

PEER-LED
**TEAM LEARNING
INTERNATIONAL
SOCIETY**
SECOND ANNUAL CONFERENCE

HOUSTON, TEXAS
USA

— ❁ —
MAY 30 — JUNE 1, 2013

University of Houston, Downtown





Welcome to the University of Houston-Downtown and the 2nd Annual Conference of the Peer-Led Team Learning International Society!

We are delighted to host this important meeting that brings together some of the nation's preeminent thinkers and leaders of peer-led learning. I'm proud that two of our faculty members – Dr. Ongard Sirisaengtaksin and Mitsue Nakamura – not only serve as board members for the Society, but also were instrumental team members in first establishing the Society at its inaugural meeting in Atlanta in 2011.

Research has proven time and again that when faculty enlist the participation of peer leaders to help teach their fellow students, both the peer leader and the learner reap significant benefits not seen in more traditional professor-led modalities. Under the watchful guidance of faculty members, trained peer leaders develop vital skills, leadership and confidence and their peers receive direction to comprehend challenging material in a collaborative setting.

At UHD, we are always seeking new pedagogical approaches to best equip our students with the knowledge they need to be successful. Toward that end, we strongly believe that high-impact practices, which supplement classroom learning, are key to students' mastery of difficult concepts, especially those presented in STEM-related curriculums. The peer-led workshops espoused by the Society are excellent examples of the high-impact practices that can transform students' knowledge acquisition and retention.

I applaud your efforts to foster student learning through peer-led teams and support your vision of expanding this practice across disciplines. I look forward to the additional contributions you will surely make to higher education – one successful student at a time.

Sincerely,

A handwritten signature in black ink that reads "William V. Flores". The signature is fluid and cursive, with a large, stylized initial "W".

William V. Flores
President, University of Houston-Downtown

Agenda

Thursday, May 30, 2013

1:00-7:00 pm	Conference Registration & Poster Set-up	A300
1:00-4:00 pm	Mini-Course	A300
	Problem-solving on sustaining a PLTL campus program - a case study approach	
5:00-7:00 pm	Reception and Poster Presentations	A300
	Remarks by Dean Akif Uzman College of Sciences and Technology University of Houston-Downtown	

Friday, May 31, 2013

8:00-9:00 am	Breakfast and Conference Registration	A300
9:00-10:15 am	Introductions Mitsue Nakamura University of Houston-Downtown & Treasurer, PLTLIS Welcome Remarks A.E. Dreyfuss, President, PLTLIS Ongard Siriaengtaksin University of Houston-Downtown & Board Member, PLTLIS Ed Hugetz Senior Vice President for Academic Affairs and Provost of the University of Houston-Downtown Speaker: <i>UHD Scholars Academy - A Model for STEM Success and PLTL Infusion</i> Mary Jo Parker Director, Scholars Academy University of Houston-Downtown, Houston, Texas	Wilhelmina Cullen Roberson Auditorium
10:15-10:30am	Break	
10:30 am-12:30 pm	Featured Workshop: LifePilot Workshop Lifepilot is an extraordinary adventure into your values and the importance of living and leading in accordance with them. This workshop is designed to be interactive as well as self-reflective. The first step in becoming a successful leader is to KNOW yourself. Lifepilot is a process of self-discovery and reflection that provides the opportunity to experience a fulfilling, meaningful and balanced life. Facilitator: Leanne E. Atwater	A300

Peer-Led Team Learning International Society Second Annual Conference
May 30-June 1, 2013
University of Houston-Downtown Houston, Texas

12:45-2:00 pm	Lunch	A300
1:15-2:00 pm	Speaker: <i>Lessons from the Experts: The Five Practices of Exemplary Leaders</i> Leanne E. Atwater C.T. Bauer College of Business, University of Houston, Houston, Texas	
2:15-3:55 pm	Oral Presentations I -- Group I & Group II	I. A300 II. Roberson Auditorium
3:55-4:15 pm	Break	
4:15-5:15 pm	Annual Meeting of the Peer-Led Team Learning International Society	A300
5:15-6:15 pm	Reception and Poster Presentations II	A300
6:15pm	Dinner (on own)	

Saturday, June 1, 2013

8:00-9:00 am	Breakfast and Conference Registration	A300
9:00-10:15 am	Speaker: <i>Peer Learning for Change</i> John Hilsdon Head of Learning Support and Wellbeing Plymouth University, Plymouth, U.K.	A300
10:15-10:30am	Break	
10:30 am-12:00 pm	Oral Presentations II -- Group I & Group II	I.A300 II. Roberson Auditorium
12:00-1:30 pm	Lunch Theme: "Birds of a Feather" Meetings of Practitioners by Discipline	A300
12:30-1:30 pm	Presentation on New Technologies Jose Marin	N620
1:30-3:30 pm	Strategic Planning Session: Promoting Peer-Led Team Learning through Collaborations	A300
3:30-4:00pm	Break	
4:00-6:00 pm	Board Meeting of the Peer-Led Team Learning International Society	Conference Room S760
6:00pm	Dinner (on own)	



PEER-LED TEAM LEARNING INTERNATIONAL SOCIETY

Speakers

Lessons from the Experts: The Five Practices of Exemplary Leaders

Leanne E. Atwater

C.T. Bauer College of Business, University of Houston
Houston, Texas



Profile

Leanne Atwater received her Ph.D. from Claremont Graduate University. She is a professor of management in the C. T. Bauer College of Business, University of Houston. She is the author of over 50 refereed publications and numerous book chapters on topics relating to leadership. She has co-authored two scholarly books "*The Power of 360 Degree Feedback*" and "*Leadership, Feedback and the Open Communication Gap*" with David Waldman. She teaches leadership and organizational behavior at

graduate and undergraduate levels. She taught leadership at the U.S. Naval Academy from 1986-1989. She also has been a principal investigator on external grants to study leadership (totaling nearly 1M) from agencies such as the Army Research Institute (ARI) and The Society for Human Resource Management Foundation. She held previous positions at Binghamton University and Arizona State University West. She is editor of *The Leadership Quarterly*, the premier outlet for scholarly articles on leadership topics.

UHD Scholars Academy - A Model for STEM Success and PLTL Infusion

Mary Jo Parker

Director, Scholars Academy
University of Houston-Downtown, Houston, Texas



Profile

Mary Jo Parker is Director of the Scholars Academy, an academic unit within the College of Sciences and Technology at the University of Houston Downtown. She also serves as a faculty member in the Natural Science Department. Dr. Parker brings a 34-year career in K-12 STEM education as a teacher, curriculum coordination, and STEM magnet school principal/administrator. Following a Rice University appointment, Dr. Parker accepted the SA Director position in 2009. Under her direction the Scholars Academy has maintained a fully-funded predominantly underrepresented STEM undergraduate population of 160 members

Peer-Led Team Learning International Society Second Annual Conference

May 30-June 1, 2013

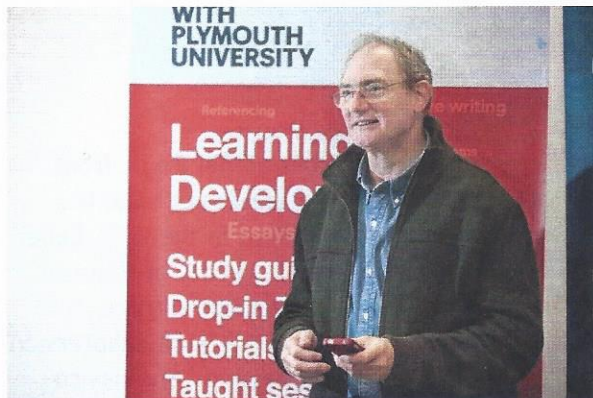
University of Houston-Downtown Houston, Texas

representing majors across the natural sciences, computer and mathematical sciences, and engineering technology. Dr. Parker currently is PI/Co-PI for several federal and state grant awards totaling over \$1 million targeting support for STEM undergraduate student success systems.

Peer Learning for Change

John Hilsdon

Head of Learning Support and Wellbeing
Plymouth University, Plymouth, U.K.



Profile

John Hilsdon is Head of Learning Support and Wellbeing at Plymouth University, in Plymouth, U.K., and a National Teaching Fellow. He leads the Learning Development, Disability Assist and Counselling teams at Plymouth and has initiated a number of projects including our PALS@Plymouth peer learning scheme. Over the last decade his work has contributed to Learning Development as a field of practice in Higher Education in the UK (in the

U.S., the term more commonly used is *Learning Specialist* rather than *Learning Developer*). He helped set up the UK network of learning developers in 2002, and was the first Chair of the Association for Learning Development in Higher Education (see www.aldinhe.ac.uk). He is co-editor of the *Journal of Learning Development in Higher Education* (www.aldinhe.ac.uk/ojs).

John Hilsdon's talk will focus on exploring what a "Learning Development" approach to peer learning might be - especially in relation to the notion of identity. John's main interest is in how students can make sense of - and get the most from - their learning experiences in college (at university), through their participation in the language and practices of academic life, and their subject disciplines. He was a coordinator for 'LearnHigher' (www.learnhigher.ac.uk), and has developed learning materials for academic writing (the 'WrAssE' project), and on the themes of critical thinking and reflection. He co-edited the book, *Learning Development in Higher Education* (Palgrave Macmillan, 2011). In recent years he has made presentations and led research seminars in the UK and other countries, including at the Universities of Lancaster; Oxford; Chiba, Japan; the University of South Australia; Hamilton University, New Zealand; the West of England; Bournemouth; de Montfort and Leeds Universities. He is currently working towards a doctorate in education.

ORAL PRESENTATIONS

Friday, May 31

2:15-3:55 pm

Group I

Room: A300

Moderator: Jim Becvar

Recruiting and Selecting Peer Leaders

Christopher Kirk Greer, Amanda Yi
University of West Georgia, Georgia, USA

We will present an overview of workshop leader retention, recruitment, and selection process undertaken by the workshop staff and "super leaders." This includes, but is not limited to: recruitment posters, informative classroom presentations by veteran leaders, encouragement by current leaders of potential leaders within their workshop groups, group interviews of potential new leaders by Workshop program staff and super leaders, and the actual selection process. The retention and hiring of new leaders into the Workshop program can be an overwhelming process with a large pool of applicants and a finite number of spaces, and through our presentation we will show how the process has been perfected and streamlined at the University of West Georgia. Participants will see the actual processes, applications, and recruitment materials used by the workshop program at UWG.

PD for PLTL Leaders: How to make the interview process both a self-evaluation and team-building exercise for veteran leaders

Lisa Kuehne, Regina Frey, Megan Daschbach
Washington University, St. Louis, Missouri

PLTL is an integral part of the first-year experience of many calculus and chemistry students at Washington University. Each year, 40-50 new leaders are hired. An effective selection process is essential to the program's success, and has been developed to be part of the ongoing leader training. The structure of the interview process for the Calculus PLTL program includes assignments required for the weekly seminar attended by PLTL leaders as well as direct involvement in the development, implementation and evaluation of the interview process. A short overview of the process will be presented, including dissemination of materials to aid in the evaluation of candidates that could be adapted for other institutions' use. Post-interview leader survey results for the 2013 selection process will be shared, and a discussion of benefits as perceived by current leaders and further evaluation strategies will follow."

Training tutors to be Peer Leaders

J. Brett Kimbrell
University of West Georgia, Carrollton, Georgia

New peer leaders in chemistry workshops at UWG are enrolled in an academic course, "What Do You Know about Leadership" for 2 semester-hours credit. The bulk of the formal training process occurs during a three-day period prior to the start of classes each semester. This pre-semester program is carried out by the faculty workshop coordinators along with a staff of seasoned peer leaders (superleaders). The agenda includes both theoretical aspects (development of the PLTL model, the art of questioning, metacognition, Bloom's taxonomy, learning theory) and practical experience including simulated workshops in which new leaders practice leadership on each other. Speakers from other campus departments are invited for presentations on stress management, learning styles, professionalism, handling disruptive students and campus resources. The formal training process ends with a "leaders' meeting" going over the content of the first week's actual workshop and preparing to lead the students they will have that semester.

Transmission: A Stronger Learning Modality

Jessica G. Salazar and James E. Becvar[†]
[#]The Department of Physics, [†]The Department of Chemistry
The University of Texas at El Paso, El Paso, Texas

A typical introductory college course: 100 students in a lecture hall listening to the instructor for approximately an hour. This setting can be categorized as students in a mode of "reception". Reception involves little engagement of the students and yields outcomes of lower assimilation, grasp of material, reduced interest and reduced retention, particularly in STEM disciplines. In contrast, Peer-Led Team Learning increases comprehension and retention by fostering an environment of "transmission". The "transmission" mode of curricular dissemination requires students to be active participants in the teaching of the material. In this "transmission" setting, students in 16-student workshops must mentally process, then communicate with their team members, the peer leader, and others within the workshop cohort through oral explanations, Socratic

Peer-Led Team Learning International Society Second Annual Conference

May 30-June 1, 2013

University of Houston-Downtown Houston, Texas

question and answer sessions, or written work. The “transmission” mode complements the “reception” mode prevailing in lecture with the overall outcome being the maximization of understanding of the material.

Friday, May 31 2:15-3:55 pm Group II
Room: Auditorium Moderator: Ongard Sirisaengtaksin

Mandating PLTL workshop sessions: the key to success

Yuanyuan Kang, Elsy Rivera, Kafayat Busari

Natural Sciences Department

University of Houston-Downtown, Houston, Texas

In the Spring of 2011, we launched PLTL workshops with a general biology 1 class at UHD. The workshops were effective, however, only benefited 1/4 of the class who attended the workshops. With 3/4 of the class not attending, the passing rate of the whole class was around 40%. We hypothesized that the lack of success was due to the voluntary student participation and decided to mandate the workshops to the whole class in Fall of 2012. The class passing rate increased from 40% to 60%. In addition, the class showed better engagement, had a low drop rate and performed the best in the departmental final exam. We believe that the mandatory attendance of PLTL workshop sessions helps broaden their impact which ultimately led to the success of the whole class. Therefore, our model provides valuable insights into a crucial component of successful PLTL implementation and may prove useful especially for those institutions with diverse student populations.

Why Attendance is Mandatory in Workshops: Comparison of Course Grades of Workshop Attendees vs. Non-Attendees with Similar GPA and SAT Scores. Part II: Results for Second-Semester Students

Brenton A. Bishop and Lucille B. Garmon

Department of Chemistry, University of West Georgia, Carrollton, Georgia

Many studies have compared course success of students who do and do not participate in PLTL workshops. These reports have been criticized when the students participating are self-selected. The students most consistently attending workshops, it is claimed, are those who are most motivated, mature, and capable of doing well anyway. To counter this objection, students regularly attending workshops in second-semester general chemistry were paired with occasional- and never-attendees with similar SAT scores and GPAs.

Students not attending workshop regularly included those who simply chose to miss many sessions; those enrolled in an honors section, which did not include a workshop; and those taking the course online, for which workshops were not available. Students with similar GPA/SAT scores who attended workshop regularly averaged higher course grades than those who did not, even when matched with similarly prepared and motivated students such as those in honors sections.

Training and Supervision: Redefining the Role of the Peer Leader

Jose Luis Alberte, Alberto Cruz, Nataly Rodriguez, Thomas Pitzer

Department of Biology, Florida International University, Miami, Florida

Student engagement in Peer-Led Team Learning (PLTL) can vary depending on the experience, dedication, and communication skills of the Peer Leader. At Florida International University, all Peer Leaders are trained in content, pedagogy, and classroom management during an extensive training program. To further decrease inter-peer variability, sessions are supervised by an experienced peer or PLTL staff member. Experienced Peer Leaders also train new Peer Leaders weekly on content and pedagogy. Peer Leaders are able and willing to take on this role, given the proper training. We have developed a tiered mentor system for the supervision of workshops and training of Peer Leaders.

Tools for Conducting Online CS I PLTL Workshops

Mitsue Nakamura and Ongard Sirisaengtaksin

University of Houston-Downtown, Houston, Texas

In general, students find a programming course difficult, especially those who are not computer science majors. This is true no matter what programming language is being taught and used in the course, whether it is C++, Visual Basic, or Java. Students must have both good problem-solving skills or logic, and a command of the programming language syntax to be able to write a complete program from the start to the end. This implies that in order to create a program, one must be able to come up with an algorithm for the solution to the problem and then convert the algorithm into code according to the programming language used. Most students lack problem solving skills or logic. Some students have difficulty understanding programming constructs and logic. Some even have a hard time comprehending the syntax of the programming language. One possible solution to alleviate these

Peer-Led Team Learning International Society Second Annual Conference

May 30-June 1, 2013

University of Houston-Downtown Houston, Texas

learning problems is to engage students in a programming environment that requires only logic skills, not syntax. Furthermore, students can also visualize the structure and logic of the program as well as the flow of execution of the program.

Workshop materials are created by faculty to focus on specific concepts, and workshop leaders guide students through the materials to make the concepts clearer to understand. PLTL workshops provide active high impact learning experiences for participants and focus on improving students' understanding of difficult concepts. In both fall 2012 and spring 2013, one of the CS I sections at UH-D was offered as an online course, with online PLTL workshops. In order to run CS I online workshops efficiently, what is needed are tools such as video conferencing and a white board - for a peer leader to share information with students as with face to face workshops - as well as an application that allows students to visualize programming logic.

The main objective of our project is to develop PLTL workshop materials that will improve students' programming skill using a programmable and executable flowchart application, called Raptor. Raptor allows students to create a program with very minimal syntax and independent of any programming language. Students will be able to create a program using block symbols that are used in a flowchart. Symbols used in the application are limited to a small set of symbols such as input, output, and condition, to avoid confusion as to which block symbol is to be used. Students can concentrate on the logic of the program, and can create a program by adding a block symbol and a programming code/statement into the block symbol one by one until the program is complete. Then, students have an option either to run or step through to the program. This allows students to visualize the flow of execution of the program and focus on the logic of the program rather than the syntax of the language. This application can also be used to demonstrate concepts such as if and loop constructs.

Saturday, June 1	10:30am-12:00pm	Group I	Room: A300	Moderator: Bonnie Gunn
------------------	-----------------	---------	------------	------------------------

Peer Learning and Social Participation: Insights from Inside

Chris Keenan

Bournemouth University, Poole, UK

This session will draw on the findings of a nationally funded UK project (2011-2012) which investigated the role of Peer Assisted Learning (PAL) in supporting new undergraduate science students. The benefits for first years who engage with PAL are well understood, however, the project also investigated the benefits of being a Peer Leader. This session will explore some of the key benefits identified by peer leaders (including enhancement of their own personal development, improved graduate attributes and confidence building) through the lens of legitimate peripheral participation (Lave and Wenger 1991) in order to develop an understanding of why and how peer leaders develop the enhanced attributes that they report. Participants will be invited to join in a discussion about how the findings might be used to inform leader training.

Strengthening Foundational Mathematics Courses through the Implementation of Peer-Led Workshops

Janet Liou-Mark, Mursheda Ahmed, Frederic Anglade

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

The consistent low pass rates of undergraduate students taking entry level mathematics courses are a national trend. Many students are entering college deficient in the necessary quantitative skills needed to fulfill their mathematics requirements for their majors. To address this dire concern, the Peer-Led Team Learning (PLTL) instructional model was adopted by New York City College of Technology to increase the retention, persistence, and pass rates in two fundamental mathematics courses (MAT 1175: Fundamentals of Mathematics, MAT 1275: College Algebra and Trigonometry). The results from this study showed that this pedagogical paradigm of student engagement is effective in promoting success in these gatekeeper courses.

Modifying Active and Collaborative Learning to Make it Work for You: "Hands-on" in the Science Classroom

Stamatis W. Muratidis

Palo Alto College, San Antonio, TX

Students come to class with the expectation of being lectured to, often reluctant to participate in group activities and disinclined to lead their peers. Science faculty often perceive their role as a lecturer they deliver on students' expectation and do not effectively promote a team learning climate. Even more so in the science classroom since faculty view the science laboratory as the sole place for collaborative efforts and informal peer learning to take place. The spirit of learning communities must begin in the classrooms. Students need to be lead and molded into peer learning cohorts in class through active and collaborative activities. Participants will be shown the merits of organizing different types of groups within their class. Best practices for forming and nurturing collaborative peer-led groups will be discussed such as the importance of appropriately sequencing activities, whilst identifying and mitigating some of the common pitfalls of implementing activities. Some of the presentation

Peer-Led Team Learning International Society Second Annual Conference

May 30-June 1, 2013

University of Houston-Downtown Houston, Texas

will take place in a collaborative group format wherein information will be experienced in groups. However given the 20 minute time constrain some information on how to initiate student collaboration and peer teaching within the classroom will be presented.

Saturday, June 1 10:30am-12:00pm Group II
Room: Auditorium Moderator: Geoffrey Saupe

Building a Community among Engineering Students

Melanie L. Villatoro, Yineng "Alex" Liang, and Khalil Rouchdy
New York City College of Technology, CUNY, Brooklyn, New York

All Construction Management and Civil Engineering Technology (CMCE) students at City Tech are required to complete Statics as a prerequisite to their Design Courses. Grade distributions over the past decade indicate that only about 53% of students pass Statics with a grade of C or better. PLTL is in its third semester of implementation and data indicates that the students in the PLTL inclusive Statics classes are performing better than those in sections without PLTL. The success of PLTL is due to workshops creating a sense of community among our diverse student population. The diversity in the classroom has a natural tendency to divide the students into "cliques" and discourages them from working together or asking peers for help. PLTL works against the natural tendencies and encourages students to overcome their differences and work as a community towards a common goal.

Educational Partnerships To Encourage STEM Participation

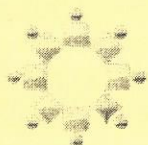
Poonam Gulati and Maria Bhattacharjee
University of Houston, Downtown, Houston, Texas

US rankings in education, especially in STEM fields, are below many developed countries. One third of the STEM doctorate students are international. Thus, there is an urgent need to creatively teach students about STEM fields that they can pursue as careers, and our proposal addresses this issue. The approach is a collaboration developed between General Microbiology and Urban Education (UD) classes. The microbiology students teach project design and implementation to the UD students, who more effectively teach hands-on science to elementary school students. Preliminary conclusions are (1) the microbiology students appreciate applying microbiology knowledge, (2) the UD students are more comfortable and encouraged to conduct science experiments in the classroom, (3) both sets of students are happy to contribute to their community, and (4) the elementary school students are excited about working on science projects. Participants to this presentation will become informed about an excellent and relatively easy partnership, which can be easily adapted to other courses.

The Experience of Peer Leadership and Its Impact on STEM Success

A.E. Dreyfuss, GuanNian Zeng, Yanna Chen, Janet Liou-Mark, Mursheda Ahmed, Frederic Anglade, Yanira Garcia, Yineng "Alex" Liang, Khalil Rouchdy, Jodi-Ann Young, Suhua Zeng

How do Peer Leaders view their leadership experience? A survey, created partly from Dreyfuss (2012) study of leading by peer leaders, was administered to former and current peer leaders at New York City College of Technology during the Spring 2013 semester. The survey examined peer leaders persistence and retention in their STEM disciplines, and their views on how the facilitation experience had impacted their personal and leadership growth and skills were analyzed. Factors that affect leadership will be presented.



PEER-LED TEAM LEARNING INTERNATIONAL SOCIETY

POSTERS

1. Chemistry Boot Camp

Sandra Andrea Salinas, Andre Perez-Orozco, Mahesh Narayan, Juan Noveron, Bonnie M. Gunn, Geoffrey Saupe, Robert Morales, and James E. Becvar

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

Peer-Led Team Learning (PLTL) has dramatically improved student success in general chemistry at the University of Texas at El Paso. Every student spends two hours per week in lecture and two hours per week in PLTL Workshop. Thus the job of peer leader is extremely important and involves an enormous responsibility. Despite being knowledgeable and prepared (the conditions for being hired), the peer leaders are still undergraduate students and have weaknesses in certain topics. Chemistry Boot Camp is designed by experienced peer-leaders to be an intensive week of chemistry review designed to make all peer leaders excel at any topic in General Chemistry I and II. By the end of Boot Camp all peer leaders will feel extremely comfortable managing any subject in chemistry and will feel secure and prepared to conduct workshop in the most effective manner, improving the quality of the peer-leaders, the workshop and ultimately the students.

2. HELP: Higher Education and Liaison Program

Jesus Guzman, Samuel Garcia, Andre Perez-Orozco, Jasmine Peralta, Brian Barraza, and Eduardo Urias
Department of Chemistry, University of Texas at El Paso, El Paso, Texas

As a result of attending and experiencing the First Annual PLTLIS meeting in Brooklyn, New York in May of 2012, the authors, peer leaders and students from the University of Texas at El Paso, were inspired to start this college preparation program at Bowie High School in Central El Paso. HELP targets the primarily low-income learners that make up the student body at this school. In fall 2012 the authors prepared the way by meeting with the Principal and many teachers and developing much of the curriculum based on hands-on learning in math and science. In eighteen weekly sessions, HELP provided activities, guidance, and motivation in spring 2013 to inspire the students to consider going to college and how to be successful when they did. We will present the results of this project and discuss the effect it had on the participants.

3. How can students in a mathematics workshop be motivated to raise their expectations of their performance?

Yanna Chen

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

From the beginning of the semester the whole workshop group divided into three sub-groups. Each group included students at different levels of mathematical skills, where one received below 70 on the first exam, one between 70-80, and one between 80-90. Is there a way to help students to become more motivated and get higher level grades (from B to A)? This poster discusses how the Peer Leader can motivate and challenge students to become more interested in math with harder questions that lead into better discussions, increasing their interest, competence, and autonomy. Having students work in the sub-groups helps them with relatedness. Whether skilled or unskilled, students will try their best to find the solution to the problem which will increase their motivation, which will also increase their interest in mathematics and lead to higher grades.

4. How can the workshop setting support female students to persevere in a college algebra and trigonometry course?

Yanira Garcia

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

Because I am a Mathematics Education major, I take many Math courses. I have observed that as the course level is more advanced there are fewer female students. Being a female in a class of mostly male students sometimes feels scary, as though one is on a planet where I am the alien who does not belong. Historically, the field of mathematics has been dominated by men, so women may feel the subject is incomprehensible. However, mathematics intrigues me, and it is quite comprehensible. The problem is that because women have a negative attitude toward math in the United States, they tend to perform poorly (Kiefer & Sekaquaptewa, 2007). The

Peer-Led Team Learning International Society Second Annual Conference
May 30-June 1, 2013

University of Houston-Downtown Houston, Texas

female population has reduced its desire to pursue mathematics due to its belief in stereotypes. This poster will present the argument that peer-led workshop in mathematics is a source of encouragement and perseverance for female and male students.

5. Mathematics Undergraduates Leading Undergraduates enrolled in General Chemistry: Why this Works!
Diana Samaroo, Suhua Zeng

Department of Chemistry, New York City College of Technology, CUNY, Brooklyn, New York
NYC College of Technology is the designated college of technology of the City University of New York. Peer-Led Team Learning (PLTL) is a structured learning method to engage students in a collaborative environment. PLTL has been used in several courses at the college, including General Chemistry and Mathematics. The implementation in Chemistry is that workshops are optional and/or mandatory outside of class time. The problem being addressed is the following: Is the first exam or second exam in General Chemistry II an indicator for passing the course? The approach used depends on recognizing that peer leaders with strong math problem solving skills give students insights in connecting chemistry concepts (such as kinetics and equilibrium) to math. These concepts are assessed on the second exam. Students in courses with workshop show significant improvement than students without workshop. The data indicates that PLTL workshops increased student retention and passing rate.

6. Peer Leading: Promoting Student Success through Enhanced Understanding of the Course Material
Shebna Cheema, Elsy Rivera, Reyna Valdez, Dr. Yuanyuan Kang
Department of Natural Sciences, University of Houston-Downtown, Houston, Texas

Peer Led Team Learning has proven effective in enhancing student performance in Freshman STEM courses. General Biology 1 is a course with an average passing rate (C or above) of ~40% at UHD. With the implementation of PLTL supplemental workshops, the success rate improved to 60% in the Fall of 2012. We believe that the PLTL played a significant role in enhancing students' understanding of the course material. By the commitment and dedication of motivated peer leaders various strategies were developed to benefit General Biology 1 students. In turn, workshop modules provided on the PLTL website were updated and customized to fit the General Biology students' academic needs. Students who attended PLTL sessions have acknowledged their effectiveness and enjoyed the activities. Lastly, activities and sessions have significantly attributed to the benefit and growth of personal and academic endeavors of the peer leaders as well.

7. Peer Leaders' Views on a General Chemistry Workshop Program
A.E. Dreyfuss and Janet Liou-Mark

New York City College of Technology, CUNY, Brooklyn, New York
How do Peer Leaders feel about a peer-led workshop program in General Chemistry? Peer Leaders were surveyed about the administrative aspects of the program, including physical space, compensation, and training, the benefits they derived from the experience, why they decided to become Peer Leaders, and suggestions for ideas for program expansion and improvement.

8. Peer-Led Team Learning Influence on Future Teachers
Amairani Hernandez, Karen Orta, Sara Wilder
University of Houston-Downtown, Houston, Texas

The overall experience of future teachers leading PLTL workshops help them to acquire the essential leadership skills, understanding of core materials, and adaptation to students' different learning styles which are necessary to become effective teachers. In order to conduct effective PLTL workshops, leaders must acknowledge various approaches to understanding material which is an important component in teaching in a regular setting. Experience with PLTL workshops allows future teachers to adjust to student's needs by understanding learning styles, personalities, and their difficulties with material. Therefore, PLTL philosophy is a wonderful model for traditional teaching to embrace.

9. Strategies for Assisting Students with Learning Difficulties and Differences
Grace England

St. Thomas University-Houston, Houston, Texas
Common characteristics of students with varying learning disabilities or differences will be described. Leaders will be given several instructional techniques or strategies to use in supporting such students to enhance their achievements in higher education classes.

10. Students' Attitudes About Peer-Led Team Learning Workshops in Chemistry: Comparison to the Six Critical Components

A.E. Dreyfuss, Janet Liou-Mark and Leo Gafney*
New York City College of Technology, CUNY, Brooklyn, New York and *Evaluation Consultant

While tracking performance and persistence among students is important to determine the effect of the incorporation of workshops in courses, there has been little published on students' attitudes toward workshop. How do students perceive PLTL workshops? This poster will present a three-semester study, based on Gafney's Student Survey (2001) on how students view workshop in their introductory chemistry courses. Survey questions and responses are organized and compared to the PLTL model's Six Critical Components.

11. Students' Attitudes About Peer-Led Team Learning Workshops in Chemistry: A Critical Incident Study
A.E. Dreyfuss and Janet Liou-Mark
New York City College of Technology, CUNY, Brooklyn, New York

What engages General Chemistry students about peer-led workshops? What do they dislike about peer-led workshops? Using Brookfield's (1995) Critical Incident Questionnaire, this poster will present the aggregated results of two semesters of responses from General Chemistry students, which found that students felt engaged when "working in groups," "solving problems" and "asking questions." They felt disengaged when they "didn't understand specific material."

12. Ten Year Cumulative Analysis on the Implementation of PLTL in Biology Undergraduate Education
Jose Luis Alberte, Alberto Cruz, Nataly Rodriguez, Giselle Barreto, Aida Ramon, and Thomas Pitzer
Florida International University, Miami, Florida

Several studies have shown that students who participate in PLTL workshops perform a letter grade higher than those who do not participate in PLTL. However, no meta-analyses have been performed to show the overall effect PLTL has on student performance over a decade. Per-term analyses of the effect of PLTL on learning in biology courses at Florida International University have shown that students who take PLTL outperform those who do not fully participate in PLTL, which is consistent with published literature. A cumulative meta-analysis over 10 years shows that PLTL participants are approximately twice as likely to pass our gateway biology courses, versus those who do not participate in PLTL. These findings indicate that the use of Peer Leaders as facilitators is an effective learning strategy in undergraduate STEM education.

13. The Evolution of PLTL: Peer Leader-Professor Group Meetings and the Effect of Size
Andre Perez-Orozco, Samuel Garcia, James E. Becvar, and Geoffrey B. Saupe
University of Texas at El Paso, El Paso, Texas

The Peer-Led Team Learning program in Chemistry at the University of Texas at El Paso requires two one-hour "preview" meetings every week between a course's group of Peer Leaders (PLs) and the professors of the course. The meetings help keep PLs on track and provide an opportunity for feedback, to and from PLs and professors. The rapid expansion in the number of students in our chemistry classes has led to the need for more PLs and larger preview meetings. We found that the dynamics of the preview meetings had lost their efficacy and were not conducive to free expression, optimization, and innovation. The preview meetings were to evolve in order to remain optimal. By infusing the meeting with some of the characteristics of the PLTL workshops and by using adaptive leadership, many problems were alleviated. Here we present the details of our program changes and the results.

14. The Formative Assessment of Readiness (FAR) Examination
Celina Duran, Mahesh Narayan, and James E. Becvar
Chemistry Department, The University of Texas at El Paso, El Paso, Texas

For the past several semesters, some sections of second semester general chemistry at the University of Texas at El Paso have used the Formative Assessment of Readiness (FAR) Examination as method of assisting students in the course and peer-led workshops to prepare and to keep current on a class-by-class basis. The FAR Examination consumes the initial five minutes of every class session to assess understanding of the material from the previous class. We report a significant correlation between the use of FAR exams and increased performance in course. Students who perform well on FAR Examinations throughout the semester have higher scores on the hour examinations and standardized final examination. We conclude that the use of FAR exams reinforces material that is learned in class, increases pressure on students to pre-read, study and review, and results in higher test scores and retention rates.

15. "The War of the Workshops"
Sandra Andrea Salinas, Mason Arbogast, James E. Becvar, Geoffrey Saupe, Juan Noveron, Mahesh Narayan
Department of Chemistry, The University of Texas at El Paso, El Paso, Texas

Peer leaders in the Peer-Led Team Learning (PLTL) program at the University of Texas at El Paso have developed many strategies over the years to motivate students to operate at their full potential. Motivating students is crucial for their learning. As one example, peer leaders have set up problem solving competitions within the workshop, but this 'internal-to-workshop cohort' strategy does not function well if it does not percolate through

most of the cohort. Because our workshop schedule most often finds two workshops running in parallel (at the same time), this semester we implemented competition between workshop cohorts. As a control, each peer leader in this study used a second workshop for comparison that did not conduct competitions between workshops. The 'between workshop cohorts' competition results in greater engagement of students within the competing cohorts and causes students to be prepared and to study outside of class.

16. Transmission: A Stronger Learning Modality

Jessica G. Salazar[#], Stephanie Moreno[†], Mahesh Narayan[†] and James E. Becvar[†]

[#]The Department of Physics, [†]The Department of Biological Sciences and

[†]The Department of Chemistry, The University of Texas at El Paso, El Paso, Texas

A typical introductory college course: 100 students in a lecture hall listening to the instructor for approximately an hour. This setting can be categorized as students in a mode of "reception". Reception involves little engagement of the students and yields outcomes of lower assimilation, grasp of material, reduced interest and reduced retention, particularly in STEM disciplines. In contrast, Peer-Led Team Learning increases comprehension and retention by fostering an environment of "transmission." The "transmission" mode of curricular dissemination requires students to be active participants in the teaching of the material. In this "transmission" setting, students in 16-student workshops must mentally process, then communicate with their team members, the peer leader, and others within the workshop cohort through oral explanations, Socratic question and answer sessions, or written work. The "transmission" mode complements the "reception" mode prevailing in lecture; with the overall outcome being the maximization of understanding of the material.

17. Turning the Tables: Making Problems Solves Problems

Brian Frescas, Robinson Roacho, James E. Becvar, and Geoffrey B. Saupe

University of Texas at El Paso, El Paso, Texas

The PLTL program in general chemistry at the University of Texas at El Paso encourages its Peer Leaders (PLs) to incorporate their innovations into the fabric of their workshops and to share their experiences with the other PLs. Our PLs have turned the tables on traditional lecturing by forcing students to transmit their knowledge to each other, rather than passively receive it from a lecturer. One way to invoke this awakening transmission is by getting students to create their own written problems in the PLTL workshops, right beside their peers. Students then trade questions within their team or with other teams, so they can be solved. The ability to create and write a reasonable chemistry question forces a higher level of comprehension, a vital perspective, and deeper learning. Once a student can generate and teach the material, they have truly mastered it. We will share our experiences with this method.

18. ULearn via PLTL UTeach

Jose Marin, Andres H. Belmont, Juan C. Noveron, and James E. Becvar

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

Teaching is often seen as the process of providing facilitated information to receivers (students) with the objective of having the receivers fully understand an idea or process. Just because all the information is delivered does not make the receiving students into learners. A great strength of Peer-Led Team Learning is forcing every student in Workshop into the teaching role. The act of teaching is well-known to make teachers into excellent learners. Being a teacher stimulates extra cognitive processes because the person needs to understand in order to deliver the information. In addition, when the teacher is questioned about specific details, such questions help to identify areas in which reinforcement of understanding is needed. Technology such as the Livescribe Echo pen permits students to record a complete notes database as another mode of delivery to refresh the learning. Teaching as a learning technique generates better understanding and longer retention of information.

19. Using the PLTL model through online workshops

Steve Leon, Brian Holtkamp, Deary Hudson, Joseph Johnson, Lucino Flores, Sara Wilder

Computer and Mathematics Sciences, University of Houston-Downtown, Houston, Texas

Online CS workshop sessions cater to students who want a better understanding of material and concepts covered in class. Often times, especially if Computer Science is not their major, students have difficulty comprehending key points in the lecture because the topics can be complex. This can be the cause of a chain reaction of failure due to the way programming assignments and concepts build upon themselves. Online workshops take students step by step through their assignments in a way that allows them to be the main contributor to its completion. Using the Wimba Collaboration online system through blackboard, the workshops utilize the PLTL model where students are guided toward an answer instead of it being handed to them. Simultaneously, students are granted a level of special attention they may not have received in class. Wimba features chat, whiteboard, and screen-sharing capabilities that allow workshop leaders to interactively communicate key ideas to the students. The end

goal is to help students solidify the material through experience and grant them the help they need to develop independent programming skills necessary in future endeavors.

20. Vision and Change: Enabling Student Success via Peer-Led Team Learning

Stephanie Moreno, Geoffrey B. Saupe, and James E. Becvar
The University of Texas at El Paso, El Paso, Texas

The vision is improved student success. The desired change is enabling stronger student self-learning. This vision is being realized by the change in curriculum format (starting in year 2000) to require Peer-Led Team Learning Workshops in first semester general chemistry at the University of Texas at El Paso. The C-or-better passing rate for first-time takers increased from the historic average near 55% to the current rate near 70%, translating into more than a thousand additional students over this period progressing into their science, engineering, and mathematics majors. The majority of the science students in these PLTL workshops at UTEP are biology majors (eventually receiving biology, microbiology, or cellular and molecular biology degrees). Workshop consists of one hour of problem solving in teams overseen by the Peer Leader, followed by one hour of hands-on explorations. Explorations provide the students with real world contextual knowledge about the abstract concepts they are learning.

21. Voluntary PLTL Workshop in Organic Chemistry

Robert E. Morales[#], Bryan Ferrell[¶], and James E. Becvar[¶]

[#]Dual Tutoring (a Texas non-profit corporation), El Paso, Texas, [¶]Department of Chemistry, The University of Texas at El Paso

The organic chemistry curriculum at the University of Texas at El Paso reverted to lecture only in fall 2012 when external funding ended and the financial support concluded for paying peer leaders to give workshops in organic chemistry courses. The recently graduated first author noted this loss with dismay and sought and received permission from the instructor to create a voluntary workshop approach integrating multiple educational techniques. Students from majors and non-majors organic courses were invited to attend two-hour workshop discussions over a ten-week period covering content, metacognition, humor in the classroom (with the goal of making students more receptive and physiologically better equipped to learn), and behavioral modification techniques. Multi-week tests were implemented to reinforce and review concepts multiple times. A statistical analysis of students' performance showed that students who attended workshop outperformed those who did not on hour examinations and on the final examination ($p < 0.02$).

22. What Can the Peer Leader Do To Increase Female Involvement in a Statics Workshop?

Khalil Rouchdy

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

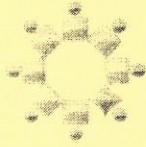
Perry's Scheme (1970) suggested four major developmental stages for college students' cognitive and ethical development. In my workshop in Statics I (applied physics in construction management), the female students were disengaged and quiet among the male students. Belenky et al, Baxter-Magolda and Kroll base their work on Perry's scheme, examining females in their intellectual development, and add to his four stages. This poster explores ways to involve female students in male-dominated courses and fields, through peer-led workshops by encouraging students to acknowledge and engage with each other.

23. What techniques can the Peer Leader use to support students' learning in workshop?

Frederic Anglade

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

Students need the support of Peer Leaders in the process of learning. Peers Leaders are students who are more knowledgeable than the students in their group. Peer Leaders understand their students' need to learn the course materials and want to guide them in order to help them succeed. As a Peer Leader, I created a friendly environment in my workshop to help students to feel comfortable to work on their modules. To achieve that, I used various techniques to create a team. This poster discusses selected theories and techniques that Peer Leaders can use to help students learn course material.



PEER-LED TEAM LEARNING
INTERNATIONAL SOCIETY

Acknowledgments

This conference would not be possible without the support of the following people and organizations.
Thank you!

University of Houston Downtown

President's Office

President William Flores

Johanna Wolfe - Vice President, Advancement and External Relations

Claire Caton - Director, Media Relations, Advancement & External Relations

Edith Torrez - Department Business Administrator I, Advancement & External Relations

Becky Gomez - Administrative Assistant, Advancement & External Relations

Provost's Office

Provost Ed Hugetz

Laura Dillard - Administrative Assistant III, Academic Affairs & Provost

College of Science and Technology Dean's Office

Dr. Akif Uzman - Dean

Dr. Ermelinda DeLaVina - Associate Dean

Heather Davis - College Business Administrator I

Scholars Academy

Dr. May Jo Parker - Director, Scholars Academy

Rene Garcia - Program Manager

Melissa Elias - Administrative Assistant II

Department of Natural Sciences

Dr. Lisa Moreno - Chair

Department of Engineering and Technology

Dr. Kenneth Oberhoff - Chair

Department of Computer and Mathematical Sciences

Dr. Shishen Xie - Chair

Dr. Youn-Sha Chan - Assistant Chair

Dr. Timothy Redl - Assistant Chair

Linda Gilbert - Department Business Administrator II

Nereida Nava-Torres - Office Assistant

Ghanem Ghanem-Technical Support Specialist II

Event Planning

Janet Heitmiller - Director of Community Relations
Lisa Alonzo - Assistant Dean of Students
Erica Flores - Non-College Work-study

Admissions

Courtney Lundgren - Coordinator, Customer Services

IT

Nikhil Bhatt - Coordinator, Multi-Media Technical Services
David McCoy - Multi-Media Engineer III
Meagan Lee - User Support Specialist I

Facilities

Florida International University

Dr. Timothy Collins, Chair, Department of Biological Sciences

New York City College of Technology, CUNY

City Tech Foundation, Jewel Escobar, Executive Director
Student Government Association, New York City College of Technology, CUNY
Office of the Dean of the School of Arts & Sciences, New York City College of Technology, CUNY
Yi-Ming Yu, Peer Leader and Vice-President, the PLTL Club at City Tech
Laura Yuen-Lau, Honors Scholars Program

University of Texas El Paso

Dodson Fund, College of Science
American Chemical Society, Rio Grande Valley Section
National Science Foundation

Special thanks to the 2013 PLTLIS Conference Organizing Committee

Mitsue Nakamura, Committee Co-Chair
AE Dreyfuss, Committee Co-Chair

Jose Alberte
James Becvar
Chinedu Chukuigwe
Alberto Cruz
Lucille Garmon
Chris Keenan
Janet Liou-Mark
Dusty Otwell
Ongard Sirisaengtaksin
Ellen West