Session 1 (10:10-11:10 am)

**Who Needs an Actuary? You Do!**
**Applying Actuarial Techniques to Solve Important Problems**
*Graham Hall, Senior Manager, and Hannah Clouser, Experienced Associate*  
*PwC Actuarial Services*

Actuaries were the original data scientists, before data science was cool. This session will give an overview of the application of data driven actuarial techniques and working methods to common non-insurance issues. Featuring case studies - including an actuarial evaluation of the Australian Social Services/welfare system and actuarial modeling for non-profit organizations - this session will detail the key components of the actuarial skillset which are relevant to wider fields and the types of industries and broader problems which actuaries are well suited to help solve.

**Graham Hall** is a senior manager in PwC's Actuarial Service practice with 8+ years of experience as an actuary and data scientist. He has worked with a wide range of US, UK and European (re)insurers, and his experience includes advising on the implementation of analytics models, capital calculations and catastrophe modeling. Graham spent the first six years of his career working in London and is a credentialed UK actuary.

**Hannah Clouser** is an experienced associate in PwC's Actuarial Service practice with three years of experience. Her focus at PwC has been on traditional life products and valuation as well as actuarial modernization tools. She has worked with numerous insurance and reinsurance companies in audit and consulting roles and has used actuarial solutions to serve non-traditional clients as well. Hannah is currently working towards her Associateship in the Society of Actuaries.

**Sankey Diagrams in Tableau**
*Matt Skinner-Thebo, Data Report Developer, CO-OP Financial Services*

Sankey diagrams are rich, effective tools for data visualization. In this presentation, we will discuss what Sankey diagrams are, where they are most effective, and how to create one in a variety of circumstances.

**Matthew Skinner-Thebo** fell in love with data after reading Ian Ayres's *Super Crunchers* in 2009. He's spent the past decade gathering and refining analytics skills, particularly in the visualization space. He currently produces Tableau dashboards for CO-OP Financial Services. Matthew also has the pleasure of coordinating the Analytics Leadership Group in Des Moines. Away from computers, he enjoys playing board games, reading, and running. Matthew lives in Ankeny with his wife Gina and their four children.
Using Data to Identify and Intervene with Patients at Risk of Falling

Julia Jenkins, DO, FAAFP, MMM, UnityPoint Clinic Family Medicine Physician and UnityPoint Accountable Care Medical Director
Michaela Donaldson, MBA, Senior Data Analyst, UnityPoint Health

Falls are the #1 cause of injuries nationally for people over 65. At UnityPoint Health, preventable falls are a leading cause of ED visits and hospital admissions. In our primary care clinics, less than half of patients are screened for fall risk annually, and care planning is not standardized for patients identified as at-risk for future falls. The redesign of the ambulatory falls screening process uses Intuitive Clinical Guidance and automates interventions based on the patient’s risk, with minimal impact to clinical workflows. This improved screening and intervention process will help to prevent falls and subsequent need for hospitalization.

Dr. Julia Jenkins has a strong background in both clinical medicine and administration with a focus on outcome-driven leadership and patient-centered care. She is board certified in family medicine with a Certificate of Added Qualification in hospice and palliative care. Dr. Jenkins is passionate about her work surrounding movement toward value and improved quality within UnityPoint. Her clinical areas of interest include coaching and mentoring providers and clinical team members in addition to utilization of data to improve quality outcomes, patient experience, and provider satisfaction.

Michaela Donaldson is passionate about the intersection of healthcare, business, and analytics. As a senior analyst at UnityPoint Health, she utilizes her global perspective, technical scientific background, and leadership experiences to drive better decision-making in healthcare with creative and analytical solutions. Michaela completed a B.S. in biological sciences and B.A. in economics at the University of California, Davis, and earned an MBA with concentrations in business analytics and marketing from the University of Iowa.

Managing Data Collection in Manufacturing

Ashwin Nagendra, Senior Manufacturing Engineer, John Deere

Manufacturing data brings with it significant challenges in collecting, simplifying, curation, and managing data quality and integrity. This session will feature manufacturers speaking about how they have implemented solutions to better manage issues and generate improved data for decision making.

Ashwin Nagendra is a senior manufacturing engineer at John Deere, where he is a member of the Smart Connected Factory program team involved in enterprise strategy execution. Ashwin has worked for John Deere for more than 10 years and has experience in manufacturing assembly, digital manufacturing, and manufacturing systems. He holds a bachelor’s degree in mechanical engineering from Bangalore Institute of Technology in Bangalore, India, and a master of science in advanced manufacturing management and technology from the University of Surrey (UK).

Telling a Story with Data: Use of Dashboards to Order the Chaos

Kelly Tagtow, Analytics and Digital Strategy Director, The Stelter Company
Matt Newsom, Solutions Architect, Perficient

What do Design Thinking and dashboards have in common? Learn how The Stelter Company used the steps of Design Thinking to empathize, define, ideate, prototype, and test during their journey from operational systems, ad-hoc data processes, minimal BI infrastructure and staffing to foundational marketing-focused dashboards built using Domo.
Over the course of 30+ years in the analytics field, Kelly Tagtow has led predictive analytics and BI projects using a wide variety of marketing, e-commerce, and nonprofit fundraising data for organizations such as The Stelter Company, Meredith Corporation, and Seed Savers Exchange. His current work is focused on integrating Stelter’s client marketing data to provide easier access, insight, and foundation for more data-driven, evidence-based decisions. Kelly has a master’s degree in mathematics from the University of Northern Iowa.

Matt Newsom is a solutions architect who works with businesses drowning in data to teach them to be experts in not just handling their data, but telling the story of their data. Matt believes that when you empower curious employees, they become happier in their work and are more involved in the success of their business. Over the past 20 years, Matt has been working with data in various capacities as a SQL Server DBA to an IT director to running his own consulting business where Domo invited him to attend their first partner training course in 2015.

**Session 2 (11:30 am-12:30 pm)**

**Women in Analytics Panel Discussion**

Pushpa Manukonda, Director, John Deere Technology Innovation Center
Jacquelyn Rees Ulmer, Associate Dean, Iowa State University Ivy College of Business
Moderated by Jenny Schmidt, President, J Schmidt Consulting

Pushpa Manukonda is the director of the John Deere Technology Innovation Center at Ames, a position she has held since November 2017. Pushpa joined John Deere in 1999 and early in her career held positions as a product modeling coordinator, project manager, engineering supervisor, senior engineer, and engineering integration lead for the XCG-John Deere Joint Venture in China. She has held management positions as product development manager, vice president of engineering for the Ashok Leyland John Deere Construction Equipment Co. joint venture, manager of technology innovation strategy, and global lead for technology innovation strategy and product engineering technologies at John Deere. Pushpa earned her bachelor of science degree in mechanical engineering from Andhra University in Andhra Pradesh, India, and completed coursework for a master’s degree in industrial engineering at the University of Iowa. In 2013, she won the National Emerging Leader award from the Society of Women Engineers. Pushpa serves as a reviewer for Small Business Innovation Research/Strategic Technology Transfer programs, actively participates in minority development events, and supports various STEM activities.

Jackie Rees Ulmer is the Union Pacific Professor of Information Systems and associate dean for professional masters programs in the Ivy College of Business at Iowa State University. Her Ph.D. is in decision and information sciences from the Warrington College of Business at the University of Florida. Her research interests include information security risk management and machine learning. Jackie has published in journals including Decision Sciences, Decision Support Systems, Information Systems Research, INFORMS Journal on Computing, MIS Quarterly, and Journal of MIS. She teaches courses in business analytics, digital disruption, information security, programming, and database.

Jenny Schmidt helps organizations develop their analytics talent. Analytics and HR leaders utilize her consulting services to create career paths and development plans to develop and retain analytics talent. Before starting her consulting firm, Jenny spent 15 years at John Deere, working as an accountant, auditor, and in human resources. She holds a bachelor’s degree in accounting from the University of Northern Iowa and an MBA from Case Western Reserve University.
# Getting Started with Analytics

**Session Outputs**

Python.

# Intro Technical

The various influencing everyday earned he passionate acceptance in risk Mahfuj information earned the risk Society of Actuaries and a lifetime learner who has completed courses in machine learning, deep learning, and Python. 

# Advanced Technical

Cheng Nie is an assistant professor of information systems at Iowa State University. His primary research interests are in the sharing economy, sponsored search, and recommender systems. Before joining Iowa State University, Cheng earned his doctoral degree in management science from the University of Texas at Dallas.

## The Future of Machine Learning and AI in P&C Insurance

**Mahfuj Munshi, Assistant Vice President, Advanced Analytics and Machine Learning, Nationwide**

Industry trends indicate that advanced data analytics tools – such as machine learning, artificial intelligence (AI), digital interactions, and the incorporation of external data sources – can all effectively be leveraged to meet company goals, including increasing operating efficiency and creating more differentiated value for members while simultaneously expanding to new customers. In this session we will discuss the trends, areas of opportunities, and challenges most organizations are facing today.

Mahfuj Munshi is an innovative and agile thought leader in the machine learning and artificial intelligence field. Mahfuj has a significant history of success introducing new thinking, building highly functional analytics organizations, influencing evidence-based decision-making, and leading large data science initiatives. He has more than 16 years of experience working for companies like Travelers, The Hartford, MassMutual Financial Services, and Allstate. Currently, he leads the advanced analytics and machine learning initiative at Nationwide Insurance (Commercial Lines). Mahfuj earned a bachelor's degree in applied mathematics from Presidency College in Kolkata, India, and a master’s degree in information technology from Bond University in Gold Coast, Australia. An avid wildlife photographer, Mahfuj is passionate about capturing images of the indigenous wildlife of Africa and actively works with Maasai tribes for various charitable causes.

**Session 3 (2:10-3:10 pm)**

## Applying Advanced Analytical Techniques to Solve Common Actuarial Problems

**Shaio-Tien Pan, Director, PwC Actuarial Services**

Advanced techniques, like artificial intelligence, intelligent process automation, and machine learning, are gaining acceptance in life insurance applications. This session will give some examples of use cases for AI techniques in everyday actuarial processes. Examples will include using anomaly detection techniques to validate model inputs and outputs and using probabilistic machine learning to infer hidden attributes in policyholders (e.g., financial acumen, risk tolerance, etc.) that can be used to influence model assumptions and customer engagement strategies.

Shaio-Tien Pan is a director in PwC's Actuarial Service practice. Shaio has over 15 years of experience in the life insurance industry with extensive knowledge of actuarial processes, modeling, and data analytics. He is a Fellow of the Society of Actuaries and a lifetime learner who has completed courses in machine learning, deep learning, and Python.
Using Power BI to Enable Enterprise Actionable Intelligence

**Tonio Lora**, Principal Cloud Solutions Architect, Microsoft

#DataVisualization #IntroTechnical

Organizations are dealing with increasingly growing data sources and continuous demand for more sophisticated business intelligence capabilities. Business users need to combine and model, in a repeatable way, on-premises and cloud-born data of many sizes and shapes. They need to be able to create reusable semantic layers and interactive visualizations. There is also an increasing need to apply sophisticated machine learning techniques to the reported data. In this session, you will learn how to use Power BI, the leading BI tool in the market, to implement true self-service BI in a governed environment to enable actionable insights.

**Tonio Lora** has been in the IT industry for over 20 years, during which time he has worked with numerous companies building large enterprise data warehouses, data lakes, and comprehensive analytics solutions. Most recently, Tonio has been working to help companies with their cloud architecture, with a focus on architecting analytics solutions in Azure. Tonio is also a lecturer for the Master of Business Analytics program at the Iowa State University Debbie and Jerry Ivy College of Business.

Automated Research and Insights:

**How Athene Evaluates the Advisor Experience**

**Matt Olson**, Vice President of Data, Insights, and Technology at Athene USA
**Dan Becker**, Senior Manager for Data, Insights, and Analytics at Athene USA

#GettingStartedWithAnalytics #IntroTechnical

A few years ago, Athene was faced with a problem: how do they get closer to the advisor experience without breaking the bank? This session will show you how they utilized Salesforce and Qualtrics to automate surveys at key touchpoints in the advisor journey and how those insights led to operational efficiencies.

**Dan Becker** is the senior manager for data, insights and analytics at Athene. His responsibilities include the management and execution of Athene’s market research strategy along with driving analytical results through the organization. Prior to joining Athene, Dan spent time at Nationwide and in public accounting as a CPA specializing in state and federal tax consulting for a variety of industries including manufacturing, insurance, and pharmaceuticals. Dan combined his passion for sports and analytics when he co-founded CFB Analytics – a site specializing in advanced stats for college football – in 2014. He is a two-time graduate of Iowa State University with a bachelor’s degree in accounting and a master’s degree in business analytics.

**Matt Olson** is a marketing leader who specializes in developing analytics, CRM, and digital capabilities for organizations. His focus has been in building these capabilities in marketing and risk organizations across industries such as retail, manufacturing, and financial services. Matt serves as a member of the Central Iowa Analytics Leadership Council, LIMRA’s Market Research Committee, and ANA’s Futures Committee. His work has been recognized by The Economist, Direct Marketing News, LIMRA, and the Iowa Chapter of the American Marketing Association. An Iowa native, Matt earned his undergraduate degree in statistics and actuarial science from the University of Northern Iowa and his MBA from Iowa State University. He has held positions with Wells Fargo, The Integer Group, and is currently vice president of data, insights, and technology at Athene USA where he holds the distinct honor of being the company’s three-time Paper Airplane Toss champion.

Data-Driven Strategy: A System Approach to Decision-Making

**Eleke Ukpabi**, Director of Engineering and Strategy,
Ruan Transportation Management Systems

#ApplyingAnalytics #Leadership
A systems approach to decision-making emphasizes the impact achieved when organizational parts are viewed as a unified whole aligned to a clear mission. Companies led with a data-driven strategy are uniquely positioned to experience higher levels of effectiveness. However, the differentiator is on why such organizations rely on this strategy and how they use data analytics to create systematic results. In this session, we will explore these concepts through an Excellence Framework that can be leveraged by leaders, executives, managers, and business professionals to realize desired outcomes.

Eleke Ukpabi is a lifelong learner driven by continuous innovation, with a passion for people development, community engagement, and technological advancement. His background is in industrial engineering and business management, with advanced studies in engineering management and business administration. He also holds specialized certifications as a quality engineer and Lean Six Sigma Master Black Belt. He is the board chair for ASQ Central Iowa and serves on the advisory councils for Harvard Business Review and the Iowa State University MBA program. He currently leads Solution Engineering for Ruan Transportation Management Systems and serves as the principal consultant for United Strategies LLC.

Session 4 (3:30-4:30 pm)

**Data Analytics Tools for Small Business**

*Brandi Shay, MBA, CBA, Assistant Professor of Accounting, Graceland University*

*Self-Employed Entrepreneur, The Shay Company, LLC and Shay Farms*

*Justin Akers, Assistant Professor of Business Administration, Graceland University*

*Self-Employed Entrepreneur, FodderWorks Midwest LLC*

Data driven decisions have always been important to small businesses. In the past, accumulating the data to make decisions with has been a struggle due to cost and time constraints. In this session, we will discuss tools that have made it more efficient for small business owners to accumulate and analyze data that can be used to improve business processes and profitability. Case studies using data analytics tools readily available to small business owners will be presented.

**Brandi Shay** is an assistant professor of accounting at Graceland University. In addition to teaching in higher education for more than 18 years, she previously served a regional director for America’s SBDC Iowa and continues to serve as a consultant for the organization.

**Justin Akers** is an assistant professor of business administration at Graceland University. He was previously the regional director for the Mid Iowa SBDC in Des Moines and has served as the director of the Sandage Center for the Study of Free Enterprise and Entrepreneurship at Graceland University.

**Analytics POV Panel Discussion**

*Kira Barclay, Director of Analytics, John Deere Financial*

*Jessica Short, Assistant Director of Analytics, Principal*

*R. Casey Showalter, Senior Director of Database Marketing, Meredith Corporation*

*Stuart Taylor, Vice President, Business Insights and Analytics, Kum & Go*

Moderated by *Deb Ingram, Analytics Director, Principal*
In this session, you’ll hear from four industry professionals on their experiences and points of view on analytics. Topics will range from artificial intelligence, unleashing innovation in analysts, navigating organizational challenges, the growth of analytic embedded tools, the impact of data privacy legislation, and much more.

**Kira Barclay** is the director of analytics at John Deere Financial. Previously, she served as the director of advanced analytics strategy and the director of strategic planning and business development. Since joining John Deere in 2004, her most insightful work experiences have been leading a global team for the John Deere Construction and Forestry Division, participating in the development of the John Deere strategy for 2022/2030, and developing a data and analytics innovation process. Kira holds a bachelor’s degree in mathematics and a master of science in statistics from Iowa State University and an MBA from Indiana University. She serves on the board of directors for Children & Families of Iowa.

**Deb Ingram** is an analytics director at Principal, helping to draw out business needs where analytics can help improve business outcomes and discover areas of insight. Deb helped develop an Analytic COE and early uses of data mining across Principal for more than 10 years. Her business background and storytelling experience, added with a touch of humor, make analytics more engaging for all. While Deb enjoys business analytics and navigating dynamics beyond the data, her favorite stats can be found on a golf course or during a brisk walk with her two dogs. She holds a degree in management from the University of Northern Iowa and an MBA from Drake University.

**Jessica Short** is an assistant director of analytics at Principal, where she solves business challenges using data. She provides strategic counsel, analytic expertise, and data storytelling to a broad range of stakeholders. Jessica is excited to be on a team that leverages the business knowledge, technology skills, and data science expertise of each member. She is a strong believer in open data science and is passionate about enabling it at an enterprise level through data management, robust analytic platforms, and improved project workflows. Jessica earned bachelor’s degrees in statistics and sociology and a master’s degree in statistics from Iowa State University.

**Casey Showalter** manages the Database Research and List Selection departments at Meredith. His primary responsibilities include the development and maintenance of Meredith’s 175+ million consumer database, data acquisitions, data mining and predictive analytics, and leveraging data and insights in support of CRM strategies for direct marketing. He has been involved in data and analytics at Meredith for over 37 years. Casey earned a B.S. degree in computer science/operations research from St. Ambrose University in Davenport, Iowa.

**Stuart Taylor** leads the Business Insights and Analytics group for Kum & Go, where he oversees custom research, marketplace and business analytics, in addition to the data and architecture needs that support this work. Prior to Kum & Go, Stuart spent more than 20 years at Nielsen in a variety of roles, including custom analytics, client management, and analytical application development. He left Nielsen for a stint to lead the Insights department for Kimberly-Clark, a role that oversaw consumer research, shopper insights, marketplace analytics, and various analytical capabilities, including ground-breaking work in virtual reality research for consumer products, specifically in the shopper insights practice.

**Transportation Data Analytics**

_Skyler Knickerbocker, Research Engineer, Iowa State University Institute for Transportation_

This session will provide examples of how big data analytics is being used for transportation decision-making in Iowa. This work is being conducted at the Iowa Department of Transportation and at the Institute for Transportation at Iowa State University. The speakers will share how data analytics and visualization are used in operations and
safety to better understand the conditions on the roadway and help decision makers make changes to improve safety and mobility.

**Skylar Knickerbocker** is a research engineer and co-director of the Real-Time Analytics in Transportation (REACTOR Lab) working in the areas of traffic operations, maintenance, and safety. He assists in the management and support for several research projects for the Iowa DOT, Midwest Transportation Center, Strategic Highway Research Program, and the Federal Highway Administration. Skylar is a member of the Transportation Research Boards Standing Committee on Visualization in Transportation. He will discuss how data visualization is being used to improve the safety on the roadway using crash and citation data tools related to motorcycle, heavy trucks, vulnerable road users and speed-related crashes. These tools are being used by both the Iowa DOT, law enforcement, and others to understand where crashes are occurring and causes of those crashes.

**Crossing Boundaries and Ethical Dilemmas:**
**Determining What’s Appropriate When Using Data**
*Erin Lachen, Data Science Supervisor, EMC Insurance*

Ever wondered what your insurance company does with your data? What about who owns (and has access to) your social media data? Have you ever wondered whether you should be using a particular dataset or data attribute to build your pricing model? Or if that model could be used in other applications? In this session we will explore the ethical considerations of data science from privacy and data ownership to the appropriate uses of models and technology.

**Erin Lachen** has been working in insurance since her first internship in 2011. She has progressed from pricing analyst to actuarial research specialist to data analytics manager to data science supervisor, and has earned her FCAS and CPCU along the way. She is driven to help others understand the potential data and analytics hold while striving to keep learning more. She loves solving problems, figuring out how to make processes easier and clearer, and helping others figure out how they can make the most impact in their careers. She has a lovely husband, adorable daughter, and two fluffy cats.