# 2019 Big Data Science Conference

## Wednesday, June 5
The Graduate Hotel

### Pre-conference

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>7:00</td>
<td>Registration and Breakfast</td>
<td>Meridian Foyer</td>
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<tr>
<td>8:00</td>
<td>Welcome and Speed Networking</td>
<td>Meridian Ballroom</td>
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<tr>
<td></td>
<td>Welcome by Connie White Delaney, PhD, RN, FAAN, FACMI, FNAP, Dean and Professor, University of Minnesota School of Nursing</td>
<td>Meridian Ballroom</td>
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<tr>
<td></td>
<td>Welcome by Bonnie L. Westra, PhD, RN, FAAN, FACMI, Associate Professor Emerita, University of Minnesota School of Nursing</td>
<td>Meridian Ballroom</td>
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<tr>
<td>8:30</td>
<td>Choose a Track</td>
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<td></td>
<td><strong>Track 1: Data Science Workshop</strong></td>
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<td></td>
<td>Lisiane Pruinelli, PhD, RN</td>
<td>Meridian One</td>
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<td>Steve Johnson, PhD</td>
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<td></td>
<td><strong>Track 2: Standardized Data for Dash Boards and Real Time Alerts for Pain Management</strong></td>
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<td></td>
<td>Rebecca Freeman, PhD, RN, PMP, FAAN</td>
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<td>Uba Backonja, PhD, RN</td>
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<td>Bonnie Westra, PhD, RN, FAAN, FACMI</td>
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<td>Anne LaFlamme, DNP, RN</td>
<td>Think 5</td>
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<td><strong>Track 3: Standardizing the Nursing Admission History and Screening to Reduce Documentation Burden</strong></td>
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<td>Jane Englebright, PhD, RN, CENP, FAAN</td>
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<td>Shannon Hulett, DNP, RN, CNL</td>
<td>Pathways</td>
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<td>David Boyd, DNP, RN-BC</td>
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<td>Sarah Michel MBA, BSN, RN, NE-BC</td>
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<tr>
<td>10:00</td>
<td>Break</td>
<td>Meridian Foyer</td>
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<tr>
<td>10:30</td>
<td>Track Workshops, continued</td>
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<tr>
<td>12:00</td>
<td>Lunch</td>
<td>Meridian Foyer</td>
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<td>1:00</td>
<td>Track Workshops, continued</td>
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<tr>
<td>2:30</td>
<td>Break</td>
<td>Meridian Foyer</td>
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<tr>
<td>2:45</td>
<td>Track Workshops, continued</td>
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<td>4:00</td>
<td>Break</td>
<td>Meridian Foyer</td>
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<tr>
<td>4:15</td>
<td>What was Helpful/What is Needed for Future (Panel)</td>
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<td>Moderator: Susan A. Matney, PhD, RNC-OB, FAAN, FACMI, F HIMSS, Nurse Informaticist, Intermountain Healthcare</td>
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<td>Laura Heermann Langford PhD, RN; Patricia Sengstack, DNP, RN-BC, FAAN; Tristan Fin, BSc, BSN, RN, DNP Student</td>
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<tr>
<td>5:00</td>
<td>Wrap up – Linking Pre-conference to Purpose of Conference</td>
<td>Meridian Ballroom</td>
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<td>Connie White Delaney, PhD, RN, FAAN, FACMI, FNAP</td>
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# Track 1: Data Science Workshop

The purpose of the two sessions in this workshop is to give leaders a foundation for understanding data science principles and tools. Participants will learn all phases of a data science project in order for them to have a better overall understanding and to improve collaboration with data science staff at their own organization. The morning session is an introduction to data science and tools while the afternoon session is an advanced hands-on workshop where participants will work with data and use the tools to perform data science.

## Morning Session: Introduction to Data Science and Tools
This is an introductory session for those who are not very familiar with the concepts of data science. Participants will start by being introduced to the data science lifecycle for nursing and interdisciplinary leaders, types of data, data pre-processing, data quality and exploring data using visualizations. You will learn about the different tools for data science (for example: Python, Jupyter, scikit-learn, Collaboratory). Participants will review the different approaches to analyzing data (including machine learning) and we will discuss examples of successful projects. This session uses presentations to teach data science, but the afternoon session will be hands-on allowing participants to work with data and tools.

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Presenter(s)</th>
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<tbody>
<tr>
<td>8:30</td>
<td>Welcome to Data Science</td>
<td>Lisiane Pruinelli, PhD, RN, Assistant Professor, University of Minnesota School of Nursing Steve Johnson, PhD, Assistant Professor, Institute for Health Informatics, University of Minnesota</td>
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<tr>
<td>9:00</td>
<td>Data Science Tools and Environments</td>
<td>Tamara J. Winden, PhD, Assistant Professor and Chief Research Informatics Officer, University of Kansas Medical Center</td>
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<tr>
<td>9:30</td>
<td>Dealing with Data and Visualization</td>
<td>Steve Johnson, PhD, Assistant Professor, Institute for Health Informatics, University of Minnesota</td>
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<td>10:00</td>
<td>Break</td>
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<tr>
<td>10:15</td>
<td>Data Science Analytic Techniques</td>
<td>Thompson Forbes III, PhD, RN, NE-BC, Assistant Professor, East Carolina University College of Nursing</td>
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<td>11:00</td>
<td>Validation and Implementation using Clinical Decision Support (CDS)</td>
<td>Christopher Cruz, MSHI, RN-BC, Informatics Advisor, National Coordination Center Lisiane Pruinelli, PhD, RN, Assistant Professor, University of Minnesota School of Nursing</td>
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<tr>
<td>11:30</td>
<td>Examples of Successful Data Science Projects</td>
<td>Mikyoung Lee, PhD, RN, Associate Professor, Texas Woman’s University Alvin D. Jeffery, PhD, RN, Medical Informatics Fellow, U.S. Department of Veterans Affairs Lisiane Pruinelli, PhD, RN, Assistant Professor, University of Minnesota School of Nursing</td>
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<tr>
<td>12:00</td>
<td>Lunch</td>
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Track 1: Data Science Workshop

Afternoon Session: Advanced Hands-On Data Science
This is a workshop for those who already have had some exposure to data science concepts. You will need to bring your own laptop and have a Google account setup in order to participate in a hands-on exploration of data science. We will be using the Google Colaboratory for exercises. Materials for the workshop will be available on GitHub and instructions for downloading and installing will be sent out before the meeting. In this session, participants will be led through lessons, using Jupyter notebooks, for performing the various aspects of the data science lifecycle including data preparation, exploratory data analysis and building a machine learning model using the Python scikit-learn toolset.

1:00 Hands-on Exploratory Data Analysis, Data Preparation and Visualization
Participants will start by working through the data extraction process and different tools will be used for exploring the data, such as Seaborn and Matplotlib, to perform data visualization. You will perform feature/variable selection for modeling suitable to answer the research question.
Steve Johnson, PhD, Assistant Professor, Institute for Health Informatics, University of Minnesota

2:15 Break

2:30 Hands-on Data Science, Modeling and Analytics Techniques
Different modeling and machine learning techniques will be used to predict outcomes using realistic EHR data. Approaches to evaluating model performance, such as cross-validation and bootstrap, will be presented.
Alvin D. Jeffery, PhD, RN, Medical Informatics Fellow, U.S. Department of Veterans Affairs

4:00 Return to the Meridian Ballroom for a Panel Discussion
### Track 2: Standardized Data for Dash Boards and Real Time Alerts for Pain Management

The purpose of this session is to demonstrate end to end capture and use of data for pain management from staff nurses through all levels in the organization. The session includes active participation exercises as well as didactic content. Specific topics include: information modeling, methods to optimize change to implement an information model, challenges and solutions in creating alerts and reports, and principles of data visualization for public health reporting to address the opioid crisis.

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<tr>
<td>8:30</td>
<td><strong>Introductions/Overview of the day</strong></td>
<td>Rebecca Freeman, PhD, RN, PMP, FAAN, Interim Chief Nursing Informatics Officer, University of Vermont Health Network</td>
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<tr>
<td>9:00</td>
<td><strong>Data, Data Everywhere and Not a Drop of Sense</strong></td>
<td>Bonnie Westra, PhD, RN, FAAN, FACMI, Associate Professor Emerita, University of Minnesota, School of Nursing</td>
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<td>10:00</td>
<td>Break</td>
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<td>10:30</td>
<td><strong>Patient Centered vs Standardized Process/Documentation for Pain Management</strong></td>
<td>Anne LaFlamme, DNP, RN, VP Chief Clinical &amp; Nursing Information Officer, Fairview Health Systems</td>
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<td>12:00</td>
<td>Lunch</td>
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<td>1:00</td>
<td><strong>Alerts &amp; Dashboards</strong></td>
<td>Rebecca Freeman, PhD, RN, PMP, FAAN, Interim Chief Nursing Informatics Officer, University of Vermont Health Network</td>
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<td>2:15</td>
<td>Break</td>
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<td>3:00</td>
<td><strong>Understanding and Addressing the Opioid Crisis by Integrating a Public Health Perspective using Data Visualizations</strong></td>
<td>Uba Backonja, PhD, RN, Assistant Professor in Nursing and Healthcare Leadership, University of Washington Tacoma, Adjunct Assistant Professor in Biomedical Informatics and Medical Education School of Medicine and Psychosocial &amp; Community Health School of Nursing</td>
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<tr>
<td>3:45</td>
<td><strong>Summary and Feedback</strong></td>
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<tr>
<td>4:00</td>
<td><strong>Return to the Meridian Ballroom for a Panel Discussion</strong></td>
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Track 3: Standardizing the Nursing Admission History and Screening to Reduce Documentation Burden

A taskforce was created across multiple Nursing Knowledge Big Data Science Workgroups to address the problem of documentation burden. This is an interactive session to evolve the content work of the Nursing History and Current State Screening task force. Participants will work in small groups to critique the work products of the task force, including the model documentation elements. Education on the next step, modeling and coding will conclude the session.

8:30
Welcome, Overview & Introductions
Jane Englebright, PhD, RN, CENP, FAAN, Chief Nurse Executive, Senior Vice-President, HCA Healthcare

9:00
Critique of Guiding Principles
Review the work of the taskforce and specifically critique the Guiding Principles document that will be used throughout the day.
Jane Englebright, PhD, RN, CENP, FAAN, Chief Nurse Executive, Senior Vice-President, HCA Healthcare

10:00
Break

10:30
Draft Recommendations for Standardizing the Admission History and Screening
A draft document of admission history and screening questions was developed. Participants will work in groups to review and provide feedback to increase the generalizability of the recommendations.
Shannon Hulett, DNP, RN, CNL, Manager of Informatics Nurse, Gundersen Health System
Sarah Michel, MBA, BSN, RN, NE-BC, Former Director of Nursing Innovation at HCA

12:00
Lunch

1:00
Report Outs from Groups on Draft Recommendations
This presentation will provide an overview of one system’s rebuild of clinical documentation using the CCC taxonomy, resulting in reduced documentation burden and comparable, sharable data about nursing practice.
Jane Englebright, PhD, RN, CENP, FAAN, Chief Nurse Executive, Senior Vice-President, HCA Healthcare

1:30
Information Modeling and Coding
In this presentation, participants will learn about the process of creating an information model from the admission history and screening and the next steps of standardizing data elements with LOINC and SNOMED CT.
Stephanie Hartleben, RN-BC, MSN, MHA, Clinical Informatics Manager, Elsevier
Theresa (Tess) Settergren, MHA, MA, RN-BC, Director, Nursing Informatics, Cedars-Sinai

2:30
Break

3:00
Dissemination Planning
Participants will engage in brainstorming strategies for dissemination of the admission history and screening when it is complete. The goal is to strategize how the model will be implemented.
David Boyd, DNP, RN-BC, Regional Director - Nursing Informatics, Kaiser Permanente

3:30
Summary and Wrap Up
Jane Englebright, PhD, RN, CENP, FAAN, Chief Nurse Executive, Senior Vice-President, HCA Healthcare

4:00
Return to the Meridian Ballroom for a Panel Discussion
# Day 1

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<td><strong>Registration / Breakfast</strong></td>
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<td>8:00</td>
<td><strong>Welcome: Nursing Knowledge Big Data Science Initiative</strong></td>
<td>Meridian Ballroom</td>
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<td></td>
<td>Connie White Delaney, PhD, RN, FAAN, FACMI, FNAP</td>
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<td>Dean and Professor, University of Minnesota School of Nursing</td>
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<tr>
<td>8:15</td>
<td><strong>Keynote: Ten Easy Steps to Better Care at Lower Cost</strong></td>
<td>Meridian Ballroom</td>
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<td>Cyrus Batheja, EdD, MBA, PHN, BSN, RN</td>
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<td>Chief Growth Officer, myConnections™ and National Medicaid Vice President United Healthcare Community &amp; State</td>
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<td>9:15</td>
<td><strong>HIT Policies, Information Exchange, and Implementation Local to National</strong></td>
<td>Meridian Ballroom</td>
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<td>Jennifer Lundblad, PhD, MBA, President and CEO of Stratis Health</td>
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<td>Lisa Moon, PhD, JD, RN, Healthcare Informatics Consultant</td>
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<td>10:00</td>
<td><strong>Break</strong></td>
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<td>10:30</td>
<td><strong>Work Group Report on 2018 Major Achievements</strong></td>
<td>Meridian Ballroom</td>
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<td>Moderator: Joyce Sensmeier, MS, RN-BC, CPHIMS, FHIMSS, FAAN</td>
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<td>Vice President Informatics, HIMSS North America</td>
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<td>12:30</td>
<td><strong>Lunch</strong></td>
<td>Meridian Foyer</td>
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<td>1:30</td>
<td><strong>Work Group Report on 2018 Major Achievements, continued</strong></td>
<td>Meridian Ballroom</td>
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<td>2:00</td>
<td><strong>Work Group Meetings</strong> (See Handout for Room Locations)</td>
<td>Meridian Ballroom</td>
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<td>Care Coordination – Think 1</td>
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<td>Clinical Data Analysis - Meridian Ballroom Section 2</td>
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<td>Context of Care – Think 3</td>
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<td>Nursing Informatics Education – Focus Boardroom</td>
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<td>Encoding and Modeling - Meridian Ballroom Section 1</td>
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<td>eRepository – Meridian Foyer</td>
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<td>3:00</td>
<td><strong>Break</strong></td>
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<td>3:30</td>
<td><strong>Work Group Meetings, continued</strong></td>
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<td>4:30</td>
<td><strong>Future Perspective on Workgroup Activities (Panel)</strong></td>
<td>Meridian Ballroom</td>
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<td>Moderator: Charlotte A. Weaver, RN, MSPH, PhD, FAAN, FHIMSS, FAAN</td>
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<td>Vicky Tiase, MSN, RN-BC, FAMIA; Susan C. Hull, MSN, RN-BC, NEA-BC, FAMIA; Joyce Sensmeier MS, RN-BC, CPHIMS, FHIMSS, FAAN</td>
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<td>5:00</td>
<td><strong>Reception</strong></td>
<td>Pinnacle Ballroom</td>
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<tr>
<td>7:00</td>
<td>Breakfast</td>
<td>Meridian Foyer</td>
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<td>8:00</td>
<td>When Big Data Runs Health Care</td>
<td>Meridian Ballroom</td>
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<td>Jane Englebright, PhD, RN, CENP, FAAN</td>
<td>Chief Nurse Executive, Senior Vice President, HCA Healthcare</td>
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<td>9:15</td>
<td>Break</td>
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<td>9:45</td>
<td>Workgroup Planning for 2019-2020</td>
<td>Meridian Ballroom</td>
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<td>Care Coordination – Think 1</td>
<td>Health IT Policy - Pathways</td>
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<td>Clinical Data Analysis - Meridian Ballroom Section 2</td>
<td>Mobile Health for Nurses – Think 2</td>
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<td>Context of Care – Think 3</td>
<td>Nursing Value – Meridian Ballroom</td>
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<td>Nursing Informatics Education – Focus Boardroom</td>
<td>Social Determinants of Health – Think 5</td>
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<td>Encoding and Modeling - Meridian Ballroom Section 1</td>
<td>Transforming Nursing Documentation – Think 4</td>
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<td>11:15</td>
<td>Break</td>
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<tr>
<td>11:30</td>
<td>Painting the Picture for Sharable and Comparable Nurse-Sensitive Data</td>
<td>Meridian Ballroom</td>
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<td>Moderator: Connie White Delaney, PhD, RN, FAAN, FACMI, FNAP</td>
<td>Dean and Professor, University of Minnesota School of Nursing</td>
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<td>Panel of Workgroup Leaders</td>
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<td>12:30</td>
<td>Box Lunch &amp; Workgroup Meetings if needed</td>
<td>Meridian Foyer</td>
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