



Peer-Led Team Learning International Society

Third Annual Conference

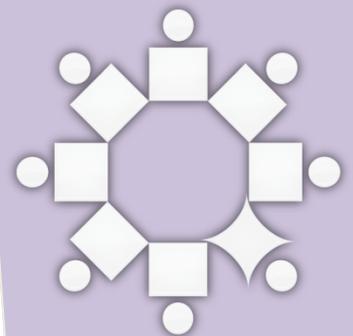
Carson, California, USA

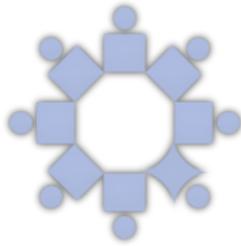
Peer-Led Team Learning: Peer Leaders as Agents of Change

May 29th - 31st, 2014



California State University
DOMINGUEZ HILLS





PEER-LED TEAM LEARNING INTERNATIONAL SOCIETY

THIRD ANNUAL CONFERENCE
CALIFORNIA STATE UNIVERSITY – DOMINGUEZ HILLS

PROGRAM AGENDA

▪ THURSDAY ▪ MAY 29, 2014 ▪

Extended Education (EE) Center

8:30 - 7:00 PM Conference Registration & Poster Set-up

9:00 - 12:00 PM

▪ Mini-Course ▪

Introduction to Peer-Led Team Learning through Case Studies of Campus Programs

Facilitators: Jose Alberte and AE Dreyfuss, Ed.D.

1:00 - 4:00 PM

▪ Mini-Course ▪

**Effective Techniques in Teaching Science:
Active and Collaborative Learning Outside the Laboratory**

Facilitator: Stamatias Muratidis, Ph.D.

5:00 - 7:00 PM

▪ Poster Presentations I ▪

Reception

Greetings: Dr. Mohsen Beheshti, CSUDH

Remarks: Dr. Hamoud Salhi, Acting Associate Dean, College of Natural and Behavioral Science



▪ FRIDAY ▪ MAY 30, 2014 ▪

Extended Education (EE) Center

8:00 - 9:00 AM Breakfast and Conference Registration

9:00 - 9:10 AM

Greetings and Opening Remarks

Dr. Mohsen Beheshti, CSUDH

Dr. Mitch Maki, Assistant Provost, CSUDH

9:10 - 10:15 AM

▪ Panel Presentation ▪

Peer Leaders as Agents of Change

James E. Becvar, University of Texas at El Paso -- Moderator

Panelists:

Pamela Brown, New York City College of Technology, CUNY, New York

Christine Keenan, Bournemouth University, England

Stephanie Marshall, Higher Education Academy, United Kingdom

Terry Platt, University of Rochester, New York

Pratibha Varma-Nelson, Indiana University-Purdue University at Indianapolis, Indiana

10:15-10:30 AM

Break

10:30 - 12:00 PM

▪ Oral Presentations I ▪

12:15 - 2:00 PM	Lunch Theme: How can Peer Leaders act as change agents to promote PLTL? Meetings of Practitioners: Peer Leaders, Faculty, Learning Specialists
2:00 - 3:30 PM	▪ Oral Presentations II ▪
3:30 - 3:45 PM	Break
3:45 - 4:45 PM	▪ Mini Presentations ▪
5:00 - 6:00 PM	▪ Poster Presentations II ▪ Reception
6:00 PM	Dinner (on own)



▪ **SATURDAY** ▪ **MAY 31, 2014** ▪

Extended Education (EE) Center

8:00 - 9:00 AM	Breakfast and Conference Registration
9:00 - 10:00 AM	▪ Plenary Session ▪ How can Peer Leaders act as change agents to promote PLTL?
10:00 - 10:05 AM	Break
10:15 - 11:15 AM	▪ Oral Presentations III ▪
11:30 - 12:30 PM	▪ Annual Meeting of the Peer-Led Team Learning International Society ▪
12:30 - 2:15 PM	Lunch ▪ Strategic Planning Session ▪ Promoting Peer-Led Team Learning through Collaborations
2:30 - 6:00 PM	▪ Board Meeting of the Peer-Led Team Learning International Society ▪
6:00 PM	Dinner (on own)





PEER-LED TEAM LEARNING INTERNATIONAL SOCIETY
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THEMED ORAL PRESENTATIONS

Room: EE 1218

Room: EE 1222

Friday, May 30, 2014

ORAL PRESENTATIONS I

	Changing Perspectives	Sustainability
10:30 AM	Peer Leaders' and Peer Leader Volunteers' Perspectives of their Involvement in a Mathematics Workshop Program: An Exploration of Motivations and Outcomes ▪Northeastern Illinois University	One California Community College's Journey Towards Sustaining, Expanding and Institutionalizing a PLTL Program ▪San Jose Community College
11:00 AM	How Does San Jose's City College's Peer Leader Training Program Affect Student Participants' Performance? ▪San Jose City College	PLTL - Learning Specialist Model ▪University of Texas at Dallas
11:30 AM	Peer Leaders as Agents of Change: Altering Student Perception of Chemistry through Effective Peer Leader Training ▪University of West Georgia	Workbooks Fund and Organize Peer-Led Workshops ▪University of Texas at El Paso

Friday, May 30, 2014

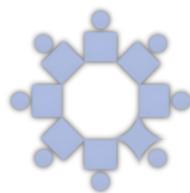
ORAL PRESENTATIONS II

	Tracking Performance	PLTL Program Expansion
2:00 PM	Effect of Leadership on Grades. Part I: Leading First-Semester General Chemistry while Taking Second-Semester General Chemistry ▪University of West Georgia	UHD Scholars Academy Faculty & Peer Mentoring Organization-Professional Development Making the Mentoring Difference ▪University of Houston-Downtown
2:30 PM	Using PLTL to Promote High Impact Practice and Retention in Computer Science 2 ▪University of Houston-Downtown	Beyond Basic: Peer Leaders Reimagine the Developmental Writing Course ▪California State University, Dominguez Hills
3:00 PM	Perceptions of Learning in PLTL Workshops ▪Florida International University	Peers Inspiring Peers: Why a Summer Bridge-to-College Program Benefits from this Partnership ▪New York City College of Technology, CUNY

Saturday, May 31, 2014

ORAL PRESENTATIONS III

	PLTL Program Expansion	Tracking Performance
10:15 AM	Training Pre-Service Teachers Using PLTL ▪Florida International University	Quantitative and Qualitative Investigations Using an Effective Combination of Focus Groups and Online Survey Results to Understand Barriers Impeding Students Who Self-Select to Participate in PLTL Workshops ▪San Jose City College
10:45 AM	Peer-Led Team Learning in Freshman Seminar ▪University of Houston-Downtown	Sustainability Peering into the Future ▪University of West Indies



PEER-LED TEAM LEARNING INTERNATIONAL SOCIETY
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MINI-COURSES

INTRODUCTION TO PEER-LED TEAM LEARNING THROUGH CASE STUDIES OF CAMPUS PROGRAMS

Facilitators: Jose Alberte & AE Dreyfuss, Ed.D.



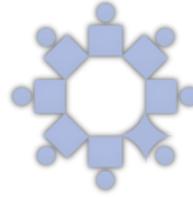
One of the greatest challenges facing educational systems is the implementation of changes to make learning internationally relevant and successful. The resistance to change, the possibilities of change, and the roles the many various stakeholders play in leading change have been noted by scholars on the topic of change in education. This interactive workshop will serve as a means of familiarizing participants with details of various PLTL campus programs through case studies, and will focus on how PLTL leaders can act as agents of change.

EFFECTIVE TECHNIQUES IN TEACHING SCIENCE: ACTIVE AND COLLABORATIVE LEARNING OUTSIDE THE LABORATORY

Facilitator: Stamatis Muratidis, Ph.D.

While some scientists are drawn to pure theoretical aspects of science, others scientists are first drawn to science through a concrete, “hands-on” predicament. Science as a discipline *requires* of students to learn “hands-on.” Yet, and perhaps precisely because most science classes are accompanied by a laboratory, the science classroom has been traditionally seen as the location where primarily lecturing takes place. Furthermore providing the answers seems to be a commonplace practice in science tutoring centers. A paradigm shift in teaching practices for instructors and peer leaders is needed if seeking to cultivate communication and teamwork skills, establishing lasting mental pictures about abstract theoretical concepts and make science more accessible to more students. Participants in this workshop will *actively* participate and rather than simply be informed, they will be engaged by use of a variety of topics, models and tools and will *experience* tips for successfully involving students. Most of the workshop will take place in a collaborative group format and best practices for forming, molding and nurturing collaborative groups will be emphasized. Along the way we will be promoting data driven best practices, while identifying and mitigating some of the common pitfalls of implementing such activities.





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PANELISTS

Pamela Brown, Ph.D., P.E.

is Associate Provost at New York City College of Technology, a branch of the City University of New York. A chemical engineer by training, she has taught chemistry and chemical engineering courses. She also served as Dean of Arts and Sciences and was a Program Director for one year at the National Science Foundation in the Division of Undergraduate Education.



Christine Keenan, Ph.D.

is a Learning and Teaching Fellow at Bournemouth University (UK) where her role involves conducting funded education research. Chris has published widely, particularly on the topic of student transition to higher education. She also has a leadership role in the university's Centre for Excellence in Learning.



PEER LEADERS AS AGENTS OF CHANGE

Stephanie Marshall, Ph.D.

is the Chief Executive of the Higher Education Academy (HEA) in UK, a Principal Fellow of the HEA and a Professor of Higher Education at the University of Manchester. Prior to the HEA Stephanie was Director of Programmes at the Leadership Foundation, leading the development of executive leadership development programmes and activities, and formerly served as a College Provost at the University of York. She recently co-edited the 4th edition of *A Handbook for Teaching and Learning in Higher Education: Enhancing Academic Practice*, the standard text for many 'New to Teaching' programmes.



Terry Platt, Ph.D.

began shifting his academic focus at the University of Rochester from laboratory research in molecular biochemistry to interventions in teaching and learning in 1999. He was a major contributor (with Prof. Jack Kampmeier and Dean Vicki Roth) to the development and expansion of the Workshop Program to support students in large introductory lecture courses, initially in STEM disciplines, which culminated in the formation of a Center for Workshop Education within the college's learning center. An integral and essential component of the program's success is training the Leaders in a credit-bearing course taught concurrently with the cognate lecture course and devoted to current topics in teaching and learning. Student demand has driven expansion of the Workshop Program, which now serves faculty and students in 12 science and humanities departments (including the business and nursing schools), involving 30% or more of the undergraduates each term in Workshop-associated programs.



Pratibha Varma-Nelson, Ph.D.

is Professor of Chemistry and the Executive Director of the Center for Teaching and Learning (ctl.iupui.edu) at Indiana University-Purdue University Indianapolis (IUPUI). Since 1995 Dr. Varma-Nelson has worked in development, implementation and dissemination of the Peer-Led Team Learning (PLTL) model of teaching. She was a Co-PI of two NSF funded National Dissemination Grants awarded to the PLTL project, and a founding Co-PI of the first NSF funded Undergraduate Research Center "Center for Authentic Science Practice in Education" (CASPiE). Her research group has recently developed cyber-PLTL (cPLTL). Expertise in both PLTL and cPLTL allows the group to study behaviors of students in face-to-face and online environments. For work on cPLTL (cpltl.iupui.edu) she has received funding from IUPUI, NSF, and Educause. Varma-Nelson is co-author of several publications about PLTL, cPLTL and CASPiE. She was the co-recipient of the 2008 James Flack Norris award for her role in developing the PLTL Workshop model.



Moderator: Jim Becvar, Ph.D.

is Professor of Chemistry at the University of Texas at El Paso, an institution he has served for more than 35 years. He introduced Peer-Led Team Learning into the chemistry curriculum in 2000. He promotes the community of scholarship within the Department and the College of Science by helping students become productive, successful, and contributing citizens of the institution.





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ORAL PRESENTATIONS

ORAL PRESENTATIONS I

FRIDAY, MAY 30, 2014 ▪ 10:30-12:00 PM

Changing Perspectives

10:30 – 11:00 AM ▪ **Peer Leaders' and Peer Leader Volunteers' Perspectives of their Involvement in a Mathematics Workshop Program: An Exploration of Motivations and Outcomes**

Ruben Echevarria, Nic Allen, Sarah Oppland-Cordell, and Doug Rosskamm
Northeastern Illinois University, Chicago, Illinois

This project presents Peer Leaders' (PLs) and Peer Leader Volunteers' (PLVs) perspectives of their involvement in the Mathematics Enrichment Workshop Program (MEWP) at a Hispanic-serving, urban, Midwestern university. The MEWP utilizes undergraduate and graduate students as PLs and PLVs to facilitate mathematics workshops that run parallel to required mathematics courses ranging from the developmental through calculus II levels. Participants completed an open-ended survey to examine their MEWP experiences. This study explores participants' motivations for becoming involved in MEWP and outcomes they ultimately experienced due to this involvement. Findings indicate that participants' motivations and outcomes were related to three overlapping themes: (a) educational philosophy, educational goals, and/or career goals, (b) implementation of peer group work, and (c) reciprocal benefits related to engagement with students. The use of qualitative methods aided in revealing the significant, diverse, and complex outcomes participants experienced, including those they perceived as preparing them for future teaching careers. Following the presentation, participants will engage in an interactive session where they will have the opportunity to reflect on their involvement in Peer-Led Programs and also brainstorm about questions they might ask Peer Leaders to capture their perspectives of their experiences in such programs.

11:00 – 11:30 AM ▪ **Peer Leaders as Agents of Change:**

Altering Student Perception of Chemistry through Effective Peer Leader Training
Christopher Greer and Brandon Rittgers
The University of West Georgia, Carrollton, Georgia

Well-trained leaders can not only help students do better in chemistry, they can influence students' feelings toward chemistry. The Chemistry Workshop Program at the University of West Georgia trains peer leaders in multiple areas, including communication, time-management, team building, and critical thinking. During a three-day training period, leaders are presented with information, ideas, and situations relevant to their future performance as peer leaders. Guest speakers bring expertise on topics such as stress management, the psychology of communication, and dealing with different learning styles. New leaders write weekly journals that describe the progress of their groups and bring up any issues that need to be addressed. A "retreat" after a few weeks revisits these issues.

To assess changes in how students felt about chemistry, both leaders and students were surveyed: leaders on what they gained from training and on how they have altered the outlook of their group members on chemistry; students on how their own perceptions of chemistry changed over one semester in workshop.

11:30 – 12:00 PM ▪ **How Does San Jose's City College's Peer Leader Training Program Affect Student Participants' Performance?**

Ana Evans, Jessica Snyder, Klayre Guzman and Perla Amaro
San Jose City College, San Jose, California

The San Jose City College PLTL program operates at an unprecedented level of accountability among all its personnel, including peer leaders, faculty and staff. Our presentation will begin with a demonstration on how San Jose City College's Peer Leaders (PLs) prepare a weekly planning sheet, which is the strength of our PLTL program. We will discuss why two hours allotted to completing a planning sheet, before facilitating a weekly PLTL workshop, is critical in helping STEM students succeed academically and personally. SJCC's PLs also undergo weekly training activities to expand their knowledge in leadership and managerial skills, with the goals of becoming effective mentors and team leaders. Peer leaders are also coached in the implementation of study techniques, pedagogy, and active learning strategies through role playing, analyzing case studies, etc. Many of the active learning techniques taught in weekly peer leader meetings are derived from On Course's (TM) student success strategies (see <http://oncourseworkshop.com/>) and implemented in weekly workshops. In addition to participating in weekly PL trainings, each PL is also required to meet one hour weekly with a lead faculty PLTL practitioner (LFPP) who ensures all course components are consistent with weekly content taught by the instructor in lecture, and reinforced by the PL in Workshop. During the mandatory orientation, prior to the beginning of the semester, prospective peer leaders buddy-up with experienced PL's and learn about the myriad responsibilities, including the maintenance of an on-line archive, e-planner, roster, etc. Classroom visits are scheduled in STEM classes during the first week of the semester to promote the program and encourage students to participate in weekly workshops. Toward the middle of the semester, each peer leader schedules a peer-to-peer observation and is evaluated by another PL to further improve both the workshop experience and academic success of the participants. The aim of our study is to determine whether a correlation exists between the quality of PL training program and improved participant performance. This will be accomplished by analyzing quantitative and qualitative data as well as effectively combining results of both online focus groups and on-line surveys.

ORAL PRESENTATIONS I

FRIDAY, MAY 30, 2014 ▪ 10:30-12:00 PM

Sustainability

10:30 – 11:00 AM ▪ **Making a Case for PLTL on Your Campus: One California Community College's Journey towards Sustaining, Expanding and Institutionalizing a PLTL Program**

Madeline Adamczeski and Mark Zheng
San Jose City College, San Jose, California

If our lessons come from the journey and not the destination, then SJCC's tenacious and resilient faculty, staff and students who steadfastly dedicated themselves to rigorously implementing the PLTL program's six critical components, have been a part of one of the most intensive educational experiments dedicated in passion, persistence and patience. Come learn about implementation, expansion, and financial sustainability strategies of SJCC's PLTL program and how you can adapt and adopt them at your academic institution toward maintaining a permanent campus program.

11:00 – 11:30 AM ▪ **PLTL - Learning Specialist Model**

Kimshi Hickman and Michael Saenz
University of Texas at Dallas, Richardson, Texas

The University of Texas at Dallas implements PLTL with the Learning Specialist Model. The PLTL Coordinator is located in the Student Success Center and creates training sessions for Workshop leaders and supports leader development in learning theory and practice. This model provides a close working relationship between the learning center and the curriculum in addition to creating increased communication and problem solving for faculty, leaders and students.

11:30 – 12:00 PM ▪ **Workbooks Fund and Organize Peer-Led Workshops**

Brian Frescas, Jose Marin, Juan C. Noveron, Geoffrey Saupe, Mahesh Narayan,
Bonnie M. Gunn, and James E. Becvar
University of Texas at El Paso, El Paso, Texas

Incorporating Peer-Led Team Learning (PLTL) into a course curriculum significantly facilitates student learning. However, financial sustainability often presents a very real barrier to PLTL longevity and success. Another difficulty is creating a well structured and efficient week-by-week sequence for workshop content. At the University of Texas at El Paso, "PLTL Workshop Workbooks" (authored by students and giving them publication credit) overcome these problems. Tailored to complement the General Chemistry 1 & 2 lectures, Workbooks required for workshop serve as a source of content/explanations, quizzes, practice problems, and in-depth explorations of chemistry. They structure lesson plans, ensuring an even pace across all workshops. Workbooks provide quality content for students to learn. A non-profit organization owns this intellectual property, publishes the workbooks, and donates all profits from sales to fund and sustain the peer leading program, ensuring that students reap the benefits that the PLTL program provides. PLTLIS should adopt this model.

ORAL PRESENTATIONS II

FRIDAY, MAY 30, 2014 ▪ 2:00-3:30 PM

Tracking Performance

2:00 – 2:30 PM ▪ **Effect of Leadership on Grades. Part I: Leading First-Semester General Chemistry while Taking Second-Semester General Chemistry**

Lucille Garmon
University of West Georgia, Carrollton, Georgia

New leaders are selected each semester at the University of West Georgia and every spring several of those chosen have just completed their first semester of general chemistry. Usually, these new leaders are themselves enrolled in the second semester of general chemistry while serving as leaders for first-semester students. This presentation compares the final grades in the second-semester of students concurrently serving as leaders with final grades of students who performed similarly during the first semester but who did not become PLTL leaders. At UWG the drop between the first and second semesters of general chemistry averages about one letter grade. However, among leaders the average drop, over the past decade for more than one hundred leaders, is less than half that. Thus one may conclude that leadership in first semester general chemistry promotes better understanding of the more advanced concepts introduced in the second semester. These results can also be a recruiting tool for convincing qualified students that becoming PLTL leaders can help them do better in their subsequent courses.

2:30 – 3:00 PM ▪ **Using PLTL to Promote High Impact Practice and Retention in Computer Science 2**

Ongard Sirisaengtaksin and Melissa Greelee
University of Houston-Downtown, Houston, Texas

Data has shown a gap between projected computer science related job openings and the number of computer science degrees awarded. Promoting recruitment and retention of computer science majors could help bridge this gap. To accomplish this, an academic support system involving PLTL has been created at the University of Houston-Downtown for the introductory computer science course, CS 1. The support system is being expanded with a program of workshops to cover CS 2 as students have difficulty making the transition from CS 1. To determine the efficacy of the workshop material being developed, the workshop sessions were offered to students and conducted by trained PLTL leaders. Feedback collected from the students and leaders over the course of this inaugural run is being used to refine the workshop materials and improve the program. The results of this work can be used to facilitate student success in CS 2 in subsequent semesters and successive classes. This session will present the results of this work and discuss how the findings can be used to facilitate student success.

3:00 – 3:30 PM ▪ **Peer Leader's Perceptions of Learning Experiences**

Jose Alberte, Alberto Cruz, Nataly Rodriguez, Aida van Mossel, Stephanie Sardinias, Thomas Pitzer
Florida International University, Miami, Florida

Peer-Led Team Learning (PLTL) at Florida International University serves a large volume of students and Peer Leaders (PL). Students who participate in PLTL, on average, perform a letter grade better than their peers who do not participate in PLTL. A survey was conducted to analyze PL perspectives on learning. The survey contained a series of Likert scale statements and free response questions on learning experiences. The nature of the questions considered barriers in education, and the perception that PLTL improved the learner's capabilities to overcome these obstacles. Based on the survey responses, PLs perceive an improvement in the way they learn during and/or after becoming a PL. PLs perceived that being a PL had a positive impact on their mastery of content, metacognitive and communication skills, and a greater appreciation of learning.

ORAL PRESENTATIONS II

FRIDAY, MAY 30, 2014 ▪ 2:00-3:30 PM

PLTL Program Expansion

2:00 – 2:30 PM ▪ **UHD Scholars Academy Faculty & Peer Mentoring Organization- Professional Development Making the Mentoring Difference**

Mary Jo Parker, Rene Garcia, Mitsue Nakamura
University of Houston-Downtown, Houston, Texas

Celebrating 15 successful years, the University of Houston-Downtown's Scholars Academy has generated over 700 alumni STEM graduates of which 91% remain in STEM graduate programs and/or the workforce. Success lies in the use of small learning communities, called peer and faculty mentor groups, each based in disciplines, supporting freshmen/transfer students through lower/upper division STEM course work, and providing support activities. Selection of peer mentor leaders, PhD faculty mentors, and training of peer mentors through an off-campus retreat setting offers many minority-serving and Hispanic-serving institutions a model for inclusive success for their own diverse STEM populations. Fifteen years of longitudinal data will frame the evolution of the organization and its continuing completion / post-baccalaureate successes. This session also focuses upon training of peer undergraduates and PhD faculty. The extensive influence of peer-led team-leadership will provide insight into the training processes.

2:30 – 3:00 PM ▪ **Beyond Basic: Peer Leaders Reimagine the Developmental Writing Course**

David Sherman, Amanda Reyes, and Ron Farol
California State University, Dominguez Hills, Carson, California

For the past six years the English department at CSU Dominguez Hills has been training Peer Leaders as Supplemental Instructors in its Developmental Writing sequence. Typical University Developmental Writing curricula rely mainly on skill and drill teaching. This de-contextualized approach ignores much of what we now know about learning and cognition. Based on theories of multimodal learning and drawing from current scholarship that examines the cognitive aspects of visual literacy and multimodal composing (Bowen and Whithaus 2013; Efland 2002), we have designed and piloted a Developmental Writing curriculum that promotes multimodal composition as a mode of inquiry and part of the writing process. We will discuss examples of innovative assignments designed to enhance the critical and creative thinking of students by looking to multimodal composing as a site for bridging affect and intellect, e.g., Facebook interventions; digital literacy autobiographies, critical spatial practices. Strong corroborating data and samples of student-produced multimodal work and writing from our diverse, urban University will be shared with participants.

3:00 – 3:30 PM ▪ **Peers Inspiring Peers:
Why a Summer Bridge-to-College Program Benefits from this Partnership**
Janet Liou-Mark, A.E. Dreyfuss, Mursheda Ahmed, Christopher Chan, Karmen Yu
New York City College of Technology, CUNY, Brooklyn, New York

New York City College of Technology has designed a “Teaching-Assistant-Scholars Bridge-to-College Summer Academy” to acclimate first-year underrepresented minority students to life in college. Peer Leaders assisted in motivating and encouraging incoming freshmen in gaining the academic and skills needed to successfully navigate college. They also facilitated a three-day mathematics preparatory workshop that provided students with the confidence to excel in their first credit-bearing mathematics course. The vitality of the peer leaders in providing support for their peers will be highlighted and the lessons learned will be presented. (This project is supported by NSF MSP Grant #1102729.)

ORAL PRESENTATIONS III SATURDAY, MAY 31, 2014 ▪ 10:15-11:15 AM
PLTL Program Expansion

10:15 – 10:45 AM ▪ **Training Pre-Service Teachers Using PLTL**
Jose Alberte, Albert Cruz, Nataly Rodriguez, Thomas Pitzer
Florida International University, Miami, Florida

The Biology Education Seminar is a course designed to train pre-service science teachers in the most effective pedagogical practices. Peer Led Team Learning (PLTL) is utilized as educational fieldwork for the course. This seminar addresses practical and fundamental aspects of student cognitive development. Students will experience and practice the implementation of group learning activities in a completely active environment. The course aims to serve as a progressive means to improve the quality of current science education. By training undergraduates, the seminar can nurture better teaching methods early in an educator’s career. In a typical teaching education program, undergraduates are not placed in charge of a classroom until their final semester. By using PLTL workshops, Peer Leaders (PLs) gain vital experience in classroom management and in the implementation of fundamental pedagogy.

10:45 – 11:15 AM ▪ **Peer-Led Team Learning in Freshman Seminar**
Mitsue Nakamura
University of Houston-Downtown, Houston, Texas

Many published studies indicate that what students experience during the first year of college greatly affects their mind set to complete a college degree. Other studies confirm that Peer-Led Team Learning helps students understand the concepts in STEM disciplines better, and helps students retain them better. This study shows that Peer-Led Team Learning can be a great tool for a freshman seminar course by discussing the peer leader role in my freshman seminar course, by sharing the syllabus used for the course, and data including the graduation rate of students who completed the freshman seminar with PLTL workshops, and the graduation rate of peer leaders.

Tracking Performance

- 10:15 – 10:45 AM ▪ **Quantitative and Qualitative Investigations Using an Effective Combination of Focus Groups and Online Survey Results to Understand Barriers Impeding Students Who Self-Select to Participate in PLTL Workshops**
Jourdan Aguirre, Rubi Reyes, Robert Parker, and Wendy Nguyen
San Jose City College, San Jose, California

The purpose of this research is to address the concern that many students who participate in Peer-Led Team Learning workshop via self-selection are those who would earn an A or B in the course regardless of whether or not they participated in Workshops. The goal is to determine whether a full range of students attend PLTL workshops at San Jose City College. We aim to address this dilemma by examining grades of students in PLTL STEM-designated classes over four consecutive semesters (Spring 2012-Fall 2013), in which the instructor promoted PLTL versus classes in which the instructor did not. Additionally, on-line survey results were analyzed over the same period, with focus on responses to attitudinal questions. In addition to the quantitative data, qualitative data was obtained by conducting focus groups with questions centered on the behavior and challenges of students who participate in Peer-Led Team Learning workshops. As we identify behaviors, attitudes, barriers and other factors that impede student participation in PLTL workshops, we anticipate that we will simultaneously be able to increase student participation in PLTL workshops and reject the assumption that students who participate in Peer-Led Team Learning workshops would already succeed with an A or B (e.g., without attending Peer-Led Team Learning workshops). By demonstrating that a normal distribution of students are participating in PLTL workshop, this research should validate the recognition that Peer-Led Team Learning is an effective intervention to decrease the number of students who drop or fail their STEM courses. Further, by analyzing both cognitive and affective results, we can better understand the challenges responsible for impeding students' ability to participate in PLTL workshops, and thus work to address those barriers, so that they may enjoy academic success through PLTL Workshops.

Sustainability

- 10:45 – 11:15 AM ▪ **Peering into the Future**
Novelette Sadler-McKnight and Imron Miller
The University of the West Indies, Mona, Jamaica

One critical role of a university education is to sustain human development. A quality university education should therefore be holistic, value-added, relevant, culturally sensitive and equip its graduates with the high-level skills to meet the demands of the labour market, civil society and governance. An important component of this quality enhanced education is the provision of unique environments that will aid in the development of graduates who are excellent team players, problem solvers, communicators and decision-makers. The Peer-Led Team Learning (PLTL) model was implemented at the University of the West Indies in 2008 to improve students' learning experiences and academic performance in chemistry. Students' performances on their final examinations and their responses to specially designed questionnaires and interviews were analyzed. Our research has shown that the PLTL experience has enriched students' learning outcomes beyond their academic performance and has enhanced their problem solving, communication, and team building skills as well as their self-esteem, confidence; interest in chemistry and careers in chemistry. In this paper we report on the PLTL model as an instructional strategy to prepare future leaders and scholars.



PEER-LED TEAM LEARNING INTERNATIONAL SOCIETY
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MINI PRESENTATIONS

Friday, May 30, 2014

3:45 - 4:45 PM

Design and Development of PLTL Workshop Material for Computer Science 2

Melissa Greenlee, Alisa Turchaninova, Eloy Perez, Steve Leon, Kevin Castillo

University of Houston-Downtown, Houston, Texas

At the University of Houston-Downtown, students find it difficult in making a transition from the first programming course (CS 1) to the second programming course (CS 2). This is due to the nature of concepts that are covered in CS 2. CS 1 covers mostly simple structures and constructs of programming concepts. This makes it less of a problem for students to comprehend. In contrast, CS 2 includes much more complex structures of programming, where students strain to grasp the concepts. To alleviate the problem, a decision was made to incorporate PLTL into CS 2. PLTL workshop exercises are currently designed, developed, and tested, to assist and guide students to improve understanding of the concepts. Each set of exercises in a workshop is designed to address only one concept.

Scaffolding: A Tool for Developing Peer Leaders

Vivian Fayowski and Saphida Migabo

University of Northern British Columbia, Canada

Scaffolding is the provision of structures and adaptive support that enables a learner to achieve an idealized level of competency in the performance of a task. We will define scaffolding as used in our program and share some best practices to develop scaffolding skills in our leaders. By modeling scaffolding while training the leaders for our peer-facilitated programs, peer leaders develop knowledge and skills to fulfill their roles as supporters of student learning. We incorporate strategies such as modeling, communication techniques, group facilitation, structuring team tasks, and creating learning outcomes. Ongoing support and peer-to-peer observations provide opportunities for reflection and refinement of skills. Formal and informal assessments contribute to leaders' development of effective scaffolding practices.

Visual Representation of Matter Aids Understanding of Chemical Kinetics

Carmen G. Kerstiens, James E. Becvar, Mahesh Narayan

University of Texas at El Paso, El Paso, Texas

For second semester General Chemistry classes at the University of Texas at El Paso, students must plot and understand Concentration vs. Time graphs for substances during kinetic processes. Many students are not able to conceptualize conservation of mass under constant volume conditions and are thus unable to rationalize concentration changes during chemical reactions. The use of shapes (e.g. triangles, circles, squares) to represent different atoms in molecules, aids comprehension of chemical kinetics in Peer-Led Team Learning Workshops. Pictorial representation of atoms using fixed numbers of specific shapes helps students visualize the conservation of matter in chemical reactions. Reactions start and end with the same number of atoms as the reaction progresses from reactants to products. Through this visual interpretation students can see which compound is the limiting reagent, how much of the other reactant is left over, and how much product can be made. This method allows students to learn and remember by visual manipulatives.

Promoting Critical Thinking Through Bloom's Taxonomy in Biology 1101 Peer-Led Workshops

Ayesha Rasool and Davida S. Smyth

New York City College of Technology, CUNY, Brooklyn, New York

Students at New York City College of Technology, CUNY have been shown to struggle with reading in foundational biology courses. A program titled "Reading Effectively Across the Disciplines" is currently in progress, aimed at teaching reading strategies, assessing reading assignment completion and outcomes of these interventions. These reading strategies can be designed to assess critical thinking. As part of READ, experienced biology students have been recruited as Peer Leaders to implement workshops and guide student reading. Peer-led workshops provide a support structure to discuss the concepts presented in lecture. Strategies used were based upon Bloom's Taxonomy of Learning Objectives (B. Bloom and Associates, 1956) and provided a basis to move through stages in developing critical thinking around biological systems. This presentation will demonstrate examples of strategies designed and implemented in peer-led workshops over the course of an academic year.

iWorkshop: Implementing the I>Clicker in Peer-Led Workshop

Jose E. Marin & Javier Benitez

The University of Texas at El Paso, El Paso, Texas

The Peer-Led Team Learning (PLTL) Program at the University of Texas at El Paso has advanced many ideas to promote learning in PLTL Workshop. We report here that the use of the I>Clicker in the Workshop environment directly prepares students to solve problems of various degrees of difficulty against the all important criterion of time. This is a very helpful lesson for students in today's classes because of the widespread use of multiple choice questions on examinations. Facile use of the I>Clicker has direct impact on the students' class grade. Use of the I>Clicker allows students to take chances and 'be wrong' anonymously. The I>Clicker is a versatile resource to promote team-work as well as solo-work to reinforce concepts, as well as to practice new material to the point of mastery.

Use of Reflective Strategies to Develop Problem-solving, Reading, and Writing in a Laboratory Course in Electro-Mechanical Technology

Andris Pinkhasik

New York City College of Technology, CUNY, Brooklyn, New York

This presentation will examine how the use of reflection can help freshmen students develop crucial engineering skills. Reflection is an exercise used after students perform various actions and then reflect on their actions. As the student reflects, questions appear, challenges faced are resolved, and the task is connected with prior knowledge. In Spring 2014, students in EMT 1130 were asked to answer three to five questions per week. Two of the questions were more general, dealing with reflection and their task for the day. The remaining questions consisted of actions performed with the electronic and safety aspects of the class. As the semester progressed, students answer more electronic-specific questions. These findings suggest that a reflection period in engineering classes may help freshmen students develop their problem-solving, reading, and writing skills crucial to their futures as engineers and technicians.

Pop Culture Entertainment Induces Enhanced, Interactive Learning

Audrey Lacerte, John Martin Gabriel B. Sabandal, Andrea Chavez, Marissa Velazquez, Juan Noveron, Geoffrey Saupe

University of Texas at El Paso, El Paso, Texas

Peer Lead Team Learning is a vital component in the learning arsenal of students in General Chemistry. Through organized and interactive methodologies, students are more apt to master the concepts throughout the course. Furthermore, these students are able to integrate and apply them outside of the classroom. Here, we present an engaging and competitive technique influenced by Suzanne Collins' *The Hunger Games*. In a three-round battle, "The Chemical Games" ensues in increased learning aptitude through engaging and intense competition. By having two control groups and two groups actively participating in the game, our results showed an increase in quiz grades of 30%. Furthermore, students were able to retain the material and incorporate the concepts repeatedly in future sessions. By fusing what students are exposed to in the entertainment world with concepts in General Chemistry, our study may provide a novel way to induce an interactive learning environment.



PEER-LED TEAM LEARNING INTERNATIONAL SOCIETY
THIRD ANNUAL CONFERENCE
CALIFORNIA STATE UNIVERSITY - DOMINGUEZ HILLS

POSTER PRESENTATIONS

Thursday, May 29, 2014 5:00-7:00 PM
Friday, May 30, 2014 5:00-6:00 PM

How do Students in Mathematics (MAT1175) Benefit from Vygotsky's Zone of Proximal Development?

Joe Nathan Abellard

New York City College of Technology, CUNY, Brooklyn, New York

ABSTRACT: The Peer-Led Team Learning (PLTL) Workshop model focuses on engaging students with discussion and problem solving pertaining to their course work with the intent of strengthening their skills and understanding of the material. Peer leaders are a vital component of the workshop model as they are faced with the responsibility of effectively facilitating workshops. Therefore, the success of a workshop is contingent on not only student performance, but also on the performance of the peer leader. It behooves the peer leader to steer students in the right direction to engage their minds in learning, in thought-provoking discussion, and in problem solving. To do that, the peer leader must effectively implement techniques to provide scaffolding for students' learning. This poster examines how the application of Lev Vygotsky's concept of the Zone of Proximal Development (ZPD) contributes to the success of a Mathematics workshop through scaffolding of student learning.

Peer Leader's Perceptions of Learning Experiences

Jose Alberte, Alberto Cruz, Nataly Rodriguez, Aida van Mossel, Stephanie Sardinias, Thomas Pitzer

Florida International University, Miami, Florida

ABSTRACT: Peer-Led Team Learning (PLTL) at Florida International University serves a large volume of students and Peer Leaders (PL). Students who participate in PLTL, on average, perform a letter grade better than their peers who do not participate in PLTL. A survey was conducted to analyze PL perspectives on learning. The survey contained a series of Likert scale statements and free response questions on learning experiences. The nature of the questions considered barriers in education, and the perception that PLTL improved the learner's capabilities to overcome these obstacles. Based on the survey responses, PLs perceive an improvement in the way they learn during and/or after becoming a PL. PLs perceived that being a PL had a positive impact on their mastery of content, metacognitive and communication skills, and a greater appreciation of learning.

Scaffolding: A Tool for Developing Peer Leaders

Vivian Fayowski and Saphida Migabo

University of Northern British Columbia, Canada

ABSTRACT: Scaffolding is the provision of structures and adaptive support that enables a learner to achieve an idealized level of competency in the performance of a task. We will define scaffolding as used in our program and share some best practices to develop scaffolding skills in our leaders. By modeling scaffolding while training the leaders for our peer-facilitated programs, peer leaders develop knowledge and skills to fulfill their roles as supporters of student learning. We incorporate strategies such as modeling, communication techniques, group facilitation, structuring team tasks, and creating learning outcomes. Ongoing support and peer-to-peer observations provide opportunities for reflection and refinement of skills. Formal and informal assessments contribute to leaders' development of effective scaffolding practices.

Super Leader Pilot Program – Roles and Outcomes

Arianne Lemieux and Christine Truong

University of Texas – Dallas, Dallas, Texas

ABSTRACT: This poster will present the newly implemented “super leader” program at the University of Texas, Dallas. Preliminary research includes results of surveys of PLTL workshop participants and “Super Leader” satisfaction.

Peer Leaders’ and Peer Leader Volunteers’ Perspectives of their Involvement in a Mathematics Workshop Program: An Exploration of Motivations and Outcomes

Sarah Oppland-Cordell, Doug Rosskamm, Ruben Echevarria, Nic Allen

Northeastern Illinois University, Chicago, Illinois

ABSTRACT: Our poster will highlight key aspects of our oral presentation which describes a study that investigated Peer Leaders’ (PLs) and Peer Leader Volunteers’ (PLVs) perspectives of their involvement in the Mathematics Enrichment Workshop Program (MEWP) at a Hispanic-serving, urban, Midwestern university. The MEWP utilizes undergraduate and graduate students as PLs and PLVs to facilitate mathematics workshops that run parallel to required mathematics courses ranging from the developmental through calculus II levels. In our study, participants completed an open-ended survey to examine their MEWP experiences. Findings indicate that participants’ motivations and outcomes were related to three overlapping themes: (a) educational philosophy, educational goals, and/or career goals, (b) implementation of peer group work, and (c) reciprocal benefits related to engagement with students. This poster will describe the significance of our research, our main research questions, our methods, key findings, and future work. When describing key findings, we will share powerful quotations that capture participants’ motivations for becoming involved in MEWP and outcomes they ultimately experienced due to this involvement.

Design and Development of PLTL Workshop Material for an Intermediate Programming Course

Melissa Greenlee, Alisa Turchaninova, Eloy Perez, Steve Leon, Kevin Castillo

University of Houston-Downtown, Houston, Texas

ABSTRACT: At the University of Houston-Downtown, students find it difficult in making a transition from the beginning programming course in Computer Science (CS 1) to the intermediate programming course (CS 2). This is due to the nature of concepts that are covered in CS 2. CS 1 covers mostly simple structures and constructs of programming concepts. This makes it less of a problem for students to comprehend. In contrast, CS 2 includes much more complex structures of programming. It presents a strain for students to grasp the concepts. To alleviate the problem, a decision was made to incorporate PLTL into CS 2. So, PLTL workshop exercises are currently designed, developed, and tested. The main goal of the poster is to show how the exercises are used to assist and guide students to improve understanding of the concepts present in CS 2.

Visual Representation of Matter Aids Understanding of Chemical Kinetics

Carmen G. Kerstiens, James E. Becvar, Mahesh Narayan

University of Texas at El Paso, El Paso, Texas

ABSTRACT: For second semester General Chemistry classes at the University of Texas at El Paso, students must plot and understand Concentration vs. Time graphs for substances during kinetic processes. Many students are not able to conceptualize conservation of mass under constant volume conditions and are thus unable to rationalize concentration changes during chemical reactions. The use of shapes (e.g. triangles, circles, squares) to represent different atoms in molecules aids comprehension of chemical kinetics in Peer-Led Team Learning Workshop. Pictorial representation of atoms using fixed numbers of specific shapes helps students visualize the conservation of matter in chemical reactions. Reactions start and end with the same number of atoms as the reaction progresses from reactants to products. Through this visual interpretation students can see which compound is the limiting reagent, how much of the other reactant is left over, and how much product can be made.

Do Current Party-Related Games Diminish or Enhance the Learning Outcomes in Peer-Led Workshop?

Yvette Y. Lopez, Luis Salazar, Elizabeth Montes, James E. Becvar, Geoffrey Saupe

University of Texas at El Paso, El Paso, Texas

ABSTRACT: Learning through games improves first semester general chemistry Peer-Led Team Learning (PLTL) workshop outcomes. Nevertheless, a gap exists in understanding which games best facilitate learning. We hypothesize that learning Chemistry through Chem Pong, a relatively new party-related game, enhances assimilation of chemical concepts compared to existing games such as "Around the World" and/or "Battleship." Chem Pong is played like Beer Pong with the alcohol replaced by chemistry questions. We tested our hypothesis by examining workshop quiz and participation grades. Our results revealed that the Chem Pong pedagogical approach was more effective in enhancing assimilation of selected general chemistry I concepts than previous learning games. This could result from the fact that current college enrollees readily relate to Chem Pong more than to similar, but older learning games.

iWorkshop: Implementing the I>Clicker in Peer-Led Workshop

Jose E. Marin, Javier Benitez, Andres H. Belmont, James E. Becvar, Geoffrey Saupe.

University of Texas at El Paso, El Paso, Texas

ABSTRACT: The Peer-Led Team Learning (PLTL) Program at the University of Texas at El Paso has advanced many ideas to promote learning in PLTL Workshop. We report here that the use of the I>Clicker in the Workshop environment directly prepares students to solve problems of various degrees of difficulty against the all important criterion of time. This is a very helpful lesson for students in today's classes because of the widespread use of multiple choice questions on examinations. Facile use of the I>Clicker has direct impact on the students' class grade. Use of the I>Clicker allows students to take chances and 'be wrong' anonymously. The I>Clicker is a versatile resource to promote team-work as well as solo-work to reinforce concepts, as well as to practice new material to the point of mastery.

How Can a Peer-Led Workshop in Statics Play a Role in the Development of First-Generation College Students?

Roger Brian Mason

New York City College of Technology, CUNY, Brooklyn, New York

ABSTRACT: Financial, academic, and emotional ups and downs are just some of the hurdles students face on a daily basis. To overcome these hurdles, students need a solid support system for success. Students may not have a support system, not because family and friends do not want to help, but because they cannot. My experience this semester in leading a workshop in Statics, the first course in Civil Engineering, has provided a practical illustration of how large the demographic of first-generation Engineering students is, and how Peer Leaders are on the front lines of helping these students on their path to higher education. This poster will explore how the Peer Leader can provide both academic and emotional support in engineering students' success, without taking on the roles of tutors or counselors/therapists.

What is the Role of the Peer Leader in Helping Students Develop Perseverance in a Statics I workshop?

Carolina Mata

New York City College of Technology, CUNY, Brooklyn, New York

ABSTRACT: The profession of Civil Engineering needs Peer Leaders in order for students to have excellent results in their Statics 1 course, a first-level course in Civil Engineering and Construction Management. Yet students often fail this course and have to take it again. A survey of "second-timers" was conducted and found that the workshop and the role of the Peer Leader were instrumental in helping students understand the modules and concepts of the course. This poster will present the findings of the survey and the connection to Deci and Ryan's Self-Determination Theory. The role of the Peer Leader in helping students develop perseverance in a Static 1 workshop is mainly through the feeling of comfort for the student in a stressful environment, where the students interact with each other. It is also clear that issues of motivation and perseverance are of great concern in the field of engineering education (Matusovich, et al., 2009). PLTL may be one way to support students to persevere and succeed as engineers.

Leader Training at the University of West Georgia

Dusty Otwell, Christopher Greer, Brandon Rittgers, Darrius Shaw, Casey Brown, Yash Raval

University of West Georgia, Carrollton, Georgia

ABSTRACT: This poster summarizes and illustrates the training of new chemistry leaders at the University of West Georgia, beginning with three days of formal training prior to the start of classes. The formal training consists of presentations, discussions and activities, general housekeeping matters and, most important, practice workshops. Training continues with weekly leaders' meetings, observations of new leaders by veterans (and vice versa), a "retreat" a few weeks into the semester to extend the formal training and address issues that have surfaced since then, midterm and end-of-semester surveys of group members, and feedback on weekly journals submitted by new leaders.

How Can the Peer Leader Develop Students' Understanding of Instructions in a Laboratory Course in Electro-Mechanical Technology?

Andris Pinkhasik

New York City College of Technology, CUNY, Brooklyn, New York

ABSTRACT: This poster examines the effects of Peer Leader implementation in Electro-Mechanical Technology 1130 (Computer Engineering Technology) at New York City College of Technology, CUNY during the Fall 2013 semester. A capable Peer Leader is a student who has already taken the class and is able to assist freshmen students. This laboratory course incorporates the workshop. In this setting, the Peer Leader performs a type of "on the job training." If a student has difficulty performing the task, the Peer Leader, using verbal and visual communication, provides an example of performing the task to help the student understand the steps. Observations of types of mediation that can assist students were made. Some students preferred visual help, some preferred written instructions. These observations suggest ways to arrange the laboratory class to be more suited to students' needs.

Use of Reflective Strategies to Develop Problem-Solving, Reading, and Writing in a Laboratory Course in Electro-Mechanical Technology

Andris Pinkhasik

New York City College of Technology, CUNY, Brooklyn, New York

ABSTRACT: This poster will present how the use of reflection can help freshmen students develop crucial engineering skills. Reflection is an exercise used after students perform various actions and then reflect on their actions. As the student reflects, questions appear, challenges faced are resolved, and the task is connected with prior knowledge. In Spring 2014, students in Electro-Mechanical Technology 1130 (Computer Engineering Technology) were asked to answer three to five questions per week. Two of the questions were more general questions dealing with reflection and their task for the day. The remaining questions consisted of actions performed with the electronic and safety aspects of the class. As the semester has progressed, students answer more electronic-specific questions. These findings suggest that a reflection period in engineering classes may help freshmen students develop their problem-solving, reading, and writing skills crucial to their futures as engineers and technicians.

What Reading Strategies Support Student Learning in a Biology 1101 Workshop?

Ayesha Rasool

New York City College of Technology, CUNY, Brooklyn, New York

ABSTRACT:

As a student majoring in Biomedical Informatics and as a Peer Leader for introductory Biology 1101 workshop, I experienced both roles while planning and presenting my workshop. To fulfill the necessary learning goals for students to understand the Biology materials, including their textbook, "Bloom's Taxonomy of Learning Objectives" provides an understanding of stages that promote critical thinking.

Promoting critical thinking through Bloom's Taxonomy in Biology 1101 peer led workshops

Ayesha Rasool and Davida S. Smyth

New York City College of Technology, CUNY, Brooklyn, New York

ABSTRACT: Students at New York City College of Technology, CUNY have been shown to struggle with reading in foundational biology courses. A program titled "Reading Effectively Across the Disciplines" is currently in progress, aimed at teaching reading strategies, assessing reading assignment completion and outcomes of these interventions. These reading strategies can be designed to assess critical thinking. As part of READ, experienced biology students have been recruited to implement workshops and guide student reading as peer leaders. 'Bloom's Taxonomy of Learning Objectives' was developed by educational psychologist Benjamin Bloom and colleagues in 1956. One of the three domains of the Taxonomy focuses on cognitive skills, to help students know, understand, apply, analyze, synthesize, and evaluate basic concepts. This poster shall demonstrate how reading strategies can be designed in the context of Bloom's Taxonomy and present selected reading strategies that connect students' understanding and comprehension of the curriculum from the lectures and textbook that were used in workshops.

Group Formation and its Effects in a Math Workshop

Julia Rivera

New York City College of Technology, CUNY, Brooklyn, New York

ABSTRACT: Changing the composition of groups in workshop can affect students in their performance and ability to work together as a team in a College Algebra and Geometry (Math 1175) workshop at New York City College of Technology, CUNY. How would each person act and interact as group configuration changed? Using Tuckman & Jensen's (1977) five stages of group development and Dixon's (2012) discussion of group behaviors, Peer Leaders can ensure that there is active engagement among students to develop reasoning and social skills. However, there may be some difficulties for group members to develop the procedures and skills needed to work together.

How Can Peer Leader Help Students Create Habits of Perseverance in College Algebra / Geometry?

Ricky Santana

New York City College of Technology, CUNY, Brooklyn, New York

ABSTRACT: How the Peer Leader can help students create habits of perseverance in College Algebra/Geometry (MAT 1175, the first credit-bearing mathematics course) is in part based on the Peer Leader's knowledge of course concepts in higher-level courses. Encouraging students to make efforts in preparing them for the upper level Math courses they will be taking is challenging, and even more so for students who have to take a remedial Math course. This is due to the sense that such a course is like having to sit through High School Math all over again, despite the college classroom. Remedial courses are meant to provide students with the necessary building blocks, and the essential foundation to be prepared for the College level Math courses. I know first-hand the struggles and the successes because I too was in this situation in my first year in college. Now, several years later, I am now leading my very own Math 1175 workshop with six students. Some of the struggles I will examine are how to adequately get students to not only create study patterns that will work for them, but successfully helping students to persevere.

Pop Culture Entertainment Induces Enhanced, Interactive Learning John Martin Gabriel B. Sabandal, Andrea Chavez, Audrey Lacerte, Marissa Velazquez, Juan Noveron, Geoffrey Saupe

University of Texas at El Paso, El Paso, Texas

ABSTRACT: Peer Lead Team Learning is a vital component in the learning arsenal of students in General Chemistry. Through organized and interactive methodologies, students are more apt to master the concepts throughout the course. Furthermore, these students are able to integrate and apply them outside of the classroom. Here, we present an engaging and competitive technique influenced by Suzanne Collins' *The Hunger Games*. In a three-round battle, "The Chemical Games" ensues in increased learning aptitude through engaging and intense competition. By having two control groups and two groups actively participating in the game, our results showed an increase in quiz grades of 30%. Furthermore, students were able to retain the material and incorporate the concepts repeatedly in future sessions. By fusing what students are exposed to in the entertainment world with concepts in General Chemistry, our study may provide a novel way to induce an interactive learning environment.

Peers Empowering Peers to Succeed in Foundation Courses in Chemistry, Civil Engineering, and Mathematics

Melanie Villatoro (Civil Engineering & Construction Management), Diana Samaroo (Chemical Technology), Janet Liou-Mark, Sandie Han, Laura Ghezzi (Mathematics)

New York City College of Technology, CUNY, Brooklyn, New York

ABSTRACT: Foundation courses essential in succeeding in Science, Technology, Engineering, and Mathematics (STEM) fields are targeted at an open-access urban minority-serving institution (MSI) and Hispanic-serving institution (HSI). Because of the high failure rates of selected courses, the Peer-Led Team Learning instructional model was implemented as best practice. Having peers empowering peers has led to an increase in pass rates of critical courses in Chemistry, Civil Engineering, and Mathematics.



Joe Nathan Abellard is a second year undergrad at City Tech (New York City College of Technology, CUNY), where he majors in Computer Engineering Technology. Joe became a peer leader in the Fall 2013 semester and has led workshops in MAT 1175 (Fundamentals of Mathematics), and in MAT 1475 (Calculus I). Joe was born and reared in Haiti, and as a child, his insatiable curiosity was an anomaly compared to that of other children. From such curiosity sprang a thinker, an iconoclast, and a philomath – someone who would break things for the mere purpose of investigating what made them “tick.” Joe is very fond of technology and engineering and enjoys working with computers and learning new technologies – simply because such things are incredibly cool. He is also a fitness enthusiast and loves to work out. When not in school, programming, or tinkering with electronics, one can find Joe in the gym picking up stuff and putting them down.

Madeline Adamczeski earned her Ph.D. in 1989 at the University of California at Santa Cruz in organic chemistry, working in Dr. Phillip Crews’ Marine Natural Products laboratory. Following graduation, she worked in industry as a senior scientist and technical consultant in natural products/drug discovery and software development companies before entering academia. During her five years in industry, she worked part-time at Diablo Valley and Las Positas Community Colleges. She began her full time academic career in 1994 at American University in Washington DC (1994-1998) and in 1999 was hired at San José City College (SJCC). She co-authored grant proposals, and was awarded numerous grants in systemic education initiatives from California State Partnership for Excellence and National Science Foundation programs. Dr. Adamczeski has been active promoting Peer Led Team Learning since 1994. Dr. Adamczeski’s work with students and PLTL has frequently been recognized; in 2011 she was the recipient of the Teacher-Scholar Award of the Santa Clara Valley Section, American Chemical Society.

Jourdan Aguirre was born on a military base in Frankfurt Germany on August, 13, 1990. Growing up, he watched shows like “Bill Nye the Science Guy” and “The Magic School Bus,” which influenced his love of science and before college, his projects ranged from making slimes to dissecting fetal pigs. He is currently a San Jose City College student with an AA degree planning on transferring to CSU-East Bay for his nursing program in the fall.

Mursheda Ahmed is graduating this June with a bachelor's degree in Applied Mathematics. She has been a peer leader in mathematics for five years. She will be applying for doctoral programs in Mathematics Education.

Jose Alberte has been the PLTL Program Director at Florida International University (FIU) since 2006. He first participated as a Peer Leader since 2005. As Program Director he has extensive experience writing PLTL workshop modules, developing training modules for Peer Leaders, coordinating faculty involvement, and general program management of a large program. Mr. Alberte led the expansion of PLTL at FIU from mentoring 250 students and a handful of Peer Leaders to approximately 3200 students per semester and approximately 200 PLTL mentors per semester, in multiple courses. He works with Biology faculty in the development of curriculum for both lecture and lab and has a broad range of knowledge and practice implementing active learning techniques in the classroom.

Nic Allen is an applied mathematics major at Northeastern Illinois University, in Chicago. He has been a Peer Leader for the Mathematics Enrichment Workshop Program since Fall 2012. He is also a Math Tutor at the Learning Support Center.

Perla Amaro is a Peer Leader and a student at San Jose City College who has been working for the PLTL Program for over a year. She is fascinated with science and how it benefits our everyday lives in a positive way. She enjoys helping other students find their way through the STEM courses, and she helps her students become more interested in science and mathematics. She is drawn to the medical field as a nurse or doctor. Through PLTL, she is not only helping her fellow students but also reinforcing her own knowledge of the subjects they are learning.

James E. Becvar grew up in Euclid, Ohio; received degrees from the College of Wooster at Wooster, Ohio (BA, Physics, 1964) and the University of Michigan, Ann Arbor, (Ph.D., 1973). He holds no degrees in chemistry but appreciates this discipline as truly being the central science; his specializations are in biochemistry and chemical education. Lumitection Analysis (US Patent 6,017,722) utilizes luminescent organisms for chemical and biochemical prospecting for new biologically active compounds. Chromat-O-Art represents intellectual property at the interface

between science and art (US Patent 8,157,872). He is an ultra-strong proponent of PLTL and has espoused this mode of learning since 2000.

Mohsen Beheshti is the Chair and Professor of Computer Science Department at California State University - Dominguez Hills. His research interests include Network Security, Data Conversion, Multidisciplinary research, and Curriculum Development. He is the director of Center for Excellence in Knowledge Management and Computational Science (CECS) to promote research and education. He is a co-founder of the Computing Alliance for Hispanic-Serving Institutions, which includes institutions in California, New Mexico, Texas, Florida, Puerto Rico, and Illinois. Peer-Led Team Learning is one of the “best practices” encouraged by the Alliance.

Christopher Chan is graduating from New York City College of Technology (City Tech) of the City University of New York in Spring 2014 in Applied Mathematics and is the recipient of the departmental award for excellence in mathematics of 2014. Christopher has been a mathematics peer leader at City Tech for over three years. With the experience of peer leading combined with academic success, he has been accepted to several graduate programs beginning in the Fall 2014. Christopher plans to continue his journey with by to making contributions to science inquiries.

Roberto Corral is a junior majoring in Biochemistry and is a Peer Leader for 2 semesters. He regularly volunteers with the Ronald McDonald foundation, and proudly brandishes a bracelet a young girl made him.

A.E. Dreyfuss is a learning developer (as the position is called in the UK) or a learning specialist (in the U.S.). She received her doctorate in Adult Learning and Leadership from Teachers College, Columbia University and her dissertation explored the phenomenon of leading by Peer Leaders. She has worked with Peer-Led Team Learning since fall 1999, and has helped disseminate the model through conferences, workshops, newsletters, websites, and papers. She also has developed a one-credit Peer Leader Training course that is used at New York City College of Technology, CUNY.

Ruben Echevarria is an applied mathematics major at Northeastern Illinois University. He has been either a Peer Leader or Peer Leader Coordinator for the Mathematics Enrichment Workshop Program since Spring 2012. He is also an Academic Coach and Math Tutor at the Learning Support Center.

Anna Evans is a Peer Leader and a student at San Jose City College who has been working for the PLTL Program in the past year. She is fascinated with science and enjoys helping other students find their way through the STEM courses. Through PLTL, she is not only helping her fellow students but also reinforcing her own knowledge of the subjects they are leading.

Vivian Fayowski is a Learning Specialist at the University of Northern British Columbia, Canada, where she oversees one-to-one, drop-in, and online tutoring services, the Supplemental Instruction program, and training programs for peer leaders and tutors. She also facilitates Studying for Success workshops and teaches in the Mathematics program.

Brian Frescas is a Biology major at the University of Texas at El Paso. This is his third semester as a Peer Leader, and his first semester as the head Peer Leader for the second semester General Chemistry class.

Lucille B. Garmon is a professor of chemistry at the University of West Georgia (UWG). She began experimenting with team learning in the 1990's by setting aside about twenty minutes of class time each week for students to collaborate on problem solving. After attending an NSF-sponsored Chautauqua workshop on PLTL in 1998 she and faculty members from six other institutions formed a consortium and submitted an “Adopt and Adapt” proposal, funded by the NSF for the period 1999-2001. This was the beginning of workshops spread broadly over the general chemistry courses at UWG. Since that time the PLTL workshop model has continued to be an integral part of general chemistry courses at West Georgia. The logistics of scheduling, registration, etc. have been institutionalized and will continue this coming fall for an expected enrollment of approximately 500 students.

Laura Ghezzi is an Associate Professor of Mathematics at the New York City College of Technology, CUNY. She received her PhD in Mathematics from Michigan State University and she held positions at the University of Missouri and at Florida International University before joining City Tech in 2007. Her research is in commutative algebra, with applications to algebraic geometry and computational algebra. She has published several papers in peer-reviewed journals and she has been an invited speaker at many national and international conferences. She is very committed to education and she truly enjoys teaching a wide variety of mathematics courses at all levels. She has implemented the Peer-Led Team Learning (PLTL) model in her "Fundamentals of Mathematics" class since 2009.

Pavel Gonzalez is a student at University of Texas at El Paso studying Cellular and Molecular Biochemistry with a minor in Art History and is a Peer Leader.

Melissa Greenlee is a graduating double major in Applied Mathematics and Computer Science at the University of Houston-Downtown (UHD). She is a trained PLTL leader and has been conducting computer science PLTL workshops for the past two years. Melissa also acts as a peer mentor for UHD's Scholars Academy and Collaborative Learning Community Center. After graduation, Melissa plans to work as a Software Development Engineer in Test at Microsoft's NERD Center in Cambridge, MA.

Christopher Greer is a biology major at University of West Georgia, who has been a chemistry workshop leader for three and a half years, two and a half of them as a senior leader or superleader. He graduated with his B.S. degree this April.

Klayre Guzman is a Peer Leader and a student at San Jose City College who has been working for the PLTL Program for over a year. She helps her students become more interested in science and mathematics. She expects to work in the medical field as a nurse or doctor.

Sandie Han is an Associate Professor of Mathematics at New York City College of Technology. She received her doctorate from CUNY Graduate Center. She has several publications in the theory and practice of Self-Regulated Learning, Mathematics Self-Efficacy, PLTL, as well as in her research area, Additive Number Theory. She has also presented locally, nationally, and internationally to college faculty, students, pre-service and in-service secondary school teachers. Her work in Self-Regulated Learning and PLTL has won her the 2013 CUNY Chancellor's Award for Excellence in Undergraduate Math Instruction.

Kimshi Hickman is an Assistant Dean for Undergraduate Education at the University of Texas at Dallas and has 18 years' experience in higher education at public and private four-year institutions. She oversees the Student Success Center which houses the Writing Center, Math Lab, Communications Lab, Testing Center, Supplemental Instructions, Peer-Led Team Learning, Tutoring, Academic Success Coaching and Financial Peer Coaching.

Carmen Kerstiens is an undergraduate student in the Cooperative Pharmacy Program at the University of Texas at El Paso and a Peer Leader.

Yvette Y. Lopez is a Peer Leader at the University of Texas at El Paso. She is majoring in the Biology field to later pursue Medical School and become a neurologist. Her team came together to try to help current and future Peer Leaders on how to incorporate the useful games to their Chemistry workshops. They tested their workshops by having one with having age appropriate games such as Beer Pong and Flip Cup. The other group consisted of games such as Memory, Around the World and Musical Chairs, more appropriate for younger ages.

Janet Liou-Mark is a Professor of Mathematics at New York City College of Technology, CUNY. She received her doctorate in mathematics education at New York University. Her research interest in the implementation of Peer-Led Team Learning (PLTL) instructional model in mathematics has won her the 2011 CUNY Chancellor's Award for Excellence in Undergraduate Mathematics Instruction and the Mathematics Association of America Metro New York Section 2014 Award for Distinguished Teaching in Mathematics. In addition to her teaching responsibilities, Dr. Liou-Mark is the Director of the Honors Scholars Program for the institution. She is currently a co-PI on a NSF Math Science Partnership grant and a NSF Research Experience for Undergraduate grant.

Jose E. Marin is a Chemistry peer leader at the University of Texas at El Paso (UTEP) who has provided development of written content for inclusion in chemistry workbooks with the aim to improve the learning of chemistry at UTEP as well as to provide economic support of the UTEP PLTL program. He also provides technology support for the program. His major is focused on Cellular and Molecular Biochemistry, and he conducts research in neurodegenerative diseases such as Alzheimer's and Parkinson's Disease.

Jorge A. Miranda is a proud alumnus from the University of Texas at El Paso. He obtained his bachelor's in biology- biomedical concentration with a minor in chemistry. When he took the general chemistry course which had PLTL, his first impressions were exciting about to the level at which the student is helped. He has implemented new ideas to make the UTEP PLTL program even better than what it is today.

Roger Brian Mason is a sophomore at New York City College of Technology, CUNY, majoring in Civil Engineering Technology. Spring 2014 is his first semester as a Peer Leader, in Statics I (Strength of Materials). He is a first-generation college student, and immigrated to the U.S. with his family at the age of 8. He started college at 17, dropped out at 19, and returned as a full-time student at 30, which sparked his interest in his poster topic.

Carolina Mata is a sophomore at New York City College of Technology, CUNY, majoring in Civil Engineering Technology. She will complete her Associate degree by Fall 2014. She has served as a Peer Leader for two semesters for Statics 1104, a freshmen engineering course, and this semester is leading a workshop for Strength and Materials 1204, a second-semester engineering course. She notes, "I was introduced to the opportunity of becoming a Peer Leader by my Statics instructor, Professor Villatoro, the second time I took the course. Since I had enjoyed having Peer Leaders in my Statics class, I was open to the idea that I would be helping others learn the course material as well, with a different type of "teaching" approach. This second time, it became fairly easy for me to grasp the concepts of the course because there were Peer Leaders. As a freshman student I had not felt comfortable asking questions when I did not understand something, and I did not talk to anyone in my class. This led to my initial failure in the course, but the second time around was different. Since I had peer leaders I was more comfortable in communicating, asking questions, and essentially, talking with and helping others. I came to the conclusion that peer leading is helpful in allowing students to have better outcomes, or results in their Statics course."

Saphida Migabo teaches in the Biology Program and facilitates the PLTL program in Biology at the University of Northern British Columbia, Canada.

Imron Miller obtained a BSc. in General and Food Chemistry from the University of the West Indies, Jamaica and a Diploma in Education from Church Teachers' College in Jamaica. He has taught advanced level Chemistry at the high school level for the past eleven years. He is currently a part-time student at the University of the West Indies completing his M.Phil. in Chemical Education.

Elizabeth Montes is a Peer Leader at the University of Texas at El Paso. She is pursuing an engineering major. Her team came together to try to help current and future peer leader on how to incorporate the correct games to their Chemistry workshops. They tested their workshops by dividing them into half having age appropriate games such as beer pong and flip cup. The other half consists of younger age appropriate games such as Memory, Around the World and Musical Chairs.

Stamatis Muratidis is Greek-German-American. He attended educational institutions in those countries and has taught a variety of Chemistry courses. In the summer of 2012 he led a team of students to study in Europe (France, Germany and Switzerland) in the first Science Study Abroad program in the Alamo Colleges district of Texas. He has used active and collaborative techniques in all the courses that he teaches, and has been presenting to fellow faculty interested in tips for successfully incorporating active learning in their classrooms. He was recently awarded the National Institute for Staff and Organizational Development (NISOD) Teaching Excellence for Innovation and Creativity Award at Palo Alto College in 2013 and 2014.

Mitsue Nakamura is a lecturer of mathematics at the University of Houston-Downtown (UHD). She received her B.S. and M.S. degrees in mathematics from the University of Houston. My research area is in division algebras, operator algebras and operator theory. She has been involved in the Peer-Led Team Learning Project at UHD as a faculty coordinator and advisor. She has been serving as a board member and the treasurer for the Peer-Led Team Learning International Society. She serves with the UHD Scholars Academy, a competitive scholarship program to support students in STEM fields, as a mentoring coordinator.

Mahesh Narayan is an Associate Professor of Chemistry at the University of Texas at El Paso doing research in Biochemistry

Wendy Nguyen is a student majoring in Biochemistry at San Jose City College. She is set to transfer in Fall 2014 and hopes to later attend pharmacy school. When she is not trying to finish her school work or helping tutor students in STEM courses, Wendy volunteers as a helper for children with special needs. During her free time, she enjoys trying new foods and reading.

Ozman Ochoa is a Senior majoring in Biochemistry at The University of Texas as El Paso. A former collegiate swimmer and English major at Southern Methodist University, Ozman is now pursuing a career in science, and hopes to attend medical school. In his free time he coaches his former club swim team, and enjoys reading, writing, and singing for his friends and family. While the goal is to become a doctor, his dream is to become an Author.

Sarah B. Oppland-Cordell is an assistant professor of mathematics at Northeastern Illinois University, Chicago, IL. Her research interests include examining marginalized students' identity development to understand how they succeed in mathematics, exploring relationships between marginalized students' identity development and participation in collaborative mathematics learning environments, and drawing on marginalized students' experiences to create equitable mathematics teaching and learning environments.

Dusty Otwell has led workshops since 2002 at University of West Georgia and has been a full-time staff person in the Department of Chemistry since 2008.

Mary Jo Parker is a faculty member in the Natural Sciences department at University of Houston-Downtown. She also directs the Scholars Academy, an academic unit in the College of Sciences & Technology. She currently is Principal Investigator on three major federal grant awards and Co-PI on another. She brings experience in curriculum and development, K-16 outreach and STEM recruitment, and closing the achievement gap for minority STEM students.

Robert Parker is a Peer Leader for Physics-2A at San Jose City College and this is his first semester participating in the PLTL program.

Andris Pinkhasik is a second semester Peer Leader for Electro-Magnetic Technology workshop and is a Computer Technology Engineering major. He became a peer leader because he felt there is a necessity of role models that freshmen students could relate to and learn from. He felt freshmen would be more comfortable speaking with a peer rather than a professor. During the semester, he implemented various techniques to learn about the students and adjust the assistance to provide the students. The idea of reflection in an engineering setting appealed to him because it is not very popular and not widely implemented. He noticed freshmen students had difficulty in expressing themselves in English, much less technically. With the counsel of his partner peer leader, the course professor, and Professor Dreyfuss, a set of questions were developed which would assist students in reading, writing, and problem-solving skill development.

Eloy Perez is a sophomore majoring in mathematics, with a minor in computer science, at the University of Houston-Downtown (UHD). He also works as a tutor for mathematics in the Collaborative Learning Community Center (CLCC) and Peer Led Team Learning (PLTL) labs. Eloy plans to attend graduate school.

Jacob Prat is a freshman majoring in Chemistry. This is his first semester as a Peer Leader and is a proud recipient of the National Science Foundation's scholarship in Science Technology Engineering and Mathematics.

Ayesha Rasool is a senior at New York City College of Technology, CUNY, majoring in Biomedical Informatics. She has been a Peer Leader for Introductory Biology for two semesters, working with a special initiative focused on reading strategies, Reading Effectively Across Disciplines (READ), which focuses on having students understand the textbook. In order to prepare for her workshops, she has researched empirical studies on effective learning strategies for introductory level biology courses and on interacting with students who are inexperienced with the needed level of commitment to their studies. Currently an Emerging Scholar at CityTech, the foundation of her research is the stages of "Bloom's Taxonomy of Learning Objectives," an essential element to help develop students' critical thinking skills.

Brandon Rittgers is a chemistry major who has been a workshop leader for two and a half years and a senior or super-leader for the past year.

Julia Rivera is a junior at New York City College of Technology, CUNY, majoring in math education. She has been a Peer Leader for two semesters, and also is involved in CUNY's Service Corps initiative where she works with young children.

John Martin Gabriel B. Sabandal is a Chemistry Peer Leader at the University of Texas at El Paso. In this institution, we are dedicated to go beyond the extra mile in order for students to not only comprehend the material, but enable them to critically integrate the learned concepts with their everyday lifestyle. I'm passionate about being an interactive peer leader with a goal to expand the students' scientific knowledge and become future peer leaders!

Novelette Sadler-McKnight teaches and conducts research in Inorganic Chemistry at the University of the West Indies, Jamaica, and has worked with teachers and students in high schools and primary schools in various outreach activities for several years. Her research interests include Kinetics and mechanisms of inorganic and organometallic reactions and Chemical Education.

Michael Saenz has been in higher education student development for seven years and the Coordinator for PLTL for two years at the University of Texas at Dallas. He coordinates 90 PLTL leaders and seven Super leaders for General Chemistry I & II, Organic Chemistry I & II, Physics I & II, Integral Calculus, Differential Calculus, and Applied Calculus I & II.

Luis Salazar is a Peer Leader at the University of Texas at El Paso. He is majoring in Biology and expects to attend Medical School and become a pediatrician.

Diana Samaroo is an Assistant Professor of Chemistry at New York City College of Technology, CUNY. She is a biochemist by training, with research interests in therapeutics discovery, nanomaterials and molecular probes. Pedagogically, her interest lies in the scaffolding of student writing in chemistry laboratories, as well as implementation of the Peer-Led Team Learning (PLTL) model in chemistry courses. She is co-PI on an NSF SENCER post-implementation award (2013-2015).

Ricky Santana is a junior at New York City College of Technology, CUNY, majoring in Mathematics Education. This is his first semester as a Peer Leader. He notes, "Being a Peer Leader is such a great opportunity: while in this program I have acquired the necessary tools I will need to become the type of educator who will make a difference. I have come full circle because in my first year of college I had to take remedial Math, and now I find myself leading a Math 1175 workshop. This is an experience I will not take for granted, and who wouldn't be happy about being invited to California for a conference?"

David Sherman teaches English at CSU Dominguez Hills and has been working with Peer Leaders since 2008.

Geoffrey Saupe is an Associate Professor of Chemistry at the University of Texas at El Paso doing research layered materials and hydrogen production from sunlight.

Ongard Sirisaengtaksin is a Professor of Computer Science at the University of Houston-Downtown and a Co-Director of the Grid Computing Laboratory. Dr. Sirisaengtaksin has served as Principle Investigator on the NSF CNS award, *Paving The Road To Professorship*; as Co-PI on the NSF S-STEM award, Undergraduate/Graduate Student Immersion in Computer Science, Technology and Mathematics. He has integrated Peer-Led Team Learning in CS 1 since fall 2009 and has been developing workshop material for CS 2.

Jessica Snyder is a student majoring in Nursing at San Jose City College, and is planning on transferring in Fall 2015. She currently leads workshops for Chemistry 32B. When asked why she decided to become a PLTL leader, she responded, "Attending workshops for Chemistry 32A and Chemistry 32B, helped me develop a better understanding of the material, and helped me become more confident in applying what I learned. I decided to lead workshops because I wanted to give other students the same experience I had, and help other people with the material, as well." She decided to major in Nursing because she has always had an interest in medicine and how the body works.

Vanessa Soto is a sophomore at University of Texas El Paso (UTEP) majoring in Biochemistry. She is the head Peer Leader of her respective Peer-Led Team Learning chapter at UTEP and has been part of the organization for two semesters. She is also a research scholar under Research Initiatives for Scientific Enhancement (RISE).

Alisa Turchaninova is a junior double major in mathematics and computer science at the University of Houston-Downtown. She is a tutor at UHD's Collaborative Learning Community Center. She has participated in research on the applications of partial differential equations with Dr. Jegdic. Alisa plans to pursue a doctorate in physics.

Karmen Yu is a doctoral student in Mathematics Education at Montclair University, New Jersey. She graduated from New York City College of Technology ("City Tech"), CUNY, with a Bachelor's degree in Applied Mathematics with a Science Concentration. She was a Peer Leader throughout her four years at City Tech and she has facilitated workshops and taught prep courses for various levels of mathematics. Her goal is to teach mathematics in higher education. She has always been interested in mathematics, teaching, learning, and conducting research and Mathematics Education is the perfect field of study where all of her interests can fit and combine into one field.

Melanie Villatoro is an Assistant Professor in the Department of Construction Management and Civil Engineering Technology at New York City College of Technology, CUNY. She is a licensed Professional Engineer in the State of New York and has over 12 years of experience designing foundations and support of excavations. Her implementation of Peer-Led Team Learning (PLTL) in Statics has decreased failure rates and increased the overall grades of students in her PLTL inclusive courses. She is interested in STEM outreach at all levels of education.



Acknowledgments

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