Wednesday, May 20, 2015

8:00 – 9:00 a.m. Breakfast – Dining Hall at new Residence Hall

9:30 – 12:30 a.m. Workshop morning session

12:30 – 1:30 p.m. Lunch – Galaxy Room at Student Union

2:00 – 5:30 p.m. Workshop afternoon session

6:00 – 7:30 p.m. Welcome reception – Hyatt Regency North Dallas

Workshops

• W3. Small area population estimation using areal interpolation (Morning session only, Room: GR 3.206).

Note: Instructors or organizers of each workshop will decide detail logistics for their workshops. During the morning and afternoon sessions, refreshments and/or snack will be provided: They are tentatively scheduled for 11:00am – 11:30am (morning session) and 3:30 – 4:00 pm (afternoon session).
Thursday, May 21, 2015

Note that posters will be displayed all day

7:30 – 8:30 a.m. Breakfast – Dining Hall at new Residence Hall

8:45 – 9:00 a.m. Welcoming Remarks, ATEC Lecture Hall: Brian J. L. Berry

9:00 – 9:45 a.m. Keynote, ATEC Lecture Hall: Shashi Shekar (Introducer: Weili Wu)

9:45 – 10:30 a.m. Keynote, ATEC Lecture Hall: Scott Morehouse (Introducer: May Yuan)

10:45 – 11:15 a.m. Mid-morning break – Clarke Center Lobby

11:15 – 12:30 p.m. Main Conference sessions, Clarke Center

Session A-1: Geocomputation & the Urban Environment (Chair: Brian J. L. Berry, Room: 1.102)

- Our town: How socioeconomics shape functional neighborhoods in American cities. Alex Singleton, Seth Spielman, and David O'Sullivan
- A web based geographic information platform to support urban adaptation to climate change. Phil Nugent, Olufemi Omitaomu, Esther Parish, Rui Mei, Kathleen Ernst, and Mariya Absar
- GPU accelerated textons and dense sift features for human settlement detection from high-resolution satellite imagery. Dilip Patlolla, Sophie Voisin, Harini Sridharan, and Anil Cheriyadat

Session A-2: Algorithms (Chair: Yan Huang, Room 1.112)

- Developing a bivariate AMOEBA technique. Sang-II Lee and Daheeon Cho
- Computationally efficient algorithms for settlement mapping using very high-resolution images. Ranga Raju Vatsavai
- A MPI-based parallel pyramid building algorithm for large-scale RS image. Gaojin He, Luo Chen, Wei Xiong, Quyun Wu, and Ning Jing

Session A-3: Accuracy & Uncertainty in Geocomputation (Chair: Daniel A. Griffith, Room: 1.120)

- Spatial aggregation as a means to improve data quality. Min Sun and David Wong.
- Uncertainties on spatial data analysis by various sources of error. Monghyeon Lee, Yongwan Chun, and Daniel A. Griffith
- Improving accuracy of categorical attribute modeling with indicator simulation and soft information.
Carlos A. Felgueiras, Antonio M. V. Monteiro, Jussara O. Ortiz, and Eduardo C. G. Camargo

12:30 – 1:30 p.m. Lunch – Galaxy Room at Student Union

2:00 – 3:40 p.m. Main Conference sessions, Clarke Center

**Session B-1: Agent-Based Models** (Chair: Weili Wu, Room 1.102)
- A vector agent-based unsupervised image classification for high spatial resolution satellite imagery.
  Kambiz Borna, Antoni Moore, and Pascal Sirguey
- Accelerating agent-based emergency evacuation planning using a knowledge database based on population distribution regularity.
  Ling Yin, Jinxing Hu, and Qi Yu
- A locality-aware approach to scalable parallel agent-based models of spatially heterogeneous interactions.
  Zhaoya Gong, Wenwu Tang, and Jean-Claude Thill
- Optimizing urban modeling based on road network and land use/cover changes by using agent based - cellular automata model.
  Yousef Khajavigodellou, Ali Asghar Alesheikh, Farshad Hakimpour, and Kamran Chapi

**Session B-2: Spatio-Temporal Geocomputation** (Chair: May Yuan, Room: 1.112)
  Thanos Bantis, James Haworth, Catherine Holloway, and John Twigg
- Predicting Hourly Ozone Pollution in Dallas-Fort Worth Area Using Spatio-Temporal Clustering.
  Mahdi Ahmadi, Yan Huang, and Kuruvilla John
- Development, evaluation and parallelization of a spatio-temporal, topographic, and spectral GIS-based solar radiation model.
  Iliyana Dobreva, Michael Bishop, Jyh-Charn Liu, and Liang Da
- Using co-clustering to analyze spatio-temporal patterns: a case study based on spring phenology.
  Raul Zurita-Milla, Xiaojing Wu, and Menno-Jan Kraak

**Session B-3: Geocomputation & the Natural Environment** (Chair: Fang Qiu, Room: 1.120)
- Regionalization of the conterminous U.S. into hierarchical landscape pattern types.
  Jacek Niesterowicz, Tomasz Stepinski, and Jaroslaw Jasiewicz
- Integrating fire-spread and household-level trigger modeling to stage wildfire evacuation warnings.
  Dapeng Li, Thomas Cova, and Philip Dennison
- Parallel calculation of LS factor for regional scale soil erosion assessment.
  Kai Liu and Guoan Tang
- Comparing curve matching approaches for land cover classification using waveform data.
  Yuhong Zhou and Fang Qiu

3:40 – 4:10 p.m. Poster Q&A and Mid-afternoon snack – Clarke Center, Lobby
4:10 – 5:50 p.m. Main Conference sessions, Clarke Center

**Session C-1: Spatial & Geostatistics I** (Chair: Yongwan Chun, Room: 1.102)

- A framework to assess model structure stationarity.
  Judith Verstegen, Floor van der Hilst, and Derek Karssenberg
- Estimating variance function of a nonstationary process using a difference filter.
  Eunice Kim
- A variance-stabilizing transformation to mitigate biased variogram estimation in heterogeneous surfaces with clustered samples.
  Xiaojun Pu and Michael Tiefelsdorf
- When space beats time: Decomposing and interpreting temporal and spatial components after hurricane events.
  Marco Millones, Benoit Parmentier, Daniel A Griffith, Stuart E Hamilton, and Sean McFall

**Session C-2: Social Media** (Chair: May Yuan, Room: 1.112)

- Developing a geocomputational workflow to check the consistency of volunteered geographic information
  Hamed Mehdi Poor, Raul Zurita Milla and Menno-Jan Kraak
- Exploring spatial decay effect in mass media and social media: A case study of china
  Yihong Yuan
- Can social media play a role in developing building occupancy curves for small area estimation?
  Robert Stewart, Jesse Piburn, Eric Weber, Marie Urban, April Morton, Gautam Thakur, and Budhendra Bhaduri
- Application of social media data to high resolution mapping of a special event population.
  Kelly Sims, Eric Weber, Budhendra Bhaduri, Gautam S. Thakur, and David Resseguie

**Session C-3: High Performance (HP) & Cloud Computing** (Chair: Yan Huang, Room: 1.120)

- Investigation of landslide based on high performance and cloud-enabled geocomputation.
  Jun Liu, Shuguang Liu, Qiming Zhou, and Jing Qian
- A fully-automated high performance image registration workflow to support precision geolocation for imagery collected by airborne and spaceborne sensors.
  Devin White and Christopher Davis
- Deviation flow refueling location model for continuous space: commercial drone delivery system for urban area.
  Insu Hong and Michael Kuby
- GeoSquare: A cloud-enabled geospatial information resources (GIRs) infrastructure for collaboration and sharing.
  Kai Hu, Huayi Wu, Zhipeng Gui, Lan You, Ping Shen, Shuang Gao, Xiaoqiang Cheng, and Jie Zheng

6:00 – 7:30 p.m. Texas BBQ – Under the Trellis (It will be held in Galaxy Room at Student Union if weather does not permit)
Friday, May 22, 2015

Note that posters will be displayed all day

7:30 – 8:30 a.m. Breakfast – Dining Hall at new Residence Hall

8:45 – 9:30 a.m. Keynote, ATEC Lecture Hall: Dana Tomlin (Introducer: Brian J. L. Berry)


10:30 – 11:00 a.m. Mid-morning break – Clarke Center, Lobby

11:00 – 12:15 p.m. Main Conference sessions, Clarke Center
Session D-1: Geometry and Space (Chair: May Yuan, Room 1.102)
  • Space-time cluster detection using network-constrained minimum spanning trees on GPU.
    Kevin Stefan
  • Can Grid and TIN coexist?
    Weidong Zhao, Jitang Zhao, Lei Ma, Wan Zhou, Jian Tian, and Jiazhong Qian
  • Design and validation of dynamic hierarchies and adaptive layouts using spatial graph
    grammars.
    Kai Liao, Jun Kong, Kang Zhang, and Bauke de Vries

Session D-2: Geocomputation Simulation I (Chair: Brian J. L. Berry, Room: 1.112)
  • Urban water-log simulation and prediction based on multi-agent systems.
    Shitai Bao, Changjoo Kim, Wenping Ai, Zehui Lai, and Jianfang Wang
  • Simulation of spatial disorientation in human walking behavior: Optimizing wandering
    disutility functions.
    Amir Najian and Denis Dean
  • A distributed simulation method of forest fire propagation based on cellar automata
    model.
    Zhenqiang Li, Xuefeng Guan, and Huayi Wu

Session D-3: Geocomputation & Species Modeling (Chair: Yan Huang, Room: 1.120)
  • Using a null model approach to explore how dynamic interactions in wildlife are
    analyzed.
    Jennifer Miller
  • Do Amerindian communities provide signals to the spatial pattern distribution of trees
    and palms in Guyana?
    Aravind Sivasailam and Anthony Cummings
  • Simulating the effects of migration on the uncertainty of species' range shift.
    Paul Holloway, Jennifer Miller, and Simon Gillings

12:30 – 1:30 p.m. Lunch – Galaxy Room at Student Union
2:00 – 3:40 p.m. Main Conference sessions, Clarke Center
Session E-1: Spatial & Geostatistics II (Chair: Daniel A. Griffith, Room: 1.102)
- Power analysis for geographic representativeness. Matthew Schmill and Tim Oates
- Respondent driven sampling and spatial autocorrelation. E Morris, Vaishnavi Thacker, and Daniel Griffith
- The statistical distribution of coefficients for constructing eigenvector spatial filters. Parmanand Sinha, Monghyeon Lee, Yongwan Chun, and Daniel A. Griffith
- The Moran coefficient and the Geary ratio: Some mathematical and numerical comparisons. Qing Luo, Daniel Griffith, and Huayi Wu

Session E-2: Cellular Automata (Chair: Fang Qiu, Room: 1.112)
- A utility study of ant colony optimization for automated calibration of land use cellular automata models. Charles P. Newland, Hedwig Van Delden, Jeffrey P. Newman, Holger R. Maier, Roel Vanhout, and Aaron C. Zecchin
- Modelling land use dynamics in Luxembourg cross border region: The use of cellular automata and decision tree learning model. Omar Charif and Reine Maria Basse
- Integrating the multi-label land use concept and cellular automata with the ANN-based land transformation model. Hichem Omrani, Amin Tayyebi, and Bryan C Pijanowski

Session E-3: Geocomputation Time Modeling (Chair: Yongwan Chun, Room: 1.120)
- World climate search and classification using dynamic time warping similarity function. Pawel Netzel and Tomasz Stepinski
- Track spatiotemporal spread of public concerns on Ebola in the U.S. via twitter. Ying Liu, Feixiong Luo, and Guofeng Cao
- Deriving spatially refined consistent small area estimates over time using cadastral data. Hamidreza Zoraghein, Stefan Leyk, Matthew Ruther, and Barbara P. Buttenfield

3:40 – 4:10 p.m. Poster Q&A and Mid-afternoon snack – Clarke Center, Lobby

4:10 – 5:50 p.m. Main Conference sessions, Clarke Center
Session F-1: Geocomputation Visualization (Chair: Fang Qiu, Room: 1.102)
- Exploring 3D trajectory visualization in a virtual environment. Jie Li, Zhao Xiao, and Jun Kong
- High resolution population grid for the entire united states. Anna Dmowska and Tomasz Stepinski
- Atvis: A New Transit Visualization System
Jiaxuan Pang, Charles Tian, Yan Huang, Bill Buckles and Arash Mirzaei
- Geovisualization of attribute uncertainty.
  Hyeongmo Koo, Yongwan Chun, and Daniel A. Griffith

Session F-2: Geocomputation & Movement (Chair: Daniel A. Griffith, Room: 1.112)
- Understanding individual daily activity space based on large scale mobile phone location data.
  Yang Xu, Shih-Lung Shaw, Ling Yin, and Ziliang Zhao
- From everywhere to everywhere (FETE): adaptation of a pedestrian movement network model to a hybrid parallel environment.
  Alexandre Sorokine, Devin White, and Andrew Hardin
- Uncovering digital divide and physical divide using mobile phone data.
  Song Gao, Bo Yan, Li Gong, Blake Regalia, Yiting Ju, and Yingjie Hu
- SVM classification of London police foot patrol behavior.
  Jianan Shen and Tao Cheng

Session F-3: Artificial Intelligence & Data Mining (Chair: Weili Wu, Room: 1.120)
- Geocomputation methods for dyadic relationships.
  Clio Andris, Nathan Frey, Jeremy Van Cleve, and James O'Dwyer
- A hybrid dasymetric and machine learning approach to high-resolution residential electricity consumption modeling.
  April Morton, Nicholas Nagle, Jesse Piburn, Robert Stewart, and Ryan Mcmanamay
- Performance analysis of machine learning algorithms for regression of spatial variables: A case study in the real estate industry.
  Sebastian Santibanez, Marius Kloft, and Tobia Lakes
- A soft computing logic method for agricultural land suitability evaluation.
  Bryn Montgomery, Suzana Dragicevic, and Jozo Dujmovic

6:00 – 7:00 p.m. Transportation to Hyatt Regency North Dallas

7:00 – 9:00 p.m. Banquet Dinner, Hyatt Regency North Dallas
Saturday, May 23, 2015

Note that posters will be displayed all morning

7:30 – 8:30 a.m. Breakfast – Dining Hall at new Residence Hall

8:45 – 9:30 a.m. Keynote, ATEC Lecture Hall: Michael Batty (Introducer: Daniel A. Griffith)

9:45 – 10:15 a.m. Mid-morning break – Clarke Center, Lobby

10:15 – 11:30 a.m. Main Conference/Panel Discussion, Clarke Center

Session G-1: Geocomputation Simulation II (Chair: Brian J. L. Berry, Room: 1.102)

- Enabling the acceleration of dust simulation using job scheduling method in a cloud environment.
  Manzhu Yu, Chaowei Yang, and Zhenlong Li
  Eduardo Pérez-Molina, Richard Sliuzas, Victor Jetten, and Martin van Maarseveen
- MIRAGE: A framework for data-driven collaborative high-resolution simulation.
  Byung Park, Melissa Allen, Devin White, Eric Weber, John Murphy, Michael North, and Pam Sydelko

Session G-2: Geocomputation, Data Mining & Big Data (Chair: Yongwan Chun, Room: 1.112)

- A Spatiotemporal Data Mining Framework for Mining Ozone Pollution Data
  Sujing Wang, Christoph Eick, Qiang Xu
- Mining sequential pattern of multi-dimensional wind profiles.
  Norhakim Yusof, Raul Zurita-Milla, and Menno-Jan Kraak
- Parallelizing affinity propagation using GPUs for spatial cluster analysis over big geospatial data.
  Xuan Shi

Session G-3: Medical Geocomputation (Chair: Weili Wu, Room: 1.120)

- Spatiotemporal epidemic modeling with libSpatialSEIR: Specification, fitting, selection, and prediction.
  Grant Brown and Jacob Oleson
- Geospatial data mining in volunteer data: How natural conditions might increase the risk of tick bites and Lyme disease?
  Irene García-Martí, Raúl Zurita-Milla, Sita Bennema, Margriet G. Harms, C. C. van den Wijngaard, Arno Swart, and Arnold J. H. van Vliet
- Surgical phase recognition using movement data from video imagery and location sensor data.
  Atsushi Nara, Chris Allen, and Kiyoshi Izumi

11:50 – 12:30 p.m. Closing Remarks, Clarke Center (Room: 1.112)
• Announcement of best paper and poster prizes

12:30 p.m. Boxed lunch – Clarke Center, Lobby
Poster presentations

Note that posters will be displayed during the whole conference. Poster presenters will be available for Questions and Answers during Poster Q&A and Mid-afternoon snack sessions. The posters are:

- Identifying significant drivers for the tradeoff and synergy between carbon sequestration and water yield ecosystem services at the watershed/eco-region level in the southeastern United States. Mukhtar Ahmed Ajaz Ahmed, Amr Abd-Elrahman, Francisco Escobedo, Wendell Cropper, and Nilesh Timilsina
- Terra Populus: Geocomputation for population and environment data. David Haynes II, Tracy Kugler, David Van Riper, and Steven Manson
- Geocomputation for urban planning in the era of big data: Developing automated tools for analyzing lidar data to inform urban planning and policy in Portland, OR. Jackson Voelkel, Vivek Shandas, Meenakshi Rao, and Anthony Thompson
- Geostatistical models for the spatial distribution of uranium in the continental United States. Sara Stoudt
- Incorporation of planetary boundary layer height modeling with GIS techniques to determine criteria for aerosolization and transport of infectious agents in southwestern United States. John Olgin and Deana Pennington
- Spatio-temporal evolution of aerosols in the Atlantic Ocean. Mariana Güereque, Deana Pennington, and Vernon Morris
- Modeling land use change using an eigenvector spatial filtering model specification for discrete response. Parmanand Sinha
- Comparing old and new urban hierarchies using agent-based simulation. Xiaomeng Li and Zachary P. Neal
- Bangladesh east-west immunization divide: Time to target communities instead of households? Priyanka Vyas and Dohyeong Kim
- Geostatistical modeling of primary and secondary automobile traffic as ecological disturbance proxy across the contiguous United States. Sean Mcfall, Matthias Leu, Benoit Parmentier, Marco Millones, and Stuart Hamilton
• Animating Maps: Visual Analytics meets Geoweb 2.0. Piyush Yadav, Shailesh Deshpande, and Raja Sengupta