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| <b>Monday, April 1, 2019</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 7:00 AM                      | <b>Complimentary Breakfast</b><br>Location: Grand Ballroom CD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 8:00 AM                      | <b>Session #1: 2019 AIChE Spring Meeting and 15th GCPS AGILE Award Keynote Address</b><br>Location: Grand Ballroom CD<br><b>Welcome and Introductions</b><br>Presented by <b>AIChE President</b> , AIChE President and <b>June C. Wispelwey</b> , AIChE Executive Director<br><br>AGILE Award Keynote Address: <b>“Presentation Title TBD”</b><br>Presented by <b>Sharon Beshouri</b> , VP Catalyst, Analytical and Refining Technology; Chief Engineer R&D Technical Function; President Shell Global Solutions (US) Inc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 9:00 AM                      | <b>Coffee and Networking Break</b> , Location: Grand Salon & Grand Ballroom AB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 9:30 AM                      | <b>Session #2: 15<sup>th</sup> GCPS Welcoming Plenary Session</b><br>Location: Grand Ballroom CD<br><b>15<sup>th</sup> GCPS Introduction and Welcome: Shakeel Kadri</b> ( <i>Executive Director, CCPS</i> ) and <b>Robert W. Johnson</b> ( <i>GCPS Chair</i> )<br><b>Programming Introductions</b> by:<br><b>Jennifer Mize</b> , 34 <sup>th</sup> Center for Chemical Process Safety (CCPS) International Chair<br><b>Morgan Reed</b> , 53 <sup>rd</sup> Annual Loss Prevention Symposium (LPS) Chair<br><b>Fred Gregory</b> , 21st Process Plant Safety Symposium (PPSS) Chair<br><b>Brenton Cox</b> , 8 <sup>th</sup> Process Safety Management Mentoring (PSMM) Chair<br><b>Wayne Chastain</b> , Process Safety Spotlights Chair<br><b>Andres F. Valencia</b> , Perspectives on Process Safety from Around the World Chair<br><br>Plenary Keynote Address Presented by <b>Matthew C. Koenings</b> , DuPont Vice-President of Operations and Chief Engineer, Retired – <b>“The Upside of UPSLI: Ensuring a Safer Industry Through Undergraduate Process Safety Education”</b> |

|          | <b>34<sup>th</sup> Center for Chemical Process Safety International Conference (CCPS)</b>                                                                                                                                          | <b>53<sup>rd</sup> Annual Loss Prevention Symposium (LPS)</b>                                                                                                                      | <b>21<sup>st</sup> Process Plant Safety Symposium (PPSS)</b>                                                                                                  | <b>8<sup>th</sup> Process Safety Management Mentoring (PSMM)</b>                                                                                             | <b>Process Safety Spotlights</b>                                                                                                                     | <b>Perspectives on Process Safety from Around the Globe</b>                                                                                                                                                                            |
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|          | <i>Session #8: How to Be the Bad Guy: Courageous Process Safety Leadership</i><br>Location: Chart B/C<br><b>Co-Chairs: John Wincek, Tracy Whipple</b>                                                                              | <i>Session #7: Extreme Weather and Other External Events</i><br>Location: Quarterdeck<br><b>Co-Chairs: Pete Lodal, Chaitanya Gottimukkala</b>                                      | <i>Session #9: Independent Protection Layers and Other Safeguards</i><br>Location: River/Starboard/Port<br><b>Co-Chairs: Philip M. Myers, Divya Narayanan</b> | <i>Session #12: Tutorials in LPS I - Concepts to Prevent Fires &amp; Explosions</i><br>Location: Kabacoff<br><b>Co-Chairs: Trey Morrison, Katie Mulligan</b> | <i>Session #11: Pressure Relief Design I</i><br>Location: Compass<br><b>Co-Chairs: Freeman Self, Srihari Magnti</b>                                  | <i>Session #10: Portuguese Session: Avanços e perspectivas para a segurança de processos na Ibero-América: Gestão da Segurança de Processos baseada em Risco</i><br>Location: Chart A<br><b>Co-Chairs: Gustavo Correa, Sandro Roxo</b> |
| 10:30 AM | Using Process Safety Tools to Find and Sell an Inherently Safer Design: A Case Study<br><b>Claire Fluegeman</b>                                                                                                                    | Analysis of Risk Due to Compound Extreme Events<br><b>Pat Harr</b>                                                                                                                 | Lifecycle Management of Protection Layers and Safeguards<br><b>Jack Chosnek</b>                                                                               | Invited Speaker<br>Recognizing flammable sources in chemical processes<br><b>Robert Bellair</b>                                                              | Compressor Stations - Undersized Relief Devices<br><b>Aniket Patankar</b>                                                                            | Approach of Human Factors in Risk Analysis and Operational Procedures: Stress Level Analysis of Operators in Performing Tasks<br><b>Luana Santos</b>                                                                                   |
| 11:00 AM | Should Chemical Engineers Have More Influence on Safety Than They Do Now?<br><b>Richard Engler</b>                                                                                                                                 | A Non-Stationary Approach to Conducting Site-Specific Integrative Risk Management Assessments at Industrial Facilities at Risk from Extreme Weather Events<br><b>Harri Kytomaa</b> | How to Prioritize Safeguards When They Are All Critical?<br><b>Ron Mukherjee</b>                                                                              | Invited Speaker<br>Basics of Flammability – Crawl on Fire<br><b>Dan Crowl</b>                                                                                | Modeling Shell Side Pressure Profiles for Heat Exchanger Tube Rupture Scenarios<br><b>Ahmed Harhara</b>                                              | Functional Safety Management: The Yellow Brick Road to a Safe Plant. Gerenciamento Da Segurança Funcional: O Caminho Dourado Para Uma Planta Segura<br><b>Monica Hochleitner</b>                                                       |
| 11:30 AM | Courageous Process Safety Leader: a Bad Guy<br><b>Rajender Dahiya</b>                                                                                                                                                              | Legal Liability Issues for Chemical Engineers Facing Extreme Weather Events<br><b>Mary Ellen Ternes</b>                                                                            | Designing a Fluid Curtain System as an Independent Protection Layer<br><b>Marcel Amorós-Martí</b>                                                             | Invited Speaker<br>Ignition<br><b>Sam Rogers</b>                                                                                                             | Design & Engineering Implementation of Pressure Relieving System of Cryogenic Carbon Dioxide Pilot Facilities<br><b>Abdullah Al Mubarak Md Jalil</b> | Process Safety Leading Indicators By Environmental Experts Point of View<br><b>Luana Santos</b>                                                                                                                                        |
| 12:00 PM | Luncheon with Speaker: <b>Bruce Chinne</b> , president of Chevron Oronite Company LLC.<br><b>“Diversity’s Role in Solving Technical Issues and Ensuring Technical Knowledge Transfer”</b><br>Location: Location: Grand Ballroom CD |                                                                                                                                                                                    |                                                                                                                                                               |                                                                                                                                                              |                                                                                                                                                      |                                                                                                                                                                                                                                        |

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|         | <b>Session #26: Organizational and Leadership Issues in Process Safety</b><br>Location: Chart B/C<br><b>Co-Chairs: San Burnett, Steve Hawkins</b> | <b>Session #19: Facility Siting, Consequence Analysis, and Risk Assessment I</b><br>Location: Quarterdeck<br><b>Co-Chairs: Kathy Kas, Kathy Pearson</b> | <b>Session #22: Identifying Hazards – Practical Approaches and Techniques I</b><br>Location: River/Starboard/Port<br><b>Co-Chairs: Jack Chosnek, Rae-Ann Joseph</b> | <b>Session #31: Tutorials in LPS II - Concepts to Prevent Fires &amp; Explosions</b><br><b>Location: Kabacoff</b><br><b>Co-Chairs: Trey Morrison, Jessica Morris</b> | <b>Session #27: Pressure Relief Design II</b><br>Location: Compass<br><b>Co-Chairs: Davide Moncalvo, Haribabu Chittibabu</b>     | <b>Session #30: Spanish Session: Avances y perspectivas de la seguridad de proceso en Iberoamérica: Gestión del la seguridad de procesos con base en riesgo</b><br>Location: Chart A<br><b>Co-Chairs: Andres F. Valencia, Eliana Berroteran</b> |
| 1:30 PM | A Leadership Vision for Accelerating Learning from Past Lessons to Create a Future Free of Incidents<br><b>David A. Jones</b>                     | Deflagrations by Design<br><b>Darren Malik</b>                                                                                                          | Think a BIT – Process Safety Excellence through Incident Barrier Based Inspection and Training<br><b>Majed Al-Mutairi</b>                                           | Invited Speaker<br>Inerting & Purging & Combustible Control<br><b>Tom Spicer</b>                                                                                     | Pressure Relief Valves - Restricting Capacity to Mitigate Oversizing<br><b>Bill Atkins</b>                                       | Disciplina total incondicional”. Reduciendo incidentes trabajando con indicadores proactivos Tier-4<br><b>Sergio Daniel Gavin</b>                                                                                                               |
| 2:00 PM | Dow's Life Critical Standards - Making Them Easier to Follow<br><b>John Dizer</b>                                                                 | Inherent Safety – How to Utilize Explosion Hazard Analyses As an Early Tool to Improve FPSO and FLNG Design<br><b>Scott Davis</b>                       | PHAs at Identical Plants: Why Aren't They the Same?<br><b>Mike Schmidt</b>                                                                                          | Invited Speaker<br>Pool Fires, Deflagrations and Detonations<br><b>Derek Miller</b>                                                                                  | Optimal Placement of Relief Devices for Hydrogen Peroxide Pipeline Protection<br><b>Daniel Nguyen</b>                            | Seguridad y medio ambiente como valor! Un camino para la toma de decisiones basada en riesgo<br><b>Juan Manuel Fernández</b>                                                                                                                    |
| 2:30 PM | Process Safety Risk Prioritization and Auditing 3rd Party Manufacturers and Suppliers<br><b>Bill Mosier</b>                                       | Interpretation of Damage Caused by a Vapour Cloud Explosion<br><b>Michael Johnson</b>                                                                   | Management of Hazardous Materials Risks for New Project<br><b>Fahad Alshammari</b>                                                                                  | Invited Speaker<br>Fire & Explosion Suppression and Extinguishing<br><b>Jeramie W. Morris</b>                                                                        | Low Pressure Does Not Equal Low Risk: Strategies to Protect Tanks Against Overpressure and Undervacuum<br><b>Todd W. Drennen</b> | Entendiendo los riesgos de ciberseguridad y su conexión e impacto con la seguridad de Procesos<br><b>John Rueda</b>                                                                                                                             |
| 3:00 PM | <b>Coffee and Networking Break, Location: Grand Salon &amp; Grand Ballroom AB</b>                                                                 |                                                                                                                                                         |                                                                                                                                                                     |                                                                                                                                                                      |                                                                                                                                  |                                                                                                                                                                                                                                                 |

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|         | <b>Session #51: Using Process Safety Metrics and Data to Drive Improvement</b><br>Location: Chart B/C<br><b>Co-Chairs: David Cummings, Jeff Fox</b>                                                                                           | <b>Session #: #43: Facility Siting, Consequence Analysis, and Risk Assessment II</b><br>Location: Quarterdeck<br><b>Co-Chairs: Kathy Kas, Kathy Pearson</b> | <b>Session #44: Identifying Hazards – Practical Approaches and Techniques II</b><br>Location: River/Starboard/Port<br><b>Co-Chairs: Jack Chosnek, Rae-Ann Joseph</b> | <b>Session #50: Tutorials in PPSS I – RBPS Elements: Culture, Competency, and Procedures</b><br>Location: Kabacoff<br><b>Co-Chairs: Bill Mosier, Chris Israni</b> | <b>Session #46: Pressure Relief Design III</b><br>Location: Compass<br><b>Co-Chairs: Nirupama Gopalaswami, Ray Mentzer</b> | <b>Session #49: Spanish Session: Avances y perspectivas de la seguridad de proceso en Iberoamérica: Análisis de riesgo y toma de decisiones</b><br>Location: Chart A<br><b>Co-Chairs: Andres F. Valencia, María Isabel Montoya</b> |
| 3:30PM  | Don't Let Your Safe Operating Limits Leave You S-O-L (Out of Luck)<br><b>Todd Stauffer</b>                                                                                                                                                    | Automated Methods in Sizing of Relief Vent Stacks Based on Proximity to Occupied Structures<br><b>Michael James</b>                                         | PHA Quality – Mining the Hidden Risks!<br><b>Susan Barney</b>                                                                                                        | Invited Speaker<br>Best Practices in Process Safety Culture<br><b>Steve Arendt</b>                                                                                | Comparison between Steady State and Dynamic Pressure Relief Calculations<br><b>Neil Prophet</b>                            | Mejores prácticas de PHA: Actualización de los estándares de PHA de lo que se creían que eran mejores prácticas a lo que realmente son<br><b>Sergio Fernandez</b>                                                                  |
| 4:00 PM | Metrics Driven Decision Making Improves Performance at Wheatstone LNG<br><b>Elise Diaz</b>                                                                                                                                                    | What Is My Flare Header Capacity, Really? Best Practices for Flare QRA Tools<br><b>Benjamin Pratt</b>                                                       | Avoiding Quality Pitfalls for HAZOP/LOPA Sessions and Documentation<br><b>Steven T. Maher</b>                                                                        | Invited Speaker<br>Best Practices in Process Safety Competency Development<br><b>Elliot Wolf</b>                                                                  | Common Misunderstanding of Overpressure Protection Scenarios for Pressure Relief Valves<br><b>Anupol Paiboonruamsilp</b>   | Principales deficiencias en los PHAs en Argentina (y la región) y cómo abordarlas<br><b>Matías A. Massello</b>                                                                                                                     |
| 4:30 PM | How to Implement a System That Gives Empowerment of Operators and Create Culture of Performance and Accountability in Process Safety, Reliability and Profitability<br><b>Claudio Schlosser</b>                                               | Using Process Simulators to Quantify Flashing Two Phase Release Conditions<br><b>Thomas O. Spicer III.</b>                                                  | Practical Strategies to Prepare and Lead HAZOP Analysis of Complex Chemical and Petrochemical Processes<br><b>Marco-Antonio Medrano</b>                              | Invited Speaker<br>Best Practices in Operating Procedures<br><b>Steve Hawkins</b>                                                                                 | Evaluating Relief Requirements for Reactive Processes with Unstable Intermediates<br><b>Stacy Fields</b>                   | Compromiso con la seguridad de los procesos<br><b>Pablo Morales &amp; Henry Pistagnesi</b>                                                                                                                                         |
| 5:00 PM | <b>Session #54 - 55: Spring Meeting &amp; GCPS Poster Session and Cocktail Reception (Includes electronic presentations of select posters)</b><br><b>Co-Chairs: Michell LaFond, Irfan Shaikh</b><br>Location: Grand Salon & Grand Ballroom AB |                                                                                                                                                             |                                                                                                                                                                      |                                                                                                                                                                   |                                                                                                                            |                                                                                                                                                                                                                                    |

| Tuesday, April 2, 2019 |                                                                                                                                                |                                                                                                                                              |                                                                                                                                          |                                                                                                                                                    |                                                                                                                                         |                                                                                                                                   |
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|                        | 34 <sup>th</sup> Center for Chemical Process Safety International Conference (CCPS)                                                            | 53 <sup>rd</sup> Annual Loss Prevention Symposium (LPS)                                                                                      | 21 <sup>st</sup> Process Plant Safety Symposium (PPSS)                                                                                   | 8 <sup>th</sup> Process Safety Management Mentoring (PSMM)                                                                                         | Process Safety Spotlights                                                                                                               | Perspectives on Process Safety from Around the Globe                                                                              |
|                        | <i>Session #65: Extract the Most Value from Your Incident Investigations</i><br>Location: Chart B/C<br>Co-Chairs: Jim Klein, Seshu Dharmavaram | <i>Session #66: Fires, Explosions, and Reactive Chemicals I</i><br>Location: Quarterdeck<br>Co-Chairs: Derek Miller, Min Sheng, Manuel Herce | <i>Session #69: New Ideas in Process Safety</i><br>Location: River/Starboard/Port<br>Co-Chairs: Brooke Beveridge, Victor Carre           | <i>Session #74: Process Safety Management Mentoring for Mentors (PSM<sup>3</sup>)</i><br>Location: Kabacoff<br>Co-Chairs: Ray Mentzer, John Herber | <i>Session #67: Integration of Human Factors into Risk Assessment I</i><br>Location: Compass<br>Co-Chairs: Terry Waldrop, Enzo Marrella | <i>Session #73: Process Safety Activities in China I</i><br>Location: Chart A<br>Co-Chairs: Dong Feng Zhao, Yi Fei Meng           |
| 8:00 AM                | Getting Incident Investigations Right<br><b>Mike Schmidt</b>                                                                                   | Caribbean Petroleum Explosion Case Study<br><b>Quentin Baker</b>                                                                             | Siri, How to Design a Procedure – Integration of Natural Language Processing in Procedure Design<br><b>Nilesh Ade</b>                    | Invited Speaker: Do we REALLY need more Process Safety Leaders? The Criticality of Effective Followership<br><b>Pete Lodol</b>                     | Humans Make Mistakes...Which Cause Events<br><b>Michelle L. Brown</b>                                                                   | How Safety Culture Driving the Improvement of Process Safety Competencies in Wanhua<br><b>Michael Chen</b>                        |
| 8:30 AM                | Using Feedback to Improve the Quality of Your Incident Investigations<br><b>A.M. (Tony) Downes</b>                                             | Case Study – Characterizing and Averting Risk of Catastrophic Vessel Failure for a Reaction in Dimethyl Sulfoxide<br><b>Megan Roth</b>       | The Frontline Reality of Process Safety Risk: Two Case Studies on Implementing Operational Risk Management Systems<br><b>Simon Jones</b> | Industrial – Academic Collaboration to Teach Chemical Process Safety<br><b>C. Aiken, K. Hohn</b>                                                   | The Influence of Cognitive and Motivational Biases While Establishing Consensus during a HAZOP<br><b>Kathryn Grant</b>                  | How we can use Artificial Intelligence (AI) Technology to Assist Process Safety? Opportunities and Prospects<br><b>Lei Wang</b>   |
| 9:00 AM                | Cultural Cause Analysis - Mapping Process Safety Incident/Performance Data to Cultural Causal Factors<br><b>Laura Jackson</b>                  | Investigation of a Polymeric Resin Deflagration Using Advanced Calorimetric Techniques<br><b>Katie Mulligan</b>                              | “Just the Facts” a Bad Way to Communicate Process Safety<br><b>T.J. Larkin</b>                                                           | Reliance Journey on Implementation of a Comprehensive Competency Development and Assurance System (CAS) in Downstream<br><b>Mat Malladi</b>        | Best Practices for Addressing Human Factors during PHAs/Hazops<br><b>William Bridges</b>                                                | Analysis of Shell Moerdijk Accident by Systems-Theoretic Accident Model and Processes and Bowtie Analysis<br><b>Jao-Jia Horng</b> |
| 9:30 AM                | <b>Coffee and Networking Break</b> , Location: Grand Salon & Grand Ballroom AB                                                                 |                                                                                                                                              |                                                                                                                                          |                                                                                                                                                    |                                                                                                                                         |                                                                                                                                   |

|          | <b>34<sup>th</sup> Center for Chemical Process Safety International Conference (CCPS)</b>                                                                                                                                                     | <b>53<sup>rd</sup> Annual Loss Prevention Symposium (LPS)</b>                                                                                        | <b>21<sup>st</sup> Process Plant Safety Symposium (PPSS)</b>                                                                                                       | <b>8<sup>th</sup> Process Safety Management Mentoring (PSMM)</b>                                                                       | <b>Process Safety Spotlights</b>                                                                                                                  | <b>Perspectives on Process Safety from Around the Globe</b>                                                                     |
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|          | <i>Session #86: Good, Fast, Cheap – Pick 2: PSM Challenges in Capital Projects</i><br>Location: Chart B/C<br><b>Co-Chairs: Rainer Hoff, Sean Dee</b>                                                                                          | <i>Session #84: Fires, Explosions, and Reactive Chemicals II</i><br>Location: Quarterdeck<br><b>Co-Chairs: Derek Miller, Min Sheng, Manuel Herce</b> | <i>Session #92: Process Safety Culture – Working Through a Transformation</i><br>Location: River/Starboard/Port<br><b>Co-Chairs: Kathy Shell, Nicole Loontjens</b> | <i>Session #93: Tutorials in CCPS I – Hazard Control</i><br><b>Location: Kabacoff</b><br><b>Co-Chairs: Wayne Garland, Debangsu Ray</b> | <i>Session #87: Integration of Human Factors into Risk Assessment II</i><br>Location: Compass<br><b>Co-Chairs: Terry Waldrop, Enzo Marrella</b>   | <i>Session #91: Process Safety Activities in China II</i><br>Location: Chart A<br><b>Co-Chairs: Dong Feng Zhao, Yi Fei Meng</b> |
| 10:15AM  | Incorporating Process Safety throughout the Lifecycle of Major Capital Projects<br><b>Bebe Kueh</b>                                                                                                                                           | How Effective are Safety Gaps at Mitigating Explosions: Largest Scale Testing of safety Gaps to Prevent DDTs<br><b>Scott Davis</b>                   | The Butterfly Effect - a Case Study on One Company's Transformation of a Process Safety Program<br><b>Jeff DeWald</b>                                              | Return to Operation--Key for Flawless Start up<br><b>Dipankar Bandyopadhyay</b>                                                        | Set Your Operators up for Success: Practical Guidelines for Addressing Human Factors in PHA Causes and Protection Layers<br><b>Richard Carter</b> | Deficiencies and Prospects of Safety Management in China's Chemical Enterprises<br><b>Jiangbo Jiu</b>                           |
| 10:45 AM | Embracing Complexity and Managing Risk: PSM Challenges in Specialty Chemical Innovation<br><b>Lauren Moyer</b>                                                                                                                                | Role of Fire Codes and Standards in Hazard Management from Fire, Explosion, and Reactivity Hazards<br><b>Guy Colonna</b>                             | Where There Is a Will There Is a Way: a Story of Organizational Transformation<br><b>Palaniappan Chidambaram</b>                                                   | Study of the Initiator Mischarging Effect on Runaway Reaction of Styrene Polymerization<br><b>Lin Zhao</b>                             | Accounting for Emergent Failure Paths in LOPA<br><b>Dave Grattan</b>                                                                              | Air Product-Lessons Learned from a Dust Hazard Analysis at a Joint Venture Site in China<br><b>Julie Kister</b>                 |
| 11:15 AM | Guidelines for Integrating Process Safety into Engineering Projects<br><b>Mike Broadribb</b>                                                                                                                                                  | Assessment of Battery Energy Storage Systems<br><b>Bjorn Nillberg</b>                                                                                | Frontline Supervisors Are the Safety Culture<br><b>Renato Prestes</b>                                                                                              | A Semi-Quantitative Tool to Estimate the Risk of Dust Fire or Explosion from Process Equipment<br><b>Emmanuel Addai</b>                | Human Factors - What Role Should They Play in Risk Assessment and How Should They be Handled<br><b>David Rowe</b>                                 | Application of Safety Management Information System in HSSE Management System of Sinopec<br><b>Yang Xu Sr.</b>                  |
| 11:45 AM | Luncheon with Speaker: <b>Sunita Satyapal</b> , Director of the U.S. Department of Energy's Fuel Cell Technologies Office, at the Office of Energy Efficiency and Renewable Energy<br><b>"Hydrogen Safety"</b><br>Location: Grand Ballroom CD |                                                                                                                                                      |                                                                                                                                                                    |                                                                                                                                        |                                                                                                                                                   |                                                                                                                                 |

|         | <b>34<sup>th</sup> Center for Chemical Process Safety International Conference (CCPS)</b>                                                                                           | <b>53<sup>rd</sup> Annual Loss Prevention Symposium (LPS)</b>                                                                                                 | <b>21<sup>st</sup> Process Plant Safety Symposium (PPSS)</b>                                                                                     | <b>8<sup>th</sup> Process Safety Management Mentoring (PSMM)</b>                                                                                     | <b>Process Safety Spotlights</b>                                                                                                        | <b>Perspectives on Process Safety from Around the Globe</b>                                                                                                                                                                                     |
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|         | <b><i>Session #111: Process Safety Management Challenges with Infrastructure and Facility Siting</i></b><br>Location: Chart B/C<br><b>Co-Chairs: Don Connolley, Eric Freiburger</b> | <b><i>Session #100: Fires, Explosions, and Reactive Chemicals III</i></b><br>Location: Quarterdeck<br><b>Co-Chairs: Derek Miller, Min Sheng, Manuel Herce</b> | <b><i>Session #101: Human Reliability and Performance I</i></b><br>Location: River/Starboard/Port<br><b>Co-Chairs: Karen Study, Laura Ankrom</b> | <b><i>Session #114: What Should Be Keeping You Up At Night But Isn't</i></b><br>Location: Kabacoff<br><b>Co-Chairs: Myron Carlson and Faraz Khan</b> | <b><i>Session #103: Instrumented Protective Systems</i></b><br>Location: Compass<br><b>Co-Chairs: Tab Vestal, Jim Garrison</b>          | <b><i>Session #112: Spanish Session: Avances y perspectivas de la seguridad de proceso en Iberoamérica: Análisis de consecuencias y planes de emergencia</i></b><br>Location: Chart A<br><b>Co-Chairs: Andres F. Valencia, Sergio Fernández</b> |
| 1:30 PM | Two Plants, One Fence Line: Understanding Process Safety Management Responsibilities in Shared Facilities<br><b>Matthew S. Walters</b>                                              | CFD Modeling of Liquid Jet Fire<br><b>Jin Zhao</b>                                                                                                            | Everything You Need to Know about Human Reliability for Process Safety<br><b>William Rhodes</b>                                                  | Building Hazard Recognition Competency<br><b>Michael Fleming</b>                                                                                     | Why Choose a Race Car When Economy Will Do - Competency with Safety Instrumented Systems<br><b>James Torres</b>                         | Comparación de los resultados de los análisis de riesgo y consecuencias en sistemas de transporte de refinados y GLP<br><b>Maria Montoya</b>                                                                                                    |
| 2:00 PM | Strathcona County's Industrial Engagement Program: Leading the Way Using the MIACC Model<br><b>Modusser Tufail</b>                                                                  | Ignition Phenomenon: From Electrostatics to Electrical Discharge<br><b>Eric Peterson</b><br><b>Physical Safety</b>                                            | Leveraging Augmented Reality to Minimize Operational Error: The Rise of Operator 2.0<br><b>Michael Thompson</b>                                  | Ignorance Is Not Bliss with Reactive Chemical Hazards<br><b>Amy Theis</b>                                                                            | Perfecting Proof Test Effectiveness; How More Extensive Testing Can Improve Safety and Reduce Cost!<br><b>Iwan VanBeurden</b>           | Desarrollo de planes de emergencia para proyectos de inversión externa<br><b>Yaneira Saud</b>                                                                                                                                                   |
| 2:30 PM | Beyond VCE: Addressing Fire Hazards As Part of Facility Siting<br><b>Ellen Wilensky</b>                                                                                             | Understanding the Potential for Detonations in Large-Scale Vapor Cloud Explosions<br><b>Carl Bauwens</b>                                                      | Safe Operations Using Advanced Operator Graphics<br><b>Anais Lowe</b>                                                                            | Process Safety Improvements: Things That Help Me Sleep at Night<br><b>Joe Stevens</b>                                                                | Sil-3, Sil-2, and Unicorns (there is a 99% chance your SIL 2 and SIL 3 have no better performance than SIL 1)<br><b>William Bridges</b> | Enfoque Multi-Amenaza Para Abordar Peligros Natech<br><b>Adriana Mesa Sr.</b>                                                                                                                                                                   |
| 3:00 PM | <b>Coffee and Networking Break, Location: Grand Salon &amp; Grand Ballroom AB</b>                                                                                                   |                                                                                                                                                               |                                                                                                                                                  |                                                                                                                                                      |                                                                                                                                         |                                                                                                                                                                                                                                                 |

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|         | <b>Session #120: Are You Sure Those Protection Layers Work?</b><br>Location: Chart B/C<br><b>Co-Chairs: Rob Coover, Fred Henselwood</b> | <b>Session #123: Combustible Dust Hazards and Their Mitigation</b><br>Location: Quarterdeck<br><b>Co-Chairs: Henry Dwight, Amy Gray</b>          | <b>Session #127: Human Reliability and Performance II</b><br>Location: River/Starboard/Port<br><b>Co-Chairs: Karen Study, Laura Ankrom</b> | <b>Session #133: The Day PSM Hit Home</b><br><b>Location:</b> Kabacoff<br><b>Co-Chairs: Scott Haney, Mark Wingard</b> | <b>Session #126: Facility Siting Studies</b><br>Location: Compass<br><b>Co-Chairs: Nirupama Gopalaswami, Susan Behr</b>            | <b>Session #118: Spanish Session: Avances y perspectivas de la seguridad de proceso en Iberoamérica: Sistemas instrumentados</b><br>Location: Chart A<br><b>Co-Chairs: Felipe Muñoz, Pablo Morales</b> |
| 3:45 PM | Confirming the SIS Layer of Protection<br><b>Denise Chastain-Knight</b>                                                                 | A Comparison of Explosion Vent Sizing for Combustible Dusts Using NFPA 68 and EN 14491 for Three Typical Industrial Vessels<br><b>James Koch</b> | Enhancing Behavior-Based Safety Culture through Casual Safety Observations<br><b>Jennifer N. Boice</b>                                     | My Story: Living Through a Major Chemical Plant Explosion<br><b>Ron Lewis</b>                                         | Facility Siting, a Practical Approach<br><b>Yaneira Saud</b>                                                                       | Control avanzado de procesos (APC): Una herramienta de entrenamiento y aseguramiento del desempeño en la implementación de seguridad de procesos con base en riesgo (RBPS)<br><b>Andrés Valencia</b>   |
| 4:15 PM | Crediting Check Valves As IPLs? a Testing Protocol to Better Understand Check Valve Reliability<br><b>Jody Olsen</b>                    | 3D Printing – Unique Hazards When Metal Dust Is Created<br><b>Mohammed Alam</b>                                                                  | Case Studies on the Results of Digital Procedure Solution Implementation<br><b>Elliott Lander</b>                                          | The 1995 Napp Explosion and the Future of the Chemical Safety Board<br><b>Rick Engler</b>                             | Designing an Effective Detection and Mitigation System for a Plant Build on Facility Siting Study and QRA<br><b>Murtaza Gandhi</b> | La gestión del cambio del Sistema Instrumentado de Seguridad y su impacto con el riesgo<br><b>Alejandro Esparza</b>                                                                                    |
| 4:45 PM | Safeguard Meters within Chevron<br><b>Vincent Attanucci</b>                                                                             | Combustible Dust Hazards, Mitigations, and Pitfalls<br><b>David Rowe</b>                                                                         | A Practical Approach to Improving Human Factors in the Operation and Maintenance of Automation Systems<br><b>Eloise Roche</b>              | The Day I Got a Second Chance<br><b>George King</b>                                                                   | The Good, the Bad and the Ugly- Importance of Management of Change (MOC) in Building Siting<br><b>Vinicius Simoes</b>              | Como implementar un sistema de gestion de competencias de seguridad funcional en la industria de procesos?<br><b>Eliana Berroteran</b>                                                                 |

| Wednesday, April 3, 2019 |                                                                                                                                                      |                                                                                                                                   |                                                                                                                                                       |                                                                                                                                                                                    |                                                                                                                                                                   |                                                                                                                                |
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|                          | 34 <sup>th</sup> Center for Chemical Process Safety International Conference (CCPS)                                                                  | 53 <sup>rd</sup> Annual Loss Prevention Symposium (LPS)                                                                           | 21 <sup>st</sup> Process Plant Safety Symposium (PPSS)                                                                                                | 8 <sup>th</sup> Process Safety Management Mentoring (PSMM)                                                                                                                         | Process Safety Spotlights                                                                                                                                         | Perspectives on Process Safety from Around the Globe                                                                           |
|                          | <b>Session #135: Achieving Success in Process Safety, Beyond Compliance I</b><br>Location: Chart B/C<br><b>Co-Chairs: Chris Israni, Lauren Moyer</b> | <b>Session #142: Emerging Topics and Technologies I</b><br>Location: Quarterdeck<br><b>Co-Chairs: Elliot Wolf, Qingsheng Wang</b> | <b>Session #144: Equipment Reliability and Inspection Practices</b><br>Location: River/Starboard/Port<br><b>Co-Chairs: Steve Emerson, Rahul Raman</b> | <b>Session #150: Tutorials in PPSS II - RBPS Elements: HIRA, Asset Integrity and Reliability, and Compliance</b><br>Location: Kabacoff<br><b>Co-Chairs: Rao Akula, Janet Evans</b> | <b>Session #139: Augmenting Process Safety Performance through Big Data Digitalization I</b><br>Location: Compass<br><b>Co-Chairs: Bruce Hardy, Eric Peterson</b> | <b>Session #146: Japan's Process Safety Progress</b><br>Location: Chart A<br><b>Co-Chairs: Shigeyuki Tanaka, Junichi Kanai</b> |
| 8:00 AM                  | Trust as Currency<br><b>Paul Gathright</b>                                                                                                           | Driving Transformation in Process Industries through Materials and Chemicals Informatics<br><b>Daniel Chrste</b>                  | Case Study: Qualitative Risk Assessment of a Refrigeration System<br><b>Robert Sladek</b>                                                             | PHA Draft Review Guidance<br><b>Sean Classen</b>                                                                                                                                   | Safe and Optimised Operations through Smart Analytics & Big Data<br><b>Karl McManus</b>                                                                           | Process Safety Initiatives in Jxtg Nippon Oil & Energy Corporation<br><b>Tomoya Ohtani</b>                                     |
| 8:30 AM                  | Employee Training: Beyond Compliance<br><b>Brian Desrosiers</b>                                                                                      | Carol Robotic Catalyst Unloading Results from Field Trials<br><b>Chris Jansen</b>                                                 | Managing Reliability of Ethane Crackers Using DMR, RBI, and IOWs<br><b>Vibha Zaman</b>                                                                | Safety Integrity Level Determination and Categorization<br><b>Anca Elena Costea</b>                                                                                                | Don't Worry!! Laboratory Safety Is Fun Do, Let's Play a Mobile Game<br><b>Nishaben Desai Dholakiya</b>                                                            | Analysis of Spontaneous Combustion in Various Polymer Resin<br><b>Takashi Odagiri</b>                                          |
| 9:00 AM                  | Reevaluating the Permit to Work Process through the Human Reliability Lens<br><b>Alyse Keller</b>                                                    | Using Unmanned Aerial Vehicles and Robotics in Hazardous Locations Safely<br><b>Kathy Kas</b>                                     | Quantitative Risk Based Methodology for Pressure Relief Valve (PRV) Inspection Optimization<br><b>Hassan Sadeghi</b>                                  | Implications of the International Building and Fire Codes on New and Existing Processes and Structures<br><b>Michael Snyder</b>                                                    | Leveraging Advanced Data Analytics to Improve Process and Plant Safety<br><b>Charles Fialkowski</b>                                                               | Improvement of Piping Integrity Management with Advanced Technology<br><b>Suguru Koyanagi</b>                                  |
| 9:30 AM                  | <b>Coffee and Networking Break</b> , Location: Grand Salon & Grand Ballroom AB                                                                       |                                                                                                                                   |                                                                                                                                                       |                                                                                                                                                                                    |                                                                                                                                                                   |                                                                                                                                |

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|          | <b>Session #156: Achieving Success in Process Safety, Beyond Compliance II</b><br>Location: Chart B/C<br><b>Co-Chairs: Scott Dean, Andrew Goddard</b>                                                                                                        | <b>Session #160: Emerging Topics and Technologies II</b><br>Location: Quarterdeck<br><b>Co-Chairs: Elliot Wolf, Qingsheng Wang</b> | <b>Session #155: Using Near Miss and Minor Incident Data for Process Improvement</b><br>Location: River/Starboard/Port<br><b>Co-Chairs: Neha Rajan, Vic Edwards</b> | <b>Session #170: Tutorials in CCPS II – Applying PSM</b><br>Location: Kabacoff<br><b>Co-Chairs: Wayne Garland, Sachin Punekar</b> | <b>Session #157: Augmenting Process Safety Performance through Big Data Digitalization II</b><br>Location: Compass<br><b>Co-Chairs: Bruce Hardy, Eric Peterson</b> | <b>Session #164: Korea Session: Effective Implementation of PSM and Its Utilization</b><br>Location: Chart A<br><b>Co-Chairs: II Moon, Hyuckmyun Kwon</b> |
| 10:15 AM | Conducting Quality Process Safety Management Audits – Globally<br><b>Mike Munsil</b>                                                                                                                                                                         | Application of Visual Flame Detection and Hazard Mapping to Large Atmospheric Storage Tanks<br><b>Jim Scoggins</b>                 | Forecasting of Major Incidents Based on Big Data of Near Misses and Minor Incidents: Heinrichs Vs. Deep Learning<br><b>Dongil Peter Shin</b>                        | Process Safety, the Journey Is Most Important!<br><b>James Martin</b>                                                             | Alarm Management Using Data-Driven Methods<br><b>Pankaj Goel</b>                                                                                                   | Capacity Building of Risk Communication with the Local Community in RMP (risk management plan)<br><b>Junheon Yoon</b>                                     |
| 10:45 AM | High Performance in Process Safety: A Balanced Approach<br><b>Coen van Driel</b>                                                                                                                                                                             | Improved Modeling of Continuous Gas Releases of Finite Duration<br><b>Jessica Morris</b>                                           | Opportunities to Enhance Barrier Management through Incident Analysis<br><b>Fabian Zitman &amp; Emma Verschoor</b>                                                  | Error Propagation and Uncertainty Analysis: Application to Fault Tree Analysis<br><b>Raymond "Randy" Freeman</b>                  | Finding Unknown Anomalies before They Risk Process Safety<br><b>Tim Holtan</b>                                                                                     | A Decision Making Model for Chemical Accident Responses Based on Machine Learning<br><b>Chuntak Phark</b>                                                 |
| 11:15 AM | Implementing Process Safety Critical Roles (PSCR) to Reduce Risk<br><b>Andrew Wilson</b>                                                                                                                                                                     | Bringing It All Together: The Emergence of Operation Risk Management Systems<br><b>Scott Lehmann</b>                               | Development, Implementation and Use of a Process Safety Incident Identification and Capture System within a Utility Context<br><b>Brendan Bleasdale</b>             | Effective PSM on Small Capital Projects<br><b>Kerie Bowen</b>                                                                     | Digitalization in Process Safety: Fire Risk Prediction Analytics<br><b>Sulo Belawan</b>                                                                            | The Changes of PSM(Process Safety Management) System in Republic of Korea<br><b>Jae min Ryu</b>                                                           |
| 11:45 AM | Luncheon with Speaker: <b>Gavin Towler</b> , Vice President and Chief Technology Officer, Honeywell Performance Materials Technologies<br><b>“Integrated Safety Management - Taking Safety Performance to the Next Level”</b><br>Location: Grand Ballroom CD |                                                                                                                                    |                                                                                                                                                                     |                                                                                                                                   |                                                                                                                                                                    |                                                                                                                                                           |
|          | <b>Session #177: Case Histories and Lessons Learned – GCPS Joint Session</b><br>Location: Grand Ballroom CD<br><b>Co-Chairs: Jerome Taveau, Jerry Forest, John Champion</b>                                                                                  |                                                                                                                                    |                                                                                                                                                                     |                                                                                                                                   |                                                                                                                                                                    |                                                                                                                                                           |
| 1:30 PM  | Presentation of the <b>William H. Doyle Award for LPS Best Paper Award, PPSS Best Paper Award, and CCPS Best Paper Award</b>                                                                                                                                 |                                                                                                                                    |                                                                                                                                                                     |                                                                                                                                   |                                                                                                                                                                    |                                                                                                                                                           |
| 1:45 PM  | When Emergency Response Goes Fatally Wrong: Lessons Learned from Investigating Two Major Incidents – <b>Scott Davis</b>                                                                                                                                      |                                                                                                                                    |                                                                                                                                                                     |                                                                                                                                   |                                                                                                                                                                    |                                                                                                                                                           |
| 2:15 PM  | Major Explosion at a Chemical Company in China: The Causes and Lessons Learned – <b>Wei Wang</b>                                                                                                                                                             |                                                                                                                                    |                                                                                                                                                                     |                                                                                                                                   |                                                                                                                                                                    |                                                                                                                                                           |
| 2:45 PM  | Taming the Wild River Rapids: How Process Safety Can Apply Outside the Process Industries – <b>Trish Kerin</b>                                                                                                                                               |                                                                                                                                    |                                                                                                                                                                     |                                                                                                                                   |                                                                                                                                                                    |                                                                                                                                                           |
| 3:15 PM  | <b>Break</b>                                                                                                                                                                                                                                                 |                                                                                                                                    |                                                                                                                                                                     |                                                                                                                                   |                                                                                                                                                                    |                                                                                                                                                           |
| 3:30 PM  | Fatal Toxic Chemical Release at Dupont – <b>Tamara Qureshi</b>                                                                                                                                                                                               |                                                                                                                                    |                                                                                                                                                                     |                                                                                                                                   |                                                                                                                                                                    |                                                                                                                                                           |
| 4:00 PM  | Explosion at BASF Ludwigshafen - Findings and Lessons Learned – <b>Gregg Matthew Kiihne</b>                                                                                                                                                                  |                                                                                                                                    |                                                                                                                                                                     |                                                                                                                                   |                                                                                                                                                                    |                                                                                                                                                           |
| 4:30 PM  | Hurricane Harvey 20 Months Later - Insights on the Arkema Crosby Flooding – <b>Andrew Goddard &amp; Eric Tilles</b>                                                                                                                                          |                                                                                                                                    |                                                                                                                                                                     |                                                                                                                                   |                                                                                                                                                                    |                                                                                                                                                           |
| 5:00 PM  | <b>GCPS Concluding Remarks</b>                                                                                                                                                                                                                               |                                                                                                                                    |                                                                                                                                                                     |                                                                                                                                   |                                                                                                                                                                    |                                                                                                                                                           |