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

WIPRO SEF

YEAR 11
QUARTERLY REPORT
June 2024

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Executive Summary

For over a decade, the Wipro Science Education Fellowship (SEF) has provided funding and support to science teachers and school districts across the country. The program has national reach with sites in California, Florida, Massachusetts, Missouri, New Jersey, New York, and Texas serving almost 750,000 total students (approximately 1.5% of US pre-K – 12 students). The original phases of the program focused on developing a cadre of science teacher leaders who lead *from their classrooms*. As the second decade of the program begins a new layer of leadership is being added by engaging more purposefully with school formal district leadership (administration). The goal is to enable district transformation through teacher leadership.

This quarter, the theme of the report reflects on the completion of the second year of the "innovation phase" of the Wipro SEF initiative. Each university is continuing efforts unique to their sites as we implement and investigate strategies to promote district transformation through teacher leadership. As a means of better understanding what is occurring at each location, site visits that include visits to Fellows in their classrooms and meetings with principals take place. These site visits also provided increased recognition of the programs at each school district. The end of the year also presented additional opportunities for cross-site interactions as Fellows attended and presented at meetings at other sites.

Keywords: Teacher leadership, collaboration, district transformation, learning communities

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 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. This critical mass of teacher leaders sets the stage for district transformation.

Phase II and Phase III – Innovation Phase

After Fellows complete the two-year "foundation" program, District science coordinators work with their university partners in exploring ways in which to build on the Fellows experiences, projects and leadership skills in order to support district transformation. Through various and varied initiatives, Fellows engage with other teachers in their districts. Simultaneously, administrators are made more aware of the resources that the Wipro SEF program has seeded in their schools and districts. This phase of funding is also intended to encourage district incentives to support future work that will continue after this Wipro external funding concludes.

HOW TO READ THIS REPORT

This report captures the work of the Wipro SEF program from April 2024 through June 10, 2024. We are now in the second year of the Innovation Phase (Phase II/Phase III) of the Wipro SEF where all sites are now moving beyond the Foundation Wipro SEF program (Wipro SEF Classic). During this time, all sites met the challenges of maintaining and adapting the Wipro SEF program as they adjust to the new "normal" following the Covid-19 pandemic. *The chart below summarizes the activities of this quarter and the activities that took 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 individual Fellows please refer to the vignettes in the sections entitled "Featured Fellows." Throughout the report, you will find remarkable stories of Wipro Fellows supporting their students as teachers and supporting other teachers as teacher leaders.

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
2022-2023	Phase II	Phase II	Phase III & Lead Institution	Phase II	Phase III	Phase III	Phase III
2023-2024	Innovation Phase	Innovation Phase	Innovation Phase & Lead Institution	Innovation Phase	Innovation Phase	Innovation Phase	Innovation Phase

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	
Innovation Phase (Phase II &III)				Activities proposed by individual sites.

Key to yearly activities

Foundation Phase (Wipro SEF Classic)

Site (Institution)	Districts	Total Students in Districts	Fellows	Non-Fellow teachers involved (e.g. GPS)	District Science Coordinators	Presentations and Publications
California (Stanford)	5	97,288	60		5	7
Florida (U of South Florida)	3	398,360	60		3	16
Massachusetts (UMass – Boston)	5	73,688	58 – Phase I 17 – Phase II		5	18
Missouri (U of Missouri)	8	34,162	52		13[1]	8
New Jersey (Montclair State)	5	31,486	60 – Phase I 24 – Phase II 31 – Phase III		5	22
New York (Mercy College)	5	33,580	60 – Phase I 60 – Phase II		5	31
Texas (U North Texas – Dallas)	5	83,160	46 – Phase I 20 – Phase 2[2]		5	28

[1]Over four years.
[2]Plus 5 Non-Fellow teachers for the Walk STEM project.

Current Innovation Phase

Site (Institution)	Projects Submitted	Projects Approved	Alumni Fellow	New Fellows	Non Fellow Teachers involved	District Science Coordinators
California (Stanford)	N/A	N/A	60	16		5
Florida (U of South Florida)	7	7	3	0		3
Massachusetts (UMass – Boston)	8	5	5	0	10	5
Missouri (U of Missouri)	N/A	N/A	2	7		4
New Jersey (Montclair State)	13	13	13	18[3]		5
New York (Mercy College)	16	11	4	33	65	3[2]
Texas (U North Texas – Dallas)	14	14	11	22[3]		5

[1] Plus two district administrators.
[2] Plus nine district administrators.

Upcoming Meetings and Milestones

During the summer months, District Science Coordinators will be attending the NSELA meeting in Seattle. This is described with other cross-site interactions.

On September 28, Mercy University will be holding a conference. The expectation is that this will be another opportunity for cross-site interactions where Fellows from other sites will present in New York.

Coinciding with the Sep 28 meeting at Mercy University, a site visit will take place at schools participating in Wipro SEF at Montclair State university.

Executive Summary for Each Site

Executive Summary Statement - CA

The CA Wipro Team's vision for developing teacher leadership in the Wipro SEF Program focuses on developing leadership practices and broadening educators' perspectives beyond the classroom by applying their leadership skills within their school and district contexts. To meet these goals, the CA Wipro Site continues to offer the traditional Wipro SEF Program to science teachers from the five partner school districts. To further support the partner school districts, the CA Wipro Leadership Team has created specific plans for each district based on their needs. Lastly, the CA Team completed its first Wipro School Leaders Program, which brings together school leaders from across the five districts to build their capacity to support high-quality teaching and learning, increase equitable opportunities, and support the Wipro Program's goals.

The goal of the CA team is to develop each district's collective capacity to advance high-quality science teaching and learning in their districts that align with NGSS and reduce the persistent inequities that pervade science education. By addressing the work at these three levels—teachers, district teams, and school leaders—the CA site is working towards the goal of district transformation.

Executive Summary Statement - FL

What is so wonderful about this project is that we are empowering our fellows to work on projects that they find meaningful and are encouraged to do. This combination leads to a great chance of success knowing they are supported, both financially and in terms of the leadership team. We see how the fellows are excited about the work they do, bringing in more individuals on their teams, and then sharing this work with others.

The goal of this project is to allow our fellows to apply for mini grants to support their projects. These projects are ideas from their own projects in phase 1, methodologies learned, or in peer projects they want to implement. They can apply for one- or two-year projects. The fellows learn about action research in year 1 while in year 2 they receive individualized support on their unique projects.

In this quarter, we were able to recruit our 3rd cohort of projects. We had some folks who submitted new projects as their old ones finished up. We have other fellows who are working on the second year of their project ant then finally we have a new cohort of fellows starting new projects in their district.

The fourth quarter will bring us a new"ish" structure to our professional development sessions. Like Phase 1 of the project, we have had sessions where fellows from year 1 work with fellows in year 2.

We are doing that but it will be fellows who have completed their action research course year (year 2+) with those that have not (year 1). We will also have the largest number of fellows participating in this project moving forward this year.

Executive Summary Statement - MA

The UMass Boston innovation plan includes working with the original five districts as well as beginning Wipro SEF activities with three new districts. Each of the original five districts had a meeting with the Fellows, the District Science Coordinator and Arthur Eisenkraft to discuss district initiatives. The purpose of these meetings is to help define "district transformation" for each district. This requires identifying the gap between the present district situation and the future vision of the district. This leads to a recognition that there are specific changes that the district may want to implement in science. In turn, we identify strategies that are within the capabilities of the Fellows (i.e. teacher leaders) and the coordinator to implement over the next few years.

The first of two major initiatives taking place are the Chat GPT seminar series where 9 teachers met this past summer for an intensive week-long seminar. The outcome of this week was a set of approaches where Chat GPT could support teacher work and improve student learning. This was followed by monthly meetings to discuss the implementation of the ideas generated during the summer sessions.

The second is the creation of the first of a series of V-CCLS teams in the Cambridge Public Schools. Let by a Wipro Fellow, it involved 9 other teachers. A new set of teachers is being recruited for additional V-CCLS teams next year.

UMass Boston will also try to generate interest in the foundation Wipro SEF program of 4 years in three high-needs districts in the Boston area. Unlike the original sites, these new sites and Fellows will not be receiving the generous stipends of the past and will have to come up with other ways to incentivize participation in the program.

Executive Summary Statement - MO

The Missouri Wipro project's goal of teaching math and science in a harmonious manner will contribute to the transforming of the teaching of those subjects in participating districts. We are already seeing collaboration among math and science teachers, development of lessons that borrow from the other subject, discussion about changing the sequences in their curricula and interest in bringing in other teachers from their grade bands.

Our Wipro project has modified the initiatives of Phase I. Fellows participate as teams of 2-4 teachers from three grade bands (K-5, 6-9 and 9-12) from a given district, with at least one math and one science teacher in the team. For cohort 4 and 5, grade 6-12 teachers were recruited for year 1. K-5 teachers were added only in year 2 for cohort 4. For cohort 6 we have changed the grade band mix

to recruit all grades, namely, K-12 teachers for both years. In year 1 they collaborate in V-CCLS and H-CCLS teams, anchoring their work in a research article and a math and a science educational practice. In year 2 they focus on creating or modifying four or more lesson plans that integrate math and science content. In the past quarter, March – June 2024, Cohort 4 has completed two years of work in the project. During this academic year each 6-12 teacher has worked on creating 4 or more lessons in their subject (math or science) that includes concepts, methodology, vocabulary and alignment with the other subject. Teachers have worked on collaboration within their district Wipro team and with other Wipro fellows. Cohort 5 has completed year 1, where they worked on V-CCLS and H-CCLS partnerships and created one lesson plan. They have begun planning their lessons and math-science collaborations for next year. Cohort 4 and 5 fellows made presentations about their work during the end-of-year conference in May. During the next quarter we will work with Cohort 5 and the newly recruited Cohort 6. We have accepted 16 fellows from four school districts for Cohort 6. After having worked with grades 6-12 in year 1 for cohorts 4 and 5 and adding on a one-year program for K-5 in cohort 4, we have changed the composition of the cohort by accepting K-12 teachers for 2 years. This change will help us compare the efficacy of the two grade-band mixes. The essential activities will remain the same, thus the first semester will consist of a V-CCLS partnership among the fellows.

Executive Summary Statement - NJ

The Montclair State University site has made progress through the first half of its Phase III project. The program is contributing to district transformation through the Fellows' self-initiated projects, which extend the reach of the Wipro program to new teachers, new districts, new subjects, and new collaborations. The connections that are made through the program would not be possible without the structure that the Wipro SEF program provides.

As stated in the previous report, the current phase of the project has involved 12 Alumni Fellow working on district-related initiatives and one Fellow working on publicizing the program. Each of the alumni Fellows has recruited a team of district teachers. Together, these teams are working towards their respective goals as a new cadre of teacher leaders are nurtured.

This past quarter, Alumni Fellows continued working with their teams to make progress towards their respective project goals. Their projects involved other teachers new to Wipro, administrators, instructional coaches from other districts, and former Fellows. With the culminating event in sight, all Fellows worked on developing and refining their presentations. The event, held on Tuesday May 29th, showcased each team's two-year project and brought together various program stakeholders. The presentations were inspiring and thoughtful and represented a variety of ways to make change in districts. The MSU site is currently collecting proposals for the second half of the innovation phase. All Fellows, including past Fellows and Fellows new to the program in this phase, were invited to apply. With a new cadre of Fellows, the next quarter will focus on goal setting and

extending the reach of the Wipro SEF Fellowship even further

Executive Summary Statement - NY

In the five GNY districts, Wipro Reimagined teachers are reimagining the ways in which they can be critical leaders toward district transformation. These teachers are implementing creative strategies for vertical articulation between both teachers and students in the districts through initiatives including robotics, engineering, and mathematics, which administrators have indicated intention to support in years to come.

Mercy University's goal for the 2023-24 AY was to support Wipro projects that spanned across different schools in each district, connecting elementary, middle, and high schools through STEM programming. Our goal is to support innovation and collaboration by teachers and administrators to improve STEM teaching and learning in their districts. This quarter, Fellows enacted five vertically articulated projects, including a K-12 engineering design challenge, a 5th grade-high school math peer mentorship collaboration, an elementary-high school family STEAM night, an elementary science teacher conference hosted by high school and middle school science faculty, and a K-5 garden club. These projects are supported by administrators representing various grade levels across the district. The Mercy team hopes that establishing vertical relationships will improve sustainability outcomes for all of these projects. In the next quarter, the Mercy team will take a summer break and prepare to invite applicants for our next cohort in the fall

Executive Summary Statement – TX

The Wipro program, in this part of the Innovation Phase (year 2) has three types of projects, School projects, collaborative projects and individual projects. I added the school projects because I wanted more than just individual projects done by Fellows. I wanted these to be school and district initiatives that would lead to teacher leadership and district transformation and so far, I have been pretty happy with the projects.

I funded 6 school projects this year

- Cedar Hill ISD: Effects of Collins Writing in Science (District initiative , 2nd year of funding with more fellows added,)
- DeSoto ISD: The Garden Project from Seeds to Flowers
- Grand Prairie ISD: a) Gamyfying Forces (2nd year of funding with more fellows added, Bilingual & STEM focus) b) Savvy Sphero Sisters (Focus on girls in STEM, coding)
- Irving ISD: Exploring STEM wonders with 3D printing (first graders, STEM focus)
- Lancaster ISD: Transforming Instruction, one PLC at a time (, 2nd year of funding with more fellows added,)

I funded 1 Collaborative project:

- Trinity Basin / Lancaster ISD: All hands-on deck (third and last year of funding, more fellows added)

2 Individual Projects were funded:

- Shelby Allen : Stemtastic club
- Marsha Bolden: Exploring Science concepts using PBLs

The Spring semester is always a very busy one. The STAAR test preparation leading up to the actual STARR test administration in May, starts in early March. This is a hectic time at schools. We have focused on project data collection and submitting CAST Proposals and working on their Wix portfolios.

During the next quarter, I will work with my fellows to complete their Wix Portfolios, and make sure all 10 CAST proposals are submitted. I will meet with the DSCs to see what direction we want to proceed in for year 3 before I start talking to Fellows regarding year 3 proposals. I will schedule meetings to talk to Fellows about their ideas and in developing their proposals for Phase 3 year 3

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UMASS BOSTON LEAD INSTITUTION

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

Cross Site Collaborations

With the pandemic behind us, we are providing opportunities for cross-site face-to-face collaborations in addition to those on zoom.

In May, 3 Fellows from Texas and 2 Fellow from California attended the year end conference at the University of Missouri. Details of the meeting are found in the Missouri site report.

> "Cohorts 4 and 5 presented their work during the conference, which was held in the conference room of the Bond Life Sciences Center on the campus of the University of Missouri. Visiting Wipro fellows included Krystal Rising, Kellie Burchfield, and Jeremy Hesse from Ceder Hill ISD in Texas, and Jonathan Lee from San Francisco Unified School District in California. Each group had a 30-minute slot (20 min for presentation + 10 min feedback). Arthur Eisenkraft gave the Keynote presentation. Having visiting presenters added a new dimension to the conference, giving home and visiting presenters an occasion to share their work across sites, as well as an opportunity to share ideas with fellows from other sites."

On June, 15 Fellows from Texas, Missouri, New Jersey, New York and Florida attended the year end conference at Stanford University. The impact of these interactions were quite positive as evidenced by the surveys conducted at the close of the California session. Details of the meeting are found in the Missouri site report.

> "The day began with a short opening session by Dr. Tammy Moriarty, CSET's Associate Director. Participants were then excused to various breakout rooms to begin their Presentations. Cohort 4 Fellows presented their GPS presentations, and the Wipro guests presented their latest projects. The presenters were divided into 3 smaller groups, with each fellow assigned to a specific room as well as a specific time slot. The CA Team designed the schedule in such a way that allowed district coordinators to be able to see as many fellows from their districts as possible without overlapping times. In between GPS Presentations, participants were given time to view GPS Posters in an uncurated Poster Session. This enabled fellows and guests to read and give feedback to teachers using sticky notes, that they could not hear in other presentation rooms. The day concluded with a talk on Teacher Leadership by Dr. Tammy Moriarty and Dr. Arthur Eisenkraft and the presentation of certificates to the CA Wipro fellows."

Common Interest Seminars

As a new initiative, we are inviting Fellows from different sites to share their efforts in projects that have similar goals. Each of these meetings will be held on Zoom. If there is enough interest, we can follow these Zoom meetings with a face-to-face meeting, if deemed worthwhile.

One of these "birds of a feather" meetings was on the topic of emergent bi-lingual approaches in the

classroom. Preetha (CA) took the lead. The 1.5-hour meeting was to take place on Thursday, May 23from 6-7:30 PM (EST)/3-4:30 PM (PST). There was good attendance with every site represented by at least one Fellow.

Upcoming NSELA meeting

The National Science Education Leadership Association's summer meeting will take place in Seattle, WA from July 16-18. We have 18 District Science Coordinators attending. The formal focus of the three days is on climate education. This continues the work of this past year where we held cross-site meetings with Fellows on climate education followed by a joint meeting with students in the Kings College, UK program. It also builds on the Sustainability Conference held by Azim Premji University and UMass Boston in Bangalore in January, 2014.

During the meeting there will be opportunities for our DSCs to discuss strategies to introduce climate education to our Fellows, teachers and students. One focus will be on developing an approach following these rough guidelines:

- Create a set of climate change literacy statements
- Support teacher learning of climate science
- Generate climate change lessons appropriate to different age groups
- Use our V-CCLS model to have K-12 teachers teach climate lessons across grades and have them discuss these lessons
- Set up V-CCLS cohorts across sites involving more teachers in climate education

This could result in a submission for a cross-site NSF grant to expand this work.

Wipro Book Contract

We have entered into a book contract with Routledge (Taylor and Frances Group). The book should be completed by December 2024 and published June 2025. The working title is, "*A Roadmap for Transformative Science Teacher Leadership: Building Meaningful Professional Development in Districts*."

The text of the chapters has been completed. To make the book "come alive" we are now requesting that Fellows respond to specific questions regarding aspects of the program. These quotes and testimonials will add personal insights to the descriptions of the Wipro SEF program.

Website Development

Wipro is on the last leg of this website development journey with getting "legal' to review it. The release should happen soon.

Wipro Research Initiative

Professor Brooke Whitworth, Professor Julian Wenner and colleagues are initiating research regarding teacher leadership and how the Wipro SEF program aligns with current knowledge regarding this field.

Proposed Research

Study #1: Explore the social networks associated with science education teachers, DSCs and administration. The goal of this research is to understand the network intricacies of science educators which can be used for insight to how new policies, standards and curriculum is disseminated.

Study #2 (REVISED 8/1/2023): Explore the perceived applicability and effectiveness of the Wipro PD in light of basic psychological needs theory (which is a component of self-determination theory). Examine alignment of components of the Wipro PD with components of needs theory (autonomy, competence, relatedness) and explore for relationships (if any) with teachers' perceived applicability and effectiveness of the PD.

Study #3 (REVISED 8/1/2023): Examine the relationships (if any) between science education fellows' (SEFs') demographic characteristics and their 1) perceptions of their own leadership, 2) their choice of GPS topic, and 3) experiences of Wipro PD.

Progress Report

a. SNA study is on track to be submitted to Science Educator by 4/30/2024 or a few days after.

b. The second study is on track to be submitted for the IJTL special issue by 5/15/24.

c. The third study, the demographic comparison was submitted to JRST and is currently under review.

SciLeadPro

The research team runs a yearlong seminar for District Science Coordinators. We are considering having interested DSCs attend this course. The decision will be partially based on the value of the NSELA meeting that is being held in July.

Monthly Leadership meetings

Meetings of representatives from the seven sites in the Wipro SEF program occur monthly to share best practices, plan strategic initiatives, and share progress. The annotated agendas for the April and May meetings are provided here.

Monthly Meeting Agenda
Tuesday, April 16, 2024
11 AM – 1 PM (EDT)

Join Zoom Meeting
https://umassboston.zoom.us/j/99914434497
Meeting ID: 999 1443 4497
Passcode: 973499

1. Total Eclipse reports – April 8, 2024 – who got to observe; where; how was it?
2. Cross-site conferences
   a. MO & CA
      1. How many Fellows plan on attending?
         a. TX – 3 to MO; 3 to CA
         b. CA – 1 to MO
         c. MO – 4 fellows to CA
         d. NJ – 3 to CA
         e. FL – 2 to CA
         f. NY – 3 to CA
      2. Plans at site?
      3. Logistics?
         a. Transportation to MO, CA
         b. Transportation to site (car, uber)
         c. Hotels
         d. Dinners?
         e. Additional costs
      4. How can we make this worthwhile?
   ii. TX - sharing out at our annual dinner
         i. What is transferable?
         ii. MO – asking Fellows to take short videos
         iii. put them out on website
         iv. what else happens outside of MO
         v. NJ – next meeting is in September
         vi. Short video?
         vii. Wipro – Feedback for June meeting
         viii. Meeting with all visiting Fellows in a Zoom meeting

3. DSC – NSELA in July?
   a. 800-1000 members
   b. College Faculty, District leaders, Coordinators, Cs^3,
   c. PD for leaders during the year – webinars, AAAS, NSTA, monthly
   d. 2 F2F meetings – with NSTA in spring; one in the summer
   e. Summer – 3 to 5 days
   f. Proposals are solicited around conference strands and themes
   g. This year, 2 people are invited to lead and will partner with Botanical Gardens in Seattle
   h. Visit nsela.org for summer institute information
   i. Peer reviewed journal (Science Educator) and non-peer reviewed newsletter
   j. Meghan, Tammy, YES
   k. Meera – offer for next year where it does not conflict with this year's plans
   l. Who gets to go? DSCs – yes; IHE - ?
4. Updates from sites
   a. TX – 40 fellows at last night's meeting; STAR test going on;
   b. NJ – evening with presentations of 2-years; 3 formats – posters and roundtables and workshops; Phase 2, cohort 2 proposals will be coming in during the summer; AERA presentations on SNA
   c. FL – 4 proposals – Phase 3, C2; two year projects; met with team leaders; U of S Florida; one on ones with each team;
   d. NY – 8 fellows at NSTA; Success for them; working on projects;
5. Other cross-site interactions
   a. ELL
   b. TX – teaching science in Spanish
   c. Climate and sustainability
   i. India?
   d. Gardening
   i. TX – ISEA conference;
6. Book updates and progress
7. Website updates
8. Upcoming visits
   a. MO – May 4
   b. NJ – May 29
   c. CA – June 1
   d. TX – June 4
9. Trello - <10 users to keep "free" status
   a. Send a note
10. Other
11. Evaluation survey – up in late April

Monthly Meeting Agenda Tuesday, May 22, 2024
11 AM – 1 PM (EDT)

Join Zoom Meeting
https://umassboston.zoom.us/j/99914434497
Meeting ID: 999 1443 4497
Passcode: 973499

1. Cross-site conferences and updates
   a. MO report

Jonathan	Lee	CA
Jeremy	Hesse	TX
Krystal	Rising	TX
Kellie	Burchfield	TX

MO report from Meera and Linda:
Linda:
We had a conference in early May. There were Cohorts 4 and 5. We had 18 fellows from MO, 3 fellows from TX, and 1 from CA and Arthur.
The conference went well, and the agenda was packed. All the presentations were great, and Arthur gave a keynote speech.
All the teams worked hard on their collaborations and kept things consistent. There was focus on data collection and graphing.
Prior to this Mathematics and Science component didn't really interact much but now they were able to integrate their content better.
Meera:
I was also impressed by how much the collaborations have improved. In the beginning they were really struggling but in the second year they figured out a way to work well together.
We had two small districts, and it made a really big impact in their schools.
We also see in the incoming cohort that these two schools are really working on their interactions.
Need to consider how we can work on a district transformation as the schools are small.
Arthur:
The most important thing that having TX and CA attended the dynamics was changed. The warm and cool feedback worked really well. Felt good about the cross-site conference.

b. CA – June 1

First Name	Last Name	Site
Nicole	Holman	FL
Larry	Plank	FL
Kelli	Anthes	MO
Melissa	Hundley	MO
Brea	James	MO
Bryan	Bolton	MO
Alison	Mahfouz	NJ
Janine	Hogel	NJ
David	Kleiner	NJ
Alicia	Ricks	NY
Vittoria	Condello-Vessecchia	NY
Monica	Hatley	TX
Faith	Milika	TX
Brittney	Preston	TX
Arthur	Eisenkraft	MA
Anne	Gurnee	Other

CA Conference: Tammy and Preetha

Preetha shared a draft of the conference schedule.

Tammy went through the agenda:

Starting at 8:30 with a breakfast

Then we'll do a quick welcome and community builder to understand where all the attended are from

We'll divide our participants into 3 break-out rooms. In each of the groups we'll have California participants and a visiting group for 1 hr presentations

The CA fellows will have posters for the rooms and attendees can see all of the presentations

They'll go back at 11 and have more presentations.

Then we'll have lunch

Then after lunch we'll have more presentations.

We'll be mixing the groups throughout the day to make sure that people get different perspectives.

1:30-2:15 we'll talk about why Teacher Leadership matters and share some research on it.

Arthur will follow with reflections and comments.

And then we'll present the graduating cohort

We'll have a feedback survey, but we are open if Ann wants to add any questions

Later we'll have a cake and celebration for the graduating cohort. Arthur will give out the certificates. So, then visitors can have plenty of time to get to the city and do what they need to do. This schedule has been sent to all the principles, and district coordinators, etc. We'll have school administrators.

Arthur: The feedback survey- who is it for?
Tammy: We are hoping that all the participants (including administrators) will take it
Arthur: What do we want to find out?

- What was the value of the conference?
- What did you learn from the participants?
- What are the key takeaways:
- What did they learn that was different and the same?
- What things that they could apply to their role?
- How to keep the community working together?
- What do you want to share with your colleagues?

Arthur:

1. A short survey that they do right after the conference
2. With travelling people can ask a different types of questions
3. Have a dinner with some of the attendees and ask them questions. For example, what they'll take back and share with other people?
   For CA, what is the benefit of all of the guests, what was the value for your fellows? Really liked having the other perspective

Arthur: How do we figure out this survey?
During conference survey and after conference survey

Preetha: We can identify 3 main open-ended questions:
A question related to this experience.
Another one what were their takeaway.
What did they learn that was different (some of the actionable things)?
How do you want to build on it?
What sort of avenues you would build from the future community building

Arthur: Maybe we can ask him some quick questions and then follow up with an open-ended follow up questioner.

Tammy: I want to know from all the participants

i. How do we find out (i.e. document) value for CA and visiting sites?
ii. NY – Sept 28

Arthur:
Based on the feedback from CA we'll need to figure out about the event in NY

2. Upcoming events
   a. Texas – June 4

Ratna: We are having annual dinner. It is not the usual conference.
We'll get an update from our groups.
Arthur will attend and speak and some other groups will come as well.
I'll want to talk about the new events. I'd like to have a full day conference next June.

Arthur: Maybe what your role should be to use the network you have of 5 districts and explore what's going on in their districts and what workshops they'll have. You can learn from each other and figure out what you can do to support the efforts in the districts.

b. New Jersey – June 29

Emily: The group that will be in CA will present. We asked people if they want to do a workshop, round table, or poster. We mostly got round tables and posters in response. I think it will go well.

c. NSELA – July 16-18

Eric	Lewis	CA
Fawnia	Schultz	FL
Marilyn	Decker	MA
Douglas	Dias	MA
Sarah	Smith	MA
Deena	DePamphilis	MA
Patricia	Mcgaffigan	MA
Arthur	Eisenkraft	MA
Susan	Bartol	NJ
Mary	Goffredo	NJ
Regina	Borriello	NJ
Carmen	King	NY
Aimee	Ferguson	NY
Leana	Peltier	NY
Pam	Pelletier	other
Tamara	Majors	TX
Faith	Milika	TX

i. Any IHE attending NSELA?
ii. Focus on Climate Change education
iii. Time during meeting for work
iv. How do we leverage?
v. How do we find out (i.e. document) value for DSCs

Arthur: I've never been to this conference. I offered an opportunity to some of the districts to go to this conference. The topic will be Climate Change education. I will be there as well.
Again, the question is, what do we do? We'll bring all the coordinators together face to face, but how we'll leverage it for them? What should we be doing while we are there?
Maybe have a zoom call with them to discuss what they learned after the conference.
Brook does a 1-year leadership institute for DSC who will tailor it to their needs.

3. Cross-site interest groups
   a. ELL workshop on Thursday – Preetha
   b. Gardening
   c. Climate
4. Plans for 2024-2025 from sites

Arthur: NY had their Cohort 2 meeting.
FL: We had our celebrations. We had great time. We had the presentations that are wrapping up and the new ones, each of them provided info to help conversations. As all the cohorts are in different situations. We asked our teams to present at the National conference. Some of our fellows submitted to NSTA conference.
MO: Meera: We have started on our recruitment. We have 16 applications, and we have people from the same districts we have this year and a private school. We feel pretty good about this new group.
NJ: Emily: We sent out our recruitment info. We are looking at some increase in numbers so we are interested to see what the response will be.
TX: Ratna: We are still not clear about our plans. Waiting to see what we can add to the current projects.
CA: Tammy: We are still recruiting Wipro traditional Some of our districts are kind of small. We have 11-12 applications that look strong. We'd like to have about 20 participants. We need to have some time with Arthur to see how we can recruit from elementary schools.
For the school leaders program the recruitment is challenges, so I might to extend the recruitment into the fall, as a backup plan.
5. Book updates and progress
Arthur: Thank you for updates and some changes are required. I'm working on that. One of the big changes that I'm working on is in the chapter where Meera contributed about what university people do.
6. Evaluation Survey – Anne
Anne: Working on evaluation Survey and got some response. Can't share anything yet. Also staring on interviews. Starting to interview some of the DSC and administrators. Has scheduled interviews from each of the states. Next, will interview university leaders to see how the year has gone for each of the states.
7. Website
Arthur: Need to find out why it is not available yet.
8. Quarterly Report – June 2024
   a. Additions?
   b. How to best communicate our success?

Arthur: We'll put out the template on Slack and you can ask questions.

9. Other

CALIFORNIA- STANFORD UNIVERSITY

Authors: Dr. Preetha K Menon; Dr. Tammy Moriarty

Executive Summary Statement

The CA Wipro Team's vision for developing teacher leadership in the Wipro SEF Program focuses on developing leadership practices and broadening educators' perspectives beyond the classroom by applying their leadership skills within their school and district contexts. To meet these goals, the CA Wipro Site continues to offer the traditional Wipro SEF Program to science teachers from the five partner school districts. To further support the partner school districts, the CA Wipro Leadership Team has created specific plans for each district based on their needs. Lastly, the CA Team completed its first Wipro School Leaders Program, which brings together school leaders from across the five districts to build their capacity to support high-quality teaching and learning, increase equitable opportunities, and support the Wipro Program's goals.

The goal of the CA team is to develop each district's collective capacity to advance high-quality science teaching and learning in their districts that align with NGSS and reduce the persistent inequities that pervade science education. By addressing the work at these three levels—teachers, district teams, and school leaders—the CA site is working towards the goal of district transformation.

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Summary of Current Project(s) and Goals

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Progress and Highlights (Selected/Highlighted Projects)

Reflections from Cohort 4 Fellows at the end of the last PL Session

1. How prepared do you feel to practice leadership in science at your school/district (i.e. for your students and/or lead other teachers, etc.)? What topics or ideas during the Wipro fellowship helped you? Please explain.

"I feel very prepared to practice leadership in science at my site and district, and just the idea that "leadership is not a title or position but an action or something that you practice" has grounded me in my belief that I am a science and teacher leader".

"Fairly prepared. I feel more prepared regarding students, probably as a result of my GPS project having a student focus. Our discussions on and use of reflective practice helped me develop and design my project and pedagogy. The concept of "from the balcony" has also been helpful for contextualizing issues on campus."

"I feel prepared to practice leadership in science at my school and within my district. I think the part that helped the most was getting to experience (for the first time in my educational career) professional development that allowed us to dig into real research, apply our experiences and ideas, and collaborate authentically in a way that made us feel valued and trusted as professionals. I want to bring that feeling and that level of collaboration to any meetings or PDs I have the opportunity to lead. I also appreciated the deeper understanding I was able to reach about K-12 science, talking about rightful presence vs inclusion, and the learning we did around leadership practices."

2. How did this fellowship help you in understanding the teaching of multilingual learners? Please explain.

"I love the idea of creating an information gap and giving students a reason to need the vocabulary and then providing it. Science is such a natural fit with language learning and while there were some

similarities in what we did in Wipro and the work we have been doing in my district, our cohort was able to focus more on research and the quality of language interactions and supports (vs maybe receiving a list of curated language interactions or structures to implement without digging into the content or circumstances that make the interaction impactful for students)."
"The Wipro fellowship deepened my understanding of teaching multilingual learners. I learned to celebrate diverse cultures, use realia, provide scaffolds, and use visuals for comprehension. I also learned that all students benefit from MLL scaffolds and strategies. Tailoring lessons with hands-on activities and peer collaboration that is genuine is also key. This program reminded me of a lot of the multilingual learner strategies that I was taught in my credential program and gave me new insights to keep in mind when teaching Science to multilingual learners."
"I think just really trying to see lessons from different points of view and that what I think might be a simple idea is actually very complex if you don't have the background to support it. It also made me think that I have more students that could benefit from these strategies of teaching than just my MLLs."

3. What would you say if you were to describe your experiences to a potential Wipro fellowship applicant?

"The Wipro fellowship was an enriching experience that drove deep into innovative teaching practices, especially in STEAM education and leadership. It offered practical strategies and a supportive community of passionate educators. Through workshops and collaborative projects, I transformed my teaching to be more engaging and effective. I highly recommend the fellowship to educators seeking to make a meaningful impact in their classrooms, school sites and districts."
"This has been the most impactful professional development that I have ever done. I am so appreciative of the topics we have covered, the community of learners, and the excellent leadership."
"I would say that the opportunity to work with other people from nearby districts and at different grade levels is invaluable."
"Best professional development I have ever experienced. The learning, the support, the feeling of being treated as a true professional, and the ability to be inspired and pursue and develop different avenues of this career are things you cannot get anywhere else. This experience has created a culture of inclusion with engagement and inquiry through research and shared experiences."

GPS posters and presentations

Throughout the second year, our approach involves providing individual mentoring and intentionally delivering differentiated support to our Wipro Fellows. We aim to empower each teacher to thrive in their GPS project and ensure they receive ample support tailored to their unique needs. This emphasis on individual empowerment contributes to the effectiveness of our transformative initiatives. Following are the fifteen titles and abstracts of our Cohort 4 fellows.

Fellow	District	Title	Abstract
Jonathan Lee	Presidio Middle School SFUSD CA	**"Developing a Food Waste Management and Education Program"**	The current world population is over 8.1 billion people, and each individual relies on natural resources to survive. Another staggering statistic is that up to 40% of food is wasted in the United States. The goal of this project is to attempt to educate our student population and school community about the consequences of food waste and how they can help reduce Presidio Middle School's contribution to food waste as it relates to overall human use of natural resources (7th grade curriculum) and the contribution of food waste to climate change. We are attempting to accomplish this by developing and sustaining a Food Waste Education and Management Program called Precology, which is a lunchtime club comprised of students from different grade levels. With our initiative, we are also empowering students to use the scientific process to address a real world problem and helping them to develop leadership and communication skills as they try to educate our school population.
Kendall Bell	Willow Glen Middle School San Jose Unified School District CA	**"Cultivating Confidence and Community: Supporting New Science Teachers in Their Early Career"**	This project involved regular meetings and workshops with new science teachers to discuss their challenges, share best practices, and brainstorm solutions. I worked with three new teachers to develop research based individualized action plans to address their specific needs and goals. The project included observation and feedback sessions where the new teachers were encouraged to reflect on their teaching experiences, identify areas for growth, and seek out opportunities for further learning and development. By fostering a culture of continuous improvement and support, the project aimed to empower new teachers to

			become confident, effective, and reflective educators. Overall, this project aimed to provide new science teachers with the support and resources they need to navigate the challenges of their early career at the site level by strengthening the community of teachers in the department and tailoring leadership practices to best support them. Through this project, I have felt more inspired and empowered as a leader to help support new teachers become effective and reflective science educators who are also committed to continuous professional development and lifelong learning.
Kendrick Chow	Ruth Asawa School of the Arts SFUSD CA	**"Exploration of the AI usage in the classroom to support evidence-bas ed arguments"**	In the past few years, Large Language Models (LLMs) significantly impacted the world around us, including the field of education. According to Pew, while 90% of Americans have heard some form of AI, one third of those surveyed can correctly identify situations where AI is used in the world around them, and 88% of Americans show an equal or higher level of concern than excitement over the technology. Specifically in the classroom, 19% of teens ages 13-17 who know about ChatGPT have used it for schoolwork, approximately 13% of all teens in the United States. With this new technology comes concerns about academic integrity, creativity and originality, the amount of additional learning needed to better understand this new tool and its place in society, and the future of learning itself. To begin to address these potential concerns, this GPS project followed a "5e" approach to introducing students to LLMs, their limitations, the ethical boundaries that teachers and students currently forsee with it and the responsibilities that come with its

			usage, and the leveraging of LLMs in the classroom to approach the improvement of their evidence-based arguments.
Lisa Ernst	Alice Fong Yu K-8, SFUSD CA	**"Sustainable Outdoor Classroom through the lenses of a Maker/STEAM/Tinkerer"**	Within SFUSD, there are numerous school gardens funded through the San Francisco city "bond," system. In the 90s, at Alice Fong Yu K-8 (the first Chinese Immersion Public School in the Nation), a school garden was developed through Arden Bucklin-Sporer, the executive director of San Francisco Green Schoolyard Alliance. In 2003, the AFY K-8 School Garden was awarded the Beautification Award, and then in 2016, the school received the California Green Ribbon Award. With these acknowledgments, the school was able to enhance and define two outdoor spaces: A. raised growing beds with shelter and shade, and B. an outdoor cooking space with five chickens. Yet, there is one space that is unutilized, an outdoor space that has the potential to create a culture of inclusion through engagement and inquiry for the students. Using the lenses of Makers, STEAM learning and Tinkerer, I am creating an outdoor classroom that is sustainable through various avenues. Utilizing a range of funding and providing inclusion and

			accessibility through English/Cantonese, I aim to provide all my students a platform that supports the growth mindset of a Maker/STEAM/Tinkerer.
Ann Hughes	SFUSD	**Navigating Teacher Leadership During Uncertainty**	Amidst the whirlwind of changes and uncertainties that swept through our school this year, I navigated the shifting tides with my various roles in the GPS project. With increased turnover at the administrative leadership level, I anchored myself to the principles of distributed leadership. As a part of a team of committed teachers and other community members, we steered our collective efforts toward stability and growth. I took on several formal leadership roles within instructional planning, science leadership, and Union Leadership. I also found myself in informal roles of mentorship, advocacy, and community organizing through science teaching. I focused on three early career teachers who I mentored throughout the year. I also shared an end-of-year project across six cross-grade Buddy Classrooms, hatching and releasing butterflies in our school garden. These roles and projects helped in creating some stability in a challenging year. The various roles I filled provided support and

			helped to grow the capacity and confidence of our staff.
Anjana Amirapu	SFUSD	**Engaging High School Students with Citizen Science and Experimental Design through Student-Driv en Inquiry -Based Surveys of Ant Diversity**	Despite their ecological importance, ant species diversity throughout the globe is severely understudied. Given the high volume of ecosystems to study, surveying ant diversity is a problem that can be solved through citizen science, a collaborative effort in which scientists and students collect and interpret ant data. The goal of my GPS project as a Wipro Teacher Fellow was to create a long-term model in which students develop their questions about ant diversity, utilize their own collection and data analysis methods, and craft their conclusions. In this pilot study, one hundred 10th through 12th graders in an urban high school environment use ant baits to collect and record long-term data on ant diversity throughout different locations on their high school campus. They then analyze and visualize the data they collected and reflect on changes in their understanding of the importance of ant species diversity and the ecological importance of ants in their environment. Through their reflections, I hope to gain an understanding of how

			inquiry-based research helps students improve their data analysis and experimental design skills and helps students become more college and career-ready, one of San Francisco Unified School District's goals.
Bety Camacho	Westmont High School Campbell Union High School District CA	**Providing an Equitable Learning Environment: Including Experiential Learning, Students' Cultural & Lived Experiences, and Assessment for Self-Paced Learning.**	This project explores the journey of a new teacher as I navigate the complexities of serving diverse learners with various educational needs, languages, cultural backgrounds, and socioeconomic statuses. Incorporating experiential learning (hands-on activities), students' cultural identities & lived experiences, and assessment for self-paced learning have given me a solid foundation to effectively help and serve all of my students. I aim for my students to become more involved in their learning process and gradually gain confidence in what they are expected to learn. Overall, I sincerely hope that all students, particularly students of color, are empowered to become lifelong learners and critical thinkers of science. It was through constant reflection on teaching practices, analyzing if students were assessing content material, adapting curriculum, and carving out time in the classroom to do constant 1:1 (student: teacher) for check-ins that have shone light on how I can have a sustainable teaching life, continue to shift my classroom to be

			student-centered, incorporate equitable teaching practices for all of my students including multilingual Learners. Ultimately, I want to have a toolbox of resources and ideas that I can share with new teachers.
Brenda Valine	Baker Elementary School Moreland School District CA	**From Science Fair to STEAM Night: Refreshing Community Science Engagement"**	Many of us have experienced a standard science fair in our education. The scene of tri-fold project boards lining cafeteria tables has been a staple in education for decades. Amidst the adoption of the NGSS science standards, a new curriculum, and a push for STEAM activities in the Moreland school district, there was a need to update the elementary school science fair for our current environment. The result was my GPS project, a new approach to engaging the K-5 school comm unity through science.

Erica Paisley	Baker Elementary School Moreland School District CA	**"Supporting Teachers with STEMscopes: The Importance of Teaching Science in Elementary School"**	Moreland School District adopted a new science curriculum, STEMscopes, several years ago, but has been having a hard time getting elementary teachers (K-5) to embrace change. Many teachers, especially in primary grades (K-3), do not feel that they have enough time in the school day to teach science due to the emphasis that is placed on reading, writing, and math. This led us to create a District Science Committee with past and present Wipro fellows, to help elementary teachers understand the importance of teaching science consistently using STEMscopes. This project aimed to support teachers through a series of four optional professional development sessions, one-on-one support, and the creation of STEMplates (unit plans). Through this project, teachers became more comfortable with the curriculum and teaching science on a more regular basis.
Jeannie Son	Landels Elementary School Mountain View Whisman School District CA	**STEAM Powering K-2: Building STEAM Literacy with SIOP and Buddy system.**	Often overlooked is how educators lay a STEAM foundation for our K-2 students. Instructional methods delineated in the Sheltered Instruction Observation Protocol or the SIOP model (research-based) consistently address the academic needs of all learners, including Multilingual Learners (MLLs). Since first and third-grade STEAM classes matched on the master schedule, my upper-grade STEAM colleague and I planned three lessons in physical science that would culminate with Carnival Game Day - my project. Focusing on comprehensible input (SIOP) helped us identify and highlight the best practices to utilize consistently. We collaborated on lesson planning, outreach to

			leadership and the master schedule committee, and the district STEAM team for feedback and support. My additional goal was to provide the language skills needed by a wide range of MLL students with specific language needs. This project helped me understand what students learned (or not) based on my instructional focus, enabling me to hone ongoing instruction. The methods we used to build STEAM knowledge in our youngest students helped us identify the pedagogy needed for effective instruction that results in successful learning. While our work faced numerous challenges in accomplishing this goal, this project helped me see viable openings for leadership through advocacy.
Jodie Sheffels	Bessie Carmichael Pk-8 SFUSD CA	**Developing a Big-Little Buddies Model to Build Coherence and Joy in Science**	At a split campus PK-8 school, opportunities for professional collaboration regarding vertical alignment of curriculum and peer-to-peer learning are limited unless intentionally created. This project is designed to remedy those limitations. A pilot “Big-Little Buddies” program was created between a 6th grade and 2nd grade classroom. Students participated in 3 classroom visits in which students conducted hands-on explorations and design challenges in mixed-grade groups. A celebratory “Science Night” was held at the end of the year for the families and students who participated in the program. Impacts included increased confidence and enthusiasm for the 2nd grade teacher taking on increasingly ambitious science lessons, experiments and projects. Second grade students experienced more rigorous and exciting science lessons. Sixth grade students had the opportunity to build

			leadership and academic ownership by explaining concepts to younger students
Jordan Garvey	Theuerkauf Elementary School Mountain View Whisman School District CA	**STEAMing Ahead: Enhancing Response to Intervention with Science Literacy**	STEAMing Ahead: Enhancing RTI with Science Literacy", integrates Science, Technology, Engineering, Arts, and Mathematics (STEAM) into Response to Intervention (RTI). Collaborating with the STEAM teacher and other third-grade teaching partners, the project merges science and literacy in RTI small groups. The goal was to create unit/weekly lessons that aligned with personal collaboration goals and district science objectives. Through focused collaborations, specific literacy concepts enriched students' understanding. Tailored literacy readers were created, supporting cross-disciplinary learning and enhancing students' literacy and STEAM skills. This initiative empowers students and enriches their grasp of STEAM within RTI.

Meghan Perfect	Monta Loma Elementary Mountain View Whisman SD CA	**Creating the Leopard Lab: Innovation, Creation and Risk-taking**	This project involves the conversion of the old elementary school computer lab into an innovative makerspace, dubbed the "Leopard Lab". The space was transformed into a hub for exploring, creating, and risk-taking. A comprehensive resource launchpad was established for teachers, offering curated activities, materials management guidelines, and a streamlined sign-up system for space utilization. Activities available for use in tK-5th grade include hands-on Math activities, STEM challenges, and activities integrating STEM with literacy and Social Emotional Learning (SEL) topics. The project culminated in a professional development session allowing teachers to experience makerspace activites and empowering them to effectively utilize the space. Following the professional development session, the Leopard Lab was officially open for use. the space. Following the professional development session, the Leopard Lab was officially open for use.
Sarah Lofgren	Leland High School SJUSD CA	**The effect of direct action activities on learning, engagement, and attitudes towards the environment and environment alism**	Many people experience climate anxiety and disengage from the issue as a psychological coping strategy. To investigate and address this, students participated in actions aimed at a variety of environmental concerns. Students' feelings about humanity's role with respect to the environment were assessed at the beginning of the year using an Environmental Attitudes Inventory survey. Throughout the year, students engaged in individual and group projects requiring them to take direct actions that had measurable positive effects on the environment. Following these projects, students were asked to reflect on the impact of their actions. At the end of the academic

			year, students were re-assessed to see if participation resulted in any shifts in attitude.

Presentations Wipro Fellows from other Wipro Sites

Shannon Arbildo	Bubb Elementary School Mountain View Whisman School District CA	**Literacy in Science: Linking Reading and Writing Instruction**	Creating literate adults is a key responsibility of our schools. Many schools do great work with literature, but the need to use informational text has to be addressed. This problem has been the motivation for my project. Using informational text, identifying the main idea and supporting details, and explaining one's thoughts in writing are valuable skills for all students. In my project, Literacy in Science: Linking Reading and Writing Instruction, I decided to focus on having my 5th-grade students focus on identifying the main idea and supporting details of informational text and use that information to help answer questions using the Claim-Evidence-Reasoning (CER) strategy. By the end of the project, my students were better able to write claims and find evidence based

			on the information they could identify from the text. In the following academic years, I plan to continue building strategies for my students, starting in 4th grade, to engage with informational text.
Kelli Anthes AND Bryan Bolton	Math - 8th grade Hallsville Middle School Hallsville R4 MO	**"Bridging the Gap: Relevant Data in Math and Science"**	This presentation will explore what happens when eighth grade students collect, analyze, and interpret their data. This process bridges both Math and Science classes. We created a cross-curricular activity between our eighth grade math and science classes. Students began by analyzing and matching scenarios, tables, and graphs of distance versus time in math class on day one. Students then hypothesized, investigated, and collected distance versus time data in science class on day two. Students collected this data using bubble tubes, hot wheel cars, tumble cars, and a metronome. On day three, students analyzed the data in math class by graphing and summarizing their results. Students also discussed what the graph displayed and how it was relevant to the motion of the car over time. This activity incorporates both Missouri math and science learning standards. In science, this activity acted as an introduction to force, motion, and energy transfer. In math, this activity helped students use functions to

			model relationships between quantities and compare data from two quantities using the same subject.
Nicole Holman	Biology 9-10 Hillsborough Hillsborough FL	**Crafting a 3-Dimension al Storyline Curriculum for High School Biology**	Exploring the implementation of a 3-dimensional Storyline Curriculum can revolutionize high school biology by captivating students and fostering scientific literacy. The Storyline Curriculum integrates scientific content with science and engineering practices (SEPs), aligning with the Framework for K -12 Science Education in the Next Generation Science Standard (NGSS). This article will explore the developmental process involving a step-by-step guide, including identifying core ideas, grouping into content chunks, and anchoring phenomena to create cohesive storylines. Following the 5E model, instructional sequences emphasize engagement, exploration, explanation, elaboration, and evaluation, promoting conceptual coherence. The integration of Science and Engineering Practices (SEPs) and Crosscutting Concepts (CCCs) ensures dynamic student engagement and a deeper understanding of scientific principles (National Research Council 2012). By addressing prior knowledge and

			misconceptions, the curriculum establishes a solid foundation for effective learning. This article highlights the potential success indicators in the classroom, with teachers attesting to the transformative impact on student engagement, critical thinking, and a meaningful understanding of scientific concepts.
Vicky Condello-Vessecchia and Alicia Ricks	3rd grade Jefferson Nw Rochelle NY/ K-5 Technology /Computer Science Jefferson Elementary School New Rochelle District NY	**Computer Science and Social-Emotional Learning Meet**	The Jefferson Elementary School Wipro Science Education Fellowship team is comprised of a multidisciplinary team that has brought educators together to share ideas to introduce computer literacy, digital fluency, and STEAM (science, technology, engineering, arts, music) while incorporating Social Emotional Learning (SEL) to all of our stakeholders. This project enveloped the collaboration of administrators, community members at large, our districtwide Science coordinator, our advising Science teacher leader, bilingual school psychologists, elementary teachers, our computer science teacher, and the high school robotics team through experiential opportunities for our students and families. School-wide activities included an open house, a Read-A-Thon, lunch bunch club, 2 grade specific (K-2, 3-5) tinkering events, assemblies, and professional development workshops. Attitude and knowledge surveys were used to obtain data to identify student and family understanding of digital fluency, computer

			literacy, and the connections across social-emotional learning competencies. The continued Wipro program was data-driven to ensure sustainability for all stakeholders.
Brea James and Melissa Hundley	9-12 Science (Physical Science, Chemistry, AP Physics) 9-12Mathemati cs (Algebra 1, Geometry, Algebra 2) Boonville High School Boonville R-1 Schools MO	**Gettin' Graphy With It**	This presentation will investigate various situations that can be modeled graphically. This session will explore various methods for incorporating graphing into the math and science classrooms. Topics will include motion graphs, discrete versus continuous graphs, linear and exponential growth graphs, and linearizing graphs.

David Kleiner And Janine Hogel And Alison Mahfouz	Math Grades 3-5 Clifton School 13, Math Grades 3-5 Clifton School 13 4th grade - all subjects including Science and Math Elementary School One, Grade 7 Science East Brook Middle School, Clifton, NJ	**Once a Wipro Fellow, Always a Wipro Fellow: Ten Years of Teacher Leadership**	As members of the first and second cohorts of the Wipro SEF at Montclair State University, three New Jersey educators compare and contrast the twists and turns of their decade as Wipro Fellows. As our careers traveled in unexpected and unplanned directions, we consistently returned to the Wipro process of collaboration, reflective practice, and authentic instructional practices. Our experiences vary, our mentors are different, and our areas of instructional focus have changed, but we return to the Wipro model to continue to develop as teacher leaders and reflective practitioners. The Wipro SEF process informs our progress as we move forward in our careers.
Monica and Brittney and Faith	Elementary STEAM & Science Lancaster ISD	**Lancaster ISD Professional Learning Communities**	This presentation will discuss how Lancaster ISD WIPRO Fellows collaborated to develop and facilitate Professional Learning Communities (PLC) for novice or new to the content area, STEAM, and 3rd- 5th grade elementary science teachers. The focus of the PLC was to develop teachers' science/STEAM content and pedagogical knowledge necessary to help educators become more skillful in facilitating student learning to a greater degree.

End-of-Year Conference, June 1st, 2024.

The CA Wipro End of Year Conference occurred on Saturday, June 1st, 2024, from 9 am-3:00 pm at Stanford University. All past fellows, district science coordinators, school leaders, and district leaders in CA were invited to attend the event. This was the first in-person conference since 2019 where we had 15 guests from the other Wipro sites (Florida, Massachusetts, New York, New Jersey, and Texas) including Wipro fellows and district coordinators. The day began with a short opening session by Dr. Tammy Moriarty, CSET's Associate Director. Participants were then excused to

various breakout rooms to begin their Presentations. Cohort 4 Fellows presented their GPS presentations, and the Wipro guests presented their latest projects. The presenters were divided into 3 smaller groups, with each fellow assigned to a specific room as well as a specific time slot. The CA Team designed the schedule in such a way that allowed district coordinators to be able to see as many fellows from their districts as possible without overlapping times. In between GPS Presentations, participants were given time to view GPS Posters in an uncurated Poster Session. This enabled fellows and guests to read and give feedback to teachers using sticky notes, that they could not hear in other presentation rooms. The day concluded with a talk on Teacher Leadership by Dr. Tammy Moriarty and Dr. Arthur Eisenkraft and the presentation ofcertificates to the CA Wipro fellows.
The conference program linked below shows the full agenda for the day.

June 1, 2024

Wipro SEF

End of Year Conference

Stanford University, CERAS Building
First Floor, 520 Galvez Mall, Stanford, CA 94305
RSVP HERE https://tinyurl.com/5xzjn352

8:30 - 9:00 am	Check-In & Continental Breakfast *Lobby*		
9:00 - 9:20 am	Welcome & Introductions *Rm. 101*		
9:20 - 9:30 am	Transition & Break		
9:30 - 10:30 am	*Rm. 108* Erica Paisley (Moreland) Anjana Amirapu (SFUSD) + 1 Guest/Group	*Rm. 204* Jeannie Son (Mt. View Whisman) Kendall Bell (SJUSD) + 1 Guest/Group	*Rm. 101* Bety Camacho (CUHSD) Jodie Sheffels (SFUSD) + 1 Guest/Group
10:30-11:00 am	Poster Showcase + Feedback *Rm. 108*		
11:00 - 11:45 am	*Rm. 108* Sarah Lofgren (SJUSD) + 1 Guest/Group	*Rm. 204* Brenda Valine Chau (Moreland) + 1 Guest/Group	*Rm. 101* Shannon Arbildo (Mt. View Whisman) Lisa Ernst (SFUSD)
11:45 am - 12:30pm	Lunch *Lobby & Roof*		
12:30 - 1:15 pm	*Rm. 108* Meghan Perfect (Mt. View Whisman) Jonathan Lee (SFUSD)	*Rm. 204* Jordan Garvey (Mt. View Whisman) + 1Guest/Group	*Rm. 101* Ann Hughes (SFUSD) Kendrick Chow (SFUSD)
1:15 - 1:30 am	Transition & Stretch Break *Lobby*		
1:30 - 2:15 pm	Teacher Leadership - Why it Matters Presentation of Certificates *Rm. 101*		
2:15 - 2:30 pm	Closing & Thanks *Rm. 101*		
2:30 - 3:00 pm	Reception *First Floor*		

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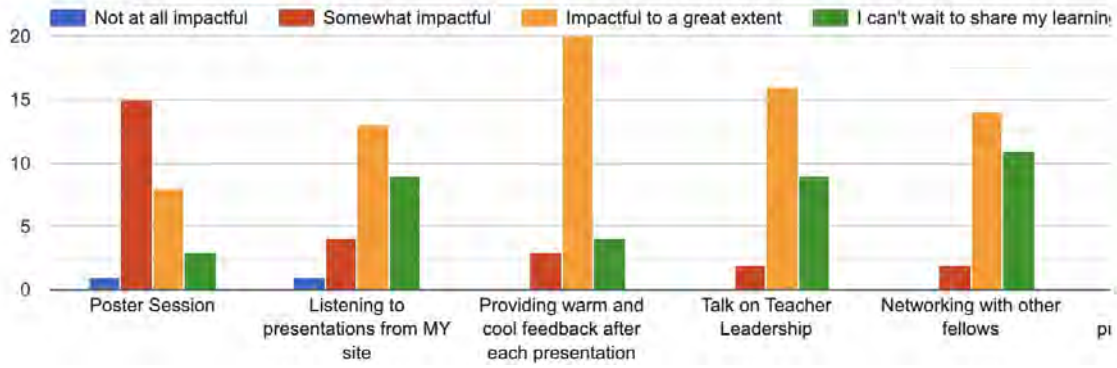
Feedback from the End of Year Conference June 1, 2024

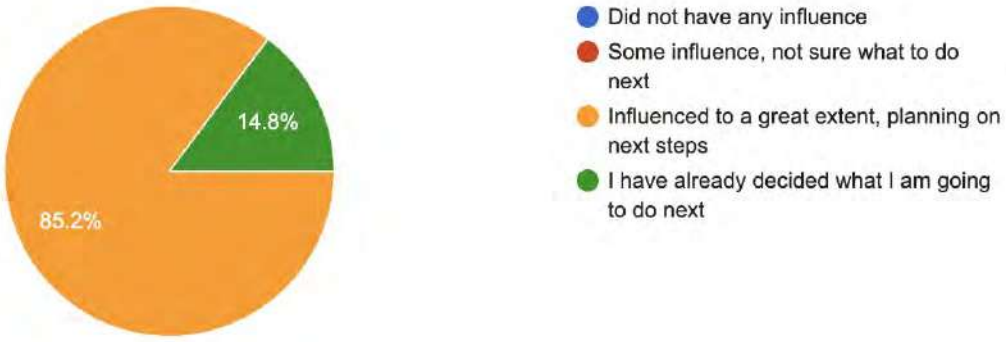
The following responses from the End of the Year conference survey were shared by the Wipro fellows.

1. How impactful were the following aspects of the conference?



2. How much in-person interaction with fellows from other sites has impacted your sense of belonging to a community among K-12 science teachers?

3. How much has the conference influenced your approach to forthcoming science teaching and leadership opportunities within your community?



4. Can you describe a specific instance where a cross-site interaction may significantly influence your teaching practice?
"Getting an idea from someone who works in a different structure can open your eyes to ideas or solutions that would be "outside the box" in my district."
"Sharing of new ideas/strategies for my classroom and also ways to take leadership skills learned and apply them."
"Different strategies based on the circumstances and needs of different sites can be applied in new ways."
"Subdividing the class into 2-3 groups… so i can interact and check-in for understanding with students who need it the most."
"I enjoyed Lisa Ernst's presentation on creating a teaching classroom outdoors and have begun to wonder where at my site we could build something like that."
"Hearing how AI can be incorporated as a meaningful learning tool."

5. How would you describe your experience to a science teacher who has not attended this conference?
"You get a lot of ideas, and when watching several presentations, you see through lines. Teachers teaching teachers is the best."
"Refreshing opportunity to hear about great work being done by other teachers. Inspiring projects that energize me to go back to the classroom & talk with district leaders."
"Encourage them to become a Wipro fellow."
"Everyone needs to get out of their little bubble and meet new people and get different perspectives. You may be surprised by the little things you hear that resonate with you."
"It was a wonderful opportunity to meet different from different backgrounds and different teaching experiences but yet be like minded in our work with children."
"I think it was amazing to hear about all the similarities in our teaching and also differences as well. The greatest impact for me is their fresh takes on topics but also I gained that feeling of if they could do, so can I! I feel more solidarity with colleagues especially when we share our stories and projects."

Wipro School Leaders Program
The Wipro School Leaders program culminated on May 1st, 2024. Professional Learning sessions focus on supporting teachers' transformative professional learning, with the professional learning sessions now shifting to a stronger focus on science instruction. and how to support multilingual learners in science.

Date	People	Activity
Wipro Fellows		
May - June 2024	Wipro Fellows + Preetha + Tammy	Ongoing coaching with Support in GPS projects

Thursday, May 16, 2024 4:30 - 6:00 pm	Wipro Fellows + Preetha + Tammy	**PL Session** Welcome & Mindfulness Wipro Pillars- Reflections Wipro End-of-Year Survey GPS Deliverables & Work Time Announcements & Closing **Slide Deck**
June 1, 2024	Wipro Fellows + Preetha + Tammy + Wipro Guests from other sites	**End-of-Year Conference** Agenda Welcome Presentations GPS Poster Sessions Certificate Presentations **Slide Deck**

Wipro District Coordinators		
May 10, 2024	Tammy + Preetha + District Coordinators	Informing about Cohort 5 applicants and appointing of interim SFUSD and Campbell High School district coordinators. **Slide Deck**
Wipro School Leaders		
April - May 2024	Tammy	Ongoing Coaching of School Leaders
May 1st, 2024	Tammy + Preetha	**In-person PL Session** ● Refresher: NGSS & 5E Vignettes ● Science Teaching and Learning for Multilingual Learners ● Presentation of Certificates **Slide Deck**
Cohort 5 Recruitment		
May 31, 2024	Wipro Fellows	Sent Welcome and Acceptance Letter to all Cohort 5 Wipro fellows
End Of Year Conference		
June 1 2024	Wipro Fellows	End-of-Year Conference Presentations - Program

Plan for the Next Two Quarters

Summer 2024		
July 2024	Preetha	NSELA Conference in Seattle, WA
July-August 2024	Preetha, Tammy, Brandi, and Janet	Write paper for science education journal IJSE
July-August 2024	Preetha, Tammy, Brandi, and Janet	Conducting a case study of three Cohorts from one site with a large percentage of multilingual learners
July-August 2024	Preetha & Tammy	Send Guidebook to Cohort 5

Vignettes

Sarah Lofgren, High School Life Science
Leland High School San Jose Unified School District.

Near the end of my third year of teaching, another teacher at my site approached me and told me about the Wipro program. At first, I was skeptical. Two years was a big commitment, and we were just returning to normal after the pandemic. Her enthusiasm convinced me to apply, and I am so glad I did. Wipro has been the most engaging and rewarding professional development experience of my career. The Wipro program has provided a perspective and experiences I would never have had otherwise. The V-CCLS projects were eye-opening. It has been years since I have been near an elementary classroom, and I have learned so much about the process that goes into planning for and evaluating such fundamental skills. Seeing how carefully and explicitly these things I had taken for granted were taught gave me new insights and ideas on how to reinforce similar skills in my classroom. It was also rewarding to reflect on teaching practice with teachers from other grade levels, as well as other high school teachers. The variety of insight that was available from people whose backgrounds included different sites, grades, subjects, and experience levels meant that there was always something unique to consider. The H-CCLS groups provided an opportunity to dig into the specifics of science teaching at the high school level in a way that I haven't found at any other professional development.

The conferences were another rewarding experience. Seeing what everyone else had been doing was inspiring, and we were proud of our work as a V-CCLS and H-CCLS group. Although that kind of public speaking event can be stressful, we had built such a supportive community that everyone was just happy to share their work. Hearing from teachers from other parts of the country helped show us what was possible and what challenges different settings can bring.

The GPS project in year two was intimidating at first. I knew that if I were going to do something worthwhile and impactful, it would take a lot of work. With the support of my coach and other fellows at the Wipro meetings throughout the year, I never felt lost or overwhelmed. I was able to grow my project over the school year, and in the end, I feel like I accomplished something that was meaningful for myself and my students. I look forward to what's next, both for me and the incoming fellows this fall!

Jordan Garvey, Elementary School Teacher,
Theuerkauf Elementary, Mountain View Whisman School District.

Navigating New Horizons with Wipro

When I joined the Mountain View Whisman School District after years of teaching, I embraced the opportunity to adapt to a new environment. The Wipro Science Education Fellowship Program became an essential part of my journey, providing invaluable support and guidance. Here are a few highlights of how Wipro has positively impacted my professional growth:

Building Connections and Support Networks: Through Wipro, I met fellow educators in various positions across my district who have been incredibly supportive. These connections have created a strong professional network I rely on for advice and collaboration. Additionally, I connected with our district coordinator, Margaret Poor, who helped bridge the gap between my school and the district. This relationship has been instrumental in ensuring that my work aligns with district goals and initiatives.

Enhancing Instruction for Multilingual Learners: Wipro has been instrumental in supporting my work with multilingual learners. By integrating science education into my literacy lessons, I have been able to create a more engaging and inclusive learning environment. This approach has significantly benefited my students and enriched their learning experiences.

Developing Leadership Skills: The program has provided numerous opportunities for leadership development. This year, I took a significant step by applying for a new position as an instructional coach, something I might not have considered without the confidence and skills I gained through Wipro. The program has pushed me out of my comfort zone and encouraged me to pursue new professional challenges.

Continued Growth and Learning: My journey with Wipro has been transformative. The program has not only supported my current work but also ignited a passion for continuous improvement. I am excited to stay connected with the Wipro community and continue to grow as an educator, always striving to enhance my practice and impact on students.

Thank you, Wipro, for this incredible opportunity. I look forward to many more years of learning and growth.

Calendar

Next year's calendar

Wipro SEF Master Calendar for 2024-2025 Academic Year

Professional learning sessions will be a combination of in-person and virtual sessions. All in-person sessions will occur at Stanford University, and Zoom links will be sent for all virtual sessions.

Thursday, September 5	5:00 PM - 7:00 PM	Induction Ceremony| in-person
Saturday, September 21	9:00 AM - 2:30 PM	PL Session | in-person
Thursday, October 17	4:30 PM - 6:00 PM	PL Session | virtual
Thursday, November 21	4:30 PM - 6:00 PM	PL Session | virtual
Saturday, December 14	9:00 AM - 2:30 PM	PL Session | in-person
Saturday, January 11	9:00 AM - 2:30 PM	PL Session | in-person
Thursday, February 27	4:30 PM - 6:00 PM	PL Session | virtual
Saturday, March 22	9:00 AM - 2:30 PM	PL Session | in-person
Thursday, April 24	4:30 PM - 6:00 PM	PL Session | virtual
Saturday, May 17	9:00 AM - 2:30 PM	PL Session | in-person
Saturday, June 7	9:00 AM - 2:30 PM	End of Year Conference | in-person

FLORIDA – UNIVERSITY OF SOUTH FLORIDA

Author: David Rosengrant, Allan Feldman, and Nancy Islam

Executive Summary

What is so wonderful about this project is that we are empowering our fellows to work on projects that they find meaningful and are encouraged to do. This combination leads to a great chance of success knowing they are supported, both financially and in terms of the leadership team. We see how the fellows are excited about the work they do, bringing in more individuals on their teams, and then sharing this work with others.

The goal of this project is to allow our fellows to apply for mini grants to support their projects. These projects are ideas from their own projects in phase 1, methodologies learned, or in peer projects they want to implement. They can apply for one- or two-year projects. The fellows learn about action research in year 1 while in year 2 they receive individualized support on their unique projects.

In this quarter, we were able to recruit our 3rd cohort of projects. We had some folks who submitted new projects as their old ones finished up. We have other fellows who are working on the second year of their project ant then finally we have a new cohort of fellows starting new projects in their district.

The fourth quarter will bring us a new"ish" structure to our professional development sessions. Like Phase 1 of the project, we have had sessions where fellows from year 1 work with fellows in year 2. We are doing that but it will be fellows who have completed their action research course year (year 2+) with those that have not (year 1). We will also have the largest number of fellows participating in this project moving forward this year.

Summary of Current Project(s) and Goals

Title: Storyline: How to use scientific narratives purposefully in science education.
This project delves into research on science instruction in high school biology, focusing on enhancing scientific literacy across diverse content areas. The approach centers on utilizing storylines—narrative-driven methods that interweave scientific content and practices into a cohesive and engaging learning experience. Drawing on pedagogical content skills such as 5E lessons, inquiry-based teaching, 3-dimensional instruction, and Socioscientific Issues (SSI), the narrative aims to connect learners to the content through personalized perspective-taking. This project is led by Nicole Holman, Phase 1 Fellow.

Title: Working Across Grade Levels to Improve Grades 3-5 Science Teaching
This two-year project brings together grades 3-5 teachers in a V-CCLS to improve the teaching of science at their school. The team is led by Tara McClintick, Phase 1 Fellow
Floyd Howze, classroom teacher, and Nicole LeGrant, Assistant Principal. The team will work together to establish a science progression for the three grades, identify appropriate curriculum materials, and implement them.

Title: Flipped classroom in advanced courses in Hillsborough County High Schools
This project is an extension of Bhagyashree Kulkarni's Phase 1 GPS project which is two separate but related projects. Chelsey Swat leads the other project. The other team members (Steven Velez Hernandez and Alan Sherburn, classroom teachers, and Khadijah Gaskins-Jones, Science Coach) are implementing flipped classroom strategy by using available videos or videos made by the teachers. The focus is advanced courses like AP, AICE and Honors classes for this upcoming year and a goal to extend this to other classes in year 2. They will disseminate their work to other high schools in Hillsborough County, and through conference presentations.

Title: Creating new teacher confidence
Chelsey Swats (phase 1 Fellow), Alan Sherburn (biology teacher), and Khadijah Gaskins-Jones, Science Coach. The aim of our project is to create more class time for classroom activities, which will facilitate learning and use traditional homework time for notes/lectures. We are all working in different content areas, so many of us are utilizing different modes of note taking strategies for content knowledge. In the second year of our project, we intend to create a training for new teachers to implement the same strategies into their science classroom, as we have had much success in our project so far. We know that many new teachers do not have many tools in their toolbox to pull from when it comes to strategies they use in their classroom. The training will help new teachers learn of

these strategies we are using in and out of the classroom.

Title: Gifted but 'Off Track': Serving the Gifted Students of a Title 1 High School Team
In this two-year project, Jacqueline Bromley, Phase I Fellow, Carolyn Graham, classroom teacher, and Aaron Melvin, Assistant Principal, is establishing an after-school club to support gifted students who have been designated either 'at-risk' or 'off track' according to Early Warning Intervention data. Teachers of gifted students often struggle with recognizing and acknowledging their gifted students' unique behaviors and characteristics; proper training of Teachers to support gifted students in their classrooms at PHS is crucial. To mitigate potentially unsuccessful outcomes, they propose that they identify and invite Gifted students to join a newly formed club that will be known as 'Above Deck'. The purpose of this club will be to support the unique social, emotional, and cognitive needs of this unique group of underserved students. They will disseminate their work to other high schools in Pasco County and through conference presentations.

Selected/Highlighted Projects

Describing one or more of the ongoing projects in a brief paragraph.
Lora Darby (Phase 1 fellow)

Title: Pasco Teacher Leader/Coach Elementary Science PLC
Project Description: Design a scope and sequence, professional learning plan and collaborative structure for a two-year Elementary Science Teacher Leader PLC for seven east side Pasco County Elementary schools experiencing high turnover. Facilitate six PLC sessions that bring 7 instructional leaders together to learn, grow, practice and model collaboratively. Part of the PLC will be an interactive book study using either Ambitious Science or Students Constructing Explanations in Science paired with our district's coaching manual Getting Better Faster. Learning and discussion from each session will include follow-up activities and modeling in classes.

Ileana Bermudez Luna (Phase 1 fellow)
Roschell Thybulle, Khadijah Jones
Title: VR in the Chemistry Classroom: Enhancing students' learning experience

This technology enhancement project will focus on developing the curriculum for the Chemistry classroom that will integrate the use of Virtual Reality (VR) for labs, simulation, and other hands-on activities. The curriculum as well as the activities that will use VR as an integral part of the lesson will be align with the Next Generation Sunshine State Standards (NGSSS) and the Science and Engineering practices. The main goal of the project is to effectively integrate innovative VR technology that will help with the following aspects in the chemistry classroom. The first year of the project will focus on curriculum development and learning VR technology. During this time, the team will also work on writing grants to acquire a minimum of thirty-five VR sets and participate in professional development opportunities. These PDs should emphasize how to effectively manage and instruct students the proper and responsible ways to use the VR sets. Then the second year of

the program, the team will work with the implementation of the VR technology along with the curriculum already developed. Finally, the results of the project will be presented to school and district personnel with the goal to spread the implementation of this approach in the chemistry classroom across the school district and eventually make this technology available to impact other STEM courses.

Progress and Highlights

We were able to bring in a series of new projects this semester where all of our groups had the chance to present at our May 4th Wipro Celebration event. We have three groups that are new projects but have had had either a 1 year or 2-year project in the past. Nicole Holman, Bhagyashree Kulkarni, and Chelsey Swats fall into this category. They are all modifying their projects to extend their work even further than had previously anticipated.

We have two groups that are progressing from year 1 of their project to year 2. Tara McClintick and the team of Jacqueline Bromley and Carolyn Graham fall into this category. Finally, we have three new groups that have not participated in the past. Ileana Bermudez Luna, Dawn Avolt and Lora Darby have all submitted projects and will be starting a new 2-year project.

Our celebration event comprised of every group either presenting what their previous work was or their goals for moving forward. What this also did was allow each group to receive feedback from one another on how they can improve upon their project moving forward. It was a very informal atmosphere which allowed collegial discussions and sharing of ideas. Not only were leaders able to enhance their projects based on feedback, but many leaders were very interested in the work of what the others were doing and wanted to take their work to their own classroom. Thus, this was another great example of increasing district wide impact.

What we have also learned is that we are going to need to modify in how we move forward this year. Though we have new projects, they were previously part of the project. Thus, they do not need to do go through another year of how to conduct research in their classroom. However, last year we only had Nicole Holman who was in that category and she is getting her doctorate with us at USF in Science education so we were able to work with her in an additional capacity. Now, we are finalizing our plans to ensure that our fellows all have opportunities to work together while their time is maximized, meaning that fellows who have participated in the year-long action research portion of our professional development do not repeat that year. Part of this could involve traveling to the site to meet the team there. Allan did this this year and found it to be very beneficial for the project.

What we are also seeing from our fellows is how they are sharing their work. Some are or will be presenting at national conferences in addition to work at their own district. We are in the process of compiling information on where they have presented their work through the quarterly reports they submit.

Plan for the Next Two Quarters

Our next DSC meeting will happen, tentatively on June 27th. From here we are going to put together our Fall and Spring Calendar. we are following a model of one in person meeting then one virtual meeting. Thus, August will be in person, September Virtual, October will be in person, November / December will be virtual. Our DSC meeting will involve us planning out those sessions and how the two groups running simultaneously will operate. We will also have two major conferences with a signification portion of our fellows presenting, the Florida Association of Science Teachers in October will be located in Tampa. We also have many teachers planning to go to the National Science Teachers Association in New Orleans in November. Thus, part of plan is to run practice talks for them to help get them prepared for their presentations, especially if it is their first one.

Vignettes

For this report we are featuring the two members of the higher education team. In the next report we will begin featuring our new cohort of Phase 2 fellows.

Allan Feldman

Allan Feldman is an emeritus professor of science education at USF. He joined the faculty here in 2009 after been at the University of Massachusetts Amherst since 1993. His research focuses on how people learn to do scientific research, and how inservice science teachers learn through action research. He has published nearly 100 peer reviewed articles and book chapters. His books include "Teachers investigate their work: An introduction to action research across the professions (2018)", "Educating Science Teachers for Sustainability (2015)", and "Dialogic Collaborative Action Research in Science Education (2023)". Allan's degrees are from NYU, Teachers College Columbia University, and Stanford University. He taught middle and high school science for 17 years before returning to the university to earn his doctorate.

Allan has been one of the higher education leaders of the Tampa Bay Wipro Science Education Fellowship Program since receiving the request for proposals from Arthur Eisenkraft in 2017. He served as principal investigator of Phase 1 until his retirement from USF in 2022. He continues to be part of the leadership team. During these past six years he shepherded the TB Wipro SEF Phase 1 Fellows through their CCLS and GPS experiences, and is now supporting the Phase 2 Fellows and their team members in their leadership projects. Because at our site we have had the same District Science Coordinators he has been able to work with them since our first year, which resulted in us bonding together into a collaborative team. Through his participation and leadership of this program Allan has seen the development of the Fellows as science teacher leaders. It has also been an opportunity for him to gain more experience with their schools and districts. In addition, it has been a growth opportunity for Allan as he's continued to develop his expertise as a science teacher educator.

Allan Feldman and Kenny Coogan (Phase 1 Fellow) at the 2023 Florida Association of Science Teachers meeting.

David Rosengrant

David Rosengrant is a Professor of STEM Education and the Campus Dean for the College of Education on the St. Petersburg Campus of USF. He joined the faculty in the Fall of 2016, thus wrapping up his 8th year at USF. Prior to USF, he started his career as an Assistant Professor of Physics Education and then was tenured and promoted to an Associate Professor of Physics Education at Kennesaw State University located northwest of Atlanta Georgia. His research is heavily grounded in physics education, expert novice differences in problem solving, eye tracking, as well as educational technologies including gamification and virtual and augmented realities. He was able to build upon his success in higher education from bring a high school physic teacher in Bucks County PA.

David joined the Wipro project at the end of the second year during the first phase of the project. This project was awarded to USF prior to the consolidation of the three campuses. Once the consolidation process started, David was invited to start working on this project. Once this project was completed, David took the lead role on the Innovation Phase of the project because of his passion in promoting excelling in the classroom and because he believes in the fellows involved in the project. He has been able to work with some at various capacities as doctoral students and fellow researchers. One such example is his work on an Augmented reality simulation with Jessica Strauss from year that took them both to Australia (see picture below).

Calendar

We will have a calendar in a few weeks after we meet with our DSCs. A site visit would be best in either August when we meet in person or October. Once we have the calendar setup we will share that information.

MISSOURI- UNIVERSITY OF MISSOURI

Author: Meera Chandrasekhar and Linda Godwin

Executive Summary Statement

The Missouri Wipro project's goal of teaching math and science in a harmonious manner will contribute to the transforming of the teaching of those subjects in participating districts. We are already seeing collaboration among math and science teachers, development of lessons that borrow from the other subject, discussion about changing the sequences in their curricula and interest in bringing in other teachers from their grade bands.

Our Wipro project has modified the initiatives of Phase I. Fellows participate as teams of 2-4 teachers from three grade bands (K-5, 6-9 and 9-12) from a given district, with at least one math and one science teacher in the team. For cohort 4 and 5, grade 6-12 teachers were recruited for year 1. K-5 teachers were added only in year 2 for cohort 4. For cohort 6 we have changed the grade band mix to recruit all grades, namely, K-12 teachers for both years. In year 1 they collaborate in V-CCLS and H-CCLS teams, anchoring their work in a research article and a math and a science educational practice. In year 2 they focus on creating or modifying four or more lesson plans that integrate math and science content. In the past quarter, March – June 2024, Cohort 4 has completed two years of work in the project. During this academic year each 6-12 teacher has worked on creating 4 or more lessons in their subject (math or science) that includes concepts, methodology, vocabulary and alignment with the other subject. Teachers have worked on collaboration within their district Wipro team and with other Wipro fellows. Cohort 5 has completed year 1, where they worked on V-CCLS and H-CCLS partnerships and created one lesson plan. They have begun planning their lessons and

math-science collaborations for next year. Cohort 4 and 5 fellows made presentations about their work during the end-of-year conference in May.
During the next quarter we will work with Cohort 5 and the newly recruited Cohort 6. We have accepted 16 fellows from four school districts for Cohort 6. After having worked with grades 6-12 in year 1 for cohorts 4 and 5 and adding on a one-year program for K-5 in cohort 4, we have changed the composition of the cohort by accepting K-12 teachers for 2 years. This change will help us compare the efficacy of the two grade-band mixes. The essential activities will remain the same, thus the first semester will consist of a V-CCLS partnership among the fellows.

Summary of Current Project(s) and Goals

The current project is an expansion of the teacher network, providing opportunities for collaboration and leadership, and focusing on collaboration between science and math teachers in elementary, middle, and high school. The project will address the challenges of teaching science and math in a harmonious manner at the middle and high school grade levels, and for some cohorts also during the elementary grades. Students often think of math as a set of rules used to manipulate abstract concepts. Several factors contribute to this thinking. Examples include terminology used in math vs science, the sequencing of math units with relation to science, the infrequency of discussion about the relevance of science topics in math units, and the differences in graphing methods used in math and science classes. The collaboration between math and science teachers is essential to the implementation of successful science and math curricula. This project will focus on having teachers develop such a culture in a systematic manner using appropriate research articles and paired Science and Engineering Practices and Common Core Math Practices.
In the first year of a fellow's participation, the project will enroll math and science teachers in teams from previous and new school districts. A team can be either from an elementary (cohort 6 only), middle (6-8), or a high school (9-12) grade band. A team will consist of 2 to 4 teachers, with at least one science and one math teacher. Members of a given team will participate in the project in the same cohort. Grade 6-12 (and for cohort 6 also K-5) fellows will work with the project for 2 years. Three cohorts of fellows will be recruited in 2022, 2023 and 2024, with up to 15 fellows per cohort. Fellows will work in V-CCLS and H-CCLS teams in Year 1 and will each develop one lesson plan that integrates math and science. In Year 2 they will work within their teams and develop 3-4 lesson plans or a module of lesson plans that they will disseminate to their and other school districts.
In Year 2 of cohort 4 (beginning fall 2023) elementary teachers were recruited from Year 1 fellows' districts as associate fellows. Elementary teachers typically teach both math and science. The purpose of having them work with middle and high school teachers is to have them learn content and methods as well as work on vertical collaboration across the K-12 spectrum so that they can integrate science into their math classes and vice versa. For Cohort 6 (beginning fall 2024) we have recruited from the entire K-12 spectrum for the 2-year program, allowing us to observe the differences among the two groupings.

Selected/Highlighted Projects

Boonville High School teachers Brea James and Melissa Hundley stand out as a model for math-science collaboration and for classroom-level transformation. Brea teaches Physics and Chemistry and Melissa teaches Algebra I. They have repeatedly told us how their early conversations in the Wipro project about each other's classes led to the discovery of several issues that could be improved to help students such as: the overlap of curricular topics, variations in vocabulary definitions that confused students, and sequence alignments. But Brea and Melissa went well beyond small fixes. They have borrowed heavily from each other so that students can think of math and science as intermingled subjects. In Year 1 Melissa and Brea focused on modeling. While each initially defined modeling differently, by the end of the year both were using modeling methods that were similar, especially in using multiple representations to describe both math and science content. They were also addressing having students use concrete and abstract methods as they developed a concept. In year 2, Brea and Melissa focused on having students create and analyze graphs to develop various skills – understanding different kinds of functions, developing models of physics concepts and moving from concrete to abstract thinking. They start with students understanding common functions. In Melissa's math class, students measure the rebound of a dropped tennis ball and create a linear graph of the rebound height vs. drop height. Brea then follows up with the pendulum lab, where students determine g by linearizing length vs. (time)2. Then Melissa follows up with a population growth activity that uses m&m candies to create exponential graph and then a ferris wheel to generate a sine curve. Once students have familiarity with functions, both Brea and Melissa use a computer program, Desmos, to have students understand the parameters that govern motion by first creating position-time graphs of a verbally described motion, and then analyzing sets of graphs by identifying related velocity-time and acceleration-time graphs. As an end of year activity, elastic bands are connected in series to mimic a bungee cord and students calculate the stretch of the cord for a toy that was flung off a tall wall.

The professional development presentation for their middle and high school math and science teachers was attended by 13 teachers. The teachers were clearly engaged, as evidenced by the active discussion seen on the video submitted.

Students in Melissa Hundley's class conducting the tennis ball rebound lab

Students in Melissa Hundley's class conducting the population growth lab

Progress and Highlights

In this past quarter, Cohort 4 worked on finishing up their lesson plans and on providing PD to teachers in their schools/districts. Meanwhile, Cohort 5 worked on completing their H-CCLS collaboration. The results of their work were presented during the end-of-year conference on May 5. (describe in detail later in this section).

Highlights of monthly meetings:

During the March monthly meeting for Cohort 5 we added a segment where teachers conducted a physics experiment on uniform motion and analyzed the data they obtained.

The goal was to have science and math teachers do the activity together and discuss how their classroom discussions might proceed. The activity led to deep conversations about vocabulary, graphing, the role and details of functions used to analyze the data. Based on these responses, we plan to make conducting physics activities a regular feature next year. Since the inquiry and modeling curriculum written by Dorina Kosztin and Meera Chandrasekhar, Exploring Physics, is now available at no charge on their website https://exploringphsyics.com, teachers will have easy access to use the content in their classroom if they wish to do so. The April 4 monthly meeting was held together for Cohorts 4 and 5. Since it was held a week before the total solar eclipse (the path of totality ran about 130 miles east of Columbia Mo), Linda Godwin gave a presentation titled "Eclipsed by the Moon," which described some of the history of eclipses, provided links to information and animations, interesting features to observe during an eclipse and various ways to observe and photograph eclipses safely, since several school districts declared April 8 a holiday, many science teachers hosted an eclipse fest for students who were not traveling to the zone of totality with family. Linda's talk was particularly useful for those teachers.

End-of-year Missouri Wipro Conference, May 4, 2024.

Cohorts 4 and 5 presented their work during the conference, which was held in the conference room of the Bond Life Sciences Center on the campus of the University of Missouri. Visiting Wipro fellows included Krystal Rising, Kellie Burchfield, and Jeremy Hesse from Ceder Hill ISD in Texas, and Jonathan Lee from San Francisco Unified School District in California. Each group had a 30-minute slot (20 min for presentation + 10 min feedback). Arthur Eisenkraft gave the Keynote presentation. Having visiting presenters added a new dimension to the conference, giving home and visiting presenters an occasion to share their work across sites, as well as an opportunity to share ideas with fellows from other sites.

The presentation abstracts are listed below, along with photographs of the conference. The full conference brochure is available here:

https://drive.google.com/file/d/1KUUjk-rjlNz20YHjpSDz2f_exz2J1FPU/view

Presentation Abstracts:

FUN WITH FORECASTING: GRAPHING WEATHER
Amy Rapp, Lynn Salzman, Becky Eckerle, Jessica White*, Hannah Cole Primary and David Barton Elementary*, Boonville R-1 School District, MO
This presentation will dive into creative ways to introduce weather graphing concepts to students across various grade levels - kindergarten, 1st grade, and 5th grade. The session will explore age-appropriate activities and visual aids to teach students how to graph weather patterns and foster their understanding of data representation. Educators will gain awareness of graphing activities to suit the cognitive abilities of each grade level, making learning about weather fun and engaging for young learners. We include innovative strategies to make weather graphing an interactive and educational experience for students of all ages.

GETTIN' GRAPHY WITH IT!
Brea James and Melissa Hundley, Boonville High School, Boonville R-1 School District, MO
We will present various situations that can be modeled graphically and explore various methods for incorporating graphing into the math and science classrooms. Topics will include motion graphs, discrete versus continuous graphs, linear and exponential growth graphs, and linearizing graphs.

BRIDGING THE GAP: RELEVANT DATA IN MATH AND SCIENCE
Kelli Anthes and Bryan Bolton, Hallsville Middle School, Hallsville R-IV School District, MO
Jamie Metcalf and Sherry Schaefer, Oakland Middle School, Columbia Public Schools, MO
The small-but-mighty Cohort 5 will explore what happens when 7th and 8th grade students collect, analyze, and interpret their own data. This process bridges Math and Science classes. The CPS teachers will discuss collecting data about the water cycle in science, consolidating and analyzing that data in Math, and then interpreting the data back in science class. The Hallsville teachers created a crosscurricular activity between our eighth-grade math and science classes. Students began by analyzing and matching scenarios, tables, and graphs of distance versus time in math class on day one. Students then hypothesized, investigated, and collected distance versus time data in science class on day two. Students collected this data using bubble tubes, hot wheel cars, tumble cars, and a metronome. On day three, students analyzed the data in math class by graphing and summarizing their results. Students also discussed what the graph displayed and how it was relevant to the motion of the car over time. This activity incorporates both Missouri math and science learning standards. In science, this activity acted as an introduction to force, motion, and energy transfer. In math, this activity helped students use functions to model relationships between quantities and compare data from two quantities using the same subject.

THE EFFECT OF COLLINS WRITING IN 8TH GRADE SCIENCE

Krystal Rising*, Kellie Burchfield, and Jeremy Hesse, Collegiate Prep Elementary*, and Collegiate Academy, Ceder Hill ISD, TX.

Writing is one of the most important instructional strategies in any content area. Writing is not just for English Language Arts. During this session participants will learn about the benefits of Collins writing and how it can impact scores on state assessments.

INVESTIGATE, COLLECT, PRESENT

Ashley Gonzales and Erika Godsey, Two Mile Prairie Elementary School, Columbia Public Schools, MO

We will provide ideas to integrate math and science into lessons for a place-based learning experience for students in 2nd and 4th grade. We will discuss ways to integrate "place" to increase student engagement, boost learning outcomes, and promote understanding of the world around us. We believe that when learning is connected to a place, it leads to deeper understanding and the type of experiences that can change your world. We will specifically be providing two sample lessons to integrate science investigations, data collection, and data presentation into one engaging unit. This simple approach to place-based education can be tailored to fit a variety of math and science standards.

KEYNOTE: MERGING THE DISCIPLINES (STEAM AND MORE)

Arthur Eisenkraft, University of Massachusetts-Boston

All disciplines ask us to reject what we may consider common sense and understand the world in new ways. Promoting this view of expanding and emerging world views is the purpose of education. Unfortunately, given the constraints of time and standardized examinations, we must consistently remind ourselves of this and ensure that our students don't perceive school as memorizing a set of facts, dates and names.

ARE YOU THE BEST GUESSER?

Nicole Campbell, Susan Elliott and Matt Wightman, Smithton Middle School, Columbia Public Schools, MO

We will discuss a variety of lessons that will encourage students to construct explanations, viable arguments, and critique the reasoning of others. We will demonstrate a sample lesson where students will connect and compare their guesses to actual ages of well-known cultural icons.

DEVELOPING A FOOD WASTE MANAGEMENT AND EDUCATION PROGRAM

Jonathan Lee, Presidio Middle School, San Francisco Unified School District, CA

The current world population is over 8.1 billion people, and each individual relies on natural resources to survive. Another staggering statistic is that up to 40% of food is wasted in the United States. The goal of this project is to attempt to educate our student population and school community about the consequences of food waste and how they can help reduce Presidio Middle School's contribution to food waste as it relates to overall human use of natural resources (7th grade

curriculum)
and the contribution of food waste to climate change. We are attempting to accomplish this by developing and sustaining a Food Waste Education and Management Program called Precology, which is a lunchtime club comprised of students from different grade levels. With our initiative, we are also empowering students to use the scientific process to address a real-world problem and helping them to develop leadership and communication skills as they try to educate our school population.

THE CLICK OF A MOUSE AND THE PUSH OF A BUTTON. WHAT DOES COMPUTATIONAL THINKING LOOK LIKE IN MATH AND SCIENCE CLASSROOMS?
Melissa Hough and Erin Snelling, Hallsville High School, Hallsville R-IV School District, MO
We will discuss computational thinking and how it can be used in the math and science classroom. Students in Pre-Algebra used various online activities to explore the slope of a line and slope-intercept form of an equation of a line. In Biology, students explored genetics, DNA, and the cell cycle using online interactives.

MODELING MOMENTUM: USING BOX CHARTS TO VISUALIZE
Karen King, Rock Bridge High School, Columbia Public Schools, MO
What makes for a good landing crash pad for gymnasts and other athletes? Why do coaches tell athletes to "follow through"? How can we tell if a soccer collision is real or a "flop"? This session will use an interactive 5E pedagogy, combined with various explanatory representations (sketches, bar charts, area box charts and equations) to support student understanding. I'll share activities using a hovercraft, "runaway truck" lab and egg drop competition that make the learning fun while students apply mathematical thinking about momentum to explain real-world phenomena.

Conference Photographs

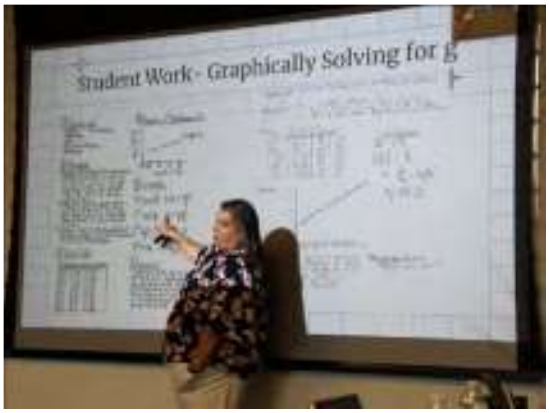

Group photograph of Missouri Wipro Conference participants


Karen King, Sherry Schaefer and Jamie Metcalf from Columbia Public Schools discuss a question (foreground).

Erin Snelling and Melissa Hough from Hallsville High School discuss a graph grouping activity

Nicole Campbell receives her Cohort 4 completion certificate from Arthur Eisenkraft, as Linda Godwin and Meera Chandrasekhar look on.

Jonathan Lee from San Fransisco describes his Food Waste reduction club.



Brea James from Boonville describes student analysis of data from a pendulum experiment

A view of the participants at the Missouri

Recruiting Cohort 6

We started recruiting Cohort 6 in the fall of 2023 but shifted into high gear in Spring 2024. Information was sent out to all previous fellows and district administrators, as well as to other nearby districts and any teachers with whom we have had contact in the past year or two. Following up on suggestions from cross-site faculty whom we met during the February Wipro meeting in Dallas, we added short bios of the two Wipro faculty (Linda and Meera) to the brochure, which are short versions of the bios on the website but highlight Linda's experience as a NASA astronaut. We have accepted 16 new Cohort 6 fellows, 6 of whom are elementary school teachers, 4 middle school and 6 high school. In addition to the current districts, we have added teachers from Helias Catholic School in Jefferson City. We are excited about having a large cohort. In a change from the current scheduling, we will be meeting with Cohorts 5 and 6 together during the 2024-25 year.

Visit to Hallsville Intermediate School in March

Bryan Bolton, Cohort 5 fellow, invited Linda to give a talk about NASA and her experiences in the space program to all the eighth-grade students on March 21 at Hallsville Middle School. Linda's presentation was titled "Is Space in Your Future? "and included her personal experiences as an astronaut at NASA, as well as current events on the International Space Station, private space missions, science in microgravity, and NASA's Artemis program for returning to the Moon. She also answered the questions from students that Bryan provided ahead of time. Hopefully the eighth graders could see that science, math, and engineering must be integrated together for successful space missions. Students had many good questions during the Q&A following the talk and were very engaged, even though it was the end of their school day! Bryan teaches eighth grade science at Hallsville R-IV Middle School; Kelli Anthes, his Co-Fellow at the school, teaches eighth grade math and Algebra 1.

Linda Godwin with the Hallsville students.


Approximately 100 8th grade students watch the presentation

Activities with indicators of district transformation:

During the conference presentations there were a few that stood out for their progress in building or district transformation. All of them involve broadening the collaboration between math and science teachers. Karen King's work (Cohort 4) involves the development of graphical methods of describing impulse and linear momentum. This method builds on the use of multiple representations and modeling methods in teaching uniform and accelerated motion and energy. Karen has already been working with two other physics teachers in her school, one of whom was a former Wipro fellow. The three of them presented the work at NSTA a year ago and have plans to present elsewhere. Due to various family issues Karen's math partner has put off finishing year 2, but that does not seem to have affected Karen's plan of inserting math concepts into her physics class.

The Boonville Cohort 4 team of Brea James and Melissa Hundley's work was described in the section on Project Highlights above. Their professional development presentation was attended by a large number of science and math teachers from middle and high school, and two middle school teachers are now part of Cohort 6.

Bryan Bolton and Kelli Anthes, two middle school Cohort 5 teachers from Hallsville, worked on their first lesson plan in spring 2024, but what was remarkable was their forward-looking conversations. They were already planning what the next year might look like, and how they could build in longer segments of intermingled and sequential science and math classes where an activity started in science, analysis occurred in the math class, followed by furthering the concept in science.

Linda and I have been discussing how we can track as well as support Cohort 4 teachers in the next two years without making it a burden on them or us.

Plan for the Next Two Quarters

Date	People	Activity
August 1, 2024	Cohorts 5 and 6	Cohort 6: Induction, Introduction to Wipro (9 am – 5 pm) Cohort 5: Getting started with year 2 (12 noon – 3 pm) Cohorts 5 and 6: Physics + Math activities
12 September 2024 (Thu)	Cohorts 5 and 6	Cohort 6: Research meeting, Making presentations, teacher leadership discussion for Cohorts 5 and 6: Physics + Math activities Cohort 5: Lesson plan collaboration
10 October 2024 (Thu)	Cohorts 5 and 6	Cohort 6: V-CCLS Research Article presentation Cohorts 5 and 6: Physics + Math activities Cohort 5: Lesson plan collaboration
7 November 2024	Cohorts 5 and 6	Cohort 6**:** "Exploring Space, Where would we be without the Moon?" by Linda Godwin Teacher leadership discussion Cohorts 5 and 6: Physics + Math activities Cohort 5: Lesson plan collaboration
12 December 2024	Cohorts 5 and 6	Cohort 6: V-CCLS team presentations Cohort 5: One lesson plan presented

Vignettes

My name is Jamie Metcalf and I teach at Oakland Middle School in the Columbia Public School District. I have taught 7th grade science for 10 years and math for one year. Currently, I am redesigning an upcoming water cycle activity to incorporate data collection and data analysis which will ultimately be compared to real-world data provided by the United States Geological Survey (USGS). Students will collect data during science class then analyze that data in math class. They will then bring their data analysis back to science class, compare it to the USGS data analysis and evaluate the credibility and authenticity of the water cycle activity. Along with my Wipro collaborative teaching partners, we are evaluating curriculum and lessons for intentional application of science practices. We are also evaluating and reconstructing units and lessons for incorporating cross-curricular connections and practices between math and science.

Calendar

Upcoming meetings for the 2023-2024 year.
Location: Physics Building Rm 223a University of Missouri, Columbia
All meetings will be face-to face unless it snows (snow location: online)

NEW JERSEY MONTCLAIR STATE UNIVERSITY

Author: Mika Munakata, Monica Taylor, Emily Klein, Colette Killian

Executive Summary Statement

The Montclair State University site has made progress through the first half of its Phase III project. The program is contributing to district transformation through the Fellows' self-initiated projects, which extend the reach of the Wipro program to new teachers, new districts, new subjects, and new collaborations. The connections that are made through the program would not be possible without the structure that the Wipro SEF program provides.

As stated in the previous report, the current phase of the project has involved 12 Alumni Fellow working on district-related initiatives and one Fellow working on publicizing the program. Each of the alumni Fellows has recruited a team of district teachers. Together, these teams are working towards their respective goals as a new cadre of teacher leaders are nurtured.

This past quarter, Alumni Fellows continued working with their teams to make progress towards their respective project goals. Their projects involved other teachers new to Wipro, administrators, instructional coaches from other districts, and former Fellows. With the culminating event in sight, all Fellows worked on developing and refining their presentations. The event, held on Tuesday May 29th, showcased each team's two-year project and brought together various program stakeholders. The presentations were inspiring and thoughtful and represented a variety of ways to make change in districts.

The MSU site is currently collecting proposals for the second half of the innovation phase. All Fellows, including past Fellows and Fellows new to the program in this phase, were invited to apply. With a new cadre of Fellows, the next quarter will focus on goal setting and extending the reach of the Wipro SEF Fellowship even further.

Summary of Current Project(s) and Goals

The highlight of this quarter was the culminating event, which took place on May 29, 2024. The agenda is provided at the end of this report and the event program brochure has been submitted as a separate document.

The projects being undertaken by the Fellows range from interdisciplinary projects to partnerships with local community programs. The table below offers a snapshot into the Fellows' work.

First Name	Last Name	Wipro Initiative
Alison	Mahfouz	Collaborating on PD and Teacher Ed Using Number Strings
Patricia	Hester-Fearon	Career Day for Grade 7
Jessica	McMasters	Career Day for Grade 8
Susan	Bartol	Improving Teacher Capacity to Deliver Elementary Science Instruction
Kristen	Scrivens	Collaborating on Professional Development and Teacher Education using Number Strings
Frances	Carlo	Arts Integration and STEAM Club
Megan	Graziano	Identifying and Supporting Science Teacher Leaders
David	Kleiner	Improving and Facilitating Effective Math Stations
Mary	Goffredo	Data Analysis and Collaboration
Janine	Hogel	Family STEAM and Makerspace
Colleen	Nolan	Roosevelt Community Garden 2023-24
Kristen	Trabona	Fostering Teacher Leadership

Progress and Highlights

The research team presented their research on Wipro at AERA and NARST. The following are the titles of the presentations:

- Developing a social network tool to support and characterize STEM teacher leadership (NARST, March 2024)
  - John O'Meara, Shanna Anderson, Timothy Aberle, Ursula Derios, Mika Munakata, Monica Taylor, Emily J. Klein
- Reimaging Teacher Leadership through Social Network Mapping: A Collaborative Self-Study. (Self-Study SIG, AERA, April, 2024)

- Kristen Trabona, Megan Graziano, Shanna Anderson, Timothy Aberle, John O'Meara, Ursula Derios, Emily J. Klein, Monica Taylor, Mika Munakata

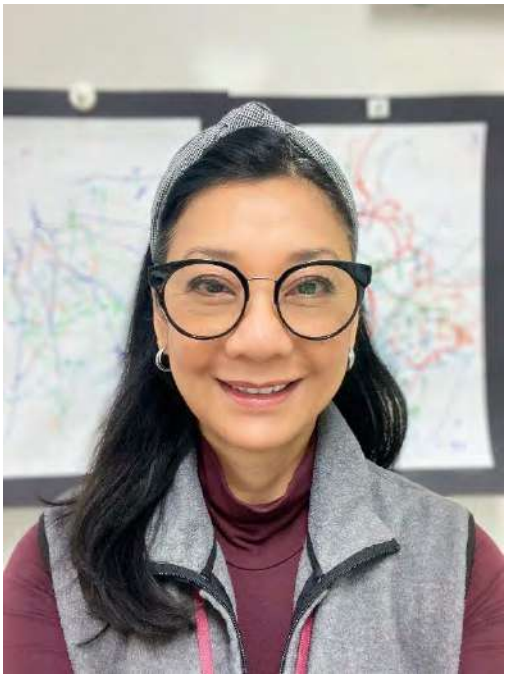
Furthermore, the research team's extended abstract was accepted for a special issue on Science Teacher Leadership of the International Journal of Teacher Leadership. The full manuscript was submitted in May 2024: Self-Created Social Network Maps: A Tool to Advance Professional Development of Science Teacher Leadership. Additionally, we are revising the 2024 AERA paper that was presented to submit it to Studying Teacher Education this fall. Finally, we will prepare and submit a proposal for AERA 2025 in July.

Plan for the Next Two Quarters

Date	People	Activity
June 14, 2024	All Fellows	Proposals due
Summer 2024	MSU Leadership + Fellows	Meet about projects and help support Fellows on their projects.
Fall 2024, Date TBA	All participants	Meeting 1 for Year 3

Vignettes

Frances Carlo
3rd grade teacher
Clifton School District



The Arts Integration and S.T.E.A.M. Club aims to provide students with opportunities to use art in exploring science, engineering, technology, and math. Students will apply the scientific method and the creative process as they engage in arts-integrated learning activities. The experience would empower students to seek out opportunities in the sciences that they may not otherwise pursue and express their understanding of science through art. Another goal of the Arts Integration S.T.E.A.M. Club is to offer teachers and administrators opportunities to develop ways of adding relevance and depth of learning for students through arts integration. By authentically integrating art with science, technology, engineering, and math through hands-on investigations, we will meet the district's plans that support the NGSS and the National Arts Standards. Our students will be better prepared to collaborate, communicate, think critically, and problem-solve, which are essential 21st Century skills.

The Arts Integration and S.T.E.A.M. Club increased its membership from 7 students and two teacher advisors in its inaugural year (2022-2023) to 26 students and four teacher advisors in the current year. Of the 26 students, 17 are females (2 of whom are English Language Learners), and 9 are males (4 of whom are English Language Learners). All the members from last year's group signed up to be part of the club this year. Due to the large amount of student interest, the group had to be divided into two groups – fifth and fourth graders, meeting on different days of the week.

So far, both groups have done similar projects to explore simple circuits using Bristle Bots and Scribble Bots. The students examined how their "bots" created works of art through vibrations. In addition, the students also collaborated to assemble and code a LEGO WeDo robot. The students had a friendly competition to determine which robot could move in a straight path the fastest. Currently, the fifth graders are creating a Fluttering Butterfly toy using a rubber band, paperclip, safety pin, and paper. The students are learning about potential and kinetic energy (science) and line and symmetry (art). For their next project, the fifth graders will create an automata toy to further explore potential and kinetic energy, and function and form. In the meantime, the fourth graders have created flip books as an introduction to animation. In the next few weeks, the fourth graders will explore how to design and produce a three-frame animation and a digital flip book. In January 2024, Sciencebuddies.org will be announcing its 2024 Engineering Challenge. I plan to have our fifth graders enter the contest.

Colleen Nolan
6th grade science and social studies
Kearny School District

Roosevelt Community Garden 2023-2024 with Jayme Tchalabi (Coach) Antonio Moyano (Principal) Grace Digangi (Art teacher) Kristin Corbett (PTA President) Amy Weber (Grade 3)
My primary objective is to foster a garden community where teachers and parents can establish a relationship that promotes inclusion and participation. With the assistance of members, I plan on creating lessons for teachers to implement in the outdoor classroom. Furthermore, having extra help in the garden will allow me to devote more time to this project. Jayme and I worked together to create a garden for one of the schools in our district. Our goal is to have a garden set up in each elementary school in Kearny. Last year, students at the high school developed their garden, and our middle school, under the guidance of Patty Hester-Fearon, has an elaborate garden that provides numerous educational opportunities.
As discussed, Mr. Moyano, Jayme, Kristen, and I have decided to expand the garden with the help of PTA. We aim to encourage teachers and families to get involved. An agenda was prepared for the September meeting that included the following suggested committees:

- PTA President and Colleen Nolan (teacher) Garden Coordinators
Work with school staff and families to establish garden interests and responsibilities. Report to Mr. Moyano, PTA, and garden committee

Subgroups:
- Plan and Research a garden design
- Sketch a plan, including future garden ideas. Garden of Hope
- Garden care
- Plantings
- Fall maintenance
- Spring maintenance
- Watering

- Maintain watering hoses and sprinklers
- Recommendations, if needed, for future watering source
- Funding
- Weeding
- Coordinate a schedule of volunteers to weed June - August
- Evaluate the current use of the boxes
- Coordinate information with the planning committee
- Secretary- Outlines tasks, committee member(s), and timeline for the garden
- Maintain a calendar and timeline for the garden committee
- Garden outreach - Post pictures
- Elicit help from area landscapers and nurseries
- Events
- End of the year Garden party for all the members
- Other

Spring goals:
Mrs. DiGangi is designing the Garden of Hope sign and will assist with construction. WIPRO will fund $200.00 for the materials. Additionally, we plan to add a new box and soil to the garden, which will be constructed once the details are confirmed. There will also be a weather station area and a seating area with shade where students can observe habitats, sketch, journal, and read. A stream table will be available for students to monitor erosion and deposition, but access to water is needed. I will provide the table. The digging pit is an area solely for digging, filled with fossils and interesting rocks, and equipped with digging tools. Furthermore, a bird feeder area will also be a part of the garden. I plan to develop this area using STEM club funds. The Garden of Hope is a special place that promotes peace and optimism through nature.

Agenda
Wipro Culminating Event - 2024

4:30-4:40 Mingle and view posters while having dinner (served in Room 2105)
Clifton - Wipro SEF Publicity Project (Regina Borriello)
Clifton - Arts Integration and Steam Club at Clifton (Frances Carlo, Traci Duff, Monica Honis, Fazilet Tokel)

4:40-4:45 Welcome

4:45-5:00 Once a Wipro Fellow, Always a Wipro Fellow: Ten Years of Teacher Leadership
David Kleiner, Clifton
Alison Mahfouz, Paramus
Janine Hogel, Clifton

5:05-5:45 Session 1
Room 2109: Roundtable - RED
Pascack Valley - Leveraging Collaborative Teaching Partnerships as Teacher Leadership Opportunities (Aarti Mallya & Megan Graziano)
Kearny - Garden of Hope (Colleen Nolan & Jayme Tchalabi)

Room 2110: Roundtable - BLUE
Kearny - Data Literacy and Collaboration (Diane Mazurak, Mary Goffredo & Charles Polk)
Kearny - "In the Middle" Career Passion Pathways (Betty Rodriguez, Pat Hester Fearon, Jessica McMasters & Jackie Galella)

5:50-6:30 Session 2
Room 2113: Roundtable - RED
Paramus -Number Strings - Stringing School Districts Together (Alison Mahfouz, Kristen Scrivens, Justine Lopez & Jessica Capello)
Montclair - Assessing Science Professional Development Needs and Then What? (Susan Bartol, Michele Gorcica & Jim Wallace)

Room 2109: Roundtable - BLUE
Hawthorne - Building Bridges: Diversifying Social Networking Presence Across District Content Areas (Stephanie Donatello, James Hurley, Darin Miller, & Kristen Trabona)
Clifton - Getting Families Involved: STEAM Nights – (Janine Hogel)

6:30-6:45 The Next Two Years: Q & A

6:45-7:00 Retirement celebration for Jessica McMasters

NEW YORK -MERCY COLLEGE

Author: Kristen Napolitano, Amanda Gunning, Meghan Marrero

Executive Summary Statement

In the five GNY districts, Wipro Reimagined teachers are reimagining the ways in which they can be critical leaders toward district transformation. These teachers are implementing creative strategies for vertical articulation between both teachers and students in the districts through initiatives including robotics, engineering, and mathematics, which administrators have indicated intention to support in years to come.

Mercy University's goal for the 2023-24 AY was to support Wipro projects that spanned across different schools in each district, connecting elementary, middle, and high schools through STEM programming. Our goal is to support innovation and collaboration by teachers and administrators to improve STEM teaching and learning in their districts.

This quarter, Fellows enacted five vertically articulated projects, including a K-12 engineering design challenge, a 5th grade-high school math peer mentorship collaboration, an elementary-high school family STEAM night, an elementary science teacher conference hosted by high school and middle school science faculty, and a K-5 garden club. These projects are supported by administrators representing various grade levels across the district. The Mercy team hopes that establishing vertical relationships will improve sustainability outcomes for all of these projects.

In the next quarter, the Mercy team will take a summer break and prepare to invite applicants for our next cohort in the fall.

Summary of Current Project(s) and Goals

The Mercy University Greater New York (GNY) Wipro Science Education Fellowship, in partnership with University of Massachusetts at Boston and other colleges, has successfully supported a new iteration of Wipro, that the Mercy University Center for STEM Education calls, "Wipro Reimagined." This innovation phase of Wipro involves teacher-led, collaborative projects that are designed to enact district change in STEM education. These projects, created by Wipro Fellows and newly participating teachers, receive buy-in from administrators as associate group members, as well as in-district support from DSCs. Over the course of 4 years, MCSE aims to establish a norm of collaborative action towards district change in the five existing Wipro districts. Year 1 was largely successful as 30 teachers and 1 retired teacher worked with 11 administrators to increase accessibility to and interest in STEM education across the New Rochelle, Port Chester, and White Plains school districts. These Fellows implemented leadership projects including designing STEM instructional materials and resources for elementary school teachers, creating outdoor learning units focused on increasing student access and participation in community green spaces, and providing professional development to teachers on integrating engineering into their STEM curriculum.

Since December, the Mercy University team has supported five new groups of Wipro Reimagined Fellows in their projects for school/district change. Cohort 2 of Wipro Reimagined includes 17 participating teachers of which 9 are newly participating teachers and 8 are returning Fellows from either Cohort 1 or the Foundation Wipro program. These Fellows represent 4 districts, including Tarrytown, White Plains, New Rochelle, and Port Chester. With so many returning Fellows, there is good continuity of teacher leadership in each district. Projects reflect a distinct vertical alignment with each teacher team gaining partnerships across district schools (elementary, middle, and high school). This vertical articulation is anticipated to contribute significantly to district change and sustainable outcomes.

MCSE plans to equip participating teachers with the tools and practices necessary to carry on transformative efforts even when Wipro funding is gone. In Year 1, Wipro Reimagined Fellows and the MCSE team established and strengthened relationships with district administrators to ensure sustainability. Year 2 will continue to foster these relationships to help both Fellows and administrators to meet district goals. Mercy reached teachers in more grade levels this year (expanding from Year 1 to include secondary level teachers) and reached four of their five partner districts.

Cohort 2 Fellows met on Zoom in May with their administrators and the NY IHE team at the Mercy University Center for STEM Education in Tarrytown, NY. Each team shared the challenges and successes with the group.

Progress and Highlights

New Rochelle has two teams:

"Coding Bootcamp": The Trinity and Ward Elementary School team partnered with the high school robotics club to bring computer science and robotics to a districtwide family STEAM night on March 14, hosting over 200 people Sessions included engineering, sound/vibration and coding stations where students and their parents also had the opportunity to explore Sphero robots and Makey

Makey circuit kits. On May 16, Ward hosted 180 students with their families at their STEAM night which had several stations using DASH robots to perform tasks, math tangram problem solving, and New Rochelle High School Robotics Team with advisor Maria Walsh who helped elementary students to program and drive robots on the gym floor. On May 30, the HS robotics team returned to Ward to do more one-on-one sessions with 5th graders and to discuss how they started their journey with Lego robotics in middle school, and then went on to competitive robotics in high school.

The New Rochelle Webster Elementary School team is creating a K-5 gardening club to engage students in science literacy through nutrition and ecology. 5th and 4th graders have successfully grown spinach, lettuce and arugula and are ready to begin their Farmer's Market to taste the 'fruits of their labor. 3rd graders had their first gardening club meeting before the Spring Break and will begin planting and germinating in pods this week! 2nd graders will also be introduced to the project this week and will begin meeting this month! Webster's Fit Fair will be held June 11-12. A Farmer's Market and Hydroponics presentation will accompany the fair this year.

White Plains has one group developing a vertically articulated engineering design challenge that will engage elementary, middle, and high school students in creating 3D printed boats that they will eventually race in May. In this project entitled Tiger Tech Boat Battle, both the teachers and students are collaborating vertically to design boats that can win the race, testing them, and then making improvements before the final race day which will be held at the high school pool. The students created a prototype boat and finalized the boat activities for the test days in April. The final event on May 18 included several boat-building stations in which elementary and pre-school students were invited to create, test out and observe a variety of different boat designs, including sailboats, candle-powered boats, foil boats, 3D printed boats, and more.

Port Chester has one group fostering a high school – 5th grade math peer mentorship program in which AP Calculus students are mentoring 5th graders as they prepare for middle school math expectations. After a few Google Meets in the spring, the 5th graders are worked towards learning basic concepts to then show their high school buddies their skills. The team hopes that all the students can see themselves as a "Math and Science Person" and not be intimidated or scared by taking advanced courses in either Middle School for the 5th Graders or College for our High School Seniors. The two groups met in person on June 11 to share their experiences and break down fears for next year.

Tarrytown's group had their first Elementary Science Teacher Conference "Unleashing the Power of Student Voices" on March 2. The group had difficulty getting the word out for registrations but was finally able to secure some funding from Regeneron and welcomed keynote speaker, Dr. Felicia Mensah who delved into the importance of taking risks in education and integrating culturally responsive teaching practices. This enlightening conversation left a lasting imprint on the entire conference, emphasizing the importance of valuing student voices and the transformative potential educators hold through innovation and inclusivity in the classroom. There were 10 participants, including Wipro Reimagined Fellow Aimee Ferguson and some pre-service teachers from Mercy University. Valuable lessons about how to effectively mount a conference were also learned!

Plan for the Next Two Quarters

Date	People	Activity
September 28, 2024	MCSE	MCSE STEM Educator Conference – Wipro 10 year anniversary celebration – face-to-face Initial Brainstorming for new Wipro Reimagined Groups
November 2024	MCSE	Application process for new Wipro Reimagined Groups

Vignettes

8 Cohort 1 Wipro Reimagined Fellows to NSTA: Carmen King (White Plains), Meera Rajani (White Plains), Susannah Genty-Waksberg (White Plains), Elcilia Tavares (White Plains), Colleen Cahill (Port Chester), Aimee Ferguson (New Rochelle), Vittoria Condello-Vessecchia (New Rochelle) and Michelle Memoli (New Rochelle) presented their Wipro Reimagined projects at the poster session for the NSTA national conference in Denver in March 2024.

Dr. Meghan Marrero and Dr. Colleen Cahill

Meera Rajani, Susannah Genty-Waksbergy, Elcilia Tavares and Carmen King with poster

8 Wipro Reimagined Fellows at NSTA

Tarrytown: Elementary Science Teacher Conference (Dr. Leana Peltier and Abbey Gilligan) This was the first time Tarrytown participated in Wipro Reimagined, and both fellows are Foundational Fellows. In March 2024 they organized the very first science teacher conference for elementary teachers in their district (Leana is a HS science teacher and Abbey is elementary), and they used Tarrytown teachers who have been in some of Mercy's STEM program training to run workshops. The workshops were aimed at showing elementary teachers who might not be comfortable with science content how to easily incorporate some science into their early elementary classrooms.

Calendar
Please provide dates for all upcoming meetings for the 2023-2024 year. Note the place, date and time and whether the meeting will be virtual or face-to-face.

TEXAS - UNIVERSITY OF NORTH TEXAS - DALLAS

Author: Dr. Ratna Narayan

Executive Summary Statement

The Wipro program, in this part of the Innovation Phase (year 2) has three types of projects, School projects, collaborative projects and individual projects. I added the school projects because I wanted more than just individual projects done by Fellows. I wanted these to be school and district initiatives that would lead to teacher leadership and district transformation and so far, I have been pretty happy with the projects.

I funded 6 school projects this year

- Cedar Hill ISD: Effects of Collins Writing in Science (District initiative , 2nd year of funding with more fellows added,)
- DeSoto ISD: The Garden Project from Seeds to Flowers
- Grand Prairie ISD: a) Gamyfying Forces (2nd year of funding with more fellows added, Bilingual & STEM focus) b) Savvy Sphero Sisters (Focus on girls in STEM, coding)
- Irving ISD: Exploring STEM wonders with 3D printing (first graders, STEM focus)
- Lancaster ISD: Transforming Instruction, one PLC at a time (, 2nd year of funding with more fellows added,)

I funded 1 Collaborative project:

- Trinity Basin / Lancaster ISD: All hands-on deck (third and last year of funding, more fellows added)

2 Individual Projects were funded:

- Shelby Allen : Stemtastic club
- Marsha Bolden: Exploring Science concepts using PBLs

The Spring semester is always a very busy one. The STAAR test preparation leading up to the actual STARR test administration in May, starts in early March. This is a hectic time at schools. We have focused on project data collection and submitting CAST Proposals and working on their Wix portfolios.

During the next quarter, I will work with my fellows to complete their Wix Portfolios, and make sure all 10 CAST proposals are submitted. I will meet with the DSCs to see what direction we want to proceed in for year 3 before I start talking to Fellows regarding year 3 proposals. I will schedule meetings to talk to Fellows about their ideas and in developing their proposals for Phase 3 year 3.

Summary of Current Project(s) and Goals
Phase 3, year 2 at UNT Dallas

S. No	Title of Project and ISD	Project goal	Number of participants
A	**School Projects**		
1	Professional Learning Communities Lancaster ISD	This collaborative project will focus on developing Professional Learning Communities (PLC) for elementary science and STEAM teachers in Lancaster ISD.	1 DSC 4 Alums 1 New 5 elementary schools
2	Effects of Collins Writing in Science Cedar Hill ISD	The goal for this project is to improve 5th grade, 8th grade Science and Biology STAAR (State of Texas Assessment of Academic Readiness)/(EOC)End Of Course scores across Cedar Hill Independent School District using Collins Writing (a district Initiative)	1 DSC 3 alums 3 new 2 elementary 2 middle 1 high school
3	From Seed to Flower: The Growing Project DeSoto ISD	The project aims to establish an edible garden that will serve as an interactive classroom for students in Pre-K through 5th grade at 4 different schools in DeSoto ISD.	1 DSC 7 new 4 elementary schools
4	Exploring STEM Wonders with 3D Printing: First Graders Unleash Innovation Irving ISD	The project goal is for first grade students to gain a better understanding of how we use products of STEM, construct solutions to world problems, design a prototype, and create a device using a 3D printer.	1 DSC 1 alum 2 new 1 elementary school

5	Gamifying Forces Grand Prairie ISD	The goal of the project is for students in grades 3 to 5 opportunities to explore the connections between the Energies and Forces by creating a game using engineering and investigative design	1 DSC 2 alums 3 new 1 elementary school
6	Savvy Sphero Sisters Grand Prairie ISD	Savvy Sphero Sisters is a project designed to address the gender gap in the technology industry by creating a supportive environment for girls to learn and succeed in coding.	1 DSC 1 alum 2 new 2 elementary schools
B	**Collaborative Projects**		
1	All Hands-on Deck Lancaster ISD, Trinity Basin Prep	The project participants aim to collaborate to provide equitable outcomes for students in grades 4, 5, and 6 that will allow them to develop a deeper understanding of science through hands-on activities.	3 alums 4 new 3 elementary 1 middle school
C	**Individual Projects**		
1	STEMtastic Club Denton ISD	The goal is to develop an after-school STEM program for my campus for 4th and 5th grade students, who will conduct PBL's, STEM challenges, and hands-on learning to enhance their knowledge and skills.	1 alum 1 elementary school
2	Exploring Science Concepts Using PBL Strategies and Activities to Engage Struggling High School Learners Irving ISD	The project is designed to explore IPC student's science content, engagement, creative thinking, collaboration, increased literacy, and problem-solving skills using PBL (Problem Based Learning) strategies and activities.	1 alum 1 high school

Selected/Highlighted Projects

Exploring STEM Wonders with 3D Printing: First Graders Unleash Innovation:
This is an Irving ISD school project, It is very interesting for several reasons. The team consists of a C3 Fellow, A STEM first grade teacher and an elementary school librarian who is actually the propelling force behind the project. It is interesting that their participants are first graders, and the project integrates STEM and the concept of empathy which is a novel idea. The first graders got to interact with 5th graders who shared what they knew about STEM, they also got to see a dog with a prosthetic leg and their final project was for them to design a prosthetic for a human with the help of a 3D printer.

Progress and Highlights

10 CAST proposals have been submitted with 2 from Cedar Hill. This time, as San Antonio is much smaller avenue, the acceptance rate of proposals will be lower, however, we have worked extremely hard to turn in great, well very thought out, hands-on proposals
I am also very happy that the Gamyfying forces group from GPISD turned their proposal into TABE, a Bilingual Ed conference in Round Rock and they got accepted and their district is paying for them to go there. The faculty at UNTD school of ED with a DOE Bilingual ed grant applied however were not accepted.
Below are the Quarterly reports for each project, they also have the CAST proposal as well as the submission confirmation attached.
Questions they responded to prompts concerning their own role in the research project, the data they collected and their own results, what worked and didn't for their project, the contribution of the project to Teacher leadership and district transformation and the impact of the project on them and their students.

1	Effects of Collins Writing in Science: Cedar Hill https://docs.google.com/document/d/1RiRdmeyr-QiqAQzkdRpQY53reJ471p5GLfWrYvNYBCQ/edit?usp=sharing
2	The Garden Project DeSoto ISD https://docs.google.com/document/d/1Rdc4QkHw4qdMOiX0wNEJd7O3Oi1bSnPjjpeOPFGJmZQ/edit?usp=sharing
3	Gamifying Forces: GPISD https://docs.google.com/document/d/19ij_HX6Dt5NVlveCBANezMxtmerJRdPjI34vGSh5Hw/edit?usp=sharing
4	Savvy Sphero sisters: GPISD https://docs.google.com/document/d/1affCRXLfvMj5fRfqBzA1-4TDBEpfxK0USisRSqvHpEI/edit?usp=sharing
5	Professional Learning Community: Lancaster ISD

	https://docs.google.com/document/d/1el-JN7_pLK5S-ICNPnBnJmvEWamex40-rxxM_K_AtI8/edit?usp=sharing
6	Exploring STEM wonders with 3D printing: Irving ISD https://docs.google.com/document/d/18H13nBhYmdSe2ZMeIl3suxtRYN1FShZ9X_SFAVTM44A/edit?usp=sharing
7	All hands-on Deck: https://docs.google.com/document/d/1aj1F2T_jZ0iLYTNVsUcCN_mxZ8UVGi1bMWdl9ef6oRE/edit?usp=sharing
8	Shelby Allen: Stemtastic club https://docs.google.com/document/d/1EXdvp9RHKiW2af20S3f5bkh0PNIXK_PIVCOXjFxcMOI/edit?usp=sharing
9	Marsha Bolden: Exploring Science concepts using PBL Strategies https://docs.google.com/document/d/1RiRdmeyr-QiqAQzkdRpQY53reJ471p5GLfWrYvNYBCQ/edit?usp=sharing

Plan for the Next Two Quarters

Date	**People**	**Activity**
TBA ~ July 8-10	DSCs	We will plan for the type of projects we want for Phase 3 year 3
August	CAST presentation practice	Prior to CAST, presenters accepted will have a dry run and get feedback warm and cool for their presentation at CAST 24
July 15th-on	All fellows	Individual zoom calls with Fellows regarding their ideas for P3Y3
June 22-on	P3Y2 Fellows	Work on completing Wix portfolios

Vignettes

Kellie Burchfield

I began my teaching career in 2014 at Lucy Mae McDonald Elementary in Ferris, Texas. Where I taught ELAR and Social Studies for 1 year before transitioning to Cedar Hill Independent School District. Since 2015, I have taught Science at Collegiate Preparatory Elementary, and Collegiate Academy and High School, where I facilitated learning in 3rd through 6th and 8th grade science. I have been recognized as one of very few teachers awarded Teacher of the Year at the Elementary, Secondary, and District level in CHISD. I am currently the Secondary Science Instructional Facilitator for CHISD. Furthermore, I was instrumental in writing the 3rd-5th grade science curriculum for the district.

While participating in the WIPRO program, my educational journey has been impacted substantially. During my first year in the program as a teacher my growth as a teacher, and the academic growth of my scholars was exponential. I learned how to facilitate collaboration within my science department and across different content. Additionally, I was able to share what we have learned through our project with the other departments which lead them to begin implementing our processes in their classroom. Additionally, I was afforded opportunities to grow professionally as a leader. My participation presented me with ample opportunities to present to my colleagues. Furthermore, my participation opened the way for me to provide professional development for teachers on my campus, and at the district level. Being a teacher leader and my connection to WIPRO ultimately lead me to my current position with the district. I am now able to facilitate our project in conjunction with our teachers, provide feedback to our scholars, and witness the impact to the district as a whole.

Ian Talamantes

My name is Ian Talamantes. I am a Fourth Grade Dual Language teacher at Ellen Ochoa STEM Academy with 11 years of teaching experience. I teach using argument driven inquiry in all subjects thanks to what I have learned as a science teacher. With a background that includes teaching 5th-grade science, I consistently seek innovative methods to ignite curiosity in others. I have been under Dr. Narayan's wing for 2 years now and I must say that I have found new branches of education thanks to the opportunities she has provided to me. It is important to note that these opportunities came as a result of her skill of being a good judge of character. She found Mrs. Tamara Majors, my district Science Coordinator. I have generally been Mrs. Majors' "guinea pig" for all types of district level innovations. And now, I have found that working with Dr. Narayan has got to be the innovation I am most grateful for.

Leadership became a big deal to me when I first heard my principal, Dr. Dinnah Escanilla, speak about the absurdity of needing to have a title to be considered a leader. A leader can be found anywhere. A leader can be built through the practice of tenacity and passion.

Thanks to all of these opportunities, I have been able to thrive under the leadership of Dr. Narayan. Her direct approach is refreshing and exciting. Her grant of autonomy is very motivating. Aside from the incredible dinners, and deserts, she has provided us with a variety of speakers who have their own successes, especially Dr. Betty Stewart. They speak of leadership and the lessons they have learned through meaningful moments in their lives. These have been considerably meaningful to me, for I have done my best to apply the skills I have learned through doing and through listening. With these skills I feel I have been able to make a change in my campus. So much so that I won teacher of the year this year.

This second year with WiPro has put me to the test for I took a leadership role in planning and implementing a new proposal. I added more educators on my campus, and made a greater change to both the students involved, and the teachers I brought in. I have had to lead a lot more than just my students and have had to keep my team accountable so that they can gain what I have had the privilege to have received myself under this fellowship.

Dr. Narayan has helped me so much by guiding me towards solutions. What can I say? She is incredible. She has gone out of her way to provide us with more opportunities on top of Wipro while guiding us with her full support. I am very thankful to have been given the opportunity to learn from her and look forward to more developments.

Calendar

We do not have any more face to face group meetings this year. However, I will be setting up individual zoom meetings with each P3Y2 participant regarding their Wix portfolio.

PROGRAM EVALUATION ANNE GURNEE CONSULTING, LLC

Monthly Evaluation Updates (see next pages)

Wipro Science Education Fellowship

Evaluation Update

March 2024

Activities this Month

- Continued to prepare for year-end evaluation activities including interviews with IHE leads, DSCs and select administrators.
- Submitted mid-year report on March 18, 2024.
- Participated in monthly Wipro call on March 19, 2024.
- Revised year-end survey for Fellows and DSCs. Submitted draft for review on March 28, 2024.
- Reviewed chapter 5 of Wipro SEF book and suggested possible quotes for addition.

What's Next?

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

- Continuing to plan year-end evaluation activities including year-end survey and interviews with key stakeholders.
- Supporting the book project as needed.
- Participating in any scheduled/needed meetings for the project and/or research.

ANNE GURNEE
CONSULTING, LLC

Wipro Science Education Fellowship

Evaluation Update

April 2024

Activities this Month

- Continued to prepare for year-end evaluation activities including interviews with IHE leads, DSCs and select administrators.
- Began administration of year-end survey for Fellows and DSCs. Survey opened on April 23 and will close on May 7, 2024. (46 responses out of 162 invites so far)
- Participated in monthly Wipro call on April 16, 2024.
- Arranged travel for California year-end meeting on June 1.
- Sent request to all IHE leaders requesting interview candidates for spring 2024 interviews.

What's Next?

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

- Closing the year-end survey for Fellows and DSCs and begin analysis of data.
- Scheduling and begin conducting interviews with selected local administrators and DSCs from each site as well as IHE leads from each site.
- Supporting the book project as needed.
- Participating in any scheduled/needed meetings for the project and/or research.

Wipro Science Education Fellowship

Evaluation Update

May 2024

Activities this Month

- Completed administration of 2024 year-end survey for Fellows and DSCs.
- Participated in monthly Wipro call on May 21, 2024.
- Attended the ELL group meeting on May 23, 2024.
- Began and completed most of the year-end interviews of selected DSCs and district administrators from all states. Also sent invites to all IHE leadership for a year-end interview with me in June/July.
- Reviewed Chapter 2 of the book in detail and also provided some thoughts on how the evaluation work could be included in the book overall.
- Traveled to California for year-end meeting on June 1.

What's Next?

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

- Observing/participating in California year-end meeting.
- Designing/administrating a post-travel survey for Fellows & DSCs who visited Missouri and California this spring.
- Scheduling and begin conducting year-end interviews with IHE leads from each site.
- Continuing the analysis of all year-end data and begin drafting the 2023-2024 annual report.
- Touching base with the New Jersey team about site visit planning in late September.
- Supporting the book project as needed.
- Participating in any scheduled/needed meetings for the project.