

Conference Program

Latent Variables Conference 2016 (LV2016)

Organized by the Department of Statistics
and Continuing Education and Conferences
University of South Carolina, Columbia

Partial Support from the
US National Science Foundation (NSF),
National Institute of Statistical Sciences (NISS),
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University of South Carolina

Oct 12-14, 2016
USC Alumni Center
University of South Carolina
Columbia, South Carolina, USA

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Conference Program Committee

- **Don Edwards**, Department of Statistics, University of South Carolina
- **John Grego**, Department of Statistics, University of South Carolina
- **David Hitchcock**, Department of Statistics, University of South Carolina

Local Arrangements and Registration

Local arrangements, registration, and housing reservations for the conference were handled by **Mr. Pete Windham** and **Ms. Kate Shelton** of **University of South Carolina Continuing Education and Conferences**.

Welcome to LV 2016

On behalf of the faculty and the students of the Department of Statistics of the University of South Carolina, Columbia, we, the organizers of the Latent Variables Conference (LV) 2016, would like to welcome all the participants of this conference to the University of South Carolina, the City of Columbia, and South Carolina. We appreciate your participation in this conference held in recognition of Prof. Jayaram Sethuraman's foundational contributions to latent variables theory and hope that this will be a productive venue for all participants to further their research and interaction with other researchers in a variety of areas related to latent variables that reflect our department's interests, including factor models, nonparametric Bayes, objective Bayes, model-based clustering, interval censoring, frailty models, multiple testing, semiparametric methods, model misspecification, group testing, and item response theory.

We would like to thank also the Program Committee members for organizing invited sessions on a varied range of topics. The participation of all the invited speakers and poster presenters is very much appreciated.

We would like also to acknowledge the support provided by the National Science Foundation, which enabled us to provide partial travel support to graduate student participants, the invited speakers, and other participants who needed some travel support. We also acknowledge the financial support provided by Dr. Prakash Nagarkatti, Vice President of Research, and co-sponsorship of the conference by NISS/SAMSI.

Enjoy the conference, and please feel free to approach any of us if there is anything else that we could do to make this a successful conference for you.

The Organizers,
Don Edwards
John Grego
David Hitchcock

Conference Program

**Wednesday
October 12, 2016**

**6:00–8:00 pm
Check-in/Reception/Mixer
USC Alumni Center
Upstairs Dining Room**

**Thursday
October 13, 2016**

**7:30–8:30 am
Breakfast and Registration
USC Alumni Center
Ballroom Pre-Function Area**

Session Number **01**
Session Title **Welcoming Session**
Time and Day **8:30–8:45 am, Thursday**
Place **USC Alumni Center Ballroom 3**
Session Organizer
Session Chair **John M. Grego, University of South Carolina**

8:30–8:40

Opening Remarks

John Grego, Department Chair

University of South Carolina

8:40–8:45

Welcoming Remarks

Hanno zur Loye, Associate Dean for Research and Graduate Studies

University of South Carolina

<i>Session Number</i>	02
<i>Session Title</i>	Plenary I
<i>Time and Day</i>	8:45–9:45 am, Thursday
<i>Place</i>	USC Alumni Center Ballroom 3
<i>Session Organizer</i>	Organizers
<i>Session Chair</i>	John M. Grego , University of South Carolina

8:45–9:45

Functional and Very High Dimension Reduction

Yanyuan Ma

Pennsylvania State University

9:45–10:00 am
Coffee Break
USC Alumni Center
Ballroom Pre-Function Area

<i>Session Number</i>	03 (Concurrent Invited)
<i>Session Title</i>	Diagnostic Screening/ROC Curves
<i>Time and Day</i>	10:00–11:30 am, Thursday
<i>Place</i>	USC Alumni Center Ballroom 1A
<i>Session Organizer</i>	Tim Hanson , University of South Carolina
<i>Session Chair</i>	Tim Hanson , University of South Carolina

10:00–10:30

Discrimination Surfaces for Region-Specific Brain Asymmetry Analysis

Miguel de Carvalho

University of Edinburgh

10:30–11:00

Nonparametric Bayesian regression analysis of the Youden index

Vanda Inacio de Carvalho

University of Edinburgh

11:00–11:30

Covariate adjusted measures of diagnostic accuracy based on pooled biomarkers

Chris McMahan

Clemson University

<i>Session Number</i>	04 (Concurrent Invited)
<i>Session Title</i>	Model Misspecification Diagnosis
<i>Time and Day</i>	10:00–11:30 am, Thursday
<i>Place</i>	USC Alumni Center Ballroom 1B
<i>Session Organizer</i>	Xianzheng Huang , University of South Carolina
<i>Session Chair</i>	Xianzheng Huang , University of South Carolina

10:00–10:30

A nonparametric goodness-of-fit test for random effects models via cross-validation Bayes factors

Jeffrey Hart

Texas A&M University

10:30–11:00

Latent variable augmented sparse regression

Jinchi Lv

University of Southern California

11:00–11:30

Prediction risk for global-local shrinkage regression

Anindya Bhadra

Purdue University

<i>Session Number</i>	05 (Concurrent Invited)
<i>Session Title</i>	Factor Models
<i>Time and Day</i>	10:00–11:30 am, Thursday
<i>Place</i>	USC Alumni Center Ballroom 3
<i>Session Organizer</i>	Yanyuan Ma , Pennsylvania State University
<i>Session Chair</i>	Yanyuan Ma , Pennsylvania State University

10:00–10:30

Variable selection for longitudinal data analysis in the presence of missing observations and measurement error

Grace Yi

University of Waterloo

10:30–11:00

A Bayesian Latent Variable Approach to Aggregation of Top-ranked Partial Gene lists in Genomic Studies

Sherry Wang

Southern Methodist University

11:00–11:30

Identification of endogenous retrovirus integration sites using a mixture model

Le Bao

Pennsylvania State University

11:30 am–1:00 pm
Lunch Break
(On Your Own)

<i>Session Number</i>	06
<i>Session Title</i>	Plenary II
<i>Time and Day</i>	1:00–2:00 pm, Thursday
<i>Place</i>	USC Alumni Center Ballroom 3
<i>Session Organizer</i>	Organizers
<i>Session Chair</i>	Don Edwards , University of South Carolina

1:00–2:00

A review of Bayesian nonparametric regression through mixture models

Sonia Petrone

Università Boccone

2:00–2:15 pm
Refreshment Break
USC Alumni Center
Ballroom Pre-Function Area

Session Number **07 (Concurrent Invited)**
Session Title **Measurement Error**
Time and Day **2:15-3:45 pm, Thursday**
Place **USC Alumni Center Ballroom 1A**
Session Organizer **Josh Tebbs**, University of South Carolina
Session Chair **Josh Tebbs**, University of South Carolina

2:15–2:45

Functional Semiparametric Bayesian Time Varying Coefficient ME Models in Matched Case-Crossover Studies

Inyoung Kim

Virginia Tech

2:45–3:15

Association Study of Children’s Methylation and Growth Trajectory using Functional Mixed Models

Arnab Maity

North Carolina State University

3:15–3:45

Analysis of proportional odds models with censoring and errors-in-covariates

Samiran Sinha

Texas A&M University

Session Number **08 (Concurrent Invited)**
Session Title **Item Response Theory**
Time and Day **2:15-3:45 pm, Thursday**
Place **USC Alumni Center Ballroom 1B**
Session Organizer **Brian Habing**, University of South Carolina
Session Chair **Brian Habing**, University of South Carolina

2:15–2:45

IRT modelling of ordinal forced-choice data

Alberto Maydeu-Olivares

University of South Carolina

2:45–3:15

The Multidimensional Generalized Graded Unfolding Model: Issues and Applications

James Roberts

Georgia Institute of Technology

3:15–3:45

A cautionary tale on equating

Louis Roussos

Measured Progress

<i>Session Number</i>	09 (Concurrent Invited)
<i>Session Title</i>	Latent Variables in Medical Testing
<i>Time and Day</i>	2:15-3:45 pm, Thursday
<i>Place</i>	USC Alumni Center Ballroom 3
<i>Session Organizer</i>	Don Edwards , University of South Carolina
<i>Session Chair</i>	Don Edwards , University of South Carolina

2:15-2:45

Modeling rater diagnostic skills in binary classification processes

Xiaoyan Lin

University of South Carolina

2:45-3:15

Modeling agreement between multiple raters' ordinal classifications

Kerrie Nelson

Boston University

3:15-3:45

A latent class modeling approach for predicting disease status using functional data in the absence of a gold standard

Amita Manatunga

Emory University

<i>Session Number</i>	10
<i>Session Title</i>	Plenary III
<i>Time and Day</i>	4:00-5:00 pm, Thursday
<i>Place</i>	Russell House Ballroom 3
<i>Session Organizer</i>	Organizers
<i>Session Chair</i>	John Grego , University of South Carolina

4:00-5:00

Latent story of the stick breaking representation for the Dirichlet process

Jayaram Sethuraman

Florida State University

5:00-5:15 pm
Group Photo Session
Location: Ballroom Terrace

6:00-8:00
Mixer
Dinner
(USC Alumni Center Ballroom 3)

Session Number **11**
Session Title **Banquet honoring Jayaram Sethuraman**
Time and Day **6:30-8:00, Thursday**
Place **USC Alumni Center Ballroom 3**
Session Organizer Organizers
Session Chair **Edsel Peña**, University of South Carolina

7:00–7:15
Edsel Peña
University of South Carolina

7:15–7:50
J. Sethuraman, the Man and the Scholar
Robert Taylor
Clemson University

Friday October 14, 2016

7:30–8:00 am
Breakfast
USC Alumni Center
Ballroom Pre-Function Area

<i>Session Number</i>	12 (Concurrent Invited)
<i>Session Title</i>	Frailty Models
<i>Time and Day</i>	8:00-9:30 am, Friday
<i>Place</i>	USC Alumni Center Ballroom 1A
<i>Session Organizer</i>	Edsel Peña , University of South Carolina
<i>Session Chair</i>	Edsel Peña , University of South Carolina

8:00-8:30
Haiqun Lin
Yale University

8:30-9:00
Frailty Models in the Social Sciences
Amanda Fairchild
University of South Carolina

9:00-9:30
Elizabeth Slate
Florida State University

<i>Session Number</i>	13 (Concurrent Invited)
<i>Session Title</i>	Objective Bayes Analysis in Latent Variable Models
<i>Time and Day</i>	8:00–9:40 am, Friday
<i>Place</i>	USC Alumni Center Ballroom 1B
<i>Session Organizer</i>	Xiaoyan Lin , University of South Carolina
<i>Session Chair</i>	Xiaoyan Lin , University of South Carolina

8:00–8:25*Latent-Variable Approaches for Accurate Computation in Bayesian Scale-Usage Models***Chris Hans**

Ohio State University

8:25–8:50*Fast Bayesian Factor Analysis via Automatic Rotations to Sparsity***Veronika Ročková**

University of Chicago

8:50–9:15*Permuted and Augmented Stick-Breaking Multinomial Regression***Mingyuan Zhou**

University of Texas at Austin

9:15–9:40*An Objective Prior for Hyperparameters in Normal Hierarchical Models***Dongchu Sun**

University of Missouri

9:35–9:50 am
Coffee Break

<i>Session Number</i>	14
<i>Session Title</i>	Plenary IV
<i>Time and Day</i>	9:50–10:50 am, Friday
<i>Place</i>	USC Alumni Center Ballroom 3
<i>Session Organizer</i>	Organizers
<i>Session Chair</i>	David Hitchcock , University of South Carolina

9:50–10:50*Scaling and Generalizing Variational Inference, with examples from Bayesian nonparametrics***David Blei**

Columbia University

<i>Session Number</i>	15 (Concurrent Invited)
<i>Session Title</i>	Model-based Clustering
<i>Time and Day</i>	11:00 am–12:30 pm, Friday
<i>Place</i>	USC Alumni Center Ballroom 1A
<i>Session Organizer</i>	David Hitchcock , University of South Carolina
<i>Session Chair</i>	David Hitchcock , University of South Carolina

11:00–11:30

Bayesian community detection with unknown number of communities

Debdeep Pati

Florida State University

11:30–12:00

Generalized linear mixed models with gaussian mixture random effects: an application to nationwide kidney transplant center evaluation

Yehua Li

Iowa State University

12:00–12:30

Edge-exchangeable graphs, sparsity, and power laws

Tamara Broderick

Massachusetts Institute of Technology

<i>Session Number</i>	16 (Concurrent Invited)
<i>Session Title</i>	Group Testing and Biomarker Pooling
<i>Time and Day</i>	11:00 am–12:30 pm, Friday
<i>Place</i>	USC Alumni Center Ballroom 1B
<i>Session Organizer</i>	Dewei Wang , University of South Carolina
<i>Session Chair</i>	Dewei Wang , University of South Carolina

11:00–11:30

A general framework for the regression analysis of pooled biomarker assessments

Colin Gallagher

Clemson University

11:30–12:00

Revisiting Nested Group Testing Procedures: New Results, Comparisons, Robustness

Yaakov Malinovsky

University of Maryland, Baltimore County

12:00–12:30

Adjusting for Processing or Measurement Error in Regression Analyses with Biomarker Exposure Levels Assessed on Pooled Samples

Robert Lyles

Emory University

12:30–2:00 pm
Lunch Break
(On Your Own)

12:30–5:00 pm
Poster Session
(See list of Presenters at End of Program)
USC Alumni Center Ballroom 2

12:30–2:00 pm
Student Poster Session Judging

Session Number **17**
Session Title **Plenary V**
Time and Day **2:15–3:15 pm, Friday**
Place **USC Alumni Center Ballroom 3**
Session Organizer Organizers
Session Chair **John Grego, University of South Carolina**

2:15-3:15
From Latent Variable and Mixture Models to Inference in Subgroup Analysis
Xuming He
University of Michigan

<i>Session Number</i>	18 (Concurrent Invited)
<i>Session Title</i>	Advances in Regression Analysis of Interval-censored Data
<i>Time and Day</i>	3:30-5:00 pm, Friday
<i>Place</i>	USC Alumni Center Ballroom 1A
<i>Session Organizer</i>	Organizers
<i>Session Chair</i>	Lianming Wang , University of South Carolina

3:30-4:00*Regression analysis of informatively interval-censored failure time data***Tony Sun**

University of Missouri

4:00-4:30*Accounting for measurement uncertainty in environmental preterm studies***Shuangge Ma**

Yale University

4:30-5:00*Bayesian semiparametric models for spatially correlated arbitrarily censored data***Haiming Zhou**

Northern Illinois University

<i>Session Number</i>	19 (Concurrent Invited)
<i>Session Title</i>	Large Sample Testing and Model Selection
<i>Time and Day</i>	3:30-5:00 pm, Friday
<i>Place</i>	USC Alumni Center Ballroom 1B
<i>Session Organizer</i>	Organizers
<i>Session Chair</i>	John Grego , University of South Carolina

3:30-4:00*A modified mixed model approach to the large scale multiple testing problem***Paramita Chakraborty**

University of South Carolina

4:00-4:30*Multiple testing approaches for removing background noise from images***Subhashis Ghoshal**

North Carolina State University

4:30-5:00*Toward valid uncertainty quantification about the model***Ryan Martin**

North Carolina State University

Closing of Conference

Poster Session Presenters
October 14 (Friday)
USC Alumni Center Ballroom 2
Period: 12:30–(Set-Up Time: Friday Morning)

Poster Board #1

Latent promotion time cure rate model using dependent tailfree mixtures

Li Li

University of New Mexico

Poster Board #2

Identifying a PTSD resilient group based on a latent class analysis of childhood trauma and adult PTSD symptoms

Megan Warnock

Emory University

Poster Board #3

Group testing regression models with dilution submodels

Md Warasi

Radford University

Poster Board #4

Size Investing Strategy on Multiple Confidence Intervals under FWER

Taeho Kim

University of South Carolina

Poster Board #5

Adaptive posterior contraction rates in non-linear latent variable models

Shuang Zhou

Florida State University

About Poster Presentations/Displays

The dimensions of the poster boards are 4 feet by 8 feet. They will be able to accommodate posters of size 36 inches by 48 inches, or 48 inches by 36 inches, though the latter would be preferable. We will provide the connectors to the poster boards (e.g., thumb tacks, etc.). Set-up time of the posters will be during Friday morning, preferably during the coffee break, and in the afternoon, participants will be able to view the posters. **Questions and Answer** sessions for these posters will be during Friday lunch break, coffee break, and after the end of the afternoon sessions. Poster displays will be in Ballroom 2.

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Instructions to Access Wireless

To access wireless, you may use secure login through **eduroam**, provided your home institution is a participating member. You should be able to log in using the network user name assigned to you by your home institution; please note that your suffix may be different. E.g., University of South Carolina faculty visiting other institutions must login using NetworkUserName@ds.sc.edu, rather than NetworkUsername@sc.edu.

If your institution is not a participating institution, you may use non-secure access through the **uscguest** wireless network.

Dining Places

Note: The link to restaurants in the Vista (www.vistacolumbia.com/businessmap.aspx?business=28) has information on many more restaurants and bars than are listed below. As a hospitality district, the Vista hosts numerous restaurant/bars, many with a similar tourist-y vibe. You can find ersatz Asian (Tsunami, SakiTumi, Takosushi), chains (Panera's, Five Guys, Chipotle's, Longhorn Steakhouse), pubs with endless beer selections (Flying Saucer, World of Beer), bars, etc. We focus mostly on some of the more established choices in the Vista below.

One or two blocks away Entrees over \$20 for dinner

1. **Motor Supply Company** 920 Gervais Street Phone: (803) 256-6687
Website: www.motorsupplycobistro.com
No other restaurant in Columbia has been as good for as long as Motor Supply. Locally-sourced food, house-cured meats, creative drinks.
2. **Ruth's Chris Steakhouse** 924A Senate Street Phone: (803) 201-6666
Website: ruthschris.com
High-end steakhouse chain located in the lobby of the conference hotel
3. **Ristorante Divino** 803 Gervais Street Phone: (803) 799-4550
Website: www.ristorantedivino.com
Old-school Northern Italian cuisine
4. **Cola's Restaurant** 1215 Assembly Street Phone: (803) 451-0051
Website: colasrestaurant.com
Newer and well-regarded restaurant. There's some New South cooking here, but many traditional entrees as well.
5. **Blue Marlin** 1200 Lincoln Street Phone: (803) 799-3838
Website: www.blumarlincolumbia.com
Creole and New South cooking in generous portions. A good place for your shrimp-and-grits fix. A civic-minded owner in Bill Dukes.

One or two blocks away Entrees under \$20 for dinner

1. **Art Bar** 1211 Park Street Phone: (803) 929-0198
Website: www.artbarsc.com
A mainstay of Columbia's alternative night scene.
2. **Gervais and Vine** 620A Gervais Street Phone: (803) 799-8463
Website: www.gervine.com
Wine bar with a good small-plates menu. The former owner, Kristian Niemi, also started well-regarded restaurants Bourbon and Mr. Friendly's.
3. **Liberty Tap Room** 828 Gervais Street Phone: (803) 461-4677
Website: www.gervine.com
Better than the typical Vista restaurant/bar.
4. **M Vista** 701 Lady Street Phone: (803) 255-8878
Website: miyos.com
Part of Michelle Wang's Columbia restaurant empire. Wide-ranging and conservative Asian cooking. Excellent drink selection.

5. **Mellow Mushroom** 1009 Gervais Street Phone: (803) 933-9201
Website: mellowmushroom.com
Cultivates a stoner vibe in its decor and advertising, but is otherwise a reliable pizza choice.
6. **Menkoi Ramen House** 1004 Gervais Street Phone: (803) 708-1569
7. **Nonnah's** 923 Gervais Street Phone: (803) 779-9599
Website: www.nonnahs.com
A perennial favorite for late night dessert.
8. **Oyster Bar** 923 Gervais Street Phone: (803) 799-4484
Website: www.oysterbarcolumbia.com
An informal bar with Gulf Coast (not Atlantic Coast) oysters on the half-shell and other simple seafood offerings
9. **Pearlz Oyster Bar** 936 Gervais Street Phone: (803) 661-7741
Website: www.nonnahs.com
Good selection of oysters from the East and Gulf Coast. A typical menu otherwise. Big happy hour scene.
10. **The Wired Goat Cafe** 709 Gervais Street Phone: (803) 851-0990
Website: wiredgoat.cafe
Local coffee shop

Main Street Growing entertainment district across Assembly Street and north of the Capitol Building

1. **The Whig** 1200 Main Street (Basement level) Phone: (803) 931-8852
Website: www.thewhig.org
It maintains a reputation as a hipster bar, but a good beer selection on tap, cheap food, and a great jukebox attract a diverse crowd.
2. **The Oak Table** 1221 Main Street Phone: (803) 563-5066
Website: www.theoaktablesc.com
Excellent restaurant run by the same group out of Charleston that owns Magnolia's and Blossom's
3. **Cowboy Brazilian Steakhouse** 1508 Main Street Phone: (803) 728-0887
Website: www.cowboybraziliansteakhouse.com
It's a churrascaria, for those interested in a meat coma
4. **Hampton Street Vineyard** 1201 Hampton Street Phone: (803) 252-0850
Website: hamptonstreetvineyard.com
Just off Main Street. A longtime and well-regarded restaurant that keeps its menu updated. And it does have a good wine selection.
5. **Bourbon** 1214 Main Street Phone: (803) 403-1404
Website: www.bourboncolumbia.com
Another Kristian Niemi restaurant. The focus is definitely on cocktails, but the food is good as well.

Across the River Small entertainment district across the historic Gervais Street Bridge

1. **Terra** 100 State Street Phone: (803) 791-3443
Website: www.terrasc.com
Upscale and well-regarded restaurant whose owners regularly participate in farm-to-table feasts.
Small plates are reasonable here.
2. **116 State** 116 State Street Phone: (803) 791-5663
Website: 116state.com
A wine bar with spanish-influenced small plates
3. **Al's Upstairs Italian Restaurant** 300 Meeting Street Phone: (803) 803-794-7404
Website: www.alsupstairsitalian.com
A traditional Italian restaurant with great views of the Gervais Street Bridge and Congaree River
if you get the right table.