personal goal to create an outdoor classroom.	Jennifer has begun learning about standards-based grading.
Melissa Baker	Melissa has begun working on her own journaling and she continues to work on her schedule to find time to exercise. She finds the journaling therapeutic and is working on meal prep.	Melissa has implemented journaling into her class. Her students have enjoyed reading non-fiction, looking for facts, and recording them in their journals.

Fellow	Personal Goal	District Goal
Rex Beltz	Has purchased a book on standards-referenced grading and is working on putting together a book club with colleagues.	Begun learning about standards-referenced grading.
Robin Bishop	As a site for place-based learning, Robin cleared up the gardening space on the school grounds. Her students were excited to receive the last of the harvest in November. She and her students also readied the garden for winter.	Robin has spent a lot of time researching place-based learning. She is especially interested in the effects of outside exploration on children's cognitive abilities.
Katy Canote	Katy's personal goal of self-care is progressing. In October and November, she was able to schedule 5 exercise and meditation days and has started using a mood tracking app for reflection.	In October, Katy did a 'practice' place-based exercise in Social Studies to lay the groundwork and learn more about place-based learning. She continues to research the methods and connect activities to standards such as land and water / force and motion.
Natalie Dixon	Natalie is working to create a space on her school grounds for a butterfly garden. She has a designated area and she and her students planted mums in the early fall. She has been taking her class outside to this area during reading time.	In October, Natalie worked with Dorina to refocus her district goal on place-based learning. She has been engaged in research and has started to make lesson plans for the spring.
Nicole Golden	Nikki has implemented Brain Breaks and in October they did the Human Knot Game twice. She reports that it was challenging but a lot of fun and that her students look forward to engaging in more of these team building exercises.	Nikki's Standards based Report Card has been compiled and uploaded into the grading system. This will allow students to reflect on their pre-test, test, and post-test learning.

Fellow	Personal Goal	District Goal
Tyler Helton	Tyler created a picture activity for students to learn vocabulary. The class completed the activity outside to get started on his goal to enhance students' learning experiences.	Tyler used feedback from his students to use the app Booklet - much like Kahoot - to create study guides for his students. He reports higher engagement and scoring on quizzes when students used this tool.
Josie Hess	Josie implemented her self-care routine to include exercise and journaling. She uses an app to track her progress which has allowed her to identify some inconsistencies and to realign.	Combining ELA goals with science learning has gone very well so far. She developed and has since successfully implemented weekly plans for teaching ELA priority standards using guided reading and novel studies and integrating science skills such as drawing conclusions, comparing, and contrasting, making inferences, and citing evidence.
Chelsea Jacobs (Simon)	Begun learning about standards-referenced grading.	Begun working on events to help alleviate staff stress.
Melanie Manning	Melanie has introduced her students to the central ideas of Claims, Evidence, Reasoning. Students wrote their own CER in a tea-brewing lab to ask and explore questions about how temperature affects molecular movement.	Melanie attended a workshop in October to learn more about place-based learning. She is creating lesson plans from that experience.
Kayla Miller Eads	Kayla is progressing on her personal goal of self-care by working out regularly and finding time to read and reflect. Her book club met in both October and November to discuss what they were reading.	The Brain Bins Kayla created with input from her colleagues have been very successful. She implemented a questionnaire, and her students report high levels of enjoyment (13 out of 17 students indicated enjoyment) utilizing Brain Bins vs. the older method of having students fill in worksheets.

Fellow	Personal Goal	District Goal
Erin Snelling	Erin's self-care routine is working well she is reading every day and writing in her journal at least 5 times a week.	Erin has been using the online platform Gimkit in her classes. Her school purchased a license for Gimkit with full access and she has been using it to create lessons for her classes.
Christie Zoeller	So far, Christie has found uses for what she has in her classroom and is creating a list of what she'd like to purchase for her flexible seating plan.	Christie reports that her students are very engaged in the 'cooking with science' lessons she's put together: "My students are excited to work together to plan a Thanksgiving lunch that will include many recipes that will see foods boiling, changing states of matter, and some chemistry at its finest."

Cohort 3 Meetings

Date	Focus of Meeting	Attendees (fellows, DSC's, mentors, etc.)
September 14, 2021	• Share GPS plans • Learn about GPS portfolio on Wix • Meet with advisors	Fellows, Advisors, Wipro MU staff
November 9, 2021	• Share GPS progress • Discuss Inclusion, Diversity and Belonging (DIB) in the school environment • Meet with advisors	Fellows, Advisors, Wipro MU staff
February 17, 2022	Continue discussion on diversity	Fellows, Advisors, Wipro MU staff

Reflections on your meetings with GPS fellows

The September meeting focused on getting started with the GPS project. Most of the time was spent on Reflective Practice. We did two rounds of speed dating among fellows, in groups of four in each breakout room, so that fellows could learn about others' GPS projects and brainstorm ideas that they might need to clarify. We had increased the budget available to support GPS projects (from $300 to $700), since a few fellows left the program

and provided a surplus in the stipend category. During the report-back session fellows discussed having talked about budgets and what they could purchase, such a book sets, science supplies and materials for STEAM bins. Fellows signed up to join pods of 3-4 people that were working on similar projects, primarily Place-based learning, and Wellness. They have also set up a buddy system among the C3 cohort to identify one person to contact on a frequent basis.

Fellows expressed excitement about GPS, using Wix, meeting with advisors, and hearing about other GPS projects and gleaning ideas from them. Most of the challenges centered around being overwhelmed at the beginning of the school year and finding time for GPS projects.

At the November meeting we spent time on adult learning and reflective practice. Kate Kelley made a presentation on Inclusion, Diversity and Belonging (PowerPoint posted on Trello). Kate discussed the topic with Tammy Moriarty as she was preparing her presentation. Following Kate's presentation, fellows then spent 40 minutes discussing three questions on Jamboards (https://jamboard.google.com/d/14hkmKqsUJ3B9LeDPbgikqanWY788uNPlmVicz3kX7_Y/edit?usp=sharing):

If Diversity is about representation, how do you / can you incorporate more diversity in your classes?

Inclusion = involvement. Think about an assignment you use and reflect on the way that every student is involved and ask yourself how you can make the assignment inclusive so that all students feel their involvement matters.

Belonging is critical to student success. Do you have a story you can give to your students that models vulnerability and resilience?

Sample part of the Jamboard

Fellows then discussed progress on their GPS projects in small group breakout rooms and discussed how they were implementing the buddy system and pods. The buddies are currently checking in with each other on progress, providing each other feedback and encouragement, and helping each other keep up with GPS requirements. Pods have been useful to trade ideas, use as a sounding board, and get advice if they get stuck. The pods have setup a group text. Overall, the breakout room discussions helped relieve stress, and get a sense of where they were at in the GPS project in comparison to others.

Additional Cohort 3 meetings

Fellows have been meeting with their advisors once a month. They meet during the bimonthly meetings, as well as in the month between meetings. The advising sessions have gone well, and several fellows expressed appreciation for having access to the advisors. Advisors have been valuable in providing information, encouragement, and guidance about proceeding with the goals. The first couple of meetings dealt with modifying or cleaning up details of the SMART aspects of the goals. Several fellows had difficulty defining personal goals, and often just chose another district goals, and needed help from the advisors on this aspect.

Meetings of Cohort 3 with District Science Coordinators

Fellows have been meeting with DCs in their districts. These meetings have been formalized in some districts (e.g., Columbia Public Schools), while they are more informal in the rural districts, where the DCs often see with the fellows on a day-to-day basis. Thus, conversations occur in the hallway and get spread over multiple discussions.

Cohort 1 & 2 Fellows

Cohort 2 fellows met with Cohort 3 during our July meeting, but not since them. Some of the Fellows have been meeting Cohort 2 or 1 fellows for advice on GPS projects. For example, Melissa Milius from Cohort 2 has been talking to some of the Cohort 3 Fellows who want to set up STEAM bins for their students.

District Science Coordinator meetings

The Missouri leadership team is setting up a meeting in January with the DCs in order to get feedback on GPS progress.

Board of Education Presentations

This discussion will be one of the topics for our January meeting with the DCs. While school boards have been meeting face-to-face in many districts, the high COVID risk, especially to MU faculty who all share a level of discomfort about face-to-face meetings, and who all have

individual health risks, has discouraged us from going to the districts. Furthermore, Cohort 2 was given a December 31 deadline for completing their GPS projects (and we are on track to finish by then). Thus Spring 2022 should be a better time for us to go to the district school board meetings to present plaques and celebrate the graduated fellows.

Featured Fellows

Nicole Golden

I am **Nicole Golden**, from Maries R-II School District. I am a 5th grade teacher. I am currently working with my school and the Wipro Science Fellowship to create an outdoor learning space for all students who attend Bland Middle School.

Figure 1. Students sitting at their outdoor classroom, Maries R-II school district, Belle, MO

Students at Maries R-II are on a four day a week schedule. Students are in their seats Tuesday through Friday from 7:15 am to 4pm. Other than switching classes students are sitting for over eight hours in a day. Having equipment or a change of environment in order to have a short reprieve from a rigid classroom setting will allow students to relax and recharge their bodies and minds for more content.

The district has provided benches and from this Wipro Project I have purchased a shed to store equipment and supplies. Any teacher in the building can utilize these benches for an outdoor lesson, a brain break, or a positive behavior reward. With all the stress that students and teachers have through our school year it becomes equally important to provide structured stress relief for students and staff. This outdoor learning space will have gross motor and fine motor supplies stored in the shed, with a key in the office for teachers to be able to utilize the space and equipment.

In order to create a quality space for positive rewards or brain breaks, student feedback, obtained through surveys, is critical to drive and create an appropriate space for students. Feedback from students about equipment will determine what equipment is purchased and stored. While feedback about different activities students have enjoyed or suggested will compile a useful tool for teachers to utilize this space in a purposeful manner.

Brandy Albrecht

My name is **Brandy Albrecht**. I am a First-Grade teacher in Eldon, Mo. This is my 12th year teaching. At South Elementary we pride ourselves on having great relationships with our students, parents, and community. While developing my GPS project I tried to think of what would enhance those relationships. Participating in the Wipro Fellowship has allowed me to integrate science more intentionally into our daily curriculum.

I am implementing a version of Genius Hour, split into two 30-minute lessons during the week. During these lessons, students pursue Passion Projects, which is something the student is passionate about, has a specific purpose. The project gives students a voice and a choice in their learning, as well as independent research time. Since several students were interested in video games, I started a Coding Camp.

Figure 2. Brandy Albrecht and her first-grade class at South Elementary, Eldon, MO

Students will work through 6 P's this year to develop a final product to present to their parents and the community. The six P's include: Passion, Pitch, Plan, Project, Product, and Presentation. My class has just finished the planning stage. I have noticed increased engagement and excitement about their projects. The final presentation stage will be tricky with Covid protocols, but through the power of technology students will use a green screen to present their project to their parents and the community. I will create a technology exhibit to showcase their projects. Students have had a blast learning the ins and outs of the green screen equipment. We made our own Macy's Thanksgiving Parade on the green screen to share with the community. I'm looking forward to seeing my student's final outcomes later this school year!

NEW YORK -MERCY COLLEGE

Introduction

This Fall Quarter, the GNY Wipro SEF Fellows returned mostly to in-person classrooms. In September, Hurricane Ida damaged property in the area causing some schools to temporarily go online—this has impacted GNY Fellows and several schools. In October, the Mercy College Center for STEM Education (MCCSE) conducted its annual K-12 STEM Teacher Conference. Due to Covid-19 restrictions, MCCSE hosted the conference online. GNY Wipro Fellow, Elizabeth Barret-Zahn, presented at the conference on publishing manuscripts in NSTA journals. Also, this Fall Quarter kicked off the MCCSE Westchester STEM Ambassadors program, a professional development series designed to promote teacher leadership in robotics, computer science, and engineering. Three GNY Wipro Fellows were accepted into the program and are currently working towards becoming STEM Ambassadors in their districts. The MCCSE maintains contact with Fellows through email blasts and individual check-ins offering support, professional development, leadership opportunities, and resources.

Fellows' activities

Fellow's Name(s)	Title of Phase II Project and funding level	Activities this quarter
Anthony Patierno, Tarrytown	Hungry for Science	This Fall, Anthony kicked off a food science program that engages his students in better understanding issues of equity in and accessibility to local food systems. Here, he plans to integrate high school Biology with culinary science and gardening. This topic is especially relevant in his school which is a local, high needs school in Tarrytown.
Patricia McCue and Scott Misner, 6th grade teachers in New Rochelle	Scott had requested rocket materials but has not yet been able to use them.	Stemming from grade level meetings where Scott shared out (he learned this from Wipro) that he had rockets to use, he and

		Patricia were invited to use an existing SEL block for science enrichment in which they implemented a 5-week Mars Rover unit in each 6th grade class! In the spring Scott will introduce his rockets to the 6th grade.

Meetings with Fellows

The MCCSE has not hosted any meetings specifically for the GNY Wipro Fellows this Fall Quarter. However, there are GNY Wipro Fellows who continue to stay in touch with the Mercy College site and continue to work on leadership. These Fellows typically join us for professional development, including as participants in WSA and as facilitators in the K-12 STEM Teacher Conference and for robotics.

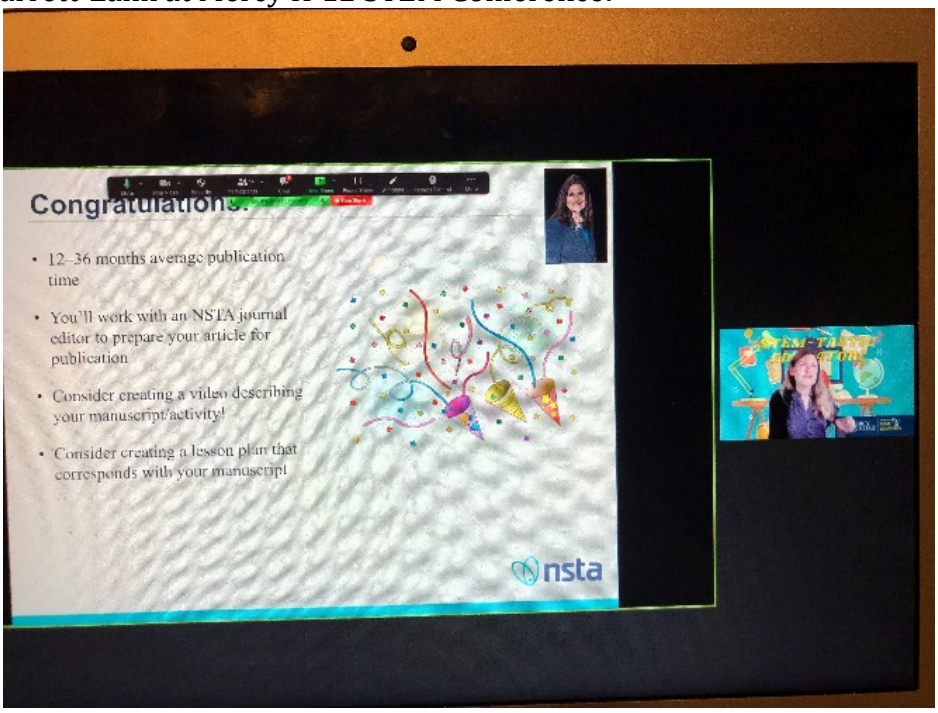
On November 23rd, Aimee Ferguson, now a New Rochelle(NR) District Coordinator, held a Zoom meeting for her Fellows and invited NR Curriculum Directors and MCCSE to join. Mary reminded the Fellows about the availability of Phase II mini-grants. One Fellow, Claudia Gianserra, said that she joined the Zoom because she wanted to reconnect with the Wipro mission. In that regard, Aimee asked the NR District Administrators on the Zoom to make sure that they make use of the expertise and training of the Wipro Fellows as they plan a new science curriculum for the district this Spring.

Plans for recruitment for future Phase II work.

The MCCSE worked towards gaining more Phase II project proposals. However, Fellows remain exhausted as they teach during the pandemic. While schools have largely returned to in-person, teachers are still faced with challenges related to accessibility to technology and support from their administrators. This year, one GNY Fellow submitted a proposal for Phase II funding and has made slow, but steady progress towards their project goal. Other proposals that were submitted prior to the pandemic are still in progress. The MCCSE team suspects that as Fellows become more familiar and gain more agency in their districts in this new context, they will begin to feel more comfortable and open to taking on more Phase II work.

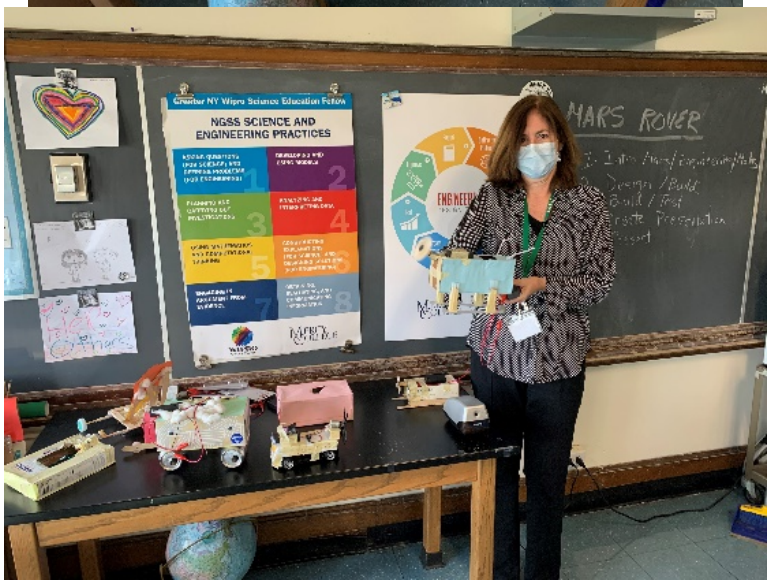
Featured Fellows

Elizabeth Barrett-Zahn at Mercy K-12 STEM Conference:



Anthony Patierno – The first food science experiment with the Culinary Club on 12/3/21 was why to choose one fat over another, air fryer vs deep fryer.

Patricia McCue and Scott Misner: Mars Rover Unit



Scott Misner in Westchester STEM Ambassador Training with cup coding and robotics:

Conferences

The MCCSE K-12 STEM Teacher Conference was held October 16th for all local districts. While in previous years, the Center has had attendance from several Wipro Fellows, this year only one attended as a presenter. The MCCSE team suspects this might have been because of the overwhelming adjustments that all teachers had to face this school year as schools mostly returned to in-person instruction, but with little resources or time allocated for staff.

Research activities

The MCCSE continues to develop their research agenda centered on teacher leadership through vertical teaming and professional development. The Westchester STEM Ambassador program, for instance, has been largely modeled on the Wipro VCCLS and engages teachers in vertical planning over the course of their long-term professional development series. The MCCSE team plans to collect data from the WSA participants to further understand the experiences within vertical teams, especially in developing materials and plans for robotics, computer science, and engineering.

Professional development

The WSA professional development series focuses on developing all K-8 teachers' confidence and leadership in bringing robotics, computer science, and engineering to their school districts. As mentioned earlier, three Wipro Fellows are currently enrolled in as STEM ambassadors and are already working towards meaningful STEM integration in their schools.

TEXAS- UNIVERSITY OF NORTH TEXAS DALLAS

Introduction

Wipro @UNT Dallas is now in Phase SEF Phase 2 and the activities below pertain to that grant. All our Wipro Fellows are teaching face to face, however all meeting conducted are via zoom.

Based on the feedback Dr. Narayan received regarding participating in the Wipro SEF grant during Covid, almost all the fellows talked about how difficult it was to cope with the isolation of completing the GPS projects during Covid without being able to meet face to face. As a result, she decided the Phase 2 projects needed to be "Collaborative".
The Collaborative Phase 2 Projects were of two types: one specially designed for the DSCs of the 5 participating districts, and collaborative mini grants for the Wipro Fellows.

Collaborative WalkSTEM Project for the DSCs:

The rationale for this project was to have a project that engaged the DSCs specifically. Dr. Narayan partnered with a Dallas based organization TalkSTEM (https://talkstem.org/) established by a science educator from Columbia University, Dr. Koshi Dhingra. The task for each DSC was to select a partner teacher from their district and develop a WalkSTEM tour on their campus with a minimum of 6 stops.

Jeremy Hesse CHISD DSC Nicole Rose Secondary Math Coordinator CHISD	Faith Milika Lancaster ISD DSC Ana Rodriguez Bilingual grade 4 teacher Lancaster ISD	Chris Dazer Irving ISD DSC Julien Yacho Digital Learning Coach, Irving ISD, Wipro C3 fellow	Danielle Moore DeSoto ISD DSC Christina Falcon, master Science teacher DeSoto ISD	Tamara Majors Elementary math / science facilitator GPISD Megan Hunt, STEM Coordinator GPISD

The project consists of 3 phases:

Phase A: To attend the 3 scheduled webinars and collaboratively learn about WalkSTEM

Phase B: Create a WalkSTEM at each ISD with 6 stops
Phase C: Get feedback on your own and another ISD's WalkSTEM walk from teachers and students at each ISD
Currently we are in Phase B of the project. Participants all attended the webinars, three meetings were held via zoom on Oct 4th and Nov 1st (both 1-hour meetings,) and Nov 29th (2-hour meeting). Each ISD also met one on one with Dr. Dhingra by November 10th.

https://docs.google.com/document/d/1PbCOc4lS20RoYptpPODeFcLk5tmoGcfc1mX7GigEpac/edit?usp=sharing
The document is the updated WalkSTEM document.
Each ISD pair has created 3 stops and will send the pictures and the accompanying scripts for each stop to Dr. Dhingra and Dr. Narayan to provide feedback. After making changes, each script will be narrated and sent to Dr. Dhingra as an audio file to be uploaded with the accompanying material on an app called Ottocast. We are currently waiting to get the scripts from the ISDs.

Example of the pictures and scripts for stops 1-3 from Grand Prairie ISD
https://docs.google.com/document/d/1mzjqwUFN1tB_aOwz5F7igqHzmDeL5fiakoa2ZiGkGhA/edit?usp=sharing

Next Steps:

By Jan 31st, each ISD will have created 6 Stops on their WalkSTEM tour. We will upload them on Ottocast, the audio will be in Spanish and English as the districts are all primarily Hispanic. We will also create videos for the ISD WalkSTEM in Spanish and English.

Collaborative Mini grants for the Fellows

The requirements for the collaborative mini grants were:
The projects should be collaborative and be led by a Wipro Fellow, collaborators could be non-Wipro teachers, informal science educators or DSCs from the same or different districts.
Projects were yearlong ending by June 2022, participants are expected to present at the annual Wipro Conference, the SW PD conference and at a Professional conference of their choice.

Approval process

Dr. Narayan met with the participants via zoom and answered any questions they had about the project. They sent her their proposal and she either sent it back to them with questions or comments for them to respond to. Once she got a clean copy, she sent it to 3

reviewers from UNTD (science and education professors) for their feedback and recommendations. Once changes were made and Dr. Narayan received the reviewers' approval, she sent the applicants an official letter of acceptance outlining the expectations and due dates.

Seven collaborative Mini grants have been approved for funding as of December 2021

Two mini grants were withdrawn for personal reasons.
One mini grant proposal has been sent back to the participants with questions and comments from Dr. Narayan.
One proposal is still to be sent to Dr. Narayan as per the fellow.

STEM Bin Activities and Writing in Science:

Maria Louisa Soto Arlington ISD- Speer Elementary School 4th-grade science and social studies Wipro fellow (C1-C2)	Tracey Craft Irving ISD - Townley Elementary School 3rd-grade math, science, social studies, and SEL Wipro fellow C2	Courtney Silverberg Irving ISD - Barton Elementary School 4th -grade math and science Wipro Fellow C1
Brief Description of the collaborative Mini-grant proposal. We plan to investigate how STEM bin activities benefit and improve students' expository writing. STEM bins are small plastic box containers filled with various math, science, or consumable materials that students use to explore STEM topics independently or with a partner. The materials can range from connecting blocks, pattern blocks, or magnetic shapes to sheets of paper, rubber bands, or small paper cups. The STEM bin activities provide support experiences for the current science objectives. Students will record experiences using guided, reflective questions. Students will then use their recorded thinking and experiences to consider how STEM bin activities relate to science objectives and their application in the real world via an expository writing prompt. We will begin by taking a preliminary writing sample for each student and using a rubric of our design (based on the 4th-grade STAAR writing rubric) to determine a baseline. We will collect STEM bin activity writing samples throughout the year to help us make adjustments and measure student progress.		

Quarterly report Dec 2021 Wipro Phase 2	
Materials	Have you received all your materials? Is anything pending/ to be returned? Please let me know specifically. Courtney received all of the materials and has distributed them. Nothing needs to be returned, nor is anything pending.

Goals and Timeline for Phase 2	Looking at your goals and timeline for Phase 2, please let me know in detail what you all have been able to accomplish individually and collaboratively
	Maria Louisa Soto:
	• I have-
	  ○ put my bins together.
	  ○ collected a baseline writing sample for each student.
	  ○ begun to grade their writing according to the rubric
	  ○ introduce the rubric to students
	  ○ taught expectations for using the bins
	
	Tracey Craft:
	• I have
	  ○ Put my bins together
	  ○ Collected a baseline writing sample for each student in 2 classes
	  ○ Begun to grade the samples using the rubric
	  ○ Introduce the rubric to students
	  ○ taught expectations for using bins
	
	Courtney Silverberg:
	• I have
	  ○ Put my bins together
	  ○ Collected a baseline writing sample for each student
	  ○ Introduce the rubric to students
	  ○ Taught expectations for using the bins
	
	Collaboratively:
	• We have-
	  ○ Composed a student-friendly rubric

	○ Created a task list ○ Created an activity progression ○ Created a common calendar to track meetings and deadlines. Find it here.
Challenges	Have there been any unexpected challenges that have prevented you from accomplishing the project goals? Our materials had been back ordered so we just got them. Also, district testing has slowed us down a bit.

Engaging IPC Students Using Filmmaking in Science

Marsha Bolden Irving ISD/Student Reassignment Centre 9th grade Wipro C3 fellow	Olutoyin Makinde Irving ISD/Student Reassignment Centre 10-11 grade chemistry and physics Not a Wipro fellow
Brief Description of proposal Student Reassignment Centre (SRC) is an alternative school for students displaced from their campus due to an infraction that occurred on their campus or against the law in the community. Some of the students find school challenging and uninteresting. For this reason, we want to encourage more student engagement in the IPC (Integrated Physics and Chemistry) curriculum by introducing filmmaking. The project is called "Engaging IPC Students by Using Film making in Science." The number of students involved in the study will depend on how many students enroll in August and preceding months; however, between 50 to 100 students are served in our classes per year before the pandemic. There are no plans for virtual students currently; the format is 100% in-person. Student Reassignment Centre students typically serve 20-day placements with us. Currently, there are two IPC sessions and students are in class for an hour and three minutes. This gives them time to complete at least one film project before exiting the 20-day placement period. The students will work in groups to complete various parts of the film. We will place students in groups of four to create film for identified IPC topics to develop creative thinking, collaboration, research, creativity, and innovation skills. Mrs. Makinde's chemistry and physics classes will serve as control for the project. Both	

control and project students will receive the same lessons to compare filmmaking versus traditional learning. The final product will be posted on a "YouTube" channel that will be reviewed by other science students (chemistry, physics) at our school and students in the district to evaluate the success of the project.

Quarterly report Dec 2021 Wipro Phase 2	
Materials	Have you received all your materials? Is anything pending/ to be returned? Please let me know specifically. Yes, we have received all the materials. I am returning the cameras this week. We have received the other two cameras that were reordered.
Goals and Timeline for Phase 2	Looking at your goals and timeline for Phase 2, please let me know in detail what you all have been able to accomplish individually and collaboratively Marsha Bolden: We got off to a late start because I did not have any IPC students for a while. And due to student absences, suspensions, and exits we have just had a bad start. We will film topics that we have covered in class with the students explaining the information on what they have learned in class. The topics include Atoms, Mixtures, Matter, Periodic Table, Solutions, and pH. We have time to recover before the end of the semester. Students have taken the pre-tests. Olutoyin Makinde: I am working with the control group (Chemistry). Before Dr. Bolden got enough students to experiment with, I was already done with atoms mixtures and matter, and Solutions and pH come next semester so I believe everything would work out fine then. In summary, we are really getting a hang of it. Collaboratively: We have met three times a month to discuss the project. We are journaling what was discussed and what we have accomplished.
Challenges	Have there been any unexpected challenges that have prevented you from accomplishing the project goals?

	Student absences and unexpected suspensions and exits. We will work on film projects until the end of the semester in chemistry and start physics in the spring semester. We have time to recover what was missed in November

Science Starr Bootcamp

Brittney Preston Lancaster ISD - Pleasant Run Elementary 5th Grade Science Wipro C2 Fellow	Faith Milika Lancaster ISD K-5 Science Coordinator Lancaster ISD DSC	Shelby Allen Lancaster ISD - Rosa Parks Elementary 5th Grade Science Wipro C3 Fellow
Through this grant, our goal is to provide a **STAAR Bootcamp** that will prepare all 5th grade students at Rosa Parks Elementary and Pleasant Run Elementary for the science STAAR exam in May 2022. We also plan to increase the overall number of students performing at the Meet (40%) and Mastery levels (25%) on the STAAR exam. The bootcamp will align to the district framework and pacing calendar. It will be composed of three components; 1) Sci-Friday, a monthly STEM learning experience addressing the district's historically low performing readiness standards 2) Targeted in class interventions, in which teachers will address individual student needs through small group instruction, 3) Enrichment sessions, after school "club" focused on accelerating student learning through hands-on investigations and learning games. Our Bootcamp will use STEM design challenges and learning activities to engage all students in deepening their understanding of the science concept being covered. After completion of the STEM activity students will be given a short formative assessment to determine their level of mastery. Mastery level will follow TEA's STAAR performance levels; Mastery 89%- 100%, Meets 78%- 88%, Approaches 61%-77%, and does not meet 60% and below. Intervention will be provided to all students with the goal of increasing each student's level of mastery. After school enrichment will focus on growing students at the Meets and Mastery level.		
Quarterly report Dec 2021 Wipro Phase 2		

Materials	Have you received all your materials? Is anything pending/ to be returned? Please let me know specifically. We have received all the materials.
Goals and Timeline for Phase 2	Looking at your goals and timeline for Phase 2, please let me know in detail what you all have been able to accomplish individually and collaboratively Brittney Preston: I have begun enrichment and interventions after school twice a week with scholars. Shelby Allen: I have started implementing interventions within the class time and during WIN time. I will start enrichment in January with a group of about 15-20 students after school weekly. Faith Milika: Inventoried materials before distributing them to Shelby and Britney. Assisted with intervention at PRE Collaboratively: We have kept in touch on the status of our project as well as met to discuss modifications and changes to the event calendar due to delay in materials and holidays. Met to discuss enrichment and intervention activities.
Challenges	Have there been any unexpected challenges that have prevented you from accomplishing the project goals? • House Bill 4545 intervention is only allotted for math and reading remediation in 5th grade. This has cut down on science instructional time as well as in-class interventions. • Due to delay with receiving materials, we have had to move life science interventions to the spring to review before the STAAR. • PBLs and Design Challenges have been modified due to students' ability level and the reduction in science instructional time.

Cross-District Collaborative STEM Initiative

Julien Yacho Irving ISD Gilbert Elementary Elementary Digital Learning Coach Wipro C3 Fellow	Sherry Thompson Irving ISD Thomas Haley Elementary 4th & 5th grade Science GT Wipro C3 Fellow	Tiffanie Johnson Bray Elementary in Cedar Hill ISD 3rd Grade Math and Science Teacher Wipro C3 fellow	Shelby Allen Lancaster ISD - Rosa Parks Elementary 5th Grade Science Wipro C3 Fellow
Brief Description of the Proposal Our project will consist of three STEM projects along with a website made using the Wix web design site to enable the collaboration of students across different districts. This proposal incorporates STEM by having students construct solutions to the problem, use math to measure, and make calculations throughout the projects. STEM (Science, Technology, Engineering and Math) projects in elementary school entails an interdisciplinary approach to solving real world problems. The students may not be facing the problem directly, but the projects are tied to real world phenomena. We have three projects aligned to our curriculum and STEM under the categories: Matter and Energy, Earth and Space and Life Science. As students work in groups on their challenges throughout the school year, they will be tasked with journal entries to document their findings and challenges. These journal entries will be viewable on the website by all scholars. These journal entries will include pictures and videos of their progress and will focus on the vocabulary for each topic. This will give our scholars a chance to focus on the topics in a real-world setting. The scholars will provide feedback and suggestions on journal entries from students in other schools and districts. This proposal incorporates educators and scholars from Cedar Hill ISD, Lancaster ISD, and Irving ISD. The challenges will be the same across grade-levels, but the expectations of the journal entries and feedback will be differentiated. Each of the three projects will end with an online meeting involving all students who participated in the projects, concluded with a survey for reflection.			

Quarterly report Dec 2021 Wipro Phase 2	
Materials	Have you received all your materials? Is anything pending/ to be returned? Please let me know specifically. We have received all of our materials, and nothing is pending at this time.

Goals and Timeline for Phase 2	Looking at your goals and timeline for Phase 2, please let me know in detail what you all have been able to accomplish individually and collaboratively Julien Yacho: We have a working website I created that students have used to take their pre-test. The reflection forms have been made for students. I am in the process of getting them all available on the website. This will be done before we get back from Christmas break. Tiffanie Johnson: Students were given the task of creating a force that can move or move an object 10 feet. Students had to create a design using the following supplies: balloon, magnet, cardboard, wheels, tape, popsicle sticks and marbles. Students had to create a design before receiving any supplies. After students received the supplies. Students began to adjust their design based on them realizing whether what they were doing was reasonable and attainable. When students began testing their projects, they were able to make minor adjustments to their project to create a force that could move an object at least 10 feet or more. Shelby Allen: I have gathered my students and worked out a timeline for an afterschool program with 4th and 5th graders. I will be working on this project in a STEM program after school hours since I am on a different scope. We will start in January since it's been a lengthy process to get approval. We will start with the Force project and do two in January. I will have campus support in the after-school program with the GT teacher for the campus. She is also providing extra time during the school day if needed. Sherry Thompson: My students have taken the pre-test and worked collaboratively to construct a design that moves. Students were given an opportunity to design their own individual prototype. Then students were able to combine ideas to create their final product. Although some designs did not go as planned for the groups, they were able to discuss what they can do to make it better as well as contributing factors that made it work or not work. Students discussed that the time constraint limited their ability to construct something more elaborate.

	Collaboratively: Together we have designed a lesson plan with a timeline that can be modified for each teacher as necessary.

Intra District Science Collaboration

Tamesha Brown Lancaster ISD - Rosa Parks Elementary ELAR content Coach Wipro C3 Fellow	Markus Burkhalter Lancaster ISD-West Main Elementary 3rd grade Science Wipro C3 Fellow	Beverly Moore Lancaster ISD - Rosa Parks Elementary 4th Grade Science Not a Wipro Fellow
Educators from Lancaster ISD will collaborate to show the importance of planning, instructing, and providing hands-on activities to increase Science awareness amongst third and fourth grade students. We will collaborate vertically together for three major themes that allow students to have hands-on experiences. In addition, we will engage the students in activities that deepen their understanding of science concepts. Our year at a glance will vertically align 3rd and 4th grade knowledge and skills expectations. This allows us to work on the same units during the same time. We will track student outcomes to show improvement in the students' district and state assessment data in comparison to the previous year. The majority of the students were learning virtually last year due to Covid-19, which limited their hands-on experiences. Currently, the curriculum that our district is using is STEMScopes, TEKS Resource System, and the Year at a Glance for alignment. The topics that we will focus on are Life Cycles, Energy, Force and Motion, and Earth's Changes. The students will complete the following explorations: · Explore the life cycle of a plant · Explore how a circuit works · Explore how a sail car moves with wind · Explore Earth's Rotation We will virtually collaborate with each other during experiments. Our Team will provide a pre and post survey, as well as track student assessment data. Our students will explore hands-on activities from November to May. They will use their science journals to document their observations, data, and illustrations. Through these hands-on activities, our students will have a greater sense of understanding of what science is through exploration and discovery. It will also foster opportunities for teachers to develop a better understanding of science concepts, thus improving their ability to plan instruction		

that enhances student knowledge. Students will use Flipgrid to provide authentic responses for their experiences. The TEKS Resource System supports the vertical alignment of the grade level standards. Each teacher will present the activities to the students at the same time.	
Quarterly report Dec 2021 Wipro Phase 2	
Materials	Have you received all your materials? Is anything pending/ to be returned? Please let me know specifically. Yes, we have received all the materials. Nothing is pending or needs to be returned.
Goals and Timeline for Phase 2	Looking at your goals and timeline for Phase 2, please let me know in detail what you all have been able to accomplish individually and collaboratively Tamesha Brown: Facilitate meetings and help create virtual collaborative activities as well as co-teaching. Markus Burkhalter: Creating lesson plans, teaching the lesson, facilitating the online collaborative meeting and hands-on group project. Beverly Moore: Creating lesson plans, teaching the lesson, data input and creating online collaborative activity. Collaboratively: We have met several times to determine what materials and activities are needed for each project. We have communicated with one another on how we will share the project requirements with parents. We have determined how students will engage collaboratively across campuses.
Challenges	Have there been any unexpected challenges that have prevented you from accomplishing the project goals? Yes, time frames with online collaborations, teacher schedules, and the Year at Glance for both grade levels are slightly different.

Investigating Climatic Impacts Using CER

Marquita Mohammed Sam Houston Elem Marshall ISD 5th grade science Wipro C3 Fellow	Vickie Hines Sam Houston Elem Marshall ISD 5th grade science Not a Wipro Fellow	Danielle Moore DeSoto ISD Wipro DSC	Rhenett Ingram The Meadows elem school DeSoto ISD 5th Grade Science Not a Wipro Fellow
In this project three classes of 5th grade students from two different school districts (DeSoto ISD and Marshall ISD) comprised of two elementary campuses, a DeSoto Science coordinator, and an informal educator will discover the importance of how local communities, such as Marshall and DeSoto, can take action and implement solutions to address the climate crisis. In doing so, students will research the actions of emergency management teams to create their own solutions and/or recommendations. Students from both schools will meet with a speaker monthly via Zoom. From these experts, students from the three classes will be introduced to some of the causes and effects of climate change and how it is impacting weather, as well as potential solutions. Working together in teams at their respective campuses, students will conduct scientific research to gain a deeper understanding of the human behaviours and scientific causes behind climate change as well as its impacts on the environment and society. Students from the two campuses will receive weekly tasks and will collaborate via Zoom in Breakout sessions to discuss their outcomes. They will participate in hands-on investigations using Flinn kits activities.			

Quarterly report Dec 2021 Wipro Phase 2	
Materials	Have you received all your materials? Is anything pending/ to be returned? Please let me know specifically. Nothing pending
Goals and Timeline for Phase 2	Looking at your goals and timeline for Phase 2, please let me know in detail what you all have been able to accomplish individually and collaboratively. Marquita Muhammad: Administered Pre-Assessment; analyzed student demographic data; Inventoried and

	delivered material received; facilitated Zoom discussion. Vicki Hines: Administered Pre-Assessment; analyzed student demographic data; Inventoried material received; read and discussed the Impact on Climate news article; facilitated presentation project and Zoom discussion. Danielle Moore: Weekly collaborative opportunities for students were observed during Friday sessions. Students completing pre-rests and/or gathering information about projects with guidance of teachers/facilitators. Rhenett Ingram: Pre-Assessment was administered, students demographics were analyzed; inventoried materials received; read and discussed the Impact on Climate news article, and facilitated Zoom small group discussions Collaboratively: Discussed project status, materials, outcomes, etc. Students were randomly placed in groups. Each group consisted of students from all three campuses. They completed a presentation on assigned topics from an article discussing the current impact of climate on natural disasters, then shared out via Zoom.

Fishing for Science with a dash of Montessori

Matthew Gaines Lake Ridge Elementary 5th Grade science / social studies Wipro fellow

Brief Description of proposal

Mr. Gaines has been a 5th grade science teacher at Lake Ridge for seven years now. He is also a tournament fisherman with decades of experience to share with students. Mr. Gaines started sharing his passion for fishing six years ago and has been fine tuning the activities every year to make them more effective and aligned to the state standards. Mrs. Hryekewicz is a very experienced and certified Montessori educator. She has been at Lake Ridge for three years now.

For the last two years, Mr. Gaines created a Fishing club he has his students participate in and he integrates 5th grade science concepts into the club activities. He has collected benchmark data to the fishing club participants to measure the academic impact of the projects. The data suggests that club members increased their knowledge of science concepts. The pre-test provided baseline data and put the science concept comprehension at 67%. At the conclusion of the club experiences, the students were given an exit test and the cohort scored 88% mastery. It is also important that 83% of the students had never gone fishing before the club and by the end of it, students reported that they are happy and confident enough to teach others to fish.

The goal of this project is to extend a real-world Fishing and Conservation experience to Montessori students. The purpose is to evaluate the impact of the non-traditional Montessori activities (listed below) on the science content knowledge and real-world experiences of both general education and Montessori students. The specific activities relevant to the real-world Fishing and Conservation experience are:

a. Learning how to fish (TEK 5.2D)
b. Learning the behaviours of fish (TEK 5.10B)
c. Monitoring nature and using observations to choose baits (TEK 3.9A)
d. Lure making both soft plastics and hard lures (TEK 3.5C)
e. Styles of fishing based on tiers, advanced, intermediate, and beginning. (Scaffolding/Differentiation)
f. Weather patterns (TEK 4.8A)
g. Knot strength (TEK 5.6D)
h. Positive mental attitude (SEL)
i. Conservation (TEK 5.1B)
j. Matching the Hatch activity which requires students to identify the abundant forage in nature at any given time and try to match it to a bait. (TEK 3.9A)

The rationale of this project is to further collect, analyze, and evaluate the impact of providing students with the real-world experience of fishing and conservation while applying the science concepts learned in school. The effects of the activities on students' science content knowledge as well as real world experiences will be measured with a pre and post content assessment as well as an informal survey before and after the experience.

<table>
<tr><td colspan="2">This project specifically is targeting students who specifically learn through the Montessori structure. Select Montessori students have been accepted into the program and will be mixed with general education students. Impact of participating in the project will be measured using informal and formal assessments and surveys. The reason Montessori students have been selected is because the instructional method used in the Montessori curriculum is so structured, and it would be interesting to determine if they would benefit from experiencing in the field practice of the sciences taught inside the walls of the campus. Anticipated benefits could range from: Stimulating their interest in science, Increased test scores in science and more interaction with gen ed students</td></tr>
<tr><td colspan="2">Quarterly report Dec 2021 Wipro Phase 2</td></tr>
<tr><td>Materials</td><td>All items received</td></tr>
<tr><td>Goals and Timeline for Phase 2</td><td>Students have been to the lake a total of 3 times. 6 fish have been caught. The specific goals I have been able to cover so far:
Learning how to fish (TEK 5.2D)
Learning the behaviours of fish (TEK 5.10B)
Monitoring nature and using observations to choose baits (TEK 3.9A)
Styles of fishing based on tiers, advanced, intermediate, and beginning. (Scaffolding/Differentiation)
Weather patterns (TEK 4.8A)
Positive mental attitude (SEL)
Conservation (TEK 5.1B)
The other goals are back-ups for rainy days. Weather has been very nice, and we have been able to go to the lake every time. Actual fishing take priority above inside lessons.</td></tr>
<tr><td>Challenges</td><td>The district has implemented STEM Clubs once a month. Due to the holidays and school schedule, club’s days were cut a little to squeeze in the STEM Clubs. This caused me to reduce the content covered with the first cohort. It also didn’t allow me to take the kids to the pond as much as I would have liked when the water was still pretty warm. The fish are a bit finicky now. They still have fun and learn but the ultimate goal is to catch a fish!</td></tr>
</table>

Anything else I should know?	I intend on doing the exit survey next week and will have the first set of tangible data for the first cohort. Very exciting!

Events coming up

Dr. Narayan is working with all the ISDs to attend their school board meetings for the plaque ceremonies in Jan / Feb.

On Feb 4th, she is planning two face to face events at UNT Dallas. The first will be an informal Cakes and Coffee type of event being held in appreciation of all the support staff at UNT Dallas who have helped us with the Wipro grant. People will stop by, get their plaques, cards, chat briefly and leave. FH 138 A/B 3:30 – 5 pm

The second is a bigger more formal event in the big room at the Student Center at UNTD. All cohorts, DSCs, informal science educators, Wipro representatives, Dr. Eisenkraft, UNTD President, Provost and our new Dean will be invited. Dinner will be provided, this event is more of a reunion, Phase 2 participants will briefly present their projects, we will hopefully talk about Phase 3 funding. This also provides a good opportunity to give Fellows who have moved from their district and cannot attend their ISD board meeting, their plaques.

News

- Dr. Narayan hired a new Part time Wipro Coordinator, Ms. Toni Meyer.
- The DeSoto Superintendent, Dr. D'Andre Weaver has resigned.
- The DeSoto DSC, Danielle Moore has decided to retire at the end of the 2021 year. She will complete the projects she is involved with.

A summary of the evaluation report follows.

Wipro Science Education Fellowship

Evaluation Update

September 2021

Tasks this Month

- Completed 2020-2021 Wipro SEF Evaluation Report (sent on September 27, 2021).
- Participated in leadership team call on September 15, 2021.
- Produced and distributed an evaluation report reading plan for the October team call.
- Continued conversation on evaluation proposals for 2021-2021 Wipro SEF evaluation work.

What's Next?

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

- Working with UMass Boston leadership to finalize the evaluation plan for 2021-2022.
- Working with UMass Boston leadership to discuss other ways that AGC can support the work of Wipro SEF.
- Participating in scheduled call(s) with IHE leadership.

Wipro Science Education Fellowship

Evaluation Update

October 2021

Tasks this Month

- Participated in leadership team call on October 20, 2021.
- Continued conversation on evaluation proposals for 2021-2022 Wipro SEF evaluation work.
- Completed contract for evaluation work for 2021-2022 project year.

What's Next?

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

- Working with UMass Boston leadership to finalize the evaluation plan for 2021-2022.
- Working with UMass Boston leadership to discuss other ways that AGC can support the work of Wipro SEF.
- Participating in scheduled call(s) with IHE leadership.

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Wipro Science Education Fellowship

Evaluation Update

November 2021

Tasks this Month

- Participated in leadership team call on November 15, 2021. Led discussion of the 2020-2021 Project Evaluation.
- Continued conversation on evaluation proposals for 2021-2022 Wipro SEF evaluation work.

What's Next?

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

- Working with UMass Boston leadership to finalize the evaluation plan for 2021-2022.
- Working with UMass Boston leadership to discuss other ways that AGC can support the work of Wipro SEF.
- Participating in scheduled call(s) with IHE leadership.