



**INFORMS Roundtable Fall Meeting Agenda
October 5-6, 2013
Hilton Minneapolis
Theme: "Big Data"**

Saturday, October 5th

1:15PM Padelford Riverboat Excursion Mississippi River

Join us for a historically narrated sightseeing excursion on the Mississippi river. "Sights along the way include: the St Paul High Bridge, Pig's Eye's Cave, Minnesota River mouth, Pike Island, Fort Snelling, and the timeless splendor of the mighty Mississippi River."
<http://www.riverrides.com/pages/public/fallsightseeing.html>

We'll meet in the Hilton lobby at 1:15 pm and depart at 1:30 pm sharp by passenger coach for Harriet Island West (20 min trip) to board at 2:15 pm, sail at 2:30 pm, and dock at 4:30 pm. We plan to arrive back at the hotel by 5:00 pm.

5:30PM Reception The Gallery, Lobby Level

6:15PM Roundtable Meeting Kickoff The Gallery, Lobby Level

6:30PM The Challenge of Big Data The Gallery, Lobby Level

Dr. Claudia Perlich, Chief Scientist, Media6Degrees

Big data is just about to reach the Peak of Inflated Expectations on the Gartner Hype Curve and it is a valid concern to ask: How far are we from the Trough of Disillusionment? Which expectations can be realized and which ones can't? Most of the hype about big data originated from technology solutions that significantly lowered the opportunity cost of storing huge amounts of information. This hype was further fueled by an ever-increasing number of vendors of "Big Data" solutions and increasingly analytics layers on top of them. While the marketing messages of these vendors are rich with cases and very optimistic on all the opportunity that should come from that data, most organizations are, frankly, not at all clear on how they should be using the ideas in their businesses.

This talk will provide a view from 15 years of experience of pre-big data efforts at IBM and post-big data solutions in computational advertising on what really matters and to

what extent (if at all) the new technologies have changed the playing field. The goals for the talk are to provide some perspective and advice on best practices on how to effectively utilize data (big or small), and, second, to provide guidance on how to avoid the most damaging pitfalls.

Claudia Perlich has worked with Big Data since before it was cool. Now the chief scientist at Media6Degrees, Ms. Perlich grew up in communist East Germany and did not see her first computer until she was 15. These days, she spends her days building models to help the digital advertising company improve its measurement tactics. She won the KDD Cup, a data-science competition sponsored by the Association for Computing Machinery, for three consecutive years from 2007 to 2009, and holds multiple patents for machine learning. In addition, she has published more than 50 scientific articles and was recognized twice for her work by the ACM. "She is strong-willed in a scientific sense and an intellectual sense, and is personally quite easy-going," said Tom Phillips, the chief executive at Media6Degrees. In 2010, he helped persuade Ms. Perlich to leave her gig at IBM, where she worked at the company's T.J. Watson Research Center, for his company. Media6Degrees, founded in 2008, now has 69 local employees and projected 2012 revenue of \$37 million. Since joining Media6Degrees, Claudia serves as one of the editors of the new journal "Big Data," and was selected by Crain's New York Business Journal as one of the "40 Under 40" young and outstanding business leaders in the New York area. Outside work, Ms. Perlich spends time at a stable in Pleasantville, N.Y., riding her horse, Monkey. She used to ride competitively. And every year she teaches herself something new: This year, it's the cello, so she can practice with her 8-year-old son, who is learning the double bass.

7:30PM *Dinner*

Conrad A, 2nd Floor

Sunday, October 6th

7:00AM *Continental Breakfast*

Red Wing, 3rd Floor

8:00AM *Roundtable Introductions*

The Gallery, Lobby Level

8:30AM *Big Data in Healthcare*

The Gallery, Lobby Level

Juergen Klenk, Principal, Booz Allen Hamilton

Organizations are accumulating data at an ever increasing rate. The IDC Digital Universe Study of December 2012 estimates that the digital universe will grow by a factor of 300 between 2005 to 2020. And according to Erik Brynjolfsson, Professor of Management at the MIT Sloan School of Management, "The problem is not that we don't have enough data – it's that we have too much data and we need to make sense of it." In this presentation we will focus on how Big Data has entered the field of Healthcare, and is expected to transform it over the next decade.

Juergen Klenk, a Principal with Booz Allen Hamilton, has over 20 years of professional experience in the public and commercial Health market. He is leading Booz Allen's Health Data Analytics team, overseeing work that spans fields such as Big Data Analytics, Scientific Computing, Healthcare Quality Research, Health Preparedness and Surveillance, Optimization, Regulatory Compliance, and Financial Integrity. Dr. Klenk's work focuses on providing advanced analytics services such as statistics, data mining, predictive modeling, and simulation in conventional and Cloud based environments to government, non-profit and commercial clients to enable data-driven planning and decision making. Dr. Klenk holds a Ph.D. in Mathematics and a M.S. in Physics and Mathematics from Tuebingen University, he is a PMI-certified Project Management Professional, and he holds a Six Sigma Green Belt and an IBM MicroMBA certification. He spent his academic career at Tuebingen University, Yale University, and the Australian National University.

9:30AM

Microbursts: Big Data in Finance

The Gallery, Lobby Level

Rishi Narang, Founding Principal, T2AM

Big data has been an issue in capital markets and trading since at least 2007. Famed quant trader Renaissance Technologies used to capture 1TB of data per day, and their data acquisition rate has since increased by an order of magnitude. The original source of big data in finance was the US equity limit order book, which generates hundreds of thousands of messages *per stock* each day, and in aggregate on the order of 1 billion messages per day. Because of the self-reinforcing nature of trading, there are unusual engineering problems that come with attempting to manage this type of data. Furthermore, there is an enormous amount of data generated on the Internet (what people normally associate with the "big data" label). This type of data is often believed to hold promise in forecasting. We will provide a framework for understanding how trading models work, and utilize that to explore both kinds of big data and their applications in the capital markets

Rishi K Narang is the Founding Principal of T2AM and manages T2AM's investment activities. He is a leader in quantitative trading and a veteran in the hedge fund industry. Prior to founding T2AM, Mr. Narang was co-Portfolio Manager and a Managing Director at Santa Barbara Alpha Strategies until 2005. He co-founded Tradeworx, Inc., a quantitative hedge fund manager, in 1999 and acted as its President until his departure in 2002. He began his hedge fund career in 1996 as the Global Investment Strategist for Citibank Alternative Investment. Mr. Narang is the author of *Inside the Black Box: The Simple Truth About Quantitative Trading* and is a frequent speaker on the topic of quantitative trading at hedge fund conferences, universities and other academic settings. He completed his undergraduate degree in Economics at the University of California at Berkeley.

A copy of Rishi Narang's book, *Inside the Black Box: The Simple Truth About Quantitative Trading*, will be given to each member representative attending the meeting.

10:30AM **Break**

10:45AM **Big Data in Health Care – Improving the Value of Care with Big Data Analytics** **The Gallery, Lobby Level**

Mark Hayward, Mayo Clinic and Charles W. Martel, Vice President, Data Management, Optum Labs

Optum and Mayo Clinic recently formed a joint venture – Optum Labs. The mission of this new collaboration is to bring together researchers, clinicians, and academics to use large data sets and sophisticated analytic tools to improve the value of care delivered. Data includes clinical data, outcomes and safety data, claims/administrative data, pharmaceutical data and life sciences data. The goal of Optum Labs is to foster a “Bell Labs” like environment for health care where groups can come together to make discoveries that will transform the future of health care. This effort relies heavily on the ability to harness the power of very large data sets to support these efforts.

Mark Hayward is the Administrator for the Center for the Science of Healthcare and Vice Chair for the Department of Facilities and Support Services for the Mayo Clinic. He earned his Bachelor of Science in Mathematics from St. Olaf College and his Masters in Industrial Engineering, Health Systems, from the University of Madison, WI. Mark served as a systems analyst at the Mayo Clinic from 1987-1991, as the Assistant Section Head, Hospital Systems and Procedures from 1991-93, Section Head, Clinic Systems and Procedures and Mayo Clinic Integrated Clinical Systems from 1993-2001, and Associate Administrator, Clinic Operations from 2008-2011.

Chuck Martel joined Optum ten years ago and now leads Optum Labs’ technology organization and several data management and services groups in Optum Data Management, including the country’s largest de-identified observational research database, healthcare trend analytics, payment integrity data and algorithm development and data projects consulting and reporting.

Earlier Optum experience included leading the development of the evidence-based medicine software, large-scale business intelligence reporting systems, physician quality measurement analytics, new products from the Innovation Lab, consumer portal tools and the company’s 2007 TDWI award-winning enterprise data warehouse.

Chuck's earlier career spans several healthcare and technology businesses, including Hospital Corporation of America (HCA), GE Medical Systems, Data General, Varian Semiconductor and two startups, including Medintell Systems (commercial development of Mayo Clinic's unit dose medication management system).

Chuck graduated from the University of Nebraska-Lincoln and earned his MBA at Vanderbilt University.

11:45AM **Lunch**

Red Wing, 3rd Floor

12:30PM *Hadoop and Big Data Analytics**The Gallery, Lobby Level***Brian Garrett, SAS**

By itself, big data has little value. Without enabling technologies such as Hadoop, performing analysis and gaining insights on big data is virtually impossible. It is computationally difficult, taxes resources, and can't complete in a timely manner.

In this session, we will discuss how Hadoop overcomes these obstacles and enables big data analytics. Through a series of real world examples, we will discuss how Hadoop allows organizations to make better decisions using big data. We will also explore new software innovations that fundamentally change the way you look at your data and gain insights.

Brian Garrett is a Principal Solutions Architect with SAS, focusing on Big Data and Hadoop. With more than 20 years experience in analytics and IT architecture, Brian has worked on big data projects around the world. Prior to joining SAS, Brian was the Chief Technical Officer of Mustard Tree Instruments, developing an analytical and computing platform for the pharmaceutical and chemical industries. In his current role, Brian works with some of largest organizations in the world helping them understand how to exploit their Big Data to drive value. Brian holds a B.S. in Statistics from NC State and a M.S. in Information Systems from The George Washington University.

1:30PM *Streaming Data for Applications in the Telecom Industry**The Gallery, Lobby Level***Dr. Dakshi Agrawal, Member of the Research Staff, IBM Research**

The ability to analyze massive volumes of network traffic (several hundred Gbps) in real-time (with microsecond to sub-second latencies) is important for Communication Service Providers (CSPs) as it enables them to optimize use of their service infrastructure and develop revenue-generating opportunities. In particular, the real-time analysis of perishable user traffic that is not stored due to regulatory and other constraints can provide insights that are useful in many applications. Based on real-world implementation experience, we will describe key challenges in the design of a platform for real-time analysis of network traffic, and how these challenges can be overcome using stream computing. We will show how in-memory computations can enable comprehensive visibility on the data objects and communication patterns of users at the application layer in contrast to simple packet- and flow-based analysis that traditional architectures provide. We discuss applications that exploit real-time massive-data analytics capabilities: online identification of most-frequent objects, online social network discovery, and real-time sentiment analysis.

Dr. Dakshi Agrawal manages Big Data Technologies research group focused on streaming analytics at IBM T J Watson Research Center. He received his undergraduate degree from Indian Institute of Technology–Kanpur, India in 1993 and his doctoral

degree from the University of Illinois–Urbana-Champaign (UIUC) in 1999. After a brief stint at UIUC as a Visiting Assistant Professor, he joined IBM Research in 2000, where he has been working in the areas of data mining, distributed systems, and communication networks.

At IBM Research, Agrawal's research work has produced major technology breakthroughs. He has been a catalyst behind several new initiatives at IBM Research, and he has led technically sophisticated projects delivering world-class capabilities to IBM products and services. For his technical contributions, he has been recognized by several high-prestige internal awards by IBM and conferred the grade of Fellow by IEEE. He is an IBM Master Inventor with more than fifty granted or filed patents. Currently, he is working on a number of initiatives within IBM for the application of big data technologies for Communications Services Providers (CSPs).

2:30PM ***Speaker Panel on Big Data*** ***The Gallery, Lobby Level***

Arnie Greenland will moderate a panel discussion comprised of the meeting's speakers.

3:30PM ***Break***

3:45PM ***Roundtable Business Meeting*** ***The Gallery, Lobby Level***

Bill Browning, INFORMS Roundtable President

An update on Roundtable membership, meetings, and finances will be presented.

4:30PM ***Roundtable Meeting with the INFORMS Board*** ***The Gallery, Lobby Level***

Our traditional annual meeting of the Roundtable and the INFORMS Board is held to discuss relevant topics and issues for the Society and the practice of operations research and management science. Questions for discussion are:

- What do Roundtable members see as emerging opportunities or challenges to INFORMS?
- What are the trends in hiring OR/Analytics professionals? Is there a difference in OR vs. Analytics hiring?
- How are the new INFORMS efforts related to the Job Fair and Job Bank helping Roundtable companies?

5:30PM ***INFORMS President's Reception for the Roundtable*** ***Grand Ballroom E***

Monday, October 7th

6:45PM ***Informal Networking Dinner (Dutch Treat)*** ***Mission American Kitchen and Bar***

Participants should meet in the hotel lobby at 6:15pm. Mark Hayward will lead the group to Mission American Kitchen and Bar, 77 7th Street (www.missionamerican.com) for the Dutch Treat Dinner.

Roundtable Suite

TBD

The **Roundtable Suite** is available 24 hours a day beginning Saturday, October 5th until Noon on Wednesday, October 9th. It is intended for Roundtable members and their guests to use as a lounge during the Roundtable and INFORMS meetings. It is great for small group discussions or a quiet place to take a break during your busy conference schedule.