

# DAE 2017 INVITED TALKS

———— Day 1: Thursday, October 12, 2017 ————

## Session 1. **INTERNET EXPERIMENTS**

*Organizer and Chair:* David Steinberg, Tel Aviv University, Israel

### **Thompson Sampling for Infinite Armed Bandits**

Steven Scott, *Google*

### **Sliced Designs for Multi-Platform Online Experiments**

Soheil (Sol) Sadeghi, *Microsoft Corporation*

### **Trustworthy analysis of online A/B tests: Pitfalls, challenges and solutions**

Jiannan Lu, *Microsoft Corporation*

## Session 2. **COMPUTATIONAL METHODS IN DESIGN OF EXPERIMENTS**

*Organizer and Chair:* Dave Woods, University of Southampton, UK

### **New methods for approximating the expected utility in Bayesian design for nonlinear models**

Yiolanda Englezou, *University of Southampton, UK*

### **The Construction of Missing-Robust Experimental Designs and their Comparison to Classical and Optimal Designs**

Byran Smucker, *Miami University (Oxford, OH)*

### **Computation of Optimal Experimental Design for Estimating Conditional Effects**

Bradley Jones, *JMP Division/SAS*

## Session 3. **NEW APPLICATIONS OF FACTORIAL EXPERIMENTS**

*Organizer and Chair:* Jessica Jaynes, California State University, Fullerton

### **Order of Addition Modeling**

Robert Mee, *University of Tennessee*

### **Application of Kriging Models for a Drug Combination Experiment on Lung Cancer**

Qian Xiao, *University of Georgia*

### **Using blocked fractional factorial designs to construct discrete choice experiments**

Jessica Jaynes, *California State University, Fullerton*

## Session 4. **DESIGNS FOR NON-NORMAL DATA**

*Organizer and Chair:* Abhyuday Mandal, University of Georgia

### **Robust Dose-level Designs for Binary Responses**

Wanchunzi Yu, *Arizona State University*

### **Constructing Efficient Designs for a Ballooned Beta-Logistic Model in Toxicology**

Seung Won Hyun, *North Dakota State University*

## D-optimal Designs for Multinomial Logistic Models

Jie Yang, *University of Illinois at Chicago*

———— Day 2: Friday, October 13, 2017 ————

### Session 5. DESIGN AND ANALYSIS OF COMPUTER EXPERIMENTS

*Organizer and Chair:* Peter Qian, University of Wisconsin-Madison

#### Data farming research: opportunities for the design and analysis of large-scale simulation experiments

Susan Sanchez, *The Naval Postgraduate School*

#### A Stochastic Process Approach to Generating Designs

Matthew Pratola, *The Ohio State University*

#### Predictive Distribution for Gaussian Process Models with Design-Based Subagging

Linglin He, *Rutgers University*

### Session 6. RECENT ADVANCES IN ORTHOGONAL ARRAYS AND COVERING ARRAYS

*Organizer and Chair:* Frederick Phoa, Academia Sinica, Taiwan

#### Strong Orthogonal Arrays of Strength Two Plus

Boxin Tang, *Simon Fraser University, Canada*

#### Geometric Orthogonal Array (GOA): A new class of space-filling designs with good uniformities in multiple dimensions

Frederick Kin Hing Phoa, *Academia Sinica, Taiwan*

#### High Index Covering Array: A Useful Class of Cost-Efficient and Outlier-Resistant Designs With Repeated Tuple Observations

Yasmeen Akhtar, *Academia Sinica, Taiwan*

### Session 7. INFERENCE FOR ADAPTIVE DESIGNS

*Organizer and Chair:* Nancy Flournoy, University of Missouri

#### Blinded and Unblinded Sample Size Recalculation for generalized linear models

Sergey Tarima, *Medical College of Wisconsin*

#### Adaptive Procedures for Optimum Observed Fisher Information

Adam Lane, *Cincinnati Children's Hospital Medical Center*

#### Optimal Adaptive Subsampling under the A-optimality Criterion for Logistic Regression

Haiying Wang, *University of Connecticut*

### Session 8. COMPUTER EXPERIMENTS AND UNCERTAINTY QUANTIFICATION

*Organizer:* Ying Hung, Rutgers University

*Chair:* C. Devon Lin, Queen's University, Canada

**Exact Knowledge Gradient-Based Sequential Data collection for Optimal Decision Making**

Qiong Zhang, *Virginia Commonwealth University*

**Invariance-Preserving Emulation for Computer Models, with Application to Structural Energy Prediction**

Peter Qian, *University of Wisconsin-Madison*

**Local Gaussian Process Model for Large-scale Dynamic Computer Experiments**

C. Devon Lin, *Queen's University, Canada*

———— Day 3: Saturday, October 14, 2017 ————

**Session 9. ADVANCES IN OPTIMAL DESIGN OF DOSE RANGING STUDIES**

*Organizer and Chair:* Valerii Fedorov, ICONplc, USA

**Operational tuning optimal design of clinical trials "time-to-event" endpoints to increase operational probability of success**

Xiaoqiang Xue, *QuintilesIMS*

**Optimal model-based design, dose ranging, and population pharmacokinetic measures**

Sergei Leonov, *ICON Clinical Research*

**A universal approach to optimal design of experiments based on the use of elemental information matrices**

Valerii Fedorov, *ICONplc, USA*

**Session 10. INFORMATION-BASED OPTIMAL SUBDATA SELECTION FOR BIG DATA**

*Organizer and Chair:* Min Yang, University of Illinois at Chicago

**Optimal design of sampling survey for efficient parameter estimation**

Wei Zheng, *University of Tennessee*

**On Data Reduction of Big Data**

Min Yang, *University of Illinois at Chicago*

**Information-Based Optimal Subdata Selection for Big Data Lasso Regression**

Xin Wang, *University of Illinois at Chicago*

## DAE 2017 INVITED POSTERS

———— Day 1: Thursday, October 12, 2017 ————

### **Optimal design involving profile factors**

Maria Adamou, *University of Southampton, UK*

### **A Bayesian-inspired minimum aberration criterion for two-level multi-stratum factorial designs**

Ming-Chung Chang, *Academia Sinica, Taiwan*

### **Hybrid Numerical Optimization Algorithms for Generating Optimal Discrimination Designs**

Ping-Yang Chen, *National Cheng Kung University, Taiwan*

### **Algorithms for searching saturated D-Optimal designs for two level factorial designs**

Kouakou Francois Domagni, *University of Illinois, Chicago*

### **CV, ECV, and Robust CV designs for replications under a class of linear models in factorial experiments**

Subir Ghosh, *University of California, Riverside*

### **Simulation-Based Optimal Bayesian Design for Sequential Experiments**

Xun Huan, *Sandia National Laboratories*

### **Power and Practicality of Large Supersaturated Designs**

Varun Khemani, *University of Maryland*

### **Robust Design of Generalized Linear Model**

Yiou Li, *DePaul University*

### **Augmenting Definitive Screening Designs for Estimating Quadratic Models**

Abigael Nachtsheim, *Arizona State University*

### **On A-efficient treatment-control designs constructed by generalized cyclic designs**

Kazuhiro Ozawa, *Gifu College of Nursing, Japan*

### **Design of Order-of-Addition Experiments**

Jiayu Peng, *Penn State University*

### **An algebra for conditional main effects**

Arman Sabbaghi, *Purdue University*

### **Pseudo Generalized Youden Designs**

Rakhi Singh, *IITB-Monash Research Academy, India*

### **Differential Evolution for Optimal Design Creation**

Zack Stokes, *UCLA*

### **Finding D-Optimal Designs for High Dimensional Logistic Models via Two-Layer Tournament Swarm Optimization**

Zizhao Zhang, *UCLA*

**Individual Factor Word Length Pattern For Nonregular Fractional Factorial Designs**  
Qi Zhou, *Tianjin University of Finance and Economics, China*

———— Day 2: Friday, October 13, 2017 ————

**Purely sequential estimation of a negative binomial mean with applications in ecology**  
Sudeep R. Bapat, *University of California, Santa Barbara*

**Information-Based Optimal Subdata Selection for Big Data Logistic Regression**  
Qianshun Cheng, *University of Illinois at Chicago*

**Comparison of Gaussian process modeling software**  
Collin Erickson, *Northwestern University*

**Replication or exploration? Sequential design for stochastic simulation experiments**  
Jiangeng Huang, *Virginia Tech*

**The application of design of experiments to precision medicine clinical trial**  
Kim May Lee, *University of Cambridge, UK*

**Hellinger information and optimal designs for nonregular models**  
Yi Lin, *University of Illinois at Chicago*

**Experimental Design with Circulant Property and its Application to fMRI Experiment**  
Yuan-Lung Lin, *Academia Sinica, Taiwan*

***d*-QPSO: A Quantum-Behaved Particle Swarm Technique for Finding *D*-Optimal Designs for Models with Mixed Factors and a Binary Response**  
Abhyuday Mandal, *University of Georgia*

**Construction of Covering Arrays Using Parallel Strength Two Covering Arrays**  
Kevin Quinlan, *Penn State University*

**Geometric Orthogonal Array (GOA): A new class of space-filling designs with good uniformities in multiple dimensions**  
Cheng-Yu Sun, *Simon Fraser University, Canada*

**Super-simple bipartite orthogonal array**  
Yu Tang, *Soochow University, China*

**Two-Level Designs Constructed by Concatenating Orthogonal Arrays of Strength Three**  
Alan Vazquez-Alcocer, *University of Antwerp, Belgium*

**Optimal space-filling Latin hypercube designs based on good lattice point designs**  
Lin Wang, *UCLA*

**Locally *D*-optimal Designs for Multiple-covariate Generalized Linear Models**  
Zhongshen Wang, *Arizona State University*

**Local Variable Selection in Experimental Design**  
Munir Winkel, *North Carolina State University*

**Functional *F* tests for orthogonal designs**  
Bairu Zhang, *Queen Mary, University of London*