Lili Ju

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Education

Ph.D. in Applied Mathematics, 2002/5, Iowa State University

M.S. in Computational Mathematics, 1998/7, Chinese Academy of Sciences

B.S. in Mathematics, 1995/7, Wuhan University, China

Experiences

2013/1 – Present **Professor**, Department of Mathematics, University of South Carolina
2008/8 – 2012/12 **Associate Professor**, Department of Mathematics, University of South Carolina
2004/8 – 2008/8 **Assistant Professor**, Department of Mathematics, University of South Carolina
2002/9 – 2004/8 **Industrial Postdoctoral Associate**, IMA, University of Minnesota

Visiting Positions

Visiting Professor (Feb. 1 – Apr. 15, 2011)
Department of Scientific Computing, Florida State University

Shapiro Scholar & Visiting Professor (Sep. 16 – Dec. 10, 2010)
Department of Mathematics, Penn State University

Professional Activities

- Member, Society for Industrial and Applied Math. (SIAM) and American Mathematical Society (AMS)
- President (2008-2009), Secretary-Treasurer (2007-2008), SIAM Southeastern Atlantic Section
- Faculty Advisor (2006/9-2008/9), SIAM Student Chapter at USC

Awards

USC Featured Scholar of June 2012, University of South Carolina, 2012.
USC Research & Productive Scholarship, University of South Carolina, 2006-2007.
J.J.L. Hinrichsen Award for outstanding research in Applied Math., 2002, Iowa State University.
University Research Excellence Award for graduate students, 2002, Iowa State University.
"YiLiDa" Award for excellent graduate studies, 1996, Chinese Academy of Sciences.

Research Interests

Numerical analysis and scientific computation; Numerical ice sheet and ocean modeling; Image processing techniques

Sponsored Research

- **National Science Foundation**, DMS-1215659, "Numerical Improvements, Mesh Adaptation and Parameter Identification for Parallel Finite Element Stokes Ice Sheet Modeling", PI, 8/1/2012-7/31/2015, $157,618.
- **Department of Energy**, DE-SC0008087, "Predicting Ice Sheet and Climate Evolution at Extreme Scales (PISCEES)", PI, 6/15/2012-6/14/2017, $348,420.
- **National Science Foundation**, DMS-0913491, "Study on Algorithms and Applications of Centroidal Voronoi Tessellations", PI, 9/1/2009-8/31/2012, $180,000.
- **Society for Industrial and Applied Mathematics**, "The 33rd SIAM Southeastern-Atlantic Section Annual Meeting", PIs (L. Szekely and L. Ju), 2009, $4,180.
- **Department of Energy**, DE-FG02-07ER64431, "New Grid and Discretization Technologies for Ocean and Ice Simulations", PI, 7/15/2007-7/14/2011, $236,871.
- **National Science Foundation**, DMS-0609575, "Some Problems on Analyses and Applications of Centroidal Voronoi Tessellations", PI, 8/1/2006-7/31/2009, $122,781.

- **USC Research Foundation**, RPS-13060-06-12306, "Some Applications of Centroidal Voronoi Tessellations", PI, 4/1/2006-6/30/2007, $5,000.

Publications

- **Book Chapters**: 1 in print
- **Papers**: 44 in print, 3 in press, 4 submitted
- **Refereed Abstracts**: 5 in print

Presentations

- **Seminars and Colloquia**: 48 invited (33 institutions), 8 contributed
- **Workshops and Conferences**: 25 talks (24 invited), 14 posters, 14 attended

Supervised Research

- **PhD. Students**: Li Tian (USC/Math, 2009/5), Xiao Xiao (USC/Math, 2012/5), Yu Cao (USC/CSE, expected 2013/5, co-supervised with S. Wang)
- **M.S. Students**: Wensong Wu (USC/Math, 2007/8), Xiao Xiao (USC/Math, 2010/5), Jing Liu (USC/Math, 2010/8), Rosalia Tatano (USC/Math, expected 2013/8)
- **Postdocs/Visiting Scholar**: Huai Zhang (Visiting Associate Professor, 2008/9-2010/3), Yang Li (Visiting Ph.D. Student, 2010/8-2011/2), Yongqiang Ren (Visiting Ph.D. Student, 2012/10-2013/9)

Courses Taught at USC

MATH 141, MATH 142, MATH 241, MATH 242, SCHC 499A, MATH 520, MATH 526, MATH 527, MATH 706, MATH 708, MATH 726, MATH 727, MATH 728J, MATH798, MATH 799, MATH 899

Major Services

- Chair of Committee of the Tenured Faculty (2009/3-2010/4), Member of Post-Tenure Review Committee (2008/8-2009/3, 2011/8-Present), Hiring Committee (2005/8-2006/8, 2007/8-2009/8), BioMath Hiring Committee (2012/8-Present), Undergraduate Advisory Council (2004/8-2006/8), Graduate Advisory Council (2006/8-2007/8, 2009/8-2010/8, 2011/8-Present), Faculty Advisory Council (2012/8-Present), Graduate Placement Committee (2011/8-Present), Applied and Computational Mathematics Committee (2004/8-2010/8, 2011/8-Present), Computer Committee (2004/8-2010/8), Grant Mentoring Committee (2009/8-2010/8), MCM Coach (2006/2-2008/8), Editor for the IMI preprint series (2005/4-2010/8) of Department of Mathematics at USC; Member of IMI Executive Committee (2012/9 – 2014/9) and USC General Education Work Team "Life-Long Learning" led by Professor Cynthia Colbert (2007/1 – 2007/8).
- Associate Editor of *SIAM Journal on Numerical Analysis*, 2012/1 – Present; Guest Editor of *Numerical Mathematics: Theory, Methods and Applications* (NMTMA) for a special issue (Vol. **3**, No. 2, 2010) on "Centroidal Voronoi Tessellations: Theory, Algorithms and Applications"; Member of the editorial board of *ISRN Applied Mathematics*, 2011/1-1012/12.
- Member of 11 Ph.D. dissertation committees at USC (2004-Present); External research evaluator for 1 Tenure&Promotion case from Department of Mathematics and Statistics of the University of North Florida (2011)
- Referee for 31 research journals since 2004; Panelist of 3 NSF panels for Division of Mathematical Science (2008/3, 2010/3, 2012/11); Reviewers of more than 35 proposals for 5 domestic and international agencies including NSF, Singapore National Research Foundation, Ministry of Education Research Grant of Singapore, Research Grants Council of Hong Kong, National Research Foundation of United Arab Emirates.
- Member of Organizing Committee of SIAM-SEAS 2008; Co-chair of Organizing Committee of SIAM-SEAS 2009 and IWCAM 2012; Organizer/Co-Organizer of 6 mini-symposia at conferences (SIAM-SEAS 2005, SIAM-CSE 2007, SIAM-SEAS 2008, SIAM 2008, ICIAM 2011, SIAM-SEAS2012).

Software Products

http : *//www.math.sc.edu/~ju/Homepage_files/softwares.html*

- "SCVT" – A Generator for Spherical Centroidal Voronoi Tessellation and Delaunay Triangulation
- "MESHGEN" – A 2D Triangular Mesh Generator based on Centroidal Constrained Delaunay Triangulation or Conforming Centroidal Voronoi Tessellations
- "PHFEMICE" – A Parallel High-order Finite Element Solver for 3D Nonlinear Stokes Ice Sheet Modeling