



# Turning STEM into STREAM

Incorporating Reading, Research, and Art into  
our STEM Practices

May 31<sup>st</sup> – June 2<sup>nd</sup>, 2016

SC2 Summer Institute for Teacher Professional Development



**Dear teachers,**

Thank you for joining us for the annual SC2 Summer Institutes! We appreciate your continued dedication to STEM education for all southern NM students.

**Tentative Conference Logistics:**

- **Parking:** You can park anywhere on the NMSU campus with the exception of Handicapped parking, Green, Yellow and Red Zones. You will receive your parking pass when you register on Tuesday, May 31st. The parking pass has to be put in your car the morning you receive it or you will be ticketed by NMSU Parking. It must be visible the entire time you are parked at NMSU for the Institute.
- **Morning refreshments** will be provided during registration from 8:30am – 9:00am on each day of the Institutes in the Performing Arts Center and at O'Donnell Hall Foyer.
- **Lunch:** Chihuahua's Mexican Restaurant, Lorenzo's, and Metropolitan Deli will cater during the Institutes. You may eat in the uncarpeted classrooms. If you prefer to eat elsewhere, campus is centrally located and many restaurants and fast food places can be found nearby. Just be back on time for your sessions!
- **Stipends:** Stipend Paperwork will be distributed, signed, and collected on Thursday, June 2<sup>nd</sup> in the OH Foyer. If you plan on leaving early, your stipend will be decreased. You will still be responsible for filling out the paperwork correctly and timely. You will receive your stipend within 21 business days after the last day of the summer institute.
- **Bring your own device:** You are welcome to bring a laptop, handheld device, tablet and a smart phone.
- **Cancelations:** if you are unable to attend the SC2 Summer Institute, please let me know immediately, we currently have a waiting list. If you do not attend and fail to inform us prior to the first day of the Summer Institute, you will be placed on a waiting list for professional development events SC2 hosts in the next academic year. If you cannot attend the entire Summer Institute, your stipend will be decreased.
- **Get to know us!** To learn more about STEM Outreach and upcoming professional development opportunities through SC2 please visit our website: [www.stem.nmsu.edu](http://www.stem.nmsu.edu) and like us on **Facebook: STEM Outreach Center-NM**
- **Evaluations:** Your feedback is valuable to our continued efforts to provide you with quality professional development opportunities. This year, the evaluation has gone paperless and can be found at the following address: <https://www.surveymonkey.com/r/sc2summerinstituteevaluation2016>

**Dr. Susan Brown** – Director of STEM Outreach  
Email: [susanbro@nmsu.edu](mailto:susanbro@nmsu.edu)

**Nicole Delgado** – Assistant Director of STEM Outreach Programs  
Email: [pazubiat@nmsu.edu](mailto:pazubiat@nmsu.edu)

# SC2 Summer Institute 2016

## Turning STEM into STREAM

Incorporating Reading, Research, and Art into our  
STEM Practices

### Tuesday, May 31<sup>st</sup>, 2016

Time	Agenda Item	Location
8:15am – 9:00am	Registration	O'Donnell Hall Foyer
9:00am – 9:15am	Welcome and Introduction to STREAM	Dominici Hall
9:15 – 10:30am	Keynote Speaker – Paulo Oemig	Dominici Hall
10:50am – 11:50am	Conference Session 1	O'Donnell Hall
11:50am – 12:45pm	Lunch	O'Donnell Hall Foyer
12:45pm – 1:45pm	Conference Session 2	O'Donnell Hall
2:00pm – 3:00pm	Grade – level Engineering Design Challenge	O'Donnell Hall

### Wednesday, June 1<sup>st</sup>, 2016

Time	Agenda Item	Location
8:30am – 9:00am	Registration	O'Donnell Hall Foyer
9:00am – 11:45am	Grade – level Engineering Design Challenge	O'Donnell Hall
11:45am – 12:30pm	Lunch	O'Donnell Hall Foyer
12:30pm – 3:00pm	Grade – level Engineering Design Challenge	O'Donnell Hall

### Thursday, June 2<sup>nd</sup>, 2016

Time	Agenda Item	Location
8:30am – 9:00am	Registration	O'Donnell Hall
9:00am – 9:30am	Value of STREAM	Dominici Hall
9:30am – 11:30am	Keynote Speaker – Mark Weakland	Dominici Hall
11:45am – 12:30pm	Lunch	O'Donnell Hall Foyer
12:30pm – 2:45pm	Mini Sessions	O'Donnell Hall
2:45pm – 3:00pm	Stipend Paperwork	O'Donnell Hall Foyer



# **Paulo Oemig**

**Dominici Hall**

**Yates Theater**

Having studied chemistry in Argentina before coming to the United States, provided Paulo Oemig with a background in physical science and scientific inquiry which he applied in an environmental laboratory while pursuing an anthropology degree in Salt Lake City, Utah. He studied physical anthropology at the University of Utah and pursued related studies abroad at Cambridge University, England. His undergraduate work focused on behavioral ecology. Looking to bridge physical and social anthropology landed him at New Mexico State University for graduate studies in cultural anthropology where he completed a Master's degree. Paulo Oemig has taught physical science and dual-language science in the Las Cruces Public Schools for ten years. Throughout his time in the classroom he has been advisor and coach to diverse after school STEM academic programs. He is highly qualified in science, mathematics, social studies, TESOL, and bilingual education. He is interested in anthropology of (science) education, science literacy and bilingual education. Paulo Oemig is currently on a leave of absence from the school district while pursuing a doctoral degree in Curriculum and Instruction at New Mexico State University in the Language, Literacy and Culture program. He has presented at numerous literacy and science conferences at home and abroad. Paulo Oemig has been recognized with the Las Cruces Public Schools 2012 Teacher of the Year award and the New Mexico Golden Apple Award of Excellence in Teaching. He has also served an Albert Einstein Distinguished Educator Fellowship with NASA at Goddard Space Flight Center and Headquarters. Paulo considers "Teaching is a science, a skill and an art. Education is a complex process, which entails taking risks for both the educator and the student."

**May 31st, 2016**  
**Workshop Session I: 10:50am 11:50am**

**Climate Change and the Water Cycle: A Free 6th-12th Grade Unit Focused on New Mexico and the Southwest**

**Stephanie Haan-Amato and Stephanie Bestelmeyer –  
Asombro Institute for Science Education**

OH 104

Are you looking for engaging ways to teach your middle and high school students about climate change, the water cycle, or effects of changing climate on New Mexico water resources? Come learn about free, hands-on activities developed by the Asombro Institute for Science Education in partnership with the USDA Southwest Regional Climate Hub. Activities are aligned with CCSS and NGSS and can be conducted independently or as part of a 10-hour unit.

**Determining the Density of Liquids**

**Teresa Tellez and Celestina Valenzuela – Gadsden Middle School**

OH 127

Need some ideas on how to make density more engaging and hands-on? In this session, you can walk away with a simple mini-lab which incorporates STREAM to understand the concepts of density, mass, and volume.

**Angles Abound: Math in Art? Is that Even Possible?**

**Heidi Sanchez – STEM Outreach Center**

OH 130

Is math and art really related? Is that even possible? Join this session to learn about how math and art are interrelated and how you can integrate both in creative ways.

**Literacy in Math and Science**

**Anna Suggs – Zia Middle School**

OH 133

In this workshop we will present literacy strategies that can be used in any subject matter. We will practice strategies that you can use in your classroom no matter what subject you teach.

**You Wouldn't Want to Live Without...**

**Nicole Delgado – STEM Outreach Center**

OH 143

Join this session to learn why you wouldn't want to live without... antibiotics, electricity, extreme weather, insects and many more! We are going to explore the You Wouldn't Want To... book series, they are informative, fun, and have many potential lessons imbedded in them if you have an open mind and think creatively. This session is hands-on and loaded with reading and art!

### **Close Reading – How Does Close Reading Support the Integration of Science and Inquiry in the Classroom?**

**Carina Berard – Loma Heights Elementary**

OH 151

The number one reason teachers do not use close reading practices or include inquiry into their day is that they report they do not have time! Join this session to experience a 30 minute, 3 day close reading lesson and receive the planning piece for a 2 day Science Inquiry. Teachers will learn how Close Reading supports inquiry and hands-on science in the classroom. Teachers will take away strategies to support students with the use of complex texts and engage students in annotating, analysis, questioning, and drawing conclusions based on text based evidence.

### **Edible Education**

**Liz Anichini – La Semilla Food Center**

OH 227

La Semilla will provide teachers with information on healthy lifestyle choices that encourage active lifestyles and healthy eating through hands-on activities and a fun presentation.

### **Color STREAM**

**Shelly Pope and Laura Talley – Onate High School**

OH 233

Color is an intricate part of our lives. From understanding where colors come from to calculating how fast electromagnetic waves move through space, colors are all around. People experience colors in different ways. Remember last spring the famous Facebook dress that divided the whole world? What color did you see? Why do opinions vary? In this session, how people experience color will be our research question. We will explore color concepts through a guided inquiry approach allowing you to discover how your eyes receive color and how your brain interprets these images. Join us as we introduce a unit on color as well as exhibit key aspects of that lesson.

### **What Forces Affect the Motion of a Rocket?**

**Thelma Peterson – Riverside Elementary**

OH 033

Join this session to learn the science behind rockets. This session will be hands-on, informative, and fun!

### **Stories from SCRATCH**

**Laurel Cutting – Columbia Elementary**

OH 041

This session would be a short introduction to Scratch programming and how it can be used to create interactive stories. Teachers will learn about the benefits of Scratch such as cost effective, ease of use, unlimited possibilities, and integrates STEM into

multiple subjects. They will see a couple of examples. Then, they will work in partners to put together a short story about themselves.

### **Hands on the Land**

**Eileen Davis, BLM, Patty Leonard, Stacie Williams, and Noelle Murillo - LCPS**

OH 111

Join this session to learn about the Hands on the Land project and the forthcoming curriculum developed by local teachers to be used at and for the Organ Mountain – Desert Peak National Monument. Lessons will include indoor and outdoor activities.

## **Special Session:**

# **CHEMISTRY**

## **PUMP UP YOUR PRAXIS**

**Presenter: Jo Latorre, NMSU**  
**Chemistry Building, RM: Organic Lab, 191**  
**Limited to 25 teachers per session**

Demonstrations and Team-Based Experiments in the following areas using Vernier Technology Software

- Acid/Base Chemistry
- Polymer Chemistry
- Redox and Combustion (Reaction Types)
- Chromatography
- Atomic Theory

You will become consumers of chemistry as we scaffold science learning through guided inquiry. We will discuss methods for problem-solving and improving higher order thinking using present day science challenges. If students can find connectedness to their lives, we have active participants! Hopefully, you will find new ways to motivate your students and energize your classroom environment. Bring a notebook, there will be literature at your disposal.

Remember Lab Safety! Please plan your attire accordingly!

**May 31st, 2016**  
**Workshop Session II: 12:45pm – 1:45pm**

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**Math's Ancient Beauty Secret**

<b>Heidi Sanchez – STEM Outreach Center</b>	OH 130
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The Fibonacci sequence occurs throughout the worlds of nature, art, music, and math. Join this session to learn about Fibonacci's Numbers and get inspired to create your own works of art based on this number pattern.

**Literacy in Math and Science**

<b>Anna Suggs – Zia Middle School</b>	OH 133
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In this workshop we will present literacy strategies that can be used in any subject matter. We will practice strategies that you can use in your classroom no matter what subject you teach.

**Animal Evolution in a Seashell- Active Learning Techniques in Zoology**

<b>Dr. Michele Nishiguchi – NMSU Regents Professor</b>	OH 143
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Join this session to learn to learn about marine evolution and how to incorporate technology in your classroom when learning about zoology!

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**May 31<sup>st</sup>, 2016 – Grade-Level Workshops**  
**2:00pm – 3:00pm**

<b>Grade – level(s)</b>	<b>Presenter(s)</b>	<b>Room Numbers</b>
<b>Kindergarten</b>	Patricia Leonard	OH 104
<b>1<sup>st</sup> Grade</b>	Andrea Martinez	OH 127
<b>2<sup>nd</sup> Grade</b>	Sam Stichter	OH 130
<b>3<sup>rd</sup> Grade</b>	Dolores Polanco	OH 133
<b>4<sup>th</sup> Grade</b>	Allen Aguayo	OH 143
<b>5<sup>th</sup> Grade</b>	Emilia Linley	OH 151
<b>6<sup>th</sup> Grade</b>	Luis Sandoval	OH 227
<b>7<sup>th</sup>/8<sup>th</sup> Grade</b>	Marci Behrens	OH 233
<b>9<sup>th</sup> – 12<sup>th</sup> Grade</b>	Juanita Arguello	OH 111

**May 31<sup>st</sup>, 2016**

<b>Time</b>	<b>Activity</b>
<b>2:00pm – 3:00pm</b>	Introduction to the grade-level engineering challenge designed. At this time, we will discuss what and STEM/Engineering Design Challenge is and how it is a great way to incorporate reading, research, and art into STEM. Teachers will review the Engineering Design Process (handout provided to each teacher), discuss the following days challenge, ask teachers to brainstorm ideas about the challenge, and ask teachers to bring materials from home if needed.

**\*Note, you will be required to attend the grade-level session you registered with.**

## June 1<sup>st</sup>, 2016 – Grade-Level Workshops

Grade – level(s)	Presenter(s)	Room Numbers
Kindergarten	Patricia Leonard	OH 104
1 <sup>st</sup> Grade	Andrea Martinez	OH 127
2 <sup>nd</sup> Grade	Sam Stichter	OH 130
3 <sup>rd</sup> Grade	Dolores Polanco	OH 133
4 <sup>th</sup> Grade	Allen Aguayo	OH 143
5 <sup>th</sup> Grade	Emilia Linley	OH 151
6 <sup>th</sup> Grade	Luis Sandoval	OH 227
7 <sup>th</sup> /8 <sup>th</sup> Grade	Marci Behrens	OH 233
9 <sup>th</sup> – 12 <sup>th</sup> Grade	Juanita Arguello	OH 111

Time	Activity
8:15am – 9:00am	Summer Institute Registration
9:00am – 10:00am	Define the problem, research the problem, and brainstorm a solution. Teachers will work in small groups to address the challenge. Add a reading and research component at this time.
10:00am – 10:30am	Draw a plan (using the chart paper provided) of the model/prototype the group will build.
10:00am – 11:00am	Build a model or prototype that will address the needs of the challenge.
11:00am – 11:45am	Test the prototype – teachers will have an opportunity to test out their solutions to see how well their original design works in addressing the challenge.
11:45am – 12:30pm	Lunch
12:30pm – 1:30pm	Analyze and redesign prototype as needed.
1:30pm – 2:30pm	Teachers will compete, and draw conclusions about the designs that were most successful at addressing the challenge.
2:30pm – 3:00pm	Reflection and presentations - using NMPED's science standards, and Next Gen Science Standards, discuss ways to implement this into the classroom and how best to utilize STREAM (science, technology, reading/research, engineering, art, and mathematics) in doing this activity with students. Teachers will also be challenged to think about ways to bring challenges to their schools for their students to compete in.



# Mark Weakland

**Dominici Hall**

**Yates Theater**

**Mark Weakland** is a teacher, literacy consultant and coach, and author.

Mark holds a master's of education degree from the University of Pittsburgh. His teaching certifications include general science, special education, elementary education, and reading. He studied in Japan under the auspices of the Japanese Fulbright Memorial Fund. During his 23 years in public education, he was a 4<sup>th</sup> and 5<sup>th</sup> grade learning support teacher, a reading consultant, and a Title I reading specialist, K-6. Currently he works for himself (Mark Weakland Literacy), presenting nationally, working regionally with teachers to strengthen literacy programs, and regularly teaching in elementary classrooms to keep it real.

Mark expresses himself through teaching, but also through writing and music. His award-winning books for children include more than four dozen informational picture books, a book of poetry (and audio book), and a middle-grade sci-fi novel. His essays and humor pieces for grownups have been published in *The Funny Times* and *Reading Today* and his resource books for teachers include *The Dramatically Different Classroom* (with Christine Laitta) and *Super Core! Supercharging Your Basal Reading Program with More Reading, Writing, and Word Work* (ILA, 2014). He is currently working on a book about spelling instruction for Stenhouse Publishing. Once a full-time starving artist, Mark still performs occasionally as a singer, drummer, and guitarist. His original songs and compositions have been finalists in the John Lennon and USA Songwriting contests, and his collections of kids' songs have won multiple Parents' Choice awards.

For the past 23 years, Mark has lived at Springwater Farm in the hills of western Pennsylvania with his wife, Beth Good. He communicates from the middle of nowhere via [www.markweaklandliteracy.com](http://www.markweaklandliteracy.com), Twitter (@MarkWeakland), and an old-school landline.

# June 2<sup>nd</sup>, 2016

## SC2 Mini Sessions

The sessions below will showcase some of the great resources SC2 has available for checkout.

Time	Rotation
12:30pm – 1:00pm	Rotation 1
1:05pm – 1:35pm	Rotation 2
1:40pm – 2:10pm	Rotation 3
2:15pm – 2:45pm	Rotation 4

### Anatomy in Clay and Anatomy Models

**Marci Behrens – Vista Middle School**

OH 104

Join this session to learn how to use the Anatomy models and build physiological systems using the models and clay. This session is hands-on and full of great tips and tricks.

### Makey Makey

**Brian Claar – White Sands Middle School**

OH 041

Join this session to learn how to use Makey Makey Invention Kits. This session will show you how to seamlessly incorporate this technology into your classroom activities.

### Green Screen In your Classroom

**Chris Garcia – Hatch Valley Middle School**

OH 033

Using green screen technology in your classroom is a great way to incorporate current technology and real world applications into your classroom. Join this session for a brief introduction on how to use them in your classroom and the software needed to produce great videos incorporating your students' voice!

### Ozobots

**Heidi Sanchez – STEM Outreach Center**

OH 151

Empower your child to embrace the future and become a maker of technology, not just a user. Computer science is child's play as adventures, games and codes become as easy as laughter, when your child connects with their own power of creation.

### Squishy Circuits

**Roshani Rajbanshi – STEM Outreach Center**

OH 227

The goal of the project is to design tools and activities which allow kids of all ages to create circuits and explore electronics using play dough. Join this session to get the recipe, make dough, and learn about circuits!

### Cublets

**Stella Otoo – STEM Outreach Center**

OH 233

Inspire a love of learning through play. Cubelets are robot blocks that make it fast and easy to engage children as young as four in learning by building robots. There's no wrong way to build with Cubelets, so it is remarkably easy to transform these blocks into brilliant bundles of robotic curiosity.

### littleBits

**Aubrie Brown -STAND NM Noyce Scholar and Lucia Diaz – STEM Outreach Center**

OH 143

Learn how to invent with these electronic building blocks. littleBits is a fun way to challenge students to think outside the box and invent new things through this interactive technology.

### Digital Microscopes

**Lidia Anguiano and Alice Manning - STAND NM Noyce Scholars**

OH 130

Digital microscopes are a fun way to see the world through a magnified lens! Teachers will learn how to make slides, use the microscopes, and learn about the unseen details of our daily lives!

### Animal Skulls

**Gaspard Mucundanyi and Maggie Ruiz - NMSU**

OH 133

SC2 has 15 animal skull replicas to select from on your journey to discover animal anatomy and the conclusions we can draw about the environments they live in from the characteristics of their skulls.

### Energy Kits

**Nicole Delgado – STEM Outreach Center**

OH 127

Join this hands-on session to learn how to use Solar and Wind Energy Kits. The kits come with all supplies needed to create green energy. We will also learn how to calculate our carbon footprint. **Note, this session will only be held for the first 3 rotations.**

## Map of SC2 Summer Institutes

