



**GLOBAL EDUCATION SYMPOSIUM
2018
STEM AND LITERACY
OCTOBER 11-12, 2018**

**Teachers College, Columbia University
525 W 120th St, New York, NY 10027, USA**

Thursday, October 11th, 2018

8:15 a.m. – 9:00 a.m. Registration

Horace Mann 140

9:00 a.m. – 9:25 a.m. Opening Remarks and Welcome Message

Horace Mann 152

Dr. Felicia Mensah, Teachers College, Professor of Science Education, Associate Dean and Professor of Science Education

Dr. Jessica Riccio, Teachers College, Senior Lecturer, Preservice Program Coordinator

Dr. Shadi Farhangrazi, Scientist, Founder, Global Education Symposium, Co-Founder and CEO, S. M. Discovery Group. Adjunct Professor of Leadership and Organization, University College, University of Denver. Title: “Those who have inspired us”

9:30 a.m. – 10:45 a.m. Innovative STEM and Literacy Projects

Horace Mann 152

Chair: Dr. Gayle Knapp, Literacy and STEM Consultant, GES2018 Co-Chair

Speakers:

Heather Lu-Lasky, Founder and CEO of ChampAmerica, NYC, USA

Alan White, Founder and CEO, C3 Alliance LLC, NYC, USA

Title of Presentation (this is a shared abstract between the two speakers as they are talking about a collaborative project): Merit2Work – An Innovative Project on STEM Education and Career Preparation - A collaboration between ChampAmerica and C3 Alliance

Abstract: Two New York City based companies - ChampAmerica and C3 Alliance have joined forces to champion an innovative project - Merit2Work, an on-the-job-based training that provides participants the hands-on job experience, soft skill coaching, and professional connections and mentorship. ChampAmerica, a workforce development company which specializes in coaching and career development, was founded by Heather Lu-Lasky, an

International-student-turned Wall-Streeter; The creative mind behind C3 Alliance, a data science management consulting firm is Alan White, a career data science architect and a life-long data enthusiast who is passionate about closing the gap between education and employment. Together, C3 Alliance and ChampAmerica have championed several innovative programs (Merit2Work, Innovation Lab, etc.) that aims to promote learning and career development for those students in the STEM field. Most recently, the two companies partnered with a non-profit organization (Institute of Local Innovations) to launch a research competition for high school and early (freshman and sophomore) college students using NASA patented technologies while at the same time incorporating innovative data science/machine learning aspects. The curriculum design focused on promoting critical thinking and problem-solving in a team environment. The result of their training has led to job placement with Fortune 500 companies, complex STEM knowledge delivered to a younger group of students in a relatable format, and development of critical skills that are necessary to the modern workplace. Alan and Heather will discuss the considerations and challenges of the programs, and how they believe the program could evolve in the future, and their plans going forward. They will also discuss the inspiration that went into initial thinking behind the program focusing on rapidly changing emerging industry needs and the continually expanding skill gaps that today's students are facing.

Tim Powers, Regional Partnership Director, ThinkCERCA, Chicago, USA

Title of Presentation: The Fiscal ROI of Effective Instruction

Abstract: As budgets continue to shrink and global economies grow more and more competitive in the information age, it is critical for district leaders to build instructional models that provide strong 21st-century curriculum, offer support for remediation and enrichment at the earliest point possible, and continuously improve their organizations. Learn how districts who are investing in effective instruction are seeing the fiscal ROI.

10:45 a.m. – 11:00 a.m. Break
Horace Mann 140

11:00 a.m. – 12:15 p.m. STEM: Teaching Science, Global Outreach, Learning Models
Horace Mann 150

**Chair: Dr. Steve Acquah, Research Professor of Chemistry/ Digital Media Lab
Coordinator/ Director of GEOSSET, University of Massachusetts**

Speakers:

**Dr. Steve Acquah, Research Professor of Chemistry/ Digital Media Lab Coordinator/
Director of GEOSET, University of Massachusetts**

Title of Presentation: GEOSET

Abstract: The Global Educational Outreach for Science Engineering and Technology (GEOSET) initiative was established by the 1996 Nobel Laureate in Chemistry Sir Harold Kroto, Dr. Colin Byfleet, and Dr. Steve Acquah. GEOSET produces a variety of educational content supporting class projects, science research, outreach support for academic funding proposals, and supplements for a digital CV. It also connects to around 50 partner institutions and organizations around the world. The Digital Media Lab at UMass Amherst provides support for the use of emerging technologies in campus and online courses. Both virtual reality (VR) and 3D printing provide a unique perspective towards engaged learning practices that can foster creativity. As a UMass Innovation Fellow, Dr. Acquah will share some of the strategies employed by GEOSET and the Digital Media Lab for establishing STEM-based literacies and professional development using innovative technologies such as VR and 3D printing.

Ms. Dora Kastel, New Visions for Public Schools, NYC

Title of Presentation: Literacy Strategies for Secondary Science Classrooms

Abstract: With the arrival of the Common Core, science teachers were suddenly expected to address the “Literacy in Science” section of the English Language Arts (ELA) standards. For many, this was a particular challenge given science teachers’ minimal experience with formally teaching reading and writing, and there was a great deal of resistance. Science teachers expressed feelings that they shouldn’t have to teach ELA in a science classroom, that students should be learning these things outside of science class, and that their science instruction would suffer as a result of these new literacy-focused initiatives. It can be found however that by explicitly addressing reading and writing in science classrooms, students will actually benefit and literacy strategies can enhance student learning in science, rather than allow students to fall behind. The purpose of this talk is to share the findings from four years of literacy-focused professional development (PD) programming at the American Museum of Natural History (AMNH). From 2012 - 2016, educators at AMNH were able to work closely with over one hundred New York City middle school science teachers from schools across all five boroughs. In my presentation, I will summarize the essential features of the professional learning model we developed and share the outcomes and products developed as a result of the work. Lastly, I will address the larger implications of this work for science instruction and the development of curriculum materials and PD given the current focus on the Next Generation Science Standards.

**Dr. Jessica Riccio, Senior Lecturer, Preservice Program Coordinator, Teachers College,
Columbia University**

Title of Presentation: STEM Literacy in the K-12 Context: What do students, teachers and citizens need to know?

Abstract: In this talk, Dr. Riccio will discuss NGSS implementation in the US with a specific focus on the barriers, successes and questions related to what it means to know, understand and practice STEM in schools. We will discuss issues from the point of view of the student, the teacher and the community.

12:15 p.m. – 1:45 p.m. Networking Lunch (on your own); see handout of local restaurants

**2:00 p.m. – 3:45 p.m. Literacy and STEM Workshop
Horace Mann 150**

**Chairs: Dr. Steve Acquah, Research Professor of Chemistry/ Digital Media Lab
Coordinator/ Director of GEOSET, University of Massachusetts and
Dr. Sarah Clark, Associate Professor, College of Education, Brigham Young
University, Provo, Utah, USA**

This is an interactive workshop of discussions, brain -storming and fun ideas for educators

**3:45 p.m. – 4:00 p.m. Break
Horace Mann 140**

4:00 p.m. – 4:40 p.m. Literacy and STEM Graduate Students Presentations

Horace Mann 152

**Chair: Dr. Shadi Farhangrazi, Scientist, Founder, Global Education Symposium, Co-
Founder and CEO, S. M. Discovery Group. Adjunct Professor of Leadership and
Organization, University College, University of Denver.**

Speakers:

**Saiful Izwan Bin Zainal, Ph.D candidate, Centre of Applied Linguistics, University of
Warwick, United Kingdom.**

Abstract: There has been few descriptive and in-depth study on teacher cognitions about how to use digital technology in English literacy instruction, and not many studies that describe their use of digital technology in detail. This is an issue that should be given attention because teachers' cognitions about and use of digital technology are often associated with each other, and the knowledge of these elements is essential for improving the quality of teaching and learning. The objectives of the study are: 1) to examine the nature of Malaysian teachers' cognitions about (the use of) digital technology in English literacy instruction, 2) to investigate the origin of teachers'

cognitions, 3) to explore how Malaysian teachers use digital technology for literacy instruction in the classroom, and 4) to examine how Malaysian teachers' cognitions about digital technology are related to their use of digital technology in ESL literacy instruction. This study examines teachers' cognitions about and uses of digital technology in English literacy instruction among three teachers in Malaysia. While being descriptive and exploratory in nature, this research design focuses on employing a multiple case study approach. The teachers were surveyed, interviewed, and observed about their cognitions and uses of digital technology in English literacy instruction. Results showed that although the teachers surveyed strongly believe in the abilities and capabilities of digital technology in improving teaching, they still seem to have some concerns and confusion about the implementation of the use of technology as a whole.

Ava Javid, PhD Candidate, Program in Science Education, Teachers College, NYC, USA

Abstract: "What's my role?" An International Lens on Teachers' Beliefs about Inquiry: In this quantitative analysis of data from the Teaching and Learning International Survey (TALIS), science teachers' beliefs about their role as facilitators is examined. Responses from science teachers in several countries are considered in order to understand variance among teachers working in different educational systems. In addition, responses are analyzed to determine whether science vs. non-science teacher views about facilitating inquiry focused learning varies.

4:40 p.m. - 5: 15 p.m. Helping all students

Chair: Dr. Shadi Farhangrazi

Speaker: Mostafa Ghonim, Education activist, NYC, USA

Title: Helping educators connect with undocumented & First-Gen immigrant students

Abstract: Only four percent (4%) of students with undocumented status in the U.S. earn a college degree and advance their education beyond the high school level. The large majority of immigrant students who have undocumented status will not consider higher education due to their lack of knowledge with the college application process, access to limited financial resources and fear that their status will limit their employment opportunities after graduation or acceptance to college. Through this presentation my goal is to identify practical solutions, which will assist educators to Identify, Connect and Relate with immigrant and first-generation students. We will review information regarding the college application process for an undocumented students and share scholarship opportunities that can assist this group of students on their journey to living out the American Dream.

Friday, October 12th, 2018

8:15 a.m. – 8:45 a.m. Registration
Horace Mann 140

8:45 a.m. – 10:00 a.m. Education Perspectives in STEM: Technology in the Classroom
Horace Mann 152

Chair: Dr. Gayle Knapp, Literacy and STEM Consultant, GES2018 Co-Chair

Speakers:

Dr. Richard Simpson, Associate Professor, Rangos School of Health Sciences, Department of Occupational Therapy, Duquesne University, USA

Title of Presentation: Learning Strategies to Improve Students' Performance

Abstract: There are a number of learning strategies that have been demonstrated to improve student performance at all levels (primary, secondary and post-secondary). Unfortunately, these strategies are often unknown to students, who rely on less effective strategies.

Fortunately, students can learn to use these strategies at any age and teachers can incorporate these strategies into their instructional activities to reinforce their use. This talk will discuss how educational technologies can be used both inside and outside the classroom to encourage students to adopt learning strategies like spaced practice, retrieval practice, interleaving, elaboration and dual coding.

Dr. Iñaki Gomez Arriaran, Faculty of Engineering, Gipuzkoa - ikasTHERM Education Innovation Group – University of the Basque Country (UPV/EHU) - Spain

Title of Presentation: Development and implementation of active learning methodology based on legacy tools: flipped learning methodology

Abstract: This presentation describes an active learning methodology where STEM education activities based on the coordinated use of literacy tools, such as the flipped classroom, the Guided Problem Solving (GPS) and the monitoring of the learning process through the Socratic platform, are combined with the objective of turning students into protagonists of their own learning process experience. These tools are well known in secondary education level and during recent years they have also been successfully applied in university education. In this sense, the designed methodology is perfectly applicable both in secondary education and in certain stages of primary education.

10:00 a.m. – 10:15 a.m. Break

Horace Mann 140

10:15 a.m. – 12:15 p.m. Education Perspectives in Literacy

Horace Mann 150

Chair: Dr. Sarah Clark, Associate Professor, College of Education, Brigham Young University, Utah, USA

Speakers:

Dr. Sarah Clark, Associate Professor, College of Education, Brigham Young University, Utah, USA

Title of Presentation: The Power of Integration: Leveraging Intentional and Integrated Science and Literacy Instruction that Builds Real Word Experience and Gets Kids out of their Chair!

Abstract: The English Language Arts Common Core State Standards and the Next Generation Science Standards now require that U.S. elementary school teachers design instruction that incorporates reading, writing, listening, and speaking within a scientific context. Can these two subject areas be successfully integrated without sacrificing one for the other? Research suggests that incorporating literacy instruction within well-crafted science instruction that reflects the work and practices of scientists does indeed enable students to hone and develop stronger literacy skills, problem solving skills, and critical thinking skills beyond students' current level of understanding and ability. This session outlines how to create powerful and meaningful instructional experiences that has resulted in improved student writing, increased student interest and motivation, and greater content knowledge and experience.

Dr. Marjorie Siegel, Professor of Education, Teachers College, Columbia University, USA

Title of Presentation: Disciplinary Literacy: Expanding Our Vision of Literacy in Learning and Teaching STEM

Abstract: New perspectives on knowing and learning as social practices, the changing meaning of literacy in a globalized and networked world, and an increasingly multilingual and culturally diverse student population all point to the need for expanding our vision of literacy in teaching and learning STEM. This session challenges the current emphasis on "adding" literacy to STEM curriculum and teaching, and argues, instead, that literacy is already part of knowing and doing science and mathematics. Drawing on discourse studies, disciplinary literacy is theorized as a set of practices that members of a particular discourse community use to access and produce knowledge. Participants will be invited to explore the implications this expanded vision of literacy may have for STEM learners and teachers.

Kate Narita, Children’s book author, Boston, U.S.A

Title of Presentation: 100 Bugs! From Inception to Book

Abstract: How one author’s love of STEM, literature and nature fused to form 100 Bugs! A Counting Book. Nature inspires anytime someone steps outside. Kate Narita will describe the creative process behind 100 Bugs! A Counting Book, from her love of nature, inception to book, how she believes her book can inspire young readers to read and get outside into nature. Kate will also provide teachers with suggestions of how to use her book and other titles to inspire elementary students to create their own narratives and persuasive essays.

Dr. Gayle Knapp, Literacy and STEM Consultant, GES2018 Co-Chair

Title of Presentation: What is dyslexia and what should we do about it?

Abstract: Dyslexia, genetically heritable, is generally defined as: a disorder that involves difficulty in learning to read or interpret words, letters, and other symbols, but that do not affect general intelligence. It is actually a learning DIFFERENCE, rather than a “disorder” or “disability.” It has strengths as well as the well-known weaknesses in reading fluency. It cannot, indeed should not, be “cured.” However, the difficulties with reading CAN be improved through appropriate tutoring. The strengths should be encouraged as they can be particularly useful in STEM. The fact that 1-in-5 people world-wide have dyslexia suggest that there is a selective advantage to the thought processes of the dyslexic brain. This talk will introduce dyslexia and its learning differences and the proven methods for helping with the difficulty in reading fluency.

12:15 p.m. – 1:45 p.m. Networking Lunch (on your own); see handout of local restaurants

**2:00 p.m. – 2:35p.m. Plenary Session
Horace Mann 152**

Introduction: Dr. Shadi Farhangrazi

Dr. Waseem Malick, Former SVP, Hoffman La Roche Pharmaceutical Company, member of New Jersey Governor’s STEM Scholars Advisory Council

Title: STEM EDUCATION AND TRAINING ---- A CLARION CALL TO ACTION

Abstract: Technological advancements are transforming society at a rapid pace and along with it the need for STEM education and training is becoming critical. There is a growing need to expose and attract students to careers in the STEM related fields as well as provide opportunities for them to gain STEM skills. This presentation will focus on one such program, The Governor's STEM Scholars, which has the goal to educate the best and the brightest students about science, technology and math opportunities within New Jersey as well as to bolster the State's economic

development. This a program that was developed by the Research and Development Council of New Jersey together with the state government in partnership with industry.

2:45 p.m. – 3:20 p.m. UNESCO Speaker
Horace Mann 152

Ms. Hellin Brink, UNESCO

Title: Sustainable Development Goals, 2030 Agenda and Education

Introduction: Dr. Gayle Knapp

3:30 p.m. – 4:00 p.m. Keynote Speech
Horace Mann 152

Introduction by David Herro, Harris Ventures

Lord Harris, House of Lords, UK

Lord Harris will talk about his advocacy and support of education, Harris Academies, his own struggle with dyslexia

Conversation with Dr. Farhangrazi

4:00 p.m. - 4:30 p.m. Dr. Steve Acquah, Research Professor of Chemistry/ Digital Media Lab Coordinator/ Director of GEOSSET, University of Massachusetts,

Video on Harry Kroto

Horace Mann 152

4:30 p.m. - 5:00 p. m.

Literacy and STEM Student Presentation

Horace Mann 152

Chair: Dr. Gayle Knapp

Students' Presentation:

Juanita Morris, M.S. Student, Program in Cognitive Science in Education, Teachers College, NYC, USA

Abstract: Jaded Mathematics Perceptions: Recent studies have shown that mathematics anxiety is a component of mathematics education that prohibits students from learning and achieving high performance in mathematics. There were 48 female graduate students in this study who were exploring factors that contribute to low mathematical performance in school from a developmental approach. This was a mixed methods study but will be presented from a qualitative perspective.

Robin Roberts, EdD Candidate in Curriculum and Teaching, Teachers College, NYC, USA

Abstract: Discussing Diversity: How Veteran Teachers Talk about Student Difference: This study describes the experiences of five veteran teachers interacting with diverse students. Teachers define diversity, explain the lenses they apply to make sense out of their experiences and share how these experiences have personally impacted them and their teaching practices.

5:00 p.m. – 6:30 p.m. Reception
Closing remarks and close of the symposium
Horace Mann 140

SPONSORS

S. M. Discovery Group (SMDG)

S. M. Discovery is a bio-nanotechnology company that has developed a new and innovative patent - protected proprietary technology platform for targeted delivery of therapeutic and diagnostic agents. SMDG engages in innovative health projects and partnerships around the globe focusing on improving health and finding realistic therapeutic applications. SMDG's research focuses on improving life sciences processes and discovering therapeutic applications for central nervous system diseases (CNS), cancer, diabetes and cardiovascular diseases.

Teachers College, Columbia University

Teachers College is the first and largest graduate school of education in the United States and is also ranked among the nation's best. Its name notwithstanding, the College is committed to a vision of education four core areas of expertise: health, education, leadership, and psychology. For more than 100 years Teachers College has engaged in research, educating educators, and preparing the next generation of education leaders

BREAK SPONSOR

ChampAmerica

ChampAmerica is a New York based Workforce Development and Management Consulting firm founded in 2016. At ChampAmerica, students and young professionals are prepared to succeed in the current job market while helping the government and the private sector cultivate talent. Their aim is to help students, schools, companies, and government agencies better address the growing gap between education and employment, thus strengthening the overall competitiveness of our economy.

EXHIBITORS

Kidville

Kidville is a place where parents and kids from newborn through six years old can put creativity, fun, and play-time first. We offer a wide range of fun classes and programs designed by early childhood development specialists. We're your next-door neighbor, your music and dance studio, your art room, and your playground, all rolled into one!

Xploreo

Xploreo is an online marketplace that directly connects travelers with language teachers, NGOs, and homestay families overseas.

Lightwell Pro

Lightwell was founded on the mission of ushering in a new era of interactive storytelling, engaging people in new and delightful ways. In 2012, we created our own original series called The Adventures of Pan, featuring three heroes: Pandora "Pan" Beribolt, Chase Bravestone and Locke Lightwell. Our story apps hit #1 in over 38 countries and have been downloaded millions of times. Now, we're sharing the same tool that helped us build our interactive world with an entire generation of creators.