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

WIPRO SEF

DECEMBER 2019
QUARTERLY REPORT

Science Education Fellowship

cosmic
Center of Science and Math in Context
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BOSTON, MA 02125

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How to Read this Report

This report captures the work of the Wipro SEF program from September 15, 2019 through December 15, 2019.

- If you are unfamiliar with the Wipro Science Education Fellowship begin by reading the Introduction. If you are familiar with the program you may want to read the entire report or focus on a specific site(s) that interests, you. 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.
- You may want to read about how the program is impacting specific fellows by reading the Featured Fellows vignettes. These vignettes are written by fellows and provide their personal insight into the SEF program. They are located throughout the report by site.
- Additionally, the evaluation report provides an outline of activities related to data gathering from the entire 7 university network during this quarter.

INTRODUCTION

Wipro SEF Program Overview

The Wipro Science Education Fellowship (SEF) is a two-year program designed to improve individual teacher practice, foster teacher leadership opportunities and create a district corps of teacher leaders supporting sustainable positive changes in science education. Professional development for fellows is led by a university in partnership with the local school districts. 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 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. In Year 1, Wipro Fellows from across the participating school districts are placed in two different communities of teachers. In the fall, fellows are assigned to a subject-based vertical

team made up of four to six K-12 teachers referred to as a Vertical Collaborative Coaching and Learning in Science(V-CCLS) team. In the spring four to six Fellows who teach in the same grade span are assigned to a Horizontal Collaborative Coaching and Learning in Science (H-CCLS) team. Each of the V-CCLS and H-CCLS teams select a research paper, videotape lessons, view observation-videos, use specific observation and feedback protocols, look at student work, and prepare for a presentation. These small professional learning communities determine their own schedules, courses of study, and the lessons they will all be videotaping and observing.

V-CCLS Course of Study

Each V-CCLS team develops a Course of Study which includes a Disciplinary Core Idea (DCI) and a research focus. The Course of Study (COS) is the action-research topic that the entire team is going to explore via research articles, observations, and looking at the student work from the observed lesson. The course of study research provides the lens for classroom observations. V-CCLS teams determine their own COS but the topic must focus on science in the classroom (as opposed to looking at writing, for example) and it must be looked at vertically across the grade bands. In brief, all teachers in a V-CCLS team (elementary, middle and high school teachers) teach similar content lessons and explore how the lessons compare across grade levels and how the vertical articulation of content is manifested.

H-CCLS Course of Study

The Horizontal Collaborative Coaching and Learning in Science (H-CCLS) model is similar to the V-CCLS in that teams develop a two-part course of study. The parts of the COS include a research focus and one Science and Engineering Practice (SEP) from the Next Generation Science Standards (NGSS). The team will "dive deeply" into one SEP to learn about the practice and how to successfully bring it to their students. For example, a high school H-CCLS may dive deeply into "Planning and Carrying out Investigations"-Practice #3, each in their own content specialty, while focusing on research about "Using Scaffolding and Backward Design to help Students Plan Experiments." On the other hand, an elementary H-CCLS focusing on NGSS practice #7: Engaging in Argument from Evidence, may chose a COS to learn classroom strategies that foster argumentation skills and help students understand what evidence is and isn't at the elementary level. Each H-CCLS team is assigned a different SEP for their focus. This provides an in-depth study of one SEP for the team and a familiarity with other SEPs for all Fellows through the cross team sharing at the end of the semester.

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. One half of the growth plan focuses on supporting district initiatives and includes the fellow leading professional development for other teachers. The full growth plan culminates with a report and presentation of a poster session at the end of year conference.

A District Corps of Teacher Leaders

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

Wipro SEF University Sites

Seven universities are participating in the Wipro SEF program. The original three sites UMass Boston, Montclair State and Mercy College are receiving Phase II funding which enables them to continue working with previous Wipro Fellows and to extend projects that were developed in the 2 years of Wipro SEF funding. The table below shows what happens during each successive year in the rollout of the Wipro SEF program. The next table shows where each University site is within the cycle.

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

Key to yearly activities

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
2017-18	Year 0	Year 0	Phase II Lead Institution	Year O	Phase II	Year 4 and Phase II	Year 1
2018-19	Year 1	Year 1	Phase II Lead Institution	Year 1	Phase II	Phase II	Year 2
2019-20	Year 2	Year 2	Phase II Lead Institution	Year 2	Phase II	Phase II	Year 3

Table of Wipro SEF sites

QUARTERLY SUMMARY

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

A project management system

The Trello boards that were created in 2018 have been active and have become an important place for the Wipro SEF community to share their work. Originally the boards included examples from MA, NJ and NY but now include postings from all seven sites. Sites can see sample meeting agendas, induction ceremony and end of the year conference programs from other sites as part of the cross-site collaboration. They can also review quarterly and annual reports. Currently there are 9 Trello boards in use.

Monthly Phone calls

All seven sites were included in cross-site monthly phone conversations to share strategies, successes and challenges and to shape the program based on the collective experiences.

Cross Site Visits

Each site is responsible for creating the professional development sessions for year 1 fellows. To help each site have a better understanding of what happens at another site, visits were arranged in this quarter with a focus on year 1 meetings. Each visiting IHE leader provided warm and cool feedback to UMass Boston which was collated and shared with the host site.

In the chart below, one can see the site visits for this quarter.

Site that was visited	Date	Meeting Description	IHE Leader	Visitor Affiliations
MO- Univ. of Missouri	10/9/2019	Monthly meeting Cohort 2	Arthur Eisenkraft & Karl Jung	MA-UMB and FL Univ. of South Florida
FL- Univ. of South Florida	10/12/2019	Monthly meeting Cohort 2	Pam Pelletier & Arthur Eisenkraft	MA-UMB
CA-Stanford University	10/17/2019	Monthly meeting Cohorts 1&2	Arthur Eisenkraft & Meera Chandrasekhar	MA-UMB and MO-Univ. of Missouri
CA- Stanford University	11/6/2019	Monthly meeting Cohorts 1&2	Marilyn Decker & Ratna Narayan	MA-UMB and TX-Univ. North Texas Dallas
MO-Univ. of Missouri	12/5/2019	V-CCLS Presentations	Arthur Eisenkraft	MA-UMB

Planning for the February IHE Leadership Meeting

The UMass Boston team has begun planning the February leadership retreat. The retreat will be held in Dallas beginning on the evening of February 7th, 2020 and ending early afternoon on the 9th. Each Phase II site (NY, NJ) will send a district science coordinator and an IHE leader to the meeting. TX, MO, CA and FL will send 2 district science coordinators and I IHE leader. The focus of the meeting will be teacher leadership and the role of coordinators in building a district leadership model in the years after the Wipro SEF funding ends.

Phone calls with Fellows

As the network of Wipro sites has grown it has become increasing difficult for fellows to get to know fellows from other sites. The distances and costs for fellows to meet each other are just too much. To help fellows get to know one another, Dr. Eisenkraft suggested a series of six stand-alone, virtual conversations on topics of interest to the fellows. The conversations often consisted of only a few participants but as Dr. Eisenkraft said, “For the

few who attended it was fantastic." The challenge for the future is to figure out how to get more fellows to attend.

Proposal to the National Science Foundation

In late summer, Dr. Eisenkraft, UMass Boston, assembled a team from three Wipro SEF sites (UMass Boston, Mercy College, Stanford University), the University of Georgia and David Heil Associates, to revise a proposal to the National Science Foundation (NSF). The proposal entitled, *Aspiring Teacher Leaders Advocating Science* (ATLAS) was submitted to the NSF in November. The project utilizes the Wipro Science Education Fellowship program to explore how science teacher leadership is developed within schools and districts. The proposed study specifically focuses on district-level change and (1) explores how the instructional practice of the teacher leaders changes over time; (2) how the teachers develop into leaders; and (3) how a distributed leadership approach impacts various science education initiatives at the district level.

SITE REPORTS

CALIFORNIA- STANFORD UNIVERSITY

V-CCLS Course of Study (Cohort 2)

Team	Science Content	Course of Study (Equity Principle Focus)	Research Article
Group 1: Chemistry Sohum Bhatt, Krista Berry, Joanne Endo	PS3.A PS3.B Energy and conservation of energy	Inclusion/Equity of Voice: Our group will focus on creating equitable opportunities for students to share with the whole class.	Gardner, R., Heward, W. L., & Grossi, T. A. (1994). Effects of response cards on student participation and academic achievement: A systematic replication with inner-city students during whole-class science instruction. Journal of Applied Behavior Analysis, 27(1), 63-71. DOI: 10.1901/jaba.1994.27-63
Group 2: Biology Jessica Overby, Margaret "Maggie" Dominguez, Melissa Duran, Kelsey Magaña	LS1.C Organization for matter and energy flow in organisms	Inclusion/Equity of Voice	Cazden, C. B. (1988). *Classroom discourse: The language of teaching and learning.*
Group 3: Biology Roy Walton, Jennifer Lim, Theresa Lester	LS 1: Structure and Function	Inclusion/Equity of Voice: Focus on using multiple modalities for students to share their thoughts (semi- or non-verbal) while promoting ELL's and helping them to self-advocate in order to be heard.	Cazden, C. B. (1988). *Classroom discourse: The language of teaching and learning.*

Group 4: Biology Anu Sarkar, Carol Lima, Antony Torres	LS2.A Interdependent relationships in ecosystems	Equity of voice: Our group is focusing on the different talk protocols that exist to engage students in academic conversations.	Michaels, S., & O'Connor, C. (2012). Talk science primer. *Cambridge, MA: TERC.*
Group 5: Earth Science Vicente Patiño, Andrea Martinez, Satomi Fujikawa	**ESS2.D** Weather and climate **ESS1.C** The history of planet Earth (Patiño) Rock strata and the fossil record can be used as evidence to organize the relative occurrence of major historical events in Earth's history	Inclusion/Equity of Voice Our group will focus on engaging all voices in our classroom and finding multiple ways of talk and expression in both whole class and small group settings.	Michaels, S., & O'Connor, C. (2012). Talk science primer. *Cambridge, MA: TERC.*
Group 6: Physics Allison Houghton, Kjartan "Eric" Armann, Gina Maschio	PS2-1 PS2-2 Motion and stability: Forces and interactions	Equity of Voice: We will be focusing on how to incorporate all voices in group discussions and nonverbal communication. Through the teacher lens, how do we model this effectively and see it active in the classroom.	Michaels, S., & O'Connor, C. (2012). Talk science primer. *Cambridge, MA: TERC.*

Reflections on the V-CCLS Course of Study Process

The CA Leadership Team reflected on last year's course of study topics that were selected by Cohort 1 fellows. They were interesting, but seemed to lack focus, especially when having to consider the disciplinary core ideas across vertical grade bands. This year, the CA Leadership Team decided to limit the course of study topics to our CSET Equity Principles which are described in the table below.

Each of the V-CCLS groups chose one of the equity principles and then used the curated research articles list to help them find an appropriate research article to support their group's work. Fellows were also given a handy "how to read a research article" guide to help them with this process.

CSET Equity Principles	
Principle	***Description***
Explicit Naming	We are explicit about how we take up content in a different way than has traditionally been done in schools. With an eye on historically and socially underrepresented/underserved students (those marginalized on multiples axes of identity), we are mindful about how we build toward more responsive curriculum. We are metacognitive on a daily basis about the choices we make and how they create more equitable educational opportunities.
Content in Context	We discuss and model how to make curriculum and instructional choices based on the students the fellows teach. We honor students' different languages, experiences, and knowledge brought to the classroom and, through curricular and instructional choices, we encourage our fellows to do the same.
Prior Knowledge	We discuss and model how to know and leverage students' languages, experiences, and knowledge while also creating shared experiences in order to diminish misconceptions and incomplete understandings so that students can enter into learning more equitably.
Inclusion/ Equity of Voice	We engage different voices in our PD, honoring multiple ways of talk and expression, in order to discuss and model how fellows can do the same for their students.
Classroom Culture	We discuss and model how to engage all learners in the classroom learning through room arrangement/decor, seating, table boxes, and other classroom tools (like charts and posters). We discuss and model norms that attend to learners' social-emotional needs.

Currently, all V-CCLS teams are on schedule and will be ready for their presentations at the end of January.

Supporting V-CCLS teams

There were several supports that we implemented this year to help V-CCLS teams along. Here are brief descriptions of these supports:

- Meaningful V-CCLS work-time was built into the monthly whole group PD sessions. During these times, V-CCLS teams spent time getting organized, discussing next steps, reviewing research articles, etc.
- The CA Leadership Team helped V-CCLS teams set-up Zoom Conference calls for their debrief sessions or presentation planning. Most groups were able to meet in person, but there were times where geography was a hindrance.
- The CA Leadership Team streamlined the logistics involved with the linking/uploading of documents and naming of videos by creating an easy one-stop document for each V-CCLS Team. See this EXAMPLE team document organizer. This document has greatly impacted the ease of collecting feedback and reflection documents from fellows.
- This year, the CA Leadership Team wanted V-CCLS to have a greater emphasis on the disciplinary core ideas that they are teaching in their V-CCLS teams. To help them go deeper in this work, November's PD session focused on helping fellows create conceptual flow diagrams on the science ideas chosen by the group. They then laid out each conceptual flow in their group and discussed how the science ideas connected from elementary, middle, and high school. The feedback that we received from the fellows was that this was an extremely meaningful activity that really helped them understand their content better.

Currently, site leaders think the teams are doing well overall. The CA Team will continue to help groups learn how to work together. Fellows each have their own Talent accounts and are able to easily share videos, lessons, and student work with each other.

Monthly meetings

The following table contains the link to all the professional learning sessions slide decks up to date.

Cohort 1	Cohort 2
September Slide Deck	September Slide Deck (9/6) September Slide Deck (9/26)

October Slide Deck	October Slide Deck
November Slide Deck	November Slide Deck
December Slide Deck	December Slide Deck

Reflections on the September to December meetings

Overall, professional learning sessions are going well. The professional learning experiences have been supporting our goals for each cohort. The CA Leadership Team has a better idea of the expectations of the program and for the fellows' learning for each year in the program.

Three pillars of Wipro SEF

- **Adult Learning**
- **Reflective Practice**
- **Leadership**

The CA Team developed professional learning goals for each year of the Wipro SEF Program. All professional learning experiences are grounded in these goals and made explicit to fellows during each session. The goals for Year 1 and Year 2 of the program are listed below.

Professional Development Focus Year 1 (Cohort 2): Improving Classroom Practice in Science Teaching and Learning

- Deepen your understanding of NGSS with a focus on phenomena, 3 dimensions, & grade level progressions
- Strengthen your ability to provide equitable opportunities for all learners
- Strengthen your ability to use research to inform your practice
- Build community with other science fellows within and beyond your school districts

Professional Development Focus Year 2 (Cohort 1): Practicing Leadership in Science Teaching and Learning in your Context

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

- Continue reflective practice in your own classroom practice

District Science Coordinators

This year, the CA Leadership Team met with all of the District Coordinators to "revamp" what we thought their participation should look like this year. The team thought that there could be more meaningful interactions between District Coordinators and fellows that we did not think was being accomplished during the monthly PD sessions, mostly because it was not the most appropriate time for these interactions to occur. District Coordinators also wanted time to meet together in less rushed and more meaningful ways. To that end, the whole group decided on the following plan:

- There would be District Coordinator Only Meetings four times a year for two hours each. These meetings would be focused on sharing problems of practice and ways they could best support their Wipro fellows. These meetings are done by Zoom or in person (with lunch provided if they come in person).

- District Coordinators would participate in two full PD sessions during the school year with the fellows. During these times, District Coordinators would intentionally and meaningfully interact with fellows, not just observing what was happening in the sessions by sitting in the back. For example, this past December, District Coordinators met with both cohorts together to build community in the opener and then moved into work with Cohort 1. Together with their fellows in Cohort 1, they discussed each individual GPS project for fellows in their districts and created a large graphic to demonstrate how their district's GPS projects fit together to support their science goals in their districts.

- District Coordinators would individually check-in more regularly with Wipro fellows in each cohort. For instance, the District Coordinator from Campbell School District has been making more classroom visits to show her support for the work that they have been doing. The District Coordinator from Mountain View Whisman School District has been actively supporting each of the GPS projects for Cohort 1 fellows as well as checking in regularly with Cohort 2 fellows. In the Moreland School District, the District Coordinator has provided opportunities for all Wipro fellows to be involved with district science professional development sessions (more description in the section below under additional information).

- The CA Leadership Team has arranged classroom observations with each Wipro district to see Wipro fellows in action in their classrooms. The site visits have begun in December 2019 and will continue into January 2020.

Here are the scheduled District Coordinator Meetings for 2019-2020:

District Coordinator Only Meetings:

- Monday, October 21, 12-2pm (Stanford or Zoom)
- Wednesday, November 13th, 12-2pm (Stanford or Zoom)
- Wednesday, January 15th, 10-12pm (Stanford or Zoom)
- Wednesday, April 29th, 10-12pm (Stanford or Zoom)

PD Session Interactions with Fellows:

- Thursday, December 12, 2019 from 4:30-7:30pm @ Stanford
- Saturday, March 21, 2020 from 9:30am-12:30pm @ Stanford

District meetings

District Coordinators are regularly checking in with fellows individually and sometimes as a whole group. The individual check-ins about the fellows' work seems to be a better use of the District Coordinator and fellows' time. Fellows are reporting that they feel supported by their District Coordinators and District Coordinators have a much deeper understanding of what each fellow is doing in the program.

The focus of the district meetings has been around two main areas:

1. Supporting individual fellows in either their GPS work or V-CCLS work
2. Coordinating with fellows around district science initiatives and goals.

The second area mentioned above is worth noting. Because the district coordinators understand the strength of the Wipro program and the potential for the leading teachers to make significant impact in their districts, several District Coordinators have actively involved Wipro fellows in district science initiatives, including leading professional development sessions for the district and working with district personnel to hone the work of their current science initiatives. Because of the coherence between the work of Wipro fellows and district initiatives, there has also been a greater involvement from school site principals in understanding the Wipro program and supporting fellows in their work.

Recruitment plans for Cohort 3

Date	Location	Focus of Event
January 15	N/A	Applications for Cohort 3 will open
Month of February	Each district	Meet with district coordinators and superintendents (if possible) to determine best recruitment strategy for their district

March 15	N/A	Applications for Cohort 3 will close
March15-March 30	N/A	Review Applications and make final decisions
April 1	N/A	Acceptances, waitlists, and denials sent out
May 12	Stanford University	Cohort 3 Induction Ceremony

GPS Progress

Site location (State): CA	**Cohort #1**
Update: All Cohort 1 fellows have chosen a GPS Project and are actively working on their projects. They have regular check-ins with their assigned mentors and have been actively working on their website portfolios on WiX. Fellows also have a Benchmarks Document that they use to keep up with their projects. Fellows can also request money or resources to support their GPS Projects. See the link to the Budget Request form. Budget requests so far have included materials & supplies, books, substitutes, and stipends for participating teachers at their school sites.	

GPS Topics

District	**Name of Fellow**	**GPS Project (brief summary)**	**Coach/Mentor**
Campbell Union HS	Alfonso Garcia	Develop a physics Hyper Document that can be shared with students, colleagues and the physics community to enhance the learning of physics concepts with a variety of resources (interactive platform).	Sharon
Campbell Union HS	Dean Lorenzo	To increase student's science identity with changes in practices in the classroom	Sharon
Campbell Union HS	Kori Reynolds Holcomb	To facilitate conversations about how to implement standards-based grading amongst the Living Earth team with the intention of presenting findings to the department. Different teachers within the Living Earth team are implementing the standards-based grading in different ways. I am facilitating meetings to compare the student outcomes with different	Sharon

		methods in order to present the most successful methods to the rest of the department.	
Campbell Union HS	Anupama Tandon	NGSS Demystified - Enhancing opportunities for teachers and preparing students for a lifetime of success This project seeks to understand what kinds of supports are needed to help science teachers at a school site to promote sustainable science instruction aligned with NGSS in their classrooms. The project includes support for science teachers through coaching and collaborating where tools and strategies for demystifying NGSS are shared. The expectation is to provide better understanding and clarity to teachers about NGSS such that there is growth in student engagement and attainment in response to implementation of lessons designed based on the NGSS site wide.	Tammy
Mtn. View Whisman	Angela Bisbee	Create an online STEAM bank that can help support teachers at MVWSD with resources on NGSS, Anchor Phenomena, vocabulary, STEAM skills and examples of jobs and people in the STEAM field.	Tammy
Mtn. View Whisman	Kyle Hillebrecht	This work will center around the NGSS SEPs in the 3-5 and 6-8 bands, with the purpose being to create a clear picture of what the SEP expectations are for students at the end of 5th grade and how to build on that foundation as students transition to middle school science in 6th grade. The final product will have immediate use for STEAM teachers, 6th Grade Science teachers, and 5th Grade classroom teachers implementing NGSS. By focusing specifically on the bridge between Upper Elementary and 6th grade, we will open communication and align expectations between our middle and elementary schools, specifically in science teaching. We will be laying the foundation for future work in the middle and elementary schools as they further articulate how to scaffold student learning in science.	Sharon
Mtn. View Whisman	Natalie LaRosa	Create a collaboration log/yearlong plan with STEAM teachers that involves full coherence of classroom projects and STEAM activities. All of a grade level team will implement this. The	Sharon

		collaboration log/year long plan can be used by the district as a model for other school sites to those who are new to the STEAM model.	
Moreland	Shane McDonough	Creating and Refining Recycling/Sustainability Education in Moreland. This goal supports increased sustainability in the Moreland Community by helping to educate students, teachers, and families on how to recycle, and how to be more sustainable.	Danny
Moreland	Nikita Shah	Create professional development sessions for teachers K-8 for the new science curriculum. As an extension in the following year, start a Slack channel for teachers to support each other around the implementation of the science curriculum in year 2.	Sharon
Moreland	Michelle Sutton	Create district level professional development sessions in science and begin a district rollout plan for new science instructional materials.	Tammy
SJUSD	Jesse Bjorngjeld	Work with biology professor & graduate students from Stanford on the implementation of the Frogger Program in the classroom and school. NGSS lessons aligned with this program will be implemented in the classroom.	Tammy *Sharon *Dr. Lauren O'Connell
SJUSD	Delyna Cruz-Tanzi	Provide support to new Science teachers at Castillero MS. The project will include providing 3 new Science teachers (2 new to teaching this year, and 1 3rd year teacher) regular support and resources throughout the school year.	Danny
SJUSD	Dean Guillen	Develop a part of the 8th grade curriculum, which involves astronomy, around astrophotography using an on-line site called "YouthAstroNet." The site is put out by Harvard-Smithsonian Center for Astrophysics Science Education. The goal is to use astrophotography and the surrounding technology to provide a base to not only engage students, but to further their curiosity in the universe.	Danny
SJUSD	Ron Hamby	Create a doodle book that breaks down the PE's into small chunks to be taught in an interweaving manner. The product will be a book that can be used by teachers and students. Each PE will be broken	Danny

		down into manageable chunks with doodles that connect to all DCI's.	
SJUSD	Amy Howell	Build an integrated curriculum to help students to increase their scientific literacy. For students to be able to access the material that we present in the science classroom, students need to meet the basic literacy skills.	Danny
SJUSD	Kenneth Pringle	Develop a unit of study in chemistry that uses the 5E's and files previously created for chemistry. The project will involve categorizing the assets as one of the 5E's, developing a lesson plan that shows how the assets are used, show what the teacher is responsible for and what the student is responsible for. The intent is to be collaborative and involved other teachers in the district for materials and to see if they would like to collaborate in the development and implementation of the unit. Materials will be organized in internet accessible document(s).	Tammy
SJUSD	Galaxy (Sarah) Smith	GPS Project Idea: Applying Computational Thinking as a Life Skill to 6th Grade Students Create a series of documents meant to guide students in their planning and implementing of any large task or project both individually and with a group modeled after Computational Thinking.	Danny

GPS Progress

GPS Projects are being monitored in the following ways:

- Regular Check-Ins with assigned mentors (at least monthly if not more)
- Adherence to the Benchmarks Document and regular "signing off" by each mentor
- District Coordinator check-ins and support (ongoing)
- Worktime and check-ins during monthly whole group professional development sessions (see our PD Calendar for Cohort 1)

Meetings with GPS fellows

Cohort 1	Cohort 2
September Slide Deck	September Slide Deck (9/6)

	September Slide Deck (9/26)
October Slide Deck	October Slide Deck
November Slide Deck	November Slide Deck
December Slide Deck	December Slide Deck

Reflections on your meetings with GPS fellows

The CA Leadership Team is really happy with the progress that the fellows have made on their projects. One of the "requirements" of the projects that leadership has asked for them to make explicit is how their projects are influencing others in their understanding of excellent science teaching and learning. To that end, the projects seem really focused, district appropriate, and fellow appropriate.

Cohort 1 Fellows

Yes. The CA Leadership Team continues to intentionally build community within and between the cohorts as well as by district. One thing that was done during the December meeting was to have Cohort 1 fellows share their V-CCLS experiences with Cohort 2 fellows. That was helpful in alleviating anxieties around the V-CCLS Presentations that will take place at the end of January.

Maintaining Cohort 1 Involvement

The CA Leadership Team has not thought that far ahead yet and hope to get a better idea of what other sites have done.

Featured Fellows

Angela Bisbee, Cohort 1, Mountain View Whisman School District
When the opportunity to be a part of the Wipro Fellowship came my way, I did not hesitate to sign-up. After all, I am an elementary school teacher and I was trying to incorporate more NGSS into my classroom. This fellowship seemed like the perfect way to do that. If anything, I figured I'd receive a few strategies on implementation of these new standards while collaborating with teachers in the area. As far as professional development went, this chance seemed like a good way to improve my practice while getting some science content as well. The Wipro Fellowship has been one of the best professional development experiences I have encountered in over a decade of teaching. While I wanted to get some quick NGSS training, I ended up being a part of something much more meaningful. In my V-CCLS group, I not only explored group work in the classroom setting, but I also had a chance

to sit down and collaborate with teachers at the high school level. We were able to really look at our science teaching in a new and valuable perspective. In my H-CCLS group, we looked at inquiry in different stages and how different the implementation could go based on grade level and classroom culture. It was an eye-opening experience that generated a lot of great discussion and reflective thinking.

Now, I have transitioned from a traditional classroom teacher to a STEAM teacher, working with almost three hundred elementary students and exploring NGSS in even greater depth. And the resources I have encountered in this fellowship have not only been helpful, they have been invaluable. The importance of equity has influenced my work greatly. The reflective practices I used with my H-CCLS and V-CCLS groups is something I still carry with me and use regularly. The personal and professional connections have been a tremendous asset and a source of remarkable support. I have benefitted from being in the Wipro Fellowship in many ways. Not only do I feel I made an investment in my career, I feel reinvigorated as an educator.

Shane McDonough, Cohort 1, Moreland School District

When I applied to be a Wipro Fellow over a year ago I did so in the hopes that it would help me to develop as a science teacher. I have taught 7th grade math and science for the past 5+ years and in that time, I've received a great deal of professional development in math but only minimal professional development in science. I saw the Wipro fellowship as an opportunity for me to learn from more experienced teachers. I didn't really think I had much to offer as a fairly new teacher.

During year 1 of the program, I had the opportunity to work with teachers from other districts and I gained so much insight from our conversations around best practices in the science classroom. These teachers, many of them veteran educators, wanted to hear my ideas and insights and cared about what I had to say. My year 1 experience reminded me that to be a teacher is to be a life-long learner. This experience also helped me to realize that I have a lot to offer as an educator.

For my year 2 GPS project, I've decided to focus on an issue that is very important to me: sustainability and recycling education. In 2018, I took over my school's recycling club (Green Keepers) when no one else was willing to take it on. In the first year of running it, I realized that there was a huge need for sustainability and recycling on our campus and throughout our district. Staff and students didn't seem to understand how to

recycle, why it mattered, or how it was connected to the climate crisis. Working with Wipro that same year I began to realize that I didn't need to wait for someone else to address this problem and that *I* could be the one to take the initiative.
I came into this school year ready to take on this leadership role and in the past 4 months the club and I have made a lot of progress. We created an educational video on how to recycle and why it's important. The video was shown to every student in every science classroom this November and we've seen a reduction of trash in recycling bin since then. I've begun sending out educational materials to parents and staff about recycling and sustainability topics. I am also developing an illustrated educational story on recycling for the elementary schools in our district. All of these things that I would have liked to see done; Wipro helped me to realize they were things *I* could do, and that I didn't need to wait for someone else to take them on.

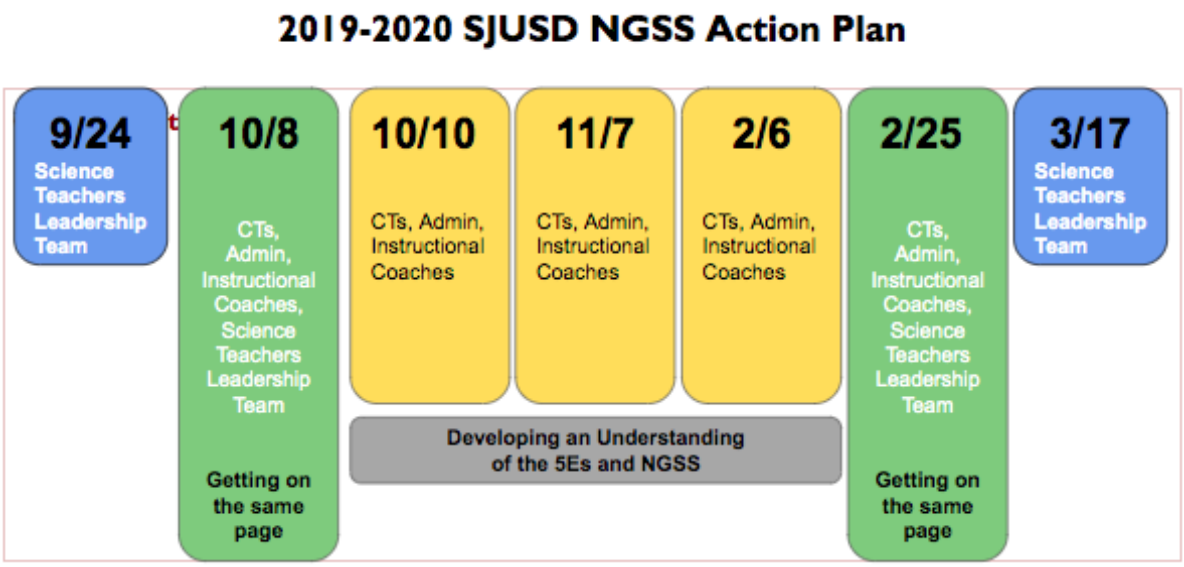
Trello Postings

Cohort 1	Cohort 2
September Slide Deck	September Slide Deck (9/6) September Slide Deck (9/26)
October Slide Deck	October Slide Deck
November Slide Deck	November Slide Deck
December Slide Deck	December Slide Deck

Other News - The CA Wipro Program has had a lot of other exciting news to report for the Fall of 2019. See below for details.

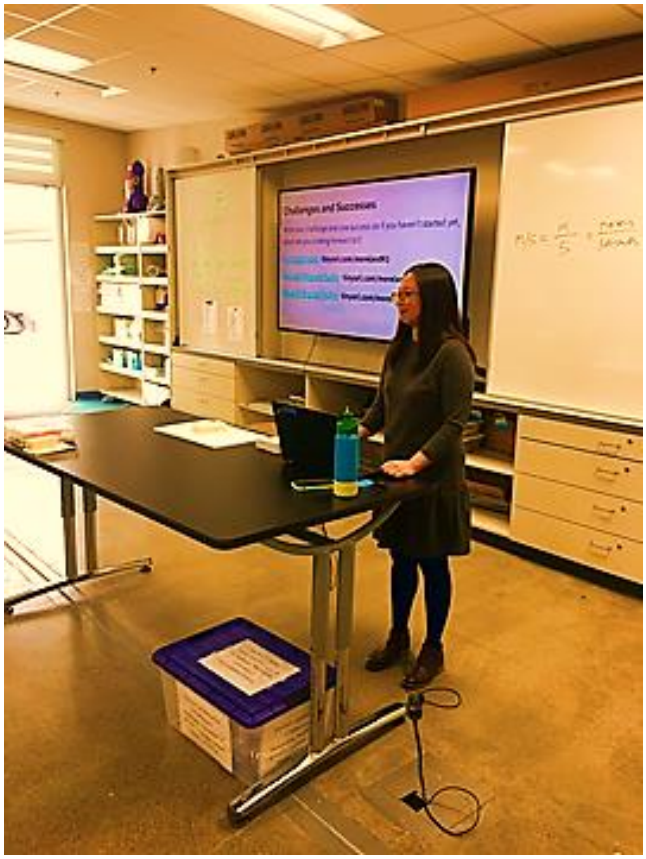
San Jose Unified School District

This year, because of the Wipro Partnership, San Jose Unified School District has implemented a district-wide plan through CSET to support science teaching and learning for secondary science teachers. Wipro fellows have been integrally involved in this plan, which has created a nice coherence between Wipro work and district work. The focus of the work is to build school site capacity by empowering science teachers, teacher leaders, instructional coaches, and administrators to develop a strong understanding of science teaching and learning in the classroom at *each school site*. The professional learning experiences are meant to focus on the roles each of these people play in supporting instruction. The following graphic shows the district-wide plan that is being implemented this year:



Moreland School District

The Moreland School District has newly adopted science instructional materials starting this school year called *Stemscopes*. Many elementary teachers in their district have been hesitant to open the materials and implement science in their classrooms. The District Coordinator from Moreland School District thought that this would be a great opportunity to give Wipro fellows from Cohort 1 and Cohort 2 opportunities to help lead the curriculum rollout and professional learning for all teachers K-8 in their school district around science teaching and learning. The fellows are doing a great job and will continue this work during the rest of the school year and beyond. Here is a picture of a Cohort 2 fellow, Joanne Endo, leading the grade 4-5 teachers in her district.



Site Visit from Anurag Behar

On September 24th, Anurag Behar visited classrooms in our Mountain View Whisman School District. Although it was a very quick visit, the Wipro District Coordinator, district personnel, and Wipro Fellows were very hospitable. The visit went well, and we look forward to more visits in the future. Here was the agenda for the site visit:

Anurag Behar School Visit Schedule for Tuesday, September 24th

Time	Activity
9:00am	Arrive at Stevenson PACT Elementary School Address: 750 San Pierre Way, Mountain View, CA 94043 Phone: (650) 903-6950 • Sign in at front office
9:10-9:30am	Observe Kyle Hillebrecht (4th grade)
9:35-9:55am	Observe Natalie LaRosa (3rd grade)
9:55-10:10am	Debrief & Discussion
10:10-10:20am	Travel to Vargas Elementary School Address: 220 N. Whisman Road, Mountain View, CA 94043 Phone: (650) 903-6952 • Sign in at front office
10:25-10:45am	Observe Angela Bisbee (STEAM teacher)
10:45-11:00am	Debrief and Discussion

V-CCLS Course of Study (Cohort 2)

Cohort # 2	V-CCLS Course of Study		Site location: Florida
Team name (Also list team members)	**Disciplinary Core Idea**	**Research Article Topic**	**Title of Research Article and Citation**
Biology Ann Salazar, Jennifer Griffone, David Seis, Sonila Toska, Bhagyashree Kulkarni	Law of conservation of energy in living systems	Using concept maps as a way to organize and connect ideas to help with retention	Quillin, K., & Thomas, S. (2015). Drawing-to-Learn: A Framework for Using Drawings to Promote Model-Based Reasoning in Biology. CBE-Life Sciences Education Vol. 14, 1-16. Sabine Gerstner & Franz X. Bogner (2009) Concept Map Structure, Gender and Teaching Methods: An Investigation of Students' Science Learning, Educational Research 51:4 425-438
Chemistry: Richard Card, Anita Ventura, Sherri Alvarez, Jennifer Rivera, Brett Goodrich	Mixtures and Solutions	Inquiry-based teaching and Questioning	Avsar Erumit, B. Fouad, K.E. & Akerson, V.L. (2019). How do learner-directed scientific investigations influence students' questioning and their nature of science conceptions? International Journal of Education in Mathematics, Science and Technology (IJEMST), 7 (1), 20-31. DOI:10.18404/ijemst.509246 Colburn, A. (March 2000). An Inquiry Primer. Sciencescope.
Physics: Cayla Repass, Jennifer Cogan,	Energy transformations	Movement in the science classroom	Thompson, M., Kolbo, J., Gilkey, S., Zhang, L., & Pritchard, M. (2017). The Effects of Move to Learn on Student Time on Task and Time

Michele Wiehagen, Karen Bulino, Daniel Rice			on Task Transitions. National Teacher Education Journal, 10(1). Stevens-Smith, D. A. (2016). Active bodies/active brains: The relationship between physical engagement and children's brain development. Physical Educator, 73(4), 719.
Earth: Carrie Donatelli, Tara McClintick, Teresa Buckman, Latasha Seay, Julie Fine	Human impact	Collaborative learning	Dennis Fung &Wai-mei Lui (2016) Individual to collaborative: Guided group work and the role of teachers in junior secondary science classrooms, International Journal of Science Education, 38:7, 1057-1076. Kristin Huysken, H. Olivey, K. McElmurry, M. Gao, P. Avis (2019) Assessing collaborative, project-based learning models in Introductory Science Courses, Journal of Scholarship of Teaching and Learning, 19:1,6-28.

Reflections on the V-CCLS Course of Study Process

Site leaders used the same multi-step method as last year. First the Fellows were given time during their first two meetings to discuss their individual interests and their districts goals for this year. They agreed on a disciplinary core idea and a topic for their research article. The team provided them with feedback and suggestions for how to narrow down their topics and provided them with multiple ways to search the literature. They provided site leaders with citations for possible articles, which they reviewed and made suggestions. Site leaders also provided the Fellows with feedback on pedagogy topics. Finally, they supported the Fellows in securing full-text articles.

All V-CCLS teams are on schedule and have completed their observation and feedback cycles. At the meeting on December 14th, all teams reported that they completed all debriefing sessions. In addition, they are all working on their presentations for January.

The leadership team provided time at the December meeting for the teams to work on their presentations. In addition, the fellows were shown a video of a presentation from last January.

The leadership team, "felt like this year's fellows selected better, more specific topics for the pedagogy aspect of the course of study and we will make sure next year to ensure that they do this again."

Classroom video recording

They used a variety of methods. Classroom videos were recorded using personal devices like phones, tablets, and camcorders. Some of the V-CCLS teams used Zoom to meet and record debrief meetings. Other groups have used their personal recording devices. All videos and documents were shared using a project Dropbox account.

Monthly meetings

Reflections on the September to December meetings

Overall, the leadership team was very pleased with what happened in the September through December meetings. They met in a variety of different locations in the three counties (September: Pasco County School District; October: Boyd Hill Nature Preserve, Pinellas County; November: The Glazer Children's Museum, Downtown Tampa; and December: Pasco county school district). The sites were selected so that they would be somewhat accessible to all the Fellows and would provide them with the opportunity to see some of the resources for informal science education in the region. Site leaders are still having difficulty integrating the resources of sites like the nature centers and the museum into our meetings. They find that the fellows either want to go home after the morning meetings or to meet with their teams. Leadership also tried having lunch after the meetings near the sites. The leadership team and DSC had nice times at lunch but no fellows joined them.

The DSCs are fully integrated into the meeting planning and in the meetings themselves. They meet with the site leaders via Zoom once per month for planning and keeping track of the fellows and their projects.

All the meetings engage the Fellows in learning activities. It is evident from the Fellows' participation in the meetings that they are increasing their knowledge of science, science pedagogy, and how science is taught across levels and districts.

Three pillars of Wipro SEF

- **Adult Learning**
- **Reflective Practice**
- **Leadership**

Reflective Practice

Again, based on the team's observations and discussions with the Fellows at the meetings they are reflecting on their practice. "We also saw that in our review of the videos of their group meetings and their V-CCLS forms."

Leadership

The fellows' ability to lead engaging discussions about the literature and science teaching practices suggest that they are developing as leaders. The leadership team recently asked them if they had ever presented to adults before. All said they had.

September Monthly Meeting at Pasco County School District

November Monthly Meeting at The Glazer Children's Museum at Downtown Tampa

December Monthly Meeting at Pasco County School District

December Monthly Meeting at Pasco School County

District Science Coordinators

This fall, Florida's DSCs took a very active role in the monthly meetings. For the September, October, and November meetings, the DSCs planned and facilitated the majority of the program for those meetings. Their expertise adds quite a lot to the meetings.

District meetings

DSCs meet with fellows every other month during monthly meetings. Because these meetings occur during our monthly meetings, we are there to observe and sit in on these meetings. They meet during the meetings when we have both Cohort 1 and 2 together.

The focus of the meetings has been the coordination of V-CCLS groups with district needs and goals. One example has been how the vertical alignment supports the work of Hillsborough County and their STEM innovation hubs. The three districts each have particular initiatives that the DSCs have been sharing with the Fellows.

Recruitment plans for Cohort 3

Date	Location	Focus of Event
January 6	Online	Application Opens

Late-January/Early-February	Online	Informational Webinar
March 23rd	Online	Applications Due
April 15	Email	New fellows notified
May 15	USF	Induction Ceremony
May 16	USF	TB Wipro SEF End of Year Conference

GPS Progress

Site location (State)	Cohort #
Florida	1

Each month the fellows complete a reflection through a Qualtrics survey. This survey asks them to report their progress in the past month, how their plan has changed, successes and challenges they have experienced, their meetings with their mentors and how those are going, and anything they need from USF or their DSCs.

Mentors should be meeting with the mentees once a month and providing support in whatever way the fellow needs. The leadership team will ask them for an update midway through the GPS year.

Site leaders will catalog all of the GPS portfolios in Dropbox. Fellows have the freedom to use whatever platform they wish for their portfolio, whether that is a series of word documents, a personal website, a Prezi, a PowerPoint, etc. The leadership team did not want to limit the fellows to a specific format, however they did tell them that whatever they submitted needed to be digital.

Reflections on the meetings with GPS fellows

The Florida team has had two meetings this fall with the cohort 1 fellows. At these meetings site leaders have instituted Affinity Groups that have been really valuable for the fellows to discuss their GPS projects with each other in groups that are centered around common themes in GPS projects. They have valued this time and enjoyed talking with each other about their progress.

Site leaders also provided the fellows with a session at the November meeting that focused on designing quality professional development sessions to prepare them to share their GPS work with other teachers in their school/district. This session was led by the district coordinator from Pinellas county, and the fellows found this session extremely valuable as well.

Cohort 1 Fellows

The leadership team provided time for cross-cohort interaction at each of the meetings that cohort 2 has attended. They have done this in two ways:

- "We have provided time for district groups to meet to build community across all of the fellows for each district. Because our districts are so large, many of our teachers do not know each other, and so we have wanted to help build a community of teachers within each district that can support the district's science work."
- "We provided time for the VCCLS groups from last year to interact with this year's VCCLS groups to talk about lessons they had learned and things they wished they had known before starting their work."

Cohort 1 will attend the VCCLS presentations in January and will be a part of the warm/cool feedback groups.

Featured Fellows

Jacqueline Bromley, Pasco County Schools
I remember my Principal bringing me the application for the USF Wipro Fellowship in April of 2018 just four days before the deadline, and it was Easter weekend. I remember feeling unsure of what exactly I was getting myself into, and then, I remember being very excited when I got the e-mail notifying me of my acceptance as a Tampa Bay Wipro Fellow. The most accurate word to describe my first year as a Wipro Fellow is validation. During my first meeting, I was placed into this unique group of wonderful women from different levels of elementary and middle school education; all of us veteran teachers; and, all of us eager to be productive members of the group. Our time together, debriefing our lessons, was the most valuable time for me. We spent time sharing our fears and doubts, of course, but most important of all, we spent time offering each other the most honest and constructive feedback that I have even received in my nine years in education. The feedback from these women validated my abilities as an educator and laid the groundwork for the confidence I would need to carry out my GPS Project.

My GPS Project, while grounded in science education, focuses on helping students themselves give and receive constructive feedback. Aligned with one of the social-emotional standards laid out by my school district, students will learn to objectively assess their own abilities and then, in turn, offer constructive criticism of the work of their peers, specifically of their scientific models, explanations or ideas, or experimental procedures. Coupled with this is the training of staff to offer more constructive and growth-oriented feedback. Too often I have witnessed formative grades as punitive for my students, rather than informative of how they could improve. The confidence and training I have gained as a Wipro Fellow will help me to conduct a professional development for my school of approximately 80 high school teachers. I have also sent an abstract/proposal to present at the 2nd Annual Women in STEAM Conference hosted by St. Leo University in Pasco County, FL. In May, I hope to write up at least one of these classroom activities or experiences to send along for publication in NSTA's *The Science Teacher* magazine, and in the future, national apply for NSTA Teaching Awards.

I am grateful for the opportunity to be a USF Wipro Fellow. It has given me a vision for who I want to be as an educator, and how I can 'advance' in education without leaving the classroom and students who I adore so much.

Kenneth (Kenny) Coogan, Hillsborough County Public Schools

I have been teaching at a public school in Tampa for 6 years. Prior to this I worked in the education departments of zoos and an aquarium for ten years. With the second year of the Wipro fellowship I have been able to integrate my carnivorous plant passion into my teaching career. With the support of the Wipro fellowship I have been able to purchase a reverse osmosis system for the University of South Florida's Botanical Gardens as well as plants for my classroom. With another grant I was able to purchase $400 of carnivorous plants, which my students installed as an exhibit at the Botanical Gardens. They thoroughly enjoyed this service project field trip. I am currently working on signage as well as pamphlets for this exhibit as well as other exhibits. Wanting to reach even more people I became a member of the International Carnivorous Plant Society (ICPS). I told them about my fellowship and was quickly voted to the board. I have been voted as the Education Director of the Society and I am currently working on writing a

middle school appropriate carnivorous plant book. This book which will serve as a portion of my GPS will be sold through the ICPS. Profits from the book will be used to provide the book to teachers around the world. I was able to make these connections and start these passion projects due to the stipend that the Wipro fellowship provides.

Other News

Jessica Strauss (cohort 1) was selected by the Space Foundation as one of 39 outstanding educators to join its Teacher Liaison program in 2020, including six international applicants from India, Mexico, and Puerto Rico. These educators were chosen for their active promotion of space, science, and STEM education in the classroom. Started by the Space Foundation in 2004, the Teacher Liaison program positively influences STEM education on an international level, using space-related content to inspire the next generation of astronauts, scientists, engineers, and space pioneers. Teacher Liaisons serve as advocates for STEM education and use training and resources, provided by the Space Foundation, to further integrate space principles into their classrooms, schools, communities, and beyond. This is based on her GPS work.

Kenneth Coogan (cohort 1) was elected as the Education Director of the International Carnivorous Plant Society (ICPS). This is based on his work for his GPS.

Fellows' activities during Phase II

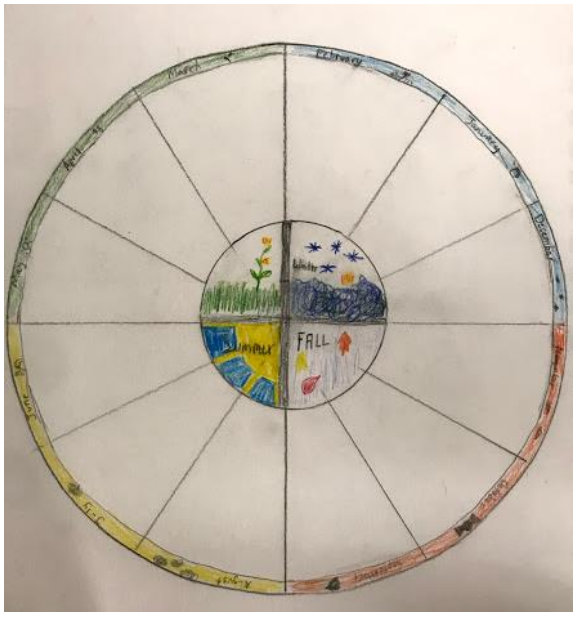
Name & Project	Activities this quarter
Judy McClure Stories from Science Classrooms: Wipro SEF Educators and Their Work	Everything is going well. The most difficult part has been getting responses from some of the teachers to schedule observations, but I've managed to make it happen. I've observed all of the teachers two or three times and interviewed one of them. It has been fascinating to spend time in classrooms as an observer. I've got an interesting grade span to observe (PreK through 5th grade) and three excellent teachers to work with.
Kim Gibbs Supporting Math and Science with Technology in K-8 Classrooms	• I just submitted my Purchase Request Form, which has been slightly revised • As soon as the iPads are delivered, I will set them up for student use • Once the iPads are set up, teachers will be able to borrow them initially for centers and/or STEM projects.
Tal Sebell Shavit Increasing Student Skills at the High School level	So far, our group has met twice: 1. Go over expectations and pick a skill of focus. The group picked "collaboration" 2. First debrief! Tal's lesson. The debrief itself went really well. The majority of the group did not have a chance to read the research articles, so we did not incorporate that into the debrief. We will be doing that for subsequent meetings. I'm still hunting down a few Form 5's. Our next meeting is on Wednesday, Dec 18th where we will debrief two lessons.
Laura Degelmann Wipro Phase II Proposal	I requested robotics equipment to use with students in the K-4 Pathways Program, which is a separate Special Education program for students with emotional and behavioral disorders. As of December 1st, I have received most of the robots that I requested. I have 4 Botley robots to use with Kindergarten and 1st graders, 4 Artie 3000 robots to use with 2nd graders, 5 Makerblock Mbots to use with 3rd graders, and I have some Tinkerbots on back order to use with my 4th graders. From now until February 1st my plan is to teach myself how to use them and create some Google folders for the teachers who will use them so that they have a place to look for lesson plans and information about the robot. Come February I would like to

	start training teachers on how to use the robots, and then they can implement them in their classrooms as they see fit. Right now, I do not have any pictures yet since I haven't started using the robots yet.
Cheryl McDonough Vertical teaming at the Ferryway school.	Cheryl revised her original proposal and submitted a new proposal in November. The key players of the Ferryway Science vertical team, Science educators grades 6-8 all will meet for at least three meetings outside of school hours and be paid accordingly. Other related educators such as the TECH Ed teacher, a fifth grade Science Teacher, a high school science team leader, and an administrator may also be included in specific meetings.
Michelle Curreri After school STEM club	Our first STEM challenge is complete. All students researched, tested, and redesigned a healthy ice pop. The fifth graders have finished their ice pop challenge and we have a winner. Well, a tie anyway. Five judges including a third and fourth grader, the kitchen staff, and our parent nutritionist voted a lime pineapple and a berry pop as the best tasting and most nutritious ice pop. We will make the winning pops for the whole grade and our buddy class as a final celebration of this activity. The STEM book collection has arrived, and kids are digging in and reading all kinds of new science books. The first science STEM club is almost finished. We have breakfast together and read and do science experiments every Thursday. The kids like the book, eating together, and doing the experiments. One thing I misjudged is the club time. We need more than four weeks to finish so we increased the club to six weeks.

Students taste tasting their pops.

Elizabeth Hadley Nature Drawing Club	We decided to try out 4 sessions in the fall and 4 in the spring to make the time commitment for everyone (staff and students/families) a little more manageable and also to give students a range of seasons to observe (as traditionally we've

always held all 8 sessions in the spring). We started 11/22 with an introductory session about what nature journaling is all about and some examples of what kinds of things could be included in a nature journal. Students learned how to set up their page and expectations for going outside. We did a "getting focused" exercise with them to get them used to sitting quietly and observing outdoors. Students got to experiment with different pencil grades and observe anything that interested them for this first session.



For the 2nd session, we introduced Phenology wheels to them as a way to capture seasonal observations. We spent part of the session indoors helping them set up their phenology wheels, and the second half of the session was spent outdoors finding phenomena to include for the "December" section of their wheel.

For the 3rd session (last Friday), students continued to work on their phenology wheels and practiced different types of drawings. We did this kind of practice because this week, (the 20th), we have the Wing masters program coming (it is a surprise for the students). They are going to bring live birds of prey and students will have the opportunity to sketch them from observation.

We also introduced photography this season as another way to capture natural phenomena. We have several students who offered to bring in their Instax mini polaroid cameras and we supplied the film. Students have been taking photos of interesting phenomena to put in their journals to supplement the drawn and written work.

In between the fall and spring session, students will have the opportunity to take their journals home with them or keep them in school to continue working on them on their own (and continuing phenology wheel observations throughout January, February, March, and April). Several students have asked if they could take them on vacation with them to work in them or keep them at school to use during outdoor recess, which we think is neat to encourage.

Judy McClure was able to come out and observe the phenology wheel intro session and is planning on attending this week's Wing masters session as material for the book/essay she's writing.

Meetings with Fellows

One of the requirements of the Phase II award was to meet several times during the academic year. Boston traffic makes it nearly impossible for teachers to travel from one side of the city to another. We found that getting together via zoom was the perfect way to get together without wasting teachers' valuable time sitting in traffic.

Phase II District Progress- Braintree Public Schools

Activities

During this quarter, Dr. Betsey Clifford, District Science Coordinator, started a Professional Learning Community (PLC) at the high school to focus on implementing strategies related to the conceptual modeling pedagogy. Two chemistry teachers attended a two-week course over the summer with the American Modeling Teaching Association to learn about the method. The PLC is open to all high school science teachers but there has been a core group of 5 teachers, the headmaster, and Dr. Clifford, attending meetings. One special education science teacher has been involved virtually but cannot attend meetings. Through the grant we purchased video cameras, tripods, and memberships to the AMTA for all involved who have not taken the course. Teachers are also compensated for their time when they attend meetings. We discussed the vision of the group when we met October 18th. We met again on November 8th and had presentations about the Modeling Pedagogy and another presentation about the Wipro protocols for giving feedback on a lesson using the CCLS format.

Dr. Clifford, has also continued to support the East Middle School science teachers with their PLC. They are focused on aligning expectations for CER from 6th through 8th grade and creating a common rubric scaffolded by grade level.

Involvement of District Fellows

Jessica Passeggio and Sandra Dziedzic are involved in this work. Sandra presented the CCLS process and protocols to the BHS group in November. Mary O'Donnell and Lea Lewis-Santos have been active in the East Middle School PLC.

Successes and Challenges

The major successes this quarter was the addition of the Conceptual Modeling PLC at Braintree High School (BHS). This group is bringing together biology and chemistry teachers to have meaningful conversations about pedagogy and curriculum. It is also developing a community to support teachers who are working to change and improve their instructional strategies which isn't always supported by all of their colleagues. I'm excited that we are focused on instruction and how students are learning and look forward to implementing the protocols next quarter.

The challenges continue to be time. Ideally, we would meet more often and for longer periods of time, but the teachers just don't have it.

Plans for recruitment for future Phase II work.

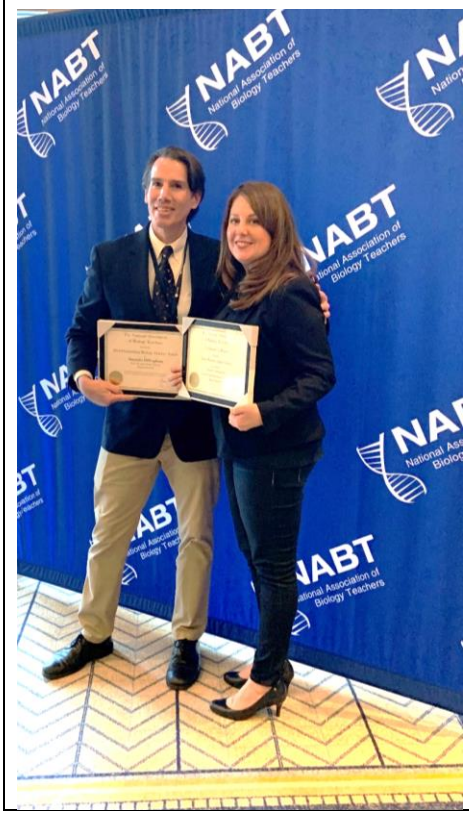
One of challenges of the Greater Boston Wipro site has been the turnover of District Science Coordinators. Site leadership has reached out to the current coordinators with very little response.

Featured Fellows

Mindy Murphy, 4th Grade Teacher, Hobomock School, Pembroke, MA

Since ending the Wipro fellowship, I was inspired to create goals centered around technology. I spent some time taking on the role of Technology Integrator for my school, in which I would assist and collaborate with other teachers in utilizing technology. With this opportunity, I was able to attend the MassCUE conference at Gillette Stadium for a couple of years in a row, where I attended workshops led by educators about different tech tools to use in the classroom. This inspired me to integrate more STEM projects and coding in my classroom, along with using different technology to accompany projects across the curriculum, such as in ELA and Social Studies. Students have been more motivated because of the technology we are using, and they have been able to demonstrate a deeper understanding of concepts using a variety of tech tools.

Amanda Dilligham, Program Director for Science, East Boston High School.



I am currently the Program Director for Science at EBHS after teaching here for the last 9 years. While I was in the WIPRO SEF program, Cohort 2, my project was centered around integrating Biotechnology and Engineering into the Biology Curriculum. Since my WIPRO SEF Tenure, I have continued to maintain that focus. Over the last 4-5 years, I have focused on grant writing, building partnerships and a sustainable biotechnology program, integrating Biotech labs and Engineering into the Biology curriculum, and professional development.

GRANTS AND AWARDS

- Received the NABT Outstanding Biology Teacher Award (OBTA) for Massachusetts in Chicago, Il (2019)
- Partnered with the District CTE team to help with MLSC grant for Biotechnology in Boston Public Schools ($426,000.00) (2019)
- Received and managed three grants from Massachusetts Life Science Center totaling $288,000.00 at East Boston High School (2014-present)
- Amgen Biotech Experience teacher recognition award (2018)
- PIC Achievers Award (2016)

V-CCLS Course of Study (Cohort 2)

Cohort #	**V-CCLS Course of Study**		**Site location Missouri**
Team name (Also list team members)	**Disciplinary Core Idea**	**Research Article Topic**	**Title of Research Article and Citation**
Biology Stacey Bishop, Melissa Milius, Beth Newton, Rachel Tinsley, Susan Saracini-Cram	Energy Transfer in Ecology	Place-based education in science	Autreau, B. T., & Binns, I. C. (2012), Investigating student attitudes and achievements in an environmental place-based inquiry in secondary classrooms. *International Journal of Environmental and Science Education, 7*(2), 167-195
Chemistry Rachael Nichols, Becky Eckerle, Maggie Hunter, Gable Nichols, Stephanie Harman	Chemical reactions	Phenomenon based learning	Wakil, K., Rahman, R., Hasan, D., Mahmood, P., & Jalal, T. (2019), Phenomenon-based learning for teaching ICT subject through other subjects in primary schools. *Journal of Computer and Education Research*, 7 (13), 205-212. DOI: 10.18009/jcer.553507
Earth/Environmental Science Kelsey Strubel, Jessica Johnson, Jennipher Adams, Teresa Edwards, Liz Schwab	Earth's changing surface	Improving student achievement using notebooks	Angi Shelton, Andrew Smith, Eric Wiebe, Courtney Behrle, Ruth Sirkin, and James Lester (2016), Drawing and Writing in Digital Science Notebooks: Sources of Formative Assessment Data, J Sci Educ Technol DOI 10.1007/s10956-016-9607-7
Physics Candace Smith, Amy Bartlett, Lucy Shrout, Seth	Energy	Science Note booking	Bridget M. Sparks (2016), The Effect of Inquiry with Science Notebooks on Student Engagement and Achievement, Professional paper submitted for a Masters' degree in

Willenberg, Kristin Harris			Science Education, MONTANA STATE UNIVERSITY Bozeman, Montana.

Reflections on the V-CCLS Course of Study Process

The leadership team modified last year's process of finding and finalizing the research paper in several ways. (1) the team provided a slightly larger selection of initial papers that they could discuss, but they were welcome to look elsewhere (2) Siegel was more specific on what qualified as a research paper (3) Fellows had a slightly longer time frame (from the August to the September meeting) to find, discuss, and finalize their paper. (4) This cohort of Fellows actively utilized the discussion board to discuss papers found among the group. (5) Siegel was designated as the only contact for discussion and approval of the research paper.

Although these modifications were minor, it helped smooth the process, so Fellows did not feel rushed, and they felt supported in their search for a research paper. The process started with searching for a research article during the August meeting, assisted by Siegel and graduate student Taylor. Fellows spent the next month researching and discussing research papers on Canvas. They finalized the paper they would use for their COS during the September meeting. They then presented their research papers during the October monthly meeting, which helped all Fellows learn about others' research papers. Following up on feedback from Eisenkraft and Jung (from Florida), who visited the October meeting, the team plans to make further changes next year so the presentations can be more useful.

All teams are on schedule. MU staff have been monitoring their video and form uploads on Torsh. Fellows have been active in their online discussions and debriefs.

The biggest change was to have Fellows upload their videos on the Torsh platform. It has been much easier for Fellows to upload the videos, and for project personnel to keep track of the video and form uploads. Fellows have appreciated the automatic organization on that platform. Although the use of the Torsh platform has added a cost of $2000 annually, it has been well worth it.

Just a few things about the presentations, as mentioned above. After the October presentations, Chandrasekhar gave a talk in November about designing PowerPoint presentations. Fellows thought that was useful to them – and that presentation will be pushed to earlier in the semester next year.

We are using the Torsh platform (upon recommendation from Tammy Moriarty from the CA site). Fellows record the video using their phones/iPad/computers, and upload with

(basically) one click. The team reviews videos on Torsh, adds comments, and uploads forms in the same folder. It has worked well.

Monthly meetings

Reflections on the September to December meetings

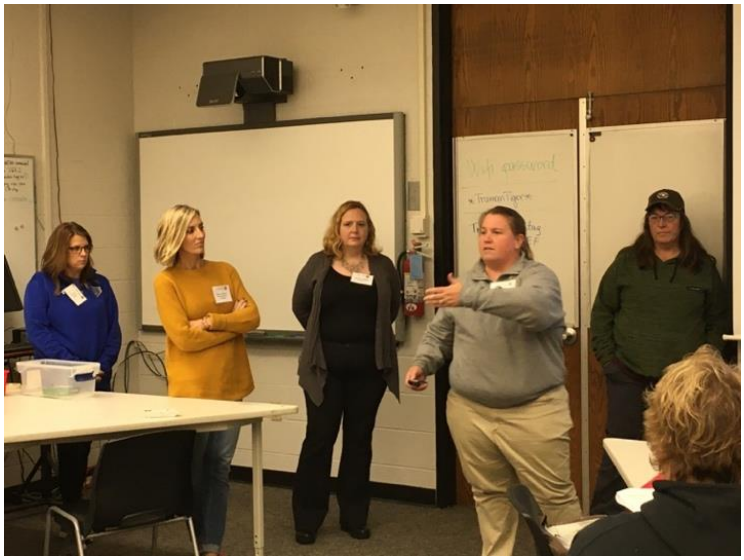
Overall, cohort 2 meetings have gone well. Fellows are engaged during monthly meetings, during their debrief meetings, and during online discussions. The online discussions have been rich. The teams are operating well. There have been a few more absences than last year, some due to family emergencies, and others due to unknown reasons. No more than 2 people were absent each meeting, but this is an issue the leadership team will address next semester, since the rest of the group feels somewhat disrupted during their group work period.

Three pillars of Wipro SEF

- **Adult Learning**
- **Reflective Practice**
- **Leadership**

Fellows' discussions, both during the monthly meetings and online indicate self-learning and reflection, as well as thoughtful responses to others' statements. Their leadership skills are developing, and leadership expects to see more indications in the coming months.

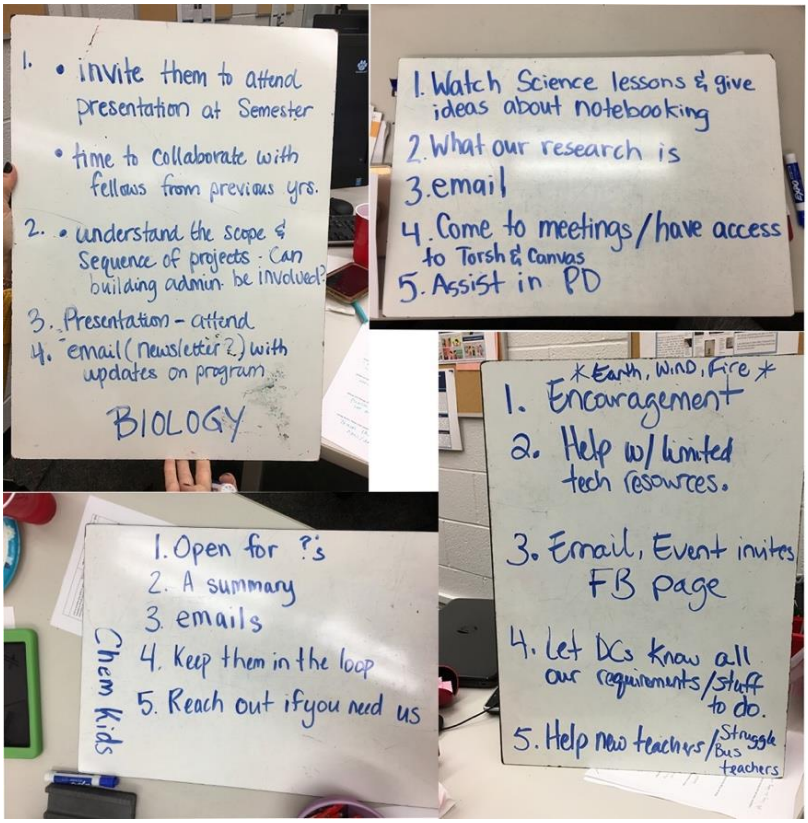
During the October meeting each team gave a 10-minute presentation about their research paper. This was the first time some of them were presenting to their peers or presenting a research paper. There was active discussion during the presentations.



The Biology team answers questions after presenting their research paper in October.

District Science Coordinators

The leadership team asked that DC's attend the August, December and May meetings, and attend a zoom meeting with project staff in October and March. This schedule makes for fewer meetings than the monthly meetings, in part because the DC's in our rural districts are not science coordinators but have responsibilities for several subjects. Our DCs have attended the August meeting, and occasionally attended parts of other monthly meetings. The December VCCLS presentation meeting was attended by six DCs, and 3 additional curriculum coordinators.



Fellows' suggestions for DC involvement

During the October meeting Fellows were asked to come up with ideas for getting district coordinators or other administrators more involved in the project. Fellows came up with several ideas, including observing their classrooms, help with resources, creating time for them to collaborate in school, attending presentation, and having the project staff keep DC's in the loop about meeting agendas. Plainly, they wanted more communication with the DCs. These ideas were relayed to the DCs by project staff.

District meetings

DCs have been asked to meet Fellows monthly, either alongside regular district-scheduled meetings or otherwise, and submit a google form after their meetings. The form includes two free-response questions about what was going well and what was not. Two DCs have been reporting back on the form, while others have reported to us verbally during our Zoom meeting in October.

The monthly meetings have served as a check in, so that DCs and Fellows can discuss local issues as well as report on progress. Overall, DCs feel that things are going well for both cohorts. They discussed initial trepidation among new Fellows about the workload, but things have looked more manageable to them as the semester wore on. Some of the Fellows have expressed their excitement about growing their professional network. They

have discussed their research papers with the DCs as well. Following the December VCCLS meeting on Dec 5, there was excitement among the DCs and discussion about visiting classes. These visits had occurred in some of the districts, and we have encouraged them to be more widespread. The DC in the Fulton district has arranged for one of the Fellows to present her class at the School Board meeting.

Recruitment plans for Cohort 3

Date	Location	Focus of Event
Dec 5, 2019		Reminder, brochures handed out. Application forms open.
Dec 15, 2019	email	Grid of "open spots" will be sent to DCs
Jan – March 2020	Email, phone, planned visits	Discussion/presentation about the program with help from current Fellows

GPS Progress

Site location (State)	Cohort #
Missouri	1

Advisors are asked to meet with their advisees once a month, and to submit a google form documenting their discussions during meetings with advisees. In addition, Fellows are expected to post monthly reflections. The first quarterly report, which documents their meetings with advisors and DCs has also been submitted. These three streams of documentation show that GPS projects are going well. Fellows have made progress toward at least one of their goals, sometimes both. For example, O'Day had begun her professional development meetings with district teachers. Nichols has received funding from her district to attend The American Beekeeping Conference in Illinois. Szydlowski has conducted a schoolwide public forum where students exhibited their projects to the Columbia STEM alliance. James has begun having high school students visit first graders and help them design an experiment titled "What substance is most affected by the sun?"

The leadership team is using Wix websites for the Fellows' portfolios. While the platform is fairly intuitive, the unfamiliarity with creating websites made this mode challenging to some of the Fellows. Extra help was provided by the project coordinator, Kate Kelley, who has scheduled a few open zoom office hours to provide help with working on Wix. By December, all Fellows had successfully begun building websites on this platform. One of them has even asked her students to use Wix for their reports.

Reflections on Meetings with GPS fellows

Year 2 Fellows had their first meeting on Oct 6. Fellows shared their GPS plans and goals among their cohort. Two former Fellows from Massachusetts, Kim Gibbs and Michelle Frazier, called in via zoom. They described their GPS projects and answered questions. A few hiccups in the zoom connection caused this meeting to be less than ideal – the leadership team was hoping for a more interactive discussion than occurred that day.

GPS advisors attended part of the meeting and had a 45-minute time slot to confer with their advisees. It was useful to have advisors meet with their group of 2-3 advisees together – Fellows appeared less constrained to bring up questions, while also working out mutual issues. Fellows talked about how making the transition from group work to individual work was hard. Not having the team to keep them on track was one of the challenges.

Site leaders plan to increase the number of meetings during year 2 for the cohort 2- they will most likely go to 4 meetings annually.

Cohort 1 Fellows Involvement with Cohort 2

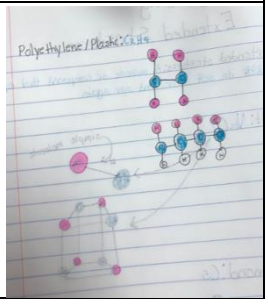
Two visits of Cohort 1 Fellows were included during Cohort 2 monthly meetings. During the September meeting Marsha Tyson visited and gave a talk about what the Wipro project meant to her, and how she navigated the first year. She stayed on for dinner and chatted with the new Fellows. During the November meeting four members of the High School HCCLS team, Jackie O'Donnell, Brea James, Kristina Wilhelm and Lindsey Schwarzer, visited and gave their presentation on using technology for graphing. The purpose of this visit was to give the new Fellows a sense of what a presentation might entail.

Site leaders plan to invite Cohort 1 and 2 Fellows to visit during the first year of Cohort 3, and to continue inviting them to the annual conference. We expect that some of them might continue submitting conference proposals about their Wipro work after their GPS project ends.

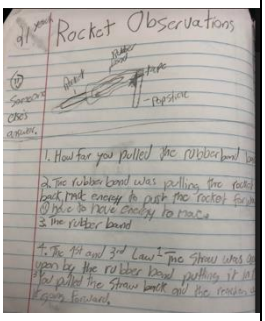
Featured Fellows

Lucy Shrout, 8th grade science teacher, Fulton Middle School, Fulton Missouri.

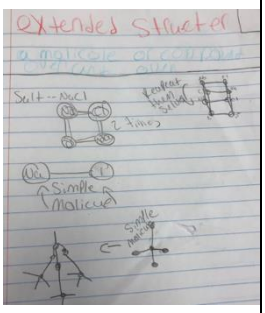
When I applied to be a Wipro SEF fellow, I was excited to learn, collaborate, and find ways to become a more productive leader in my school. I never realized how this experience would improve not only myself but also my students.



My VCCLS chose science note booking as our theme. I had been using science notebooks in my classroom for the past two years, but I didn't feel they were very impactful. The notebooks were used as a place to put worksheets and record information, merely a receptacle. I knew they could be more useful, but I didn't have time to "dive into" the topic. The Wipro program gave me the opportunity to focus on a research article that taught my group how to use science notebooks for not only instruction and investigations, but also prediction, reflection and as a tool for formative assessment. These ideas have transformed the way my students use and think about their notebooks.



For the opening activity of a unit on kinetic and potential energy, I had students work with a rubber band rocket. Instead of just discussing their observations, I had them record observations and predictions about the energy involved in their science notebooks. As the students learned more about energy they would go back to this opening activity and make updates to their thinking, reflecting on what they had learned. During our unit on extended structures, students recorded images of the 3D models they had produced in class.



In the five months I have been involved with the Wipro SEF program, I have learned a wide variety of information that has made me a better teacher. Within the Fulton Middle School, I have also made a point to share the information I am learning with my science department as well as my administrators. I look forward to learning even more from this amazing program.

Jennifer Szydlowski, 8th grade science teacher at Jefferson Middle School, Columbia, Missouri.

I have been teaching 8th grade science at JMS for nine years and have been a teacher for 21 years total. Jefferson Middle School is in the process of becoming Missouri's first STEAM middle School. So, it only made sense to focus my GPS district goal around one of the teaching strategies that is going to be a pillar of our STEAM school. I chose for my GPS district goal "Project Based Learning", and I began expanding on what I had started to implement in my classroom as part of my vertical team learning during Year One with my WIPRO cohort. To make our study of Erosion and Deposition more relevant, students were to take what they were learning in class and at our field trip to Rock Bridge State Park and create a learning tool to teach the public about "Why Rock Bridge State Park looks the way it does."

Students had done smaller PBL assignments in the past, but for this I expanded the project to include a public forum where students had the opportunity to share their projects with peers, parents, and members of the community. We invited members of the Missouri Department of Conservation, the Center for Urban Agriculture and the City of Columbia's Sustainability Office to view projects and offer feedback to students on their content as well as visual presentation. Students were able to use the format of their choice for their project. Projects included brochures, posters, videos, and websites. It turned out to be an amazing process for students. They learned a lot about their local park and local geology. And having an authentic audience greatly increased their accountability and enthusiasm for their learning.

Other News

One of Missouri's Cohort 1 teachers, Kerry Poage (formerly Kerry Franz-Quinn) was awarded the Progress in Sustainability award (see link below). The award is sponsored by the Columbia Missourian, a local newspaper. It is one of ten Missourian Progress annual awards given and is open to all Columbia residents. The Progress in Sustainability Award recognizes a community member who has made an impact on environmental sustainability through innovative practices, education and continuous improvement.

"If you ask Kerry Poage about how Grant Elementary School was able to reduce landfill waste by almost 60%, she would tell you the credit is all due to her fifth-grade students." Kerry and her students did an audit of the waste in her school. According to Kerry, "And it ended up being that we had over 200 pounds of waste in one day. Grant is a really small school, so we did the math. It ended up being that if every school was the size of Grant, we would waste over a million pounds of food every year. So that freaked them out. So I said what should we do about it? What do we need to do? They just launched into this whole kind of activism". The link to the complete article is found below.

https://www.columbiamissourian.com/special_section/progress/kerry-poage-leading-students-to-take-action-for-sustainability/article_bf2c57da-03d4-11ea-9909-bf2a82890fe7.html

Fellows' activities

The following Fellows are working on their Phase II projects.

Last Name	First Name	District	Title
Mazol	Dan	Kearny	Recruited teachers for VCCLS and held initial meetings
Kleiner	David	Clifton	Scientists of the Future are the Scientists of Today
Furer	Delia	Montclair	
DeBellis	Donna	Clifton	Creating Scientists
McCarthy	Elaine	Kearny	The Celestial Collaboration
McMasters	Jessica	Kearny	The Celestial Collaboration
Hester-Fearon	Pat	Kearny	The Celestial Collaboration
Tami	Emma	Montclair	Gamifying the Science Classroom
Hogel	Janine	Clifton	Further Extending the Elementary School Classroom
O'Sullivan	Lynne	Montclair	They held their first planning meeting where they reviewed their goals and begun to plan interdisciplinary curriculum.
Goffredo	Mary	Kearny	Family STEM Nights Grades 3-5
Graziano	Megan	Clifton	Development of a Clifton District Science Committee (District-Wide Vertical Articulation)
Ambrose	Owen	Montclair	
Reid	Patricia	Orange	Developing critical thinking skills to identify and solve problem
Borriello	Regina	Clifton	
Kaschalk	Siobhan	Paramus	East Brook STEAM Nights
Langner	Stephanie	Clifton	Phenomenal Phenomenon
Bartol	Susan	Montclair	Reimaging Your Science Fair with an Emphasis on Equity
Scrivens	Kristin	Paramus	Learning Garden
Pontelandolfo	Lorin	Clifton	Engaging in Argument from Evidence
Tiwari	Monika	Montclair	Inclusive Science Teaching (Year 2)

Meetings with Fellows

Wipro Phase II meeting

The NJ site held their first meeting of the year with Phase II Fellows on October 18, 2019. The discussion was centered on reflections and actions the Fellows could take to sustain their efforts beyond the Wipro SEF program.

Nineteen of the 22 Fellows involved in Phase II attended the meeting. (There were two teachers who missed the meeting because of Parent Teacher conferences in Kearny.)

The meeting started with a discussion of the ways in which Wipro has supported their work and what elements of the Fellows' work could be sustained with other funding. Two Cohort 1 Fellows, Sarah Taylor and Monique Dituri, led a discussion about seeking funding for classroom projects and support for leadership projects.

Monique Dituri, Wipro SEF Cohort 1 Fellow, leading a presentation on seeking grant funding.

Monique Dituri and Sarah Taylor, Wipro SEF Cohort 1 Fellows, facilitating discussions on seeking grant funding.

Plans for recruitment for future Phase II work.

During the October meeting, Fellows were asked to discuss elements of their work through the Wipro SEF program that were sustainable. When asked what elements of the project they were interested in sustaining, the Fellows offered the following ideas:

- Reflections
- Can keep CCLS-type community
- Keep partnership with MSU
- Library of resources
- Note booking
- STEM day
- Non-tangible
- Systemic change
- Being a resource for my school
- Raising the bar for science

Featured Fellows

From Lynne O'Sullivan, Montclair School District
At Glenfield Middle School, the core subject teachers in "House Titus" all teach the same group of 100 students. For three years now, we have worked together to plan lessons that reach across all subject areas. We believe that all of the students benefit from a more collaborative approach to teaching. The following are reflections from the teachers participating in a "Cross-Curricular Approach to Teaching Science": *Steven Titus - Math*

"The ability to reinforce topics in both science and math class helps the students to understand why we teach the subjects individually and how they apply outside of their traditional classroom environment."

Syreeta Carrington – Social Studies
"I was teaching yesterday, and we were working on analyzing a political cartoon created by Benjamin Franklin. We revisited information that we'd discussed about Benjamin Franklin when one of my students said, "hey, we were talking about Benjamin Franklin in science, do you guys plan this?" I said, "yes, in fact, we do." I love it when students recognize that we do try to reinforce concepts by sharing them across disciplines. "

Lauren Etter – Language Arts
"I have truly enjoyed collaborating with my co-workers. The students are able to draw on similarities between multiple subjects in order to deepen their understanding of the material we are teaching. Making connections between different subjects has fostered critical thinking and encourages students to apply what they have learned."

Margaret Whitsett – In Class Support
"As the in-class support teacher for our House, I have the pleasure of seeing the interdisciplinary efforts spring to life. I get to see students make the connections or recognize the connections we have made for them. Most are amazed that the world actually makes sense and that divergent subjects have common ground and purpose. Science is now connected to all the classes. I get to see the beauty of education at its best. I am honored to participate in this program and further the efforts of educators who want to make education a life-long endeavor."

Past Fellows Update

The NJ site has included past Fellows in events whenever possible. For example, Sarah Taylor and Monique Dituri, both Wipro Fellows from Cohort I, were invited to share their experiences and expertise related to finding external funds to support projects. The group generated a list of organizations where they have been successful.

District Change

Also, as part of the October meeting, Fellows discussed changes that have resulted from their participation in Wipro SEF.

The following are the responses Fellows gave related to the opportunities that were made possible to them through Wipro SEF:

- Become science leaders
- Visibility, reputation
- Changed view of science instruction
- Recruit teachers
- Involve teachers in programs
- Investigate inquiry learning

- Family STEM night
- Parent involvement
- Positive reinforcement
- Think outside the box
- New instructional methods
- Leading PD
- Meet colleagues from different grades, different districts
- Expose students to careers—invite STEM career people to school
- Traveled and created personal and professional networks
- Explore and understand NGSS

Other Activities

Professional Development

- Two Wipro Fellows active in Phase II, Jamillah Rawls and Alison Mahfouz, joined two other PRISM teacher-leader and professional development designers in attending a training at the Mercy Wipro center to establish PRISM as the first MakeyMakey Invention Design Center in New Jersey. These teachers will be designing and presenting engineering and invention workshops using the Makey Makey materials in January and the Spring of 2020.

NEW YORK -MERCY COLLEGE

Fellows' activities in Phase II

Fellow's Name(s)	Title of Phase II Project and funding level	Activities this quarter
Leana Peltier (cohort I) and Mayerlin Strippoli (cohort 1)	GNY Wipro Fellows-no funding	October 11, 2019: Northeast ASTE Conference Presentation
• Carmen King (cohort 1) • Chuck Sincerbeaux (cohort 1) • Maia Starcevic (cohort 2) • NJ Wipro Fellows	GNY Wipro Fellows-no funding	November 9, 2019: Makey Makey Train the Trainer workshop
Aimee Ferguson (cohort 2)	GNY Wipro Fellows-no funding	November 2-November 23, 2019: Saturday STEM Academy Elementary Engineering Challenge course for grades 1-2
Patricia McCue (cohort 2)	GNY Wipro Fellows-no funding	November 2-23, 2019: Saturday STEM Academy Programming with Basic Electronics Couse for grades 5-7

Figure 1: NJ and GNY Wipro Fellows and higher education personnel at MakeyMakey training.

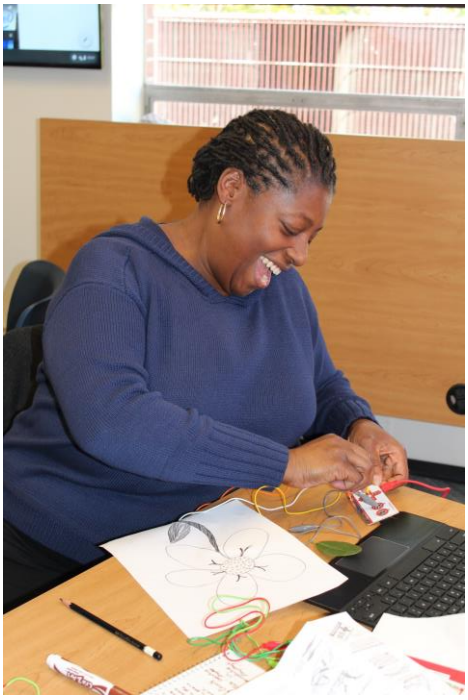


Figure 2: Carmen King (GNY cohort I) excitedly programming MakeyMakey device.

Meetings with Fellows

There have been no additional Fellow meetings scheduled for this quarter.

Plans for recruitment for future Phase II work.

Several district coordinators renewed their commitment to the Wipro Fellows in our partner districts: Leana Peltier (cohort I) in Port Chester; Vincent Dougherty (cohort I) and Carmen King (cohort I in White Plains; Maia Starcevic (cohort II) and Elizabeth Barrett-Zahn in New Rochelle; and Karen Lent (cohort I) in East Ramapo. Recruitment is ongoing for the district coordinator position at Port Chester.

Featured Fellows

Claudia Gianserra, Cohort 1
Claudia is instrumental to a project in her district that involves IBM scientists facilitating engineering activities with all of the middle school students. The program is in its 19th year and Claudia affirms how well the activities promote student engagement and real-world connections to science education. Claudia's seventh grade students exceeded expectations for engineering design by constructing a wind-powered mini-car that travelled three additional feet beyond the six-feet challenge. Claudia Gianserra continues to lead by participating in a variety of projects and initiative in her district. It is no surprise that Claudia also participated in the STEAM-a-thon program at Mercy College (see figure 3). The STEAM-a-thon program was designed to promote more female participation in STEAM careers.

Claudia with some of her seventh-grade students at Mercy College STEAM-a-thon

Past Fellows Update

Mercy College Center for STEM Education (MCCSE) shares information regarding opportunities for Fellows. Many of the GNY Fellows are actively involved in their districts and with Mercy CSE. In November, MCCSE offered a Saturday Academy for students in grades 1-12. As noted earlier, two Wipro Fellows were instructors for the Saturday STEM Academy students. Aimee Ferguson (cohort 2) led the Elementary Engineering Challenge course for a small group of 1st and 2nd graders. Patricia McCue (cohort 2) led the Programming with Basic Electronics course for approximately fourteen 5th, 6th, and 7th graders. Also, in November, Mercy College Center for STEM Education hosted a MakeyMakey Train the Trainer workshop in which three GNY Fellows, Carmen King (cohort 1), Chuck Sincerbeaux (cohort 1) and Maia Starcevic (cohort 2), as well as four representatives from the NJ Wipro program participated.

District Change

Mercy College Center for STEM Education does not have any evidence of district change currently.

Other Activities

Research Activities

A paper regarding vertical professional learning communities has been submitted to the Journal of Science Teacher Education.

Presentations and Publications

Leana Peltier, cohort 1, presented her work with in-service teachers at the 2019 Northeast Association for Science Teacher Education Conference. Her presentation titled, "Bring Teachers Together in a New Space: Elementary and Secondary teachers inquiring together about science", featured her work with colleagues in Tarrytown to form a professional learning community. Mayerlin Stripoli (cohort 1) was a co-presenter in the workshop. Leana's work is directly connected to the opportunities she had as a Wipro Fellow.

Professional Development

As noted earlier, several Wipro Fellows participated in the MakeyMakey Train the Trainer workshop. The workshop engaged participants in activities that involved invention, making, and design thinking. Additionally, each participant received training to become a MakeyMakey Certified Educator.

V-CCLS Course of Study - Cohort 3

Cohort #	**V-CCLS Course of Study**		**Site location (Texas)**
Team name (Also list team members)	**Disciplinary Core Idea**	**Research Article Topic**	**Title of Research Article and Citation**
Chemistry Markus Burkhalter, Tamesha Brown, Sherry Thompson, Tiffanie Johnson, Joel Strachan	States of Matter	Mirroring Gestures with Words	**Gestures: Their Role in Teaching and Learning** Roth, W.-M. (2001). Gestures: Their Role in Teaching and Learning. *Review of Educational Research*, *71*(3), 365–392. https://doi.org/10.3102/00346543071003365
Biology Yesenia Vasquez, Linda O'Bryan, Amanda Cortez	Plants	Metacognitive cycle	**Developmental Changes of Metacognitive Skills in Elementary School Children** Annevirta, T., & Vauras, M. (2006). Developmental Changes of Metacognitive Skills in Elementary School Children. *The Journal of Experimental Education*, *74*(3), 195–226. doi: 10.3200/jexe.74.3.195-226
Earth Science Marquita Muhammad, Julien Yacho, Larissa Keys, Terra Moore		Mnemonics	**The Effectiveness of Mnemonic Instruction for Students with Learning and Behavior Problems: An Update and Research Synthesis** Scruggs, T.E. & Mastropieri, M.A. Journal of Behavioral Education (2000) 10: 163. https://doi.org/10.1023/A:1016640214368
Physics Shelby Allen, Marsha Bolden Olaide Ajakaye, Tatayanda Younger,	Energy	PBL	**How teaching science using project-based learning strategies affects the classroom learning environment.**

Veronica Martin			Hugerat, M. (2016). How teaching science using project-based learning strategies affects the classroom learning environment. Learning Environments Research, 19(3), 383-395. doi: http://dx.doi.org/10.1007/s10984-016-9212-y

Reflections on the V-CCLS Course of Study Process

Dr. Narayan asked each team to generate ideas about what they wanted to do and then met with each team individually to talk about and finalize what they wanted to do. She is experimenting with some of the pedagogical content this year with the V-CCLS projects. Dr. Narayan wanted to steer away from the topics picked by Cohort 1(C1) and Cohort 2 (C2) such as Claims, Evidence and Reasoning (CER) and Concept maps.

All the V-CCLS teams are on schedule and will be ready for their presentation on Jan 18th, 2020.

Checking on Progress

Dr. Narayan met with each team individually on different occasions to check on their progress. Teams also shared about their progress with other teams and got feedback from them with regards to their V-CCLS progress. A combination of both these worked well. Dr. Narayan provided specific guidelines and dates of completion. As most of the fellows have expressed nervousness about presenting to adults, they will have 2 practice sessions (one in Dec and one in Jan) where they will get warm and cool feedback. The practice sessions really help. It is a matter of providing them with encouragement and feedback.

Documenting Classroom Videos

Each fellow has been loaned an iPad mini and a tripod. They record their lessons using these and upload them to Canvas using Panopto, a video sharing program that the university has subscribed to. They can share the classroom and debrief videos through Panopto, and Dr. Narayan has control of who can see the videos once they are uploaded on Wix.

Monthly meetings- Cohort 3

Cohort 3 Meeting on Tuesday October 15th: 5:30 – 8:20 pm

During this class the C3 V-CCLS group were required to come up with a plan or action for the implementation of their V-CCLS project and present it to the class. They received a round of warm and cool feedback as well. Their peers could ask them questions about their project that they had to respond to. Dr. Narayan believes this is a strategy that has worked very well in the past.

What to do:	What is needed:	Tentative Dates:
Shelby Allen Marsha Bolden Tatayanda Younger Veronica Martin Olaide	Record Lesson	October 11th October 18th October 21st October 25th November 4th
Debrief	1st: Shelby Allen 2nd: Marsha Bolden and Tatayanda Younger 3rd: Veronica Martin and Olaide	October 29th-30th November 5-6 November 18
All group	Upload Lessons	November 21st

Sample time table from the Physics group

During this class, Dr. Narayan also got them started on their Wix Portfolio which is due after their presentation in January 2020. She prefers that they start uploading material to the Wix portfolio early.

The C3 V-CCLS Chemistry group were all dressed up and coordinated to present their plan of action.

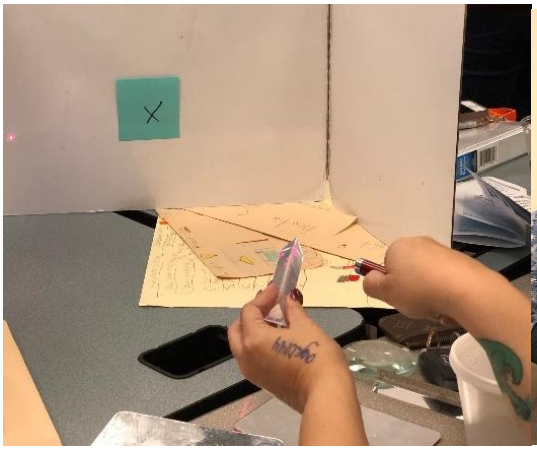
Cohort 3 Meeting on Tuesday November 12th: 5:30 – 8:20 pm

November 12th was a very cold day with bad weather. The fellows were sent home early due to poor driving conditions. They received their Wipro Jackets and were very happy about it. Dr. Narayan spent some time talking about the forms required and answered all their questions about the debrief process, forms, the presentation expectations and Wix. Dr. Narayan also talked about my expectations for them while attending CAST.

Cohort 3 with their new Wipro Jackets

Cohort 3 Meeting on Tuesday December 10th: 5:30 – 8:20 pm

This was a very interesting meeting because each V-CCLS group presented their mock V-CCLS presentation to their peers. The presentations were timed and required them to include their activity. Each group received warm and cool feedback from the group which included all the District Science Coordinators (DSCs). Dr. Narayan thinks the Fellows benefitted from this session. They also learned from watching each other present and were very open about what went wrong with their presentation and how it could be fixed. Dr. Narayan thought the presentations lacked a research focus and could flow better and she is having the fellows work on that. To quote Dr. Narayan, "All in all, they put a LOT of effort into it and I am pleased with that!"




<u>LEFT:</u> Fellows participating in an activity during the presentation <u>RIGHT:</u> All 5 DSC's


C3 Fellows participating in the presentations

Reflections on the September to December meetings

According to Dr. Narayan, "As I gain more experience with subsequent cohorts, the level of detail I can provide the Fellows seems to be much more. Conversely, I feel the time for each class (5:30-8:20) doesn't seem enough and having class on Saturday seems improbable given the Fellows' schedules."

Three pillars of Wipro SEF

- **Adult Learning**
- **Reflective Practice**
- **Leadership**

The meetings have mirrored the three pillars; however, leadership is what the fellows struggle to get a grasp on the most.

District Science Coordinators

The DSC's attend the meetings and present to the Fellows on varied topics and participate in the activities and provide feedback.

District meetings

The DSCs do meet with their fellows regularly as per their schedules, they do not report back to Dr. Narayan immediately however she does touch base with them pretty regularly (once a week at least) and she makes it a point to ask about the fellows so if there are any problems she will know about them.

The district meetings have focused mainly on projects the fellows are involved in and professional development sessions for C2 Fellows.

GPS Progress - Cohort 2

Site location (State)	Cohort #
Texas	Cohort 2

Cohort 2 Meetings

Cohort 2 meeting: September 23rd, 2019

This was an important meeting because Dr. Narayan was not at all happy with the C1 professional development products. She asked the 5 DSCs to individually talk about what was considered professional development in their school districts and how it was arranged. The DSC from Grand Prairie also gave an overview of what professional development was and research on Professional Development (PD). After the DSC presentations, Dr. Narayan spoke to the C2 fellows about the expectations for Professional development and what it entailed. She delineated between Professional development that

they attended at their school or outside and PD that they OFFERED at their school and at places like the Conference for the Advancement of Science Teaching (CAST). I showed them the Wix portfolio where a similar delineation had been made and shared the expectations for the PD session that they will offer at the school or district level. Dr. Narayan also cautioned the DSCs that the fellows were to do PD that arose from their personal/district-oriented goals and not random topics.

LEFT: Ms. Eileen Little presenting to the C2 Fellows *RIGHT: C2 Fellows*

Cohort 2 meeting: October 21st, 2019

Grant Writing workshop offered by Dr, Todd Witt (Texas Parks and Wildlife) and Mark Broughton from the DISD STEM Environmental Education center. This was another valuable session that started with the basics of a grant and how to find them and write them, structure of a grant proposal, some dos and don'ts in writing grants etc. It was chock full of good information for the fellows who will have to write a grant proposal as part of their GPS. After the session, the DSCs also shared about grant opportunities at their districts and how to access those. The presenters shared the power point with all the fellows.

Cohort 2 meeting: November 18th, 2019

This meeting was right before the CAST conference and was attended by the informal science educators as well. At CAST, the C2 Fellows were to present some of the informal science activities they designed for the informal science site at their own grade level in an interactive, hands-on manner. The C2 Fellows brought their activities to class and tested them on their C2 Peers and other informal science educators and received critical feedback. It was a very good session. They also talked about the expectations for CAST. Dr. Narayan went through the components of a research poster and gave them the template for how to start building a research poster for one of their goals.

<u>Left:</u> Colin Johnson (Dallas Zoo) and Mark Broughton (DISD STEM) with C2 Fellows
<u>Right:</u> DSCs Jeremy Hesse (CHISD) and Faith Mallika (Lancaster) with C2 Fellows

<u>Cohort 2 meeting: December 9th, 2019</u>

During this session, Dr, Narayan debriefed about CAST and their sessions, collected paperwork to get them reimbursed for their expenses and talked about upcoming deadlines and consequences of missing those deadlines. In January and February, C2 will not meet as a class but will meet with Dr. Narayan individually, C2 said they enjoyed that more than class! C2 Fellows were also given certificates for their CAST presentations.

C2 is awesome 😊

Reflections on meetings with GPS fellows

Dr. Narayan is pleased with the way the GPS is going this year as compared to Cohort 1. There is much more specificity and focus with regards to the expectations for each assignment. "I anticipate it will be even better for the next cohort." The calendars really help keeping everyone on schedule. Dr. Narayan has a very strict schedule because after March nothing happens in the schools except Drill and Kill for the Starr test and she is strict with them, so they do not leave their Wix portfolio for the last minute and keep adding to it throughout the year.

This year Dr. Narayan changed a lot with regards to the informal assignment. For C1, the Fellows were assigned to the informal science sites. This year, the informal science educators worked with Dr. Narayan to design and administer a survey to C2 Fellows, so they had some say in what sites they wanted to be assigned to. It worked very well, and everyone is happy with their placements.

Last year, she gave the informal science educators a stipend and some could accept, and some could not, so this year, she made it uniform that each site would get $700 towards materials for the projects that the C2 Fellows designed for them for the informal task. That change and having to present with the fellows at the CAST Wipro Booth, made the informal science educators more invested in the task and the fellows.

Featured Fellows

Mathew Gaines, 5th Grade teacher, Cedar Hill
My name is Matthew Gaines and I have been a 5th grade science teacher in Cedar Hill, Texas for 5 years. I was born and raised on the south side of Chicago and moved to Texas in 2012. It took 5 years after graduation to get a call from a school for an interview. In 2015, I got the call from Cedar Hill. I was voted Teacher of the Year for Lake Ridge Elementary in only my second year. I was very honored and humbled to receive such a title and to be viewed so highly by my educational peers. I continue to passionately drive my students to reach their highest potential and to inspire confidence. I was a struggling student most of my life and I use those memories to motivate my scholars. While living in Chicago, I graduated from St. Laurence High School. I went on and received my associate degree from Richard J. Daley College. From there, I transferred to Governors State University and graduated cum laude with a bachelor's degree in elementary education in 2010. I am currently attending the University of North Texas at Dallas (UNTD) in the WIPRO Fellowship Program.

My science coordinator had to work very hard to get me to agree to return to school. My previous experience with college was not very fun and I never intended to return. However, I am beyond ecstatic that I joined the WIPRO Fellowship Program through

UNTD. Since being in the program I have seen so many things change within myself both as a professional and as an individual. The best attribute I have gained is my educational competence and confidence. I still have lessons that flop, but I know how to respond to it now and measure the growth of my scholars as well as myself. It has been very empowering to have that feeling of control within my classroom. Since joining the WIPRO Program, I have been sought out to help write district curriculum, lead professional development sessions, and lead vertical and horizontal team meetings. I would have never accepted those invitations in the past. Others view me as a leader on my campus and my district and I have started to see that leadership within myself as well.

Matthew Gaines, Cohort 2 Fellow

Dr. Marsha Bolden, Biology and IPC, Irving ISD

My name is Dr. Marsha Bolden, a true Dallas-ite, born and raised. My undergraduate degree was obtained with a biology major and chemistry minor. I attended graduate school with a major in biochemistry and finally, a doctorate in education. My first scientific employment was research assistant at the University of Texas Health Science Center, Medical School, in Houston Texas. Upon returning to Dallas, I was a documentation specialist and held many positions at Abbott Laboratories. I was employed at Abbott for 15 years.

Currently, I teach biology and Integrated Physics and IPC at Secondary Reassignment Center in Irving ISD. My tenure in Irving is five years. Prior to coming to Irving ISD, I taught biology, chemistry, environmental systems, and IPC in Dallas ISD for nine years.

My tenure at Grand Prairie ISD was one year. This year, my focus as department chair is to bring research to the classroom. I have challenged my fellow teachers to discover ways to bring research to their students so they will experience at a limited level a better perspective of science.

Pursuant to academic excellence, I pursued admission into the Wipro Fellowship Program with hopes of experiencing new adventures in teaching and gaining enhanced skill sets and strategies to assist my students. The program has opened my eyes to fresh ideas and approaches to teaching and has heighten my interest in pursuing other programs that foster interactive engaging activities for student success. The program for me is going well especially in my classroom where my students look forward to their research project. In some ways I am a better teacher and department chair as I share my experience with my co-workers. I look forward to more exciting activities to share with my students.

Dr. Marsha Bolden, Cohort 3 Fellow

Other News

Kendra Brown promoted

Kendra Brown was promoted from Wipro Program Coordinator to Wipro Program Manager with a salary raise. It was well deserved.

Downloading Wix Portfolios

Dr. Narayan contacted Mr. Justin Grey from Wipro, Dallas for assistance regarding creating a program that will enable them to download and save their Wix portfolios. Justin put site leaders in contact with Frederick Wolfe who taught them how to use a free program and a very easy way to download the Wix portfolios. According to Dr. Narayan, "That was awesome and took a load off my shoulders. I am thankful Wipro Dallas were so willing to help us with this issue and we will share this information with other sites that use Wix during the February Leadership meeting."

Visit to Wipro Stanford

Dr. Narayan was fortunate to get the opportunity to visit Wipro @ Stanford University in November 2019. "I learned a lot during the visit and will incorporate what I learned at Wipro @ UNT Dallas. "


Attending and Presenting at CAST 2019

CAST is the state-wide annual Conference for the Advancement of Science Teachers that was held in Dallas in November 21-23rd. All the C2 fellows presented either their V-CCLS project or their H-CCLS project and in many cases both. Two of the C1fellows also presented their GPS projects. All the C2 and C3 fellows attended CAST, I made the decision to send C3 Fellows because out of 17 fellows only 1 had been to or even heard of the conference. We registered and paid for the Fellows conference registration, mileage, per diem and parking for each day they attended. The partner school districts will be reimbursed for the cost of subs for the days the C2 Fellows attended the conference. Kendra did a great job in making sure all 56 of the C1, C2 , C3 Fellows and informal science educators were registered for the conference, the booth was rented and ready for us and everyone had the materials they needed for their presentation. It was a big undertaking.

Below is a list of presentations by the Wipro C2 Fellows.

Thursday 9 am - 10 am Create Make and use Models: Tabitha Moreno, Ana Belmonte, Rocio Avila and Tracey Craft Monet Room

Thursday 12 - 1 pm Question Formulation Technique: Julia Glowacki, Tracey Craft, Brittney Preston Cooper room

Thursday 1:30-3:30 Dr. N Imperial Ballroom

Friday: 8:30 - 9 am: Physics in the playground Angela Governor's Lecture room

Friday: 10:30-11:30 James Mining Challenging girls to excel in STEM Monet Room

Friday: 2:30 - 3: 30 Talking it out Matthew Gaines, Billy Johnson, Brittney Preston, Mary Davis Coronado D

Friday 4-5 pm James Mining: How I survived starting a STEM club Emerald room

Saturday 11:00-12:00 Concept Mapping & Student Understanding -- Raisha Allen, Richard Anderson, Tabitha Moreno, Mary Davis Batik B

Saturday: 12:30 - 1:30 Teaching argumentation structures to all learners Richard Anderson, Raisha Allen, LaQuaesha Williams, Myesia Morrison Rosetta Room


LEFT: C1 Fellows James Mining and Kelly Hancock attending a C2 presentation
RIGHT: C3 fellows Marquita Mohammed and Tatayanda Younger attending a C2 presentation


LEFT: C2 Fellows Mary Davis, Brittany Preston, Billy Johnson and Matthew Gaines before their presentation titled "Talking it Out"
RIGHT: C2 Fellows Tabitha Moreno, Mary Davis, Raisha Allen and Richard Anderson during their presentation on Concept Mapping.

Reflection from Tabitha Moreno, C2 Fellow:

"The leadership opportunity I had this month was presenting at CAST! I was not expecting the number of teachers that attended our presentation! PHEW! I feel extremely grateful for my team! We work well together and helped one another!!!! It was great to hear teachers share out how they use models. However, the BEST part was when teachers were amazed with our students results and products. Many were eager to include models in

their lessons. It was a great atmosphere just being around so many passionate educators. Presenting with my HCCLS group was a great experience despite the nervousness!!! We overcame and did well!"

At CAST in 2018, The C1 Fellows presented at a session with our informal educator partners. Dr. Narayan commented, "I was not pleased with the results then, at CAST 19, I tried something different, I rented a corner booth at the exhibit hall and the C2 Fellows presented what they had been working on for their informal task with their informal science educator at the booth."

RIGHT: with C2 Fellow Matthew Gaines

Wipro Booth Presentation signup sheet

Thursday Nov 21st

Timing	Name of Fellow and Informal Science Educator	Name of Fellow and Informal Science Educator
11 am-1 pm	Matthew Gaines/Athens Fish Hatchery	Rocio and LaQuaesha Danielle Hatch - Cedar Hill State Park
1 pm - 3 pm	Billy Johnson/ Perot Museum	Mary Davis, Myesia Morrison, Mark Broughton -- DISD Stem Center
3 pm - 5pm	Candace Edmerson/Colin Johnson/Dallas Zoo	Tracey Craft - Ray Roberts State Park - Isle du Bois

Friday Nov 22nd

Timing	Name of Fellow and Informal Science Educator	Name of Fellow and Informal Science Educator

9 am - 11 am	Julia Glowacki/JBS Wetland Center	Ana Belmonte/Anne Fayen-Dallas Arboretum
11 am-1 pm	Brittney Preston Rosalie Wade, Juan Morel	
1 pm - 3 pm	Raisha Allen/ Ray Roberts Park	Tabitha Moreno & Erin Shields (Tx. Discovery Gardens)

Saturday Nov 23rd

Timing	Name of Fellow and Informal Science Educator	Name of Fellow and Informal Science Educator
8 am - 10am	Richard Anderson and Katie Christman	

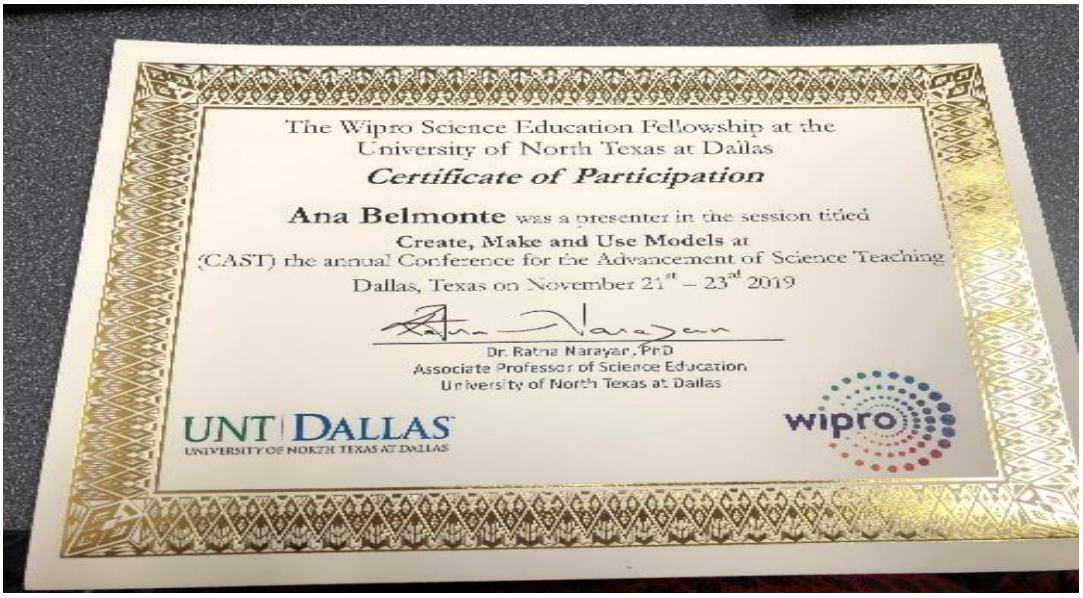
Reflection from Matt Gaines, C2 Fellow about presenting at the booth:

"I really liked this experience. It allowed me to target people who had a genuine interest in the activity I created. The conversations shared were really neat and informative. I probably enjoyed this part the best."

LEFT: C2 Fellow Richard Anderson and Katie Christman, Informal science educator from Dogwood Canyon Audubon center at the Wipro Booth
RIGHT: Juan Morrel, C2 Fellow at the Wipro Booth

After the conference, Dr. Narayan wrote a note to each C2 Wipro Fellow's Superintendent, Principal, Assistant Principal and other administrators and listed the Fellow's presentations at CAST and included pictures. The Fellows were very pleased with that and so was Dr. Narayan, "I was most happy when I got a response from a Principal / Administrator!"

Each C2 fellow also received a signed certificate for each of their presentations!


The Wipro Science Education Fellowship at the
University of North Texas at Dallas
Certificate of Participation
Ana Belmonte was a presenter in the session titled
Create, Make and Use Models at
(CAST) the annual Conference for the Advancement of Science Teaching
Dallas, Texas on November 21st – 23rd 2019
Dr. Ratna Narayan, PhD
Associate Professor of Science Education
University of North Texas at Dallas
UNT DALLAS
UNIVERSITY OF NORTH TEXAS AT DALLAS
wipro

Signed Certificate of Participation

C3 Fellows attended the conference but did not present. They are scheduled to present at CAST 2020 in Houston. Only 1 of them had attended CAST before and it really felt like they got a LOT out of the experience!

Reflection about attending CAST from C3 Fellow Amanda Cortez

"I thought CAST was amazing and I felt very honored and lucky to finally be allowed to be a part of it. Unfortunately, as a 4th grade science teacher it is not deemed necessary for us to attend so although I have asked to go every year I have always been turned down. I was so excited to finally be there this year that I was basically skipping through the Anatole. I think being there this year will truly benefit me for next year because I kind of know the ropes of how the whole shindig works now and I can visualize how it will work next year in Houston. (I would have been super freaked out about being somewhere out of town and not being familiar with how the conference worked AND having to present all at the same time next year!) I got some great ideas from presenters and have already started thinking about how it will be to present my own session next year. Super Stoked!!!"

Presentation at the annual conference of the Informal Science Association Education at Waco, Texas, Feb 27th, 2020

The annual conference of the Informal Science Education Association (ISEA) is in Waco, Texas Feb 26-28th 2020. Dr. Narayan was invited to present a poster at the conference.

She extended the invitation to her Wipro C2 Fellows. Six of the Fellows responded, and Dr. mentored them through submitting a proposal for the poster session. All of the proposals were accepted! The six C2 fellows presenting posters with Dr. Narayan are Candace Edmerson, Mary Davis, Brittney Preston, Matthew Gaines, Tracey Craft, and LaQuaesha Williams. They have also applied for the ISEA scholarship that should pay for their conference registration, Dr. Narayan will pay for mileage, and printing of the poster and mentor them through creating the poster.

Dealing with C1 Stragglers:

Five C1 Fellows did not complete their portfolio in Aug 2019 due to Medical and personal reasons. One of those has completed her portfolio and received a grade for it. Dr. Narayan spoke to the Dean of the UNT Dallas Graduate School about deadlines and to Dr. Eisenkraft who helped her craft a letter to the remaining Fellows. "We decided to give the fellows till Jan 31st to complete the work with the expectation that they must get a B to receive their remaining stipend. "

PROGRAM EVALUATION AND RESEARCH GROUP (DHA)

A summary of the evaluation report follows.

Evaluation Update – September 2019

David Heil & Associates, Inc.

Tasks this Month

- Administered the pre-program survey for Cohort 2 in California, Florida and Missouri and Cohort 3 in Texas (97% response rate).
- Administered the pre-program survey for any new District Coordinators in California, Florida, Missouri and Texas (100% response rate).
- Completed and submitted the annual summary report (September 25).

What's Next?

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

- Begin analysis of pre-program survey data from Fellows and new DCs.
- Submit report of pre-program survey highlights.
- Begin preparation for mid-year survey administration in January.
- Start initial planning for travel and site visits for 2019-2020.

Evaluation Update – October 2019

David Heil & Associates, Inc.

Tasks this Month

- Participated in Wipro Call on October 16, 2019.
- Reviewed NSF grant draft (ATLAS).
- Finalized initial review of Pre-Program Survey data and submitted Pre-Program Survey Summary on October 28, 2019.

What's Next?

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

- Continue preparation for mid-year survey administration in January.
- Continue planning for travel and site visits for 2019-2020.

Evaluation Update – November 2019

David Heil & Associates, Inc.

Tasks this Month

- Continued preparation for mid-year survey administration in January.
- Continued planning for travel and site visits for 2019-2020.
- Booked travel for February leadership meeting in Texas.

What's Next?

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

- Finalize plans for mid-year survey administration in January.
- Finalize plans for travel and site visits for 2019-2020.