

## 2014 Annual Meeting: Tentative Schedule

This tentative schedule will be updated as speakers and locations are confirmed.

### Friday October 10th

Locations TBA

#### **8:00- 9:00** Continental Breakfast (included in registration) & Unconference planning

The unconference planning will consist of presenting topics for discussion to the group and allowing members to select what topics they would like to be involved in and when. Inspiration for this model comes from ['Barcamps'](#) and ['Birds of a Feather'](#) style conferences that provide participants' the opportunity to propose discussion topics and pursue topics of interest. We'll continue adding details about this process as the schedule gets updated.

We've established a website for unconference proposals [here](#).

#### **9:00- 10:30** Unconference discussion time

#### **10:50- 12:00** Keynote Speaker: Jake Porway "Using Data for the Greater Good"

This talk is hosted by Carleton as a part of QuIRK's 10-year anniversary and is open to the Carleton College and Northfield area community.

#### About Jake Porway

Founder & Executive Director of DataKind; Host of National Geographic channel's *The Numbers Game* Jake Porway uses big data to tackle big social problems. As the founder of [DataKind](#), he connects—and acts as an accessible bridge between—data scientists and not-for-profit companies, which often don't have the know-how or resources to benefit from data analysis. A former *New York Times* Data Scientist, Porway wants all of humanity to benefit from the gains of big data.

Irrepressibly curious, Porway is both a scientist and a coder, equally excited to pioneer the next machine learning algorithm as his is to optimize the code to run it. He hopes to make machines smarter—and he looks for new ways to help machines make sense of things, for the greater good. He holds a B.S. in Computer Science from Columbia University and his M.S. and Ph.D. in Statistics from UCLA.

#### **12:00- 1:30** Lunch with Jake Porway (additional fee, limited to first 20 registrants)

OR lunch on own

OR with unconference discussion group

#### **1:30- 2:45** Plenary Speaker: Neil Lutsky. "Cut to the QUIC: What is the Essence of Quantitative Reasoning and How Can We Assess It?"

#### Talk Abstract

Among the virtues of Carleton's QuIRK initiative, one has received less attention than it warrants. That was the strategic decision to transform a campus culture indifferent to quantitative reasoning by anchoring a QR initiative in the social sciences. I will suggest this had a largely unanticipated but influential consequence that challenges conceptions of QR and means of assessing QR. I will review recent QR assessment measures and introduce a new 25-item test, the QUIC (Quantitative Understanding Instrument from Carleton), assessing socially significant quantitative reasoning concepts and skills.

### About Neil Lutsky

[Neil Lutsky](#) (Ph.D., Harvard University) is William R. Kenan, Jr., Professor of Psychology at Carleton College. He is a former president of the Society for the Teaching of Psychology (Division 2 of the American Psychological Association) and the 2011 recipient of the Charles L. Brewer Distinguished Teaching of Psychology Award given by the American Psychological Foundation. From 2004-2008 he directed a Department of Education FIPSE grant to Carleton on "Quantitative Inquiry, Reasoning, and Knowledge". Lutsky currently has appointments as Visiting Faculty at the Danish Institute for Study Abroad (Copenhagen, Fall 2014) and Visiting Professor of Psychology at Ashoka University (New Delhi, Winter and Spring, 2015).

### **3:00- 4:15** Afternoon Concurrent Sessions

"Fun Math is Not an Oxymoron: Quantitative Brain Teasers and Other Unthreatening Ways to Infuse Your Course with Numbers" Workshop with Kate Follette and Don McCarthy.

### Workshop Abstract

In this workshop, participants will be introduced to the idea of start-of-class quantitative "brainteasers" as a way to encourage numerical thinking in fun and challenging contexts. In our own classrooms, we find that this technique encourages worry-free exploration of numbers and helps students experience firsthand the utility of quantitative information to explore and solve interesting problems in both everyday and academic contexts. In this workshop, we will motivate the technique, share some of our favorite examples, and lead participants in developing several numerically-rich "brainteasers" for use in their own classrooms.

### About Kate Follette & Don McCarthy

Kate Follette is an astronomer at the University of Arizona's Steward Observatory and an instructor at Pima Community College. She is Co-PI of an NSF Transforming Undergraduate Education in STEM grant funding the development of a quantitative literacy assessment instrument for introductory college-level science courses. She regularly runs workshops for science instructors encouraging them to incorporate, emphasize and demystify numerical skills in their courses.

Don McCarthy is an infrared astronomer and educator at The University of Arizona's Steward Observatory. He teaches astronomy courses to large audiences of non-science undergraduate students, directs observatory-based Astronomy Camps for adults and teenagers, and leads a national program in science education for Girl Scouts of the USA for the NIRCAM science team on the future James Webb Space Telescope. He is Co-PI of an NSF Transforming Undergraduate Education in STEM grant funding the development of a quantitative literacy assessment instrument for introductory college-level science courses.

AALAC Workshop I. Details forthcoming

Alternate unconference discussion time

#### **4:30- 5:45 Afternoon Concurrent Sessions**

“Quantitative Reasoning in the Social Sciences” Workshop with Diego Mendez-Carbajo.

##### Workshop Abstract

The in-class use of quantitative case studies as a pedagogical resource helps students analyze and evaluate theoretical constructs in the social sciences. Specifically, the collection, manipulation and analysis of data compiled by different statistical agencies illustrate for students the connection between the theoretical and empirical dimensions of the social sciences. I will argue that the process of building such a connection relies heavily on the parallel development of a basic set of numeracy skills. This workshop will demonstrate the practical use of in-class quantitative case studies in the social science of Economics.

##### About Diego Mendez-Carbajo

Dr. Mendez-Carbajo’s research is in the area of applied economics. He has published articles on topics ranging from the inflation dynamics in the periphery of the Euro-zone to the impact of business cycles on the public funding of the Arts in the United Kingdom. A former Chairperson of the Economics Department, Dr. Mendez-Carbajo is the university’s Technology Fellow. He regularly teaches courses at all levels of the curriculum, several of which are writing-intensive.

AALAC Workshop II: Details Forthcoming

Alternate unconference discussion time

**6:30- 8:00** Dinner at Carleton (included in registration)

**8:30- 9:30** Optional Movie screenings from [The Geometry Project](#)

#### **Saturday October 11th**

Locations TBA

**8:00- 9:00** Continental Breakfast (included in registration)

**9:00- 11:00** Morning Concurrent Sessions

“Role-Playing for Quantitative Literacy” Workshop with John Curran.

##### Workshop Abstract

This workshop will give participants the tools they need to run a role-playing game called “Ways & Means 1935”, about the development of the original social security act during the Great Depression, in their course as part of a unit or final project. The game creates significant student engagement, and integrates various quantitative skills in the context of public policy development and debate. Participants in the workshop will be introduced to the central ideas of this way of teaching, and will be given detailed information on how to run the game in the classroom.

### About John Curran

John Curran earned his doctorate in Applied Mathematics from Brown University. Before returning to mathematics, he worked for the better part of a decade at an investment bank. He currently runs the actuarial science program at Eastern Michigan University. He has been active in revising the quantitative reasoning program at EMU.

AALAC Workshop III (from 9:30-10:45): Details forthcoming

Alternate unconference discussion time

### **11:15- 12:30 Morning Concurrent Sessions**

A Workshop in Five Parts by Milo Schield. "Teaching Coincidence", "Using the Log-Normal", "Statistical Significance of Correlations", "Creating Statistical Distributions via Random Processes" and "Using Segmented Regression".

#### Workshop Abstract

- 1) The chance of an unlikely coincidence increases as data size increases even though margin of error generally decreases. Coincidence is an important item in Big Data. Consider the Law of Very Large Numbers: The unlikely becomes almost certain given enough tries. Student exercises using downloadable Excel spreadsheets will be demonstrated.
- 2) The Log-Normal is very useful in modeling incomes. Excel will be used to demonstrate some of its unique properties.
- 3) The Pearson Correlation coefficient is often featured in data analysis. See [www.tylervigen.com](http://www.tylervigen.com). The formulas for the associated sampling distribution is complex -- and certainly not memorable. A simple sufficient condition for statistical significance is presented. This simple sufficient condition is useful and memorable. A preview can be found [here](#).
- 4) Statistical distributions such as the Normal, the Exponential and the Log-Normal are often presented as mathematical objects. They can be presented as the expected results of random phenomena operating in a given way. Excel simulations that form these three distributions will be demonstrated. Knowing what causes these distributions is very important to those who might use them. A preview can be found [here](#).
- 5) Segmented regression models can be very useful. Picking the point at which two segments should join involves minimizing their joint error. Two applications are presented: global warming and high blood pressure. A preview can be found [here](#).

### About Milo Schield

Milo Schield has been at Augsburg since 1985. He founded the MIS program at Augsburg and took it to be the seventh largest major within six years. He served as the chair of the Department of Business Administration for three years. Dr. Schield is an elected member of the International Statistical Institute, the US representative of the International Statistical Literacy Project, the President of the local chapter of the American Statistical Association and a Board Member of the National Numeracy Network. He is the web master of [www.StatLit.org](http://www.StatLit.org). This site had more than 200,000 download and 175,000 visits in 2010; it has been Google rated as the #1 site for statistical literacy for the past six years.

AALAC Workshop IV (from 11:00-12:15)

Alternate unconference discussion time

**12:30- 1:45** Lunch at Carleton (included in registration)

**2:00- 3:15** NNN Board Meeting;

NNN Board meetings are open to observers. If you are interested in being more involved in the organization--either formally or informally--please do join us!

**3:30- 5:00** AALAC working groups report out / Alternate unconference discussion time