ASSESSING THE DEVELOPMENT OF PEER LEADER METACOGNITIVE SKILLS
Jose Alberte and Stephanie Martinez
Florida International University
The Peer-Led Team Leading (PLTL) model has been shown to have a positive effect on undergraduate peer leaders’ professional and personal growth skills, one of these being metacognitive skills. To explore the relationship between peer leader experience and three components of metacognition (metacognitive knowledge, regulation, and responsiveness), the Awareness of Learning Inventory (AILI) will be administered to a sample of peer leaders during PLTL orientation prior to the semester, and again after the culmination of the semester. Data will be analyzed using a t-test to determine significance. It is predicted that subjects with more leading experience will score higher overall in their metacognitive abilities. It is also predicted that new leaders who are exposed to peer-leading for the first time will note a significant difference in scores before and after the semester.

PEER LEADING STRATEGIES THROUGH CASE STUDIES
Carlos Alvarez, Ronaldo Carhuaricra, Mukadder Cinar, Stephanie Gonzalez, Lamia Mahreen, Brandow Rojas, Anne Therese Yu, Gary Zeng, Mei Zhu, Janet Liou-Mark and Melanie Villatoro
New York City College of Technology
Case studies are interactive and insightful tools for training first-time peer leaders. Practices, problems, and techniques can be examined to bring about understanding that in turn can improve peer leaders’ facilitation skills. Anchored in real life behaviors and settings, case studies allow peer leaders to reflect, discuss, and evaluate possible responses. Case studies authored by new peer leaders in mathematics and statics will be shared. This project is supported by City Tech Foundation and the National Science Foundation Math Science Partnership Grant #1102729.

WORKBOOK LEARNING IMPROVEMENT STRATEGIES: HALF-NOTES AND ‘GOLD STARS’
Kristie Benejan, Viridiana Saenz, Zane Edwinson, Michelle Aranda, Junkai Zhong, James E. Becvar and Mahesh Narayan
University of Texas at El Paso
Workbooks designed for use in Peer-Led Team Learning Workshops at the University of Texas at El Paso have become a significant part of the learning experience in the General Chemistry Program. Semester after semester it is imperative to edit and introduce innovative ways to enhance learning. Current workbooks include fully worked out solutions. A significant new strategy proposed here is the incorporation of partially worked out examples (i.e. skeleton strategies, ‘half notes’). These guide students in practicing how to gain process understanding. Additionally, the constant revision, primarily by undergraduate authors, often leads to incorporation of new content errors. One simple strategy for facilitating correction is for Peer Leaders (and students), as they use workbook materials in workshop, to place a mark (‘Gold’ Star) on the upper outside corner of pages requiring editing. These ‘Gold Stars’ facilitate the localization of pages in need of editing at the time for new edition development.
EVOLUTION OF PLTL SUPERVISION: PERCEPTIONS OF SUPERVISION MENTORSHIP
Isamar Camarena-Ubiera, Katherine Francis, Daniel Flores, Alberto Cruz, Jose L. Alerte, and Thomas R. Pitzer
Florida International University
The Peer Leader (PL) Supervision program at Florida International University (FIU) was implemented in 2007, and reformed in 2015. After one year (three semesters) of implementing improvements, the effectiveness of these changes were analyzed. A multi-aimed approach using both quantitative and qualitative aspects was taken. Effects of PL quality, and supervisor perceptions were compared and analyzed using a survey with open and close-ended questions. The focus of the project was placed on the perceptions of unsupervised PLs. As a trend, unsupervised PLs felt that being supervised would have positively affected their performance as a leader. Furthermore, supervisor perceptions were generally positive after the improvements to the supervision program.

P.A.C.E. - PRE-EMPTIVE ASSIGNMENTS FACILITATE CHEMICAL EDUCATION
Miguel Carrillo-Alvarado, Aashir Sohail, Luis Zuniga, Daniela Del Campo, Mahesh Narayan and James E. Becvar
University of Texas at El Paso
A novel method involving electronic submission of homework assignments at the beginning and end of weeks through BlackBoard® was implemented to edge students into reading ahead and completing assignments in a timely manner by the UTEP PLTL program. Ideally, this permits the professors to educate the students as they would have preemptive exposure to the topical material such as Acid-Base equilibrium. This method also conditions students to study ahead of lecture components for upper division science courses; a skill which will prove invaluable for the remainder of their careers as students. Comparative analysis of students in individual workshops under different peer leaders will allow efficacy of this method to be assessed – simultaneously setting the foundation for more thorough investigations in future semesters.

WORKSHOPS IN THE PLTL LAB SETTING, CS AND BEYOND
Israel Cervantes, Mahesh Basyal, Huy Buy, Jose Gonzalez and German Villalobos
University of Houston-Downtown
At the University of Houston-Downtown, the implementation of workshops for the CS 2410: Data Structures and Algorithms course has helped students taking this course to succeed. Many of the students who were not in a PLTL section of the CS 2410 workshops expressed that they also wanted to experience the workshops. For that reason, we scheduled and implemented the CS workshops in the PLTL Lab. We received a lot of positive feedback from the students who attended the workshops. After talking to other students and hearing how they would like to have workshops for other courses, we have decided to plan and schedule workshops for other STEM disciplines in the PLTL Lab to enhance students’ learning experiences. We also believe that the development and implementation of the workshops in the PLTL Lab will benefit a larger population of students and help them to be successful in their fields.
I CAN’T BELIEVE IT’S CHEMISTRY
Carlos Chavez, Zackery Nieto, Miguel Alvarado, Oliver Valdez, Deidrah Carrillo, Jaime Ayala, James E. Becvar and Wen-Yee Lee
University of Texas at El Paso
The implementation of a YouTube channel in conjunction with a website is currently allowing instructors and the curious alike to be able to access problem-solving methods and visual examples to make chemistry truly come to life. Not only can viewers be able to visualize the methods required to solve a chemistry problem, but they are also able to see explorations in which they can apply what they learn to real world concepts. An observation regarding chemistry’s difficulty is that problems and concepts become more difficult to grasp through the higher-level courses and sub disciplines of chemistry. Our job as Peer Leaders and through I Can’t Believe It’s Chemistry will be to grant other people the opportunity to overcome these hindrances and not be repelled by its difficulty.

TEAM-BASED SCIENCE REVIEW: ARE YOU SMARTER THAN A PEER LEADER?
Roberto Corral, Erica Rodarte and James E. Becvar
University of Texas at El Paso
Peer-Led Team Learning (PLTL) at the University of Texas at El Paso engages students in team-based activities. We have created a review game challenging students to compete against their workshop peers and a team of 2-3 Peer Leaders. The workshop is divided into groups of 3-4 people and a group of Peer Leaders is invited to serve as competition for all other groups. The game is conducted like a game show and all participants will try to answer the same question in as little time as possible. If none of the workshop’s teams get the correct answer, they may each ask for a Peer Leader as a lifeline once throughout the game. All other questions must be answered as a group effort and in timely fashion in order to prepare them for studying in groups outside of the workshop and to enhance their time-testing skills for the timed final examination.

EVOLUTION OF PLTL SUPERVISION: A COMPARATIVE ANALYSIS BETWEEN PEER LEADER SELF EVALUATION RATINGS AND SUPERVISOR EVALUATION RATINGS OF PEER LEADERS
Daniel Flores, Alberto Cruz, Jose L. Alberte, and Thomas R. Pitzer
Florida International University
The Peer Leader (PL) Supervision program at Florida International University (FIU) was implemented in 2007, and reformed in 2015. After one year (three semesters) of implementing improvements, the effectiveness of these changes were analyzed. Supervisor evaluation forms were compared to PL self-evaluations to assess the accuracy of the PLs’ perception of their own performance; as well as track PL performance over the course of a semester. Form scores needed to be scaled to allow for comparable values. Supervisor form questions were scored and assigned a specific weight to standardize the evaluation method. Supervised PLs should improve quality of their performance after being supervised and mentored and there should be no significant difference between the supervisor forms and the self-evaluation forms.
CHEMISTRY WORKBOOKS FOR SPANISH SPEAKERS
Alejandra Gomez, Michelle Aranda, Viridiana Saenz, Marcos Delgado, Mahesh Narayan, Geoffrey Sauge and James E. Becvar
University of Texas at El Paso
For each of the past eight semesters, Lead for America Corporation, a 501(c)3 institution in El Paso, Texas, has produced workbooks in English for both first and second semester general chemistry. Workbooks facilitate student understanding of content by offering problems for student practice and a sequence of weekly exercises for peer-led workshop paralleling topics in lecture. The Peer Leading Team at the University of Texas at El Paso now proposes to make the two workbooks available not only to English speakers but for Spanish speakers too by translating the existing material. This will allow Spanish-speaking countries in Latin America like Mexico, Argentina, Colombia and many more to have a workbook for student use to enhance a better understanding and appreciation of the subject of Chemistry and to obtain a better grade in the courses.

KINGS AND QUEENS OF CHEMISTRY LEARNING
Ruben Guzman, Zackery Nieto, Jaime Ayala, Michelle Aguilar, James E. Becvar, Geoffrey Sauge and Wen-Yee Lee
University of Texas at El Paso
Kings and Queens of Learning is a form of ‘Jigsaw active learning’ designed to help students practice and reinforce understanding, e.g., in first-semester general chemistry to help students learn chemical nomenclature, oxidation states, and Lewis structures. Peer Leaders organize workshop students into initial teams standing around tables. Placed on the tables are cards with critical information, face down. At the start of a round, a question is asked or a problem is posed. Team members turn over and select cards for the specified problem. When the team is ready to be judged, team members must hold up cards in appropriate sequence to address the problem. The winner from several rounds and rearranged teams is crowned the King or Queen of chemistry. Variations of the cards-upside-down-on-tables set-up can be used for strengthening the understanding of: aqueous chemical reactions, calculating enthalpy changes, learning electronic structure, or concepts from other disciplines.

STACKING THE DECK: FUTURE PEER LEADER MENTOR PROGRAM
Usman Hyder, Jenny Raman, Michael Saenz
University of Texas at Dallas
The Future Peer Leader Mentor Program is a model designed to streamline the peer leader hiring process and develop high quality peer leaders before they enter the classroom. A future peer leader mentor program has the ability to raise the bar for the standard of a PLTL leader. We will explain how the model works and how participants can build a future leader mentor program that fits their needs.

THE IMPORTANCE OF INCORPORATING PEER LEADERS AS SUPERVISORS
Usman Hyder, Michael Saenz
University of Texas at Dallas
Incorporating peer educators as supervisors can be a powerful tool in student leadership development and peer assistance program productivity. Super Peer Leaders play an essential role in leading teams that work. We will provide a framework in which participants will understand the challenges and benefits of this model and how to better incorporate peer leaders as supervisors.
THE IMPORTANCE OF COMMUNITY CENTERED LEARNING ENVIRONMENTS IN THE POST-SECONDARY EDUCATIONAL INSTITUTION
Cristina McCarter
San Jose City College
There is variance among individuals in the different ways in which information is required to be presented in order to gain mastery of a specific subject. The underlying challenge most often overlooked is the lack of preparedness for subject mastery within the post-secondary educational arena. The diversity among students in post-secondary educational institutions more often than not showcases a lack of preparedness in primary and secondary education in order to succeed in a self-motivated setting of higher learning. These challenges are ultimately addressed in a community centered learning environment, such as the Peer Led Team Learning program at San Jose City College. Not only is it imperative the Peer Leader tap into as many multifaceted mediums in which to present and reinforce curriculum among different learning styles and multiple intelligences, it is also necessary to identify the individuals who require further assistance in developing proper study habits, staying motivated, and succeeding within the post-secondary institution.

ANALYSIS OF THE MOTIVATION BEHIND BECOMING A PEER LEADER
Gabriela Miguez, Jose L. Alberte, and Thomas Pitzer
Florida International University
Motivation is a highly addressed topic, not only in work related studies but also in academic research. Various types of motivation have been described. Specifically, in the self-determination theory, Deci and Ryan divide motivation into extrinsic motivation, intrinsic motivation and amotivation. Focusing on Peer Leaders in the Peer Led Team Learning (PLTL) program, these varying types of motivation were tested and compared against each other. The Academic Motivation Scale was administered to Peer Leaders. The questionnaire measures the three types of motivation and their specific categories. The questionnaire was modified to fit the context of the PLTL program and was administered during the PLTL pre-semester orientation for Peer Leaders. The results were analyzed, looking for trends and relationships between the types of motivation. The questionnaire shows which type of motivation is predominant among Peer Leaders when they choose to join PLTL.

MENDING THE “HOLES”: MATH WORKBOOKS RE-ESTABLISH AND REFORM COLLEGIATE ALGEBRA
Zackery Nieto, Alejandra Belmont, Deidrah Carrillo, Miguel Carrillo-Alvarad, Ruben Guzman, Raquelle Soto, Geoffrey Sause and James E. Becvar
University of Texas at El Paso
Observations of STEM (Science, Technology, Engineering, and Mathematics) courses over recent years display a common trend: most students are not fluent in algebra. Those intending to be STEM majors and entering fields which use math as a basic foundation lack a basic, solid understanding of algebra. We are introducing a self-guided mathematics workbook to facilitate algebraic proficiency. The workbook will allow students to reaffirm their newly acquired knowledge by providing: step-by-step solutions, fill-in-the-blank problems, real-life associations, in-depth yet coherent analysis of algebra topics, and help with writing definitions in their own words – and did we say – lots of practice problems. This workbook holds the potential to revolutionize how students entering STEM fields succeed by producing strong roots for the students to use and grow in their fields and will boost not only their understanding of the subject, but their morale and study habits as well.
EVOLUTION OF PLTL SUPERVISION: COMPARATIVE ANALYSIS OF PEER EXAM GRADES BEFORE AND AFTER SUPERVISOR MENTORSHIP
Roberto Pereira, Daniel Flores, Alberto Cruz, Jose L. Alberte, and Thomas R. Pitzer
Florida International University
The Peer Leader (PL) Supervision program at Florida International University (FIU) was implemented in 2007, and reformed in 2015. After one year (three semesters) of implementing improvements, the effectiveness of these changes was analyzed. An analysis of pre- and post-implantation was performed. The analysis compared student exam scores in supervised sections, after the implementation of program changes, against supervised student exam scores from the previous year. Preliminary data show a general trend towards improved exam scores once changes were made to the supervising program.

CHEMISTRY-NAMING
Paulette Ramirez, Deidrah Carrillo, Adam Boyea, Jaime Ayala, Priscilla Rubio, Roberto Corral, Carlos Chavez, Ashley Priego, Aleksander Lazarski, Zackery Nieto, Jose Rodriguez, Wen-Yee Lee and James E. Becvar
University of Texas at El Paso
Nomenclature challenges many students in first semester general chemistry because it requires much memorization and is often considered boring. Peer Leaders at the University of Texas at El Paso have created an interactive puzzle activity to help students practice nomenclature skills in a fun way. Students must assemble a larger triangular shape made of smaller triangular pieces with chemical names and chemical formulas along the sides. Pieces must match properly with naming partners. The game includes several triangle pieces with purposeful typographical errors mimicking the common mistakes made by students to help them cognitively recognize their errors. Timed and untimed quizzes before and after the game assessed the effectiveness of the learning. Those who did not have any time limit for quizzes performed better. This activity is suitable for review purposes and can be constructed for other academic areas such as biology, physics, and even literature.

GROUPME IS A LEARNING SUCCESS STIMULATOR
Viridiana Saenz, Kristie Benejan, Aashir Sohail, Ilse Hernandez, James E. Becvar and Mahesh Narayan
University of Texas at El Paso
The Peer-Led Team Learning (PLTL) Program at the University of Texas at El Paso focuses on the learning of the students enrolled in General Chemistry courses. However, PLTL is limited to the interaction of Peer Leader to student only during workshop, office hours, and through e-mails. Introducing a free student-friendly mobile application called GroupMe to the PLTL curriculum increases the access for the students to reach Peer Leaders as well as other peers via a smartphone or computer. GroupMe allows for the creation of a group chat to which any student enrolled in the course can join. In addition to sharing messages, pictures and videos, calendar events can be created. GroupMe increases Peer Leader to student, Peer Leader to Peer Leader, and student to student interactions, strengthening the learning experience and providing the access needed to reinforce concepts and ask questions that can be addressed at any time from any place.
CERTIFICATE OF SPECIALIZATION FOR PEER LEADER TRAINING
Alea Sandefer and Madeline Adamczeski
San Jose City College
The Certificate of Specialization in Peer Leader Training focuses on professional growth for students wanting to develop their small-group leadership and facilitation skills. It also provides experience in adult education, educational support services and applying student success strategies. Additionally, the Certificate of Specialization in Peer Leader Training fulfills several of the most desired skills required by employers. This includes small-group facilitation, cultural competency, listening skills, and analyzing problems using evidence and sound reasoning. Students must satisfactorily complete all certificate courses with a grade of “C” or better at San José City College.

HOW ONE WORD CAN GET YOU AN "A." OBJECTIVES
Aashir Sohail, Miguel Carillo-Alvarado, Kristie Benejan, Viridiana Saenz, Mahesh Narayan and James E. Becvar
University of Texas at El Paso
The Undergraduate Peer Leader (UPL) plays an invaluable role in chemistry peer-led team learning workshops. This report gives a cross-case analysis of two studies designed to investigate 1) How undergraduate students perform in course with or without OBJECTIVES (summary statements related to the critical content for weekly workshops), and 2) What factors contributed to course success. Ten UPL from the University of Texas at El Paso Chemistry PLTL program participated in this study. Findings suggest the UPL construction of their self-image is shaped through the interaction of prior experience, training, beliefs about the nature of knowledge, involvement with the exploration setting, and devotion to quality consideration of student questions. Findings can assist introductory chemistry workshop instructors and coordinators to reconsider their UPL training and support and may place workshop reform in a new innovation trajectory.

OBSERVATIONS FROM PEER LEADERS: THE RHYTHM OF A GENERAL CHEMISTRY TEAM-LEARNING WORKSHOP
Diana Samaroo, Miguel Gomez, Matthew Henning, and Sarah Hambleton
New York City College of Technology
Student engagement in General Chemistry team-learning workshops is a process that requires time. We observe three phases of student engagement in General Chemistry II peer led team-learning workshops. Initially, students are inwardly focused and insist on individual attention. In the second phase, a supportive, club-like atmosphere emerges as students assume control of the workshop, typically focused on math intensive topics like chemical equilibrium and chemical kinetics. The peer leader role as facilitator is especially important in the third phase, when non-regular attendees arrive mid-semester. The value of peer-authored worksheets and study guides is discussed. We find that prompt review of the first lecture assessment establishes rapport more effectively than traditional team-building exercises.
SECONDARY EDUCATION: CHEMICAL LEARNING SUPPLEMENTATION UTILIZING PEER-LED TEAM LEARNING
Vanessa Soto, Monthserrat Serna, Michelle Aguilar and James E. Becvar
University of Texas at El Paso
Many entering college students have difficulty with the transition into post-secondary education because their high school coursework did not prepare them sufficiently. To address this deficiency, the UTEP Chemistry Peer-Led Team Learning program has started a supplemental learning program for students taking chemistry courses in high school. The goal is to enhance student learning for those individuals who cannot afford outside help. The sessions and activities not only enrich chemistry education, but also give students the confidence needed for success in chemistry and other coursework at the University. However, many obstacles had to be overcome to start a viable program. These included satisfying administrative protocols, obtaining consistent volunteers, adjusting to scheduling constraints, etc. This poster presentation outlines the difficulties involved when trying to implement the program, and future ideas to improve the process for upcoming years.

LIGHTING THE FUSE TO SUCCESSS
Chris Torres, Mark Warmholtz, Francisco Aguirre and Angel Aceves
California State University Dominguez Hills
The PLTL model has been in place at California State University at Dominguez Hills for a couple of years through the Computer Science department. The model has been utilized in the computer science courses with success. This academic year a new student support program, First-year Undergrad STEM Experience (FUSE), has been established through a grant to support STEM major students. The PLTL model is one of the pillars for this program. PLTL has expanded beyond computer science into math and chemistry courses. In this poster presentation we will focus on structure and usage of the PLTL model within the FUSE program. The continued support of our STEM major students beyond the Summer Bridge Academy, a Supplemental Instructor program that support students with their developmental courses on campus, is absolutely necessary for the students’ success. PLTL leaders started to provide support in the following courses: Pre-calculus, Calculus 1, Calculus 2, Elementary Statistics, Introduction to College Chemistry, and General Chemistry. We hope that the PLTL program will be extended to all Lower Division major required courses. This would help develop PLTL’s effectiveness, as well as help strengthen the students’ grasp on subject material that will be critical in all Upper Division courses. Our goal for this presentation is for the audience to leave with an understanding of our PLTL structure and for them to be able to replicate it on their campus.

ATTEND PLTL. ACHIEVE SUCCESS.
Berenice Varga, Laila Abbas, Kimshi Hickman, Michael Saenz
University of Texas at Dallas
The relationship between PLTL attendance rates, DFW rates, and GPA was evaluated in a renewed study by the PLTL program in the Student Success Center. The updated 2015 study suggests a unique correlation between the three data points. The results support our hypothesis that students who have a high attendance record in the PLTL sessions have a significantly higher GPA than those with low or moderate attendance.
DEVELOPING A PLTL WORKBOOK WITH REAL WORLD APPLICATIONS

Melanie Villatoro, Abubakarr Jalloh and Roger Mason
New York City College of Technology

Many students enter a Statics (Civil Engineering) class thinking of it as another box to check off of their list of requirements. They believe that the material covered is not something that they will ever use – in their career or life. As Peer Leaders in Statics, a major goal is for students to see how the material is used in their chosen field. How can we make this connection obvious to our students in the real world? We have developed a series of workshops composed of real world applications which incorporate the basic principles introduced in a Statics course. Students can begin to appreciate the relevance of their coursework to their future.

INTRODUCING WORKSHOP-BASED PLTL TRAINING FOR HIGH SCHOOL LEADERS

Stephen Winkler, Destiny Trevino, Alice Turchaninova, Eloy Perez, Lucero Priego-Pineda and Ana Garza
University of Houston-Downtown

At the University of Houston-Downtown (UHD), Peer Leaders are trained using a semester-long course of workshops that cover topics ranging from different learning styles to accommodations for students with disabilities. This training method teaches leaders-in-training the pedagogical ideas and practical information they need to know and simultaneously provides first-hand experience with the PLTL workshop style. Recent research has indicated that high school students respond well to group work and can benefit academically from peer leadership positions. We propose to apply UHD’s training method for the training of high school students as Peer Leaders and present our proposed workshop materials.

JEOPARDY COMPETITION SPURS PEER-LED TEAM LEARNING

Luis Zuniga, Ilse Hernandez, James Becvar and Mahesh Narayan
University of Texas at El Paso

The free Jeopardy game generator (SuperTeacherTools.com) permits the competitive nature of students to enhance learning and reinforce chemistry concepts. The game format does not allow students to fade into the background and elect not to participate. All must rely upon each other to succeed. When a team picks a category the question is open to all groups, however, it is up to the facilitator to determine which member of the “clocked in” group will give the answer, preventing one student from taking over. The game format allows the more successful students to become de facto tutors to their classmates under the supervision of the peer leader who is there to correct or guide the discussion. Changing team composition avoids clique formation or “powerhouse” teams. The competitive spirit encourages students to work ahead and prepare for the workshop, resulting in higher test scores overall.
IN RECOGNITION OF THE FIFTH ANNIVERSARY OF THE PEER-LED TEAM LEARNING INTERNATIONAL SOCIETY...

Developed by A.E. Dreyfuss

Eight posters present selected themes on the raison d'être of the PLTL International Society

• What is Peer-Led Team Learning?
• Improved Student Performance: The PLTL Boost!
• Peer Leaders: The Untapped Resource in Education
• PLTL Promotes Higher Retention in STEM fields
• PLTL Fosters Engagement, Asking Questions, Deeper Learning
• PLTL Diversifies the STEM Pipeline
• Why Fund and Support PLTL?
• PLTLIS Workbooks

WHAT CAN YOU ADD TO THESE THEMES? COMMENTS TO INFO@PLTLIS.ORG