

CONTACT INFORMATION

Computer Science, U of Chicago
1100 East 58th Street #RY-161-B
Chicago, IL 60637

Voice: 773-834-3066
email: glk@uchicago.edu
Web: <http://people.cs.uchicago.edu/~glk>

POSITIONS

University of Chicago

Chicago, Illinois

July 2017 to Present: Associate Professor, Dept. of Computer Science

January 2009 to June 2017: Assistant Professor, Dept. of Computer Science and Computation Institute

Harvard Medical School (Brigham and Women's Hospital, Department of Radiology),

Boston, Massachusetts

Instructor, August 2007 to December 2008

Post-doctoral Research Fellow, October 2004 to August 2007

Advisor: Carl-Fredrik Westin

EDUCATION

University of Utah, Salt Lake City, Utah

Ph.D., Computer Science, December 2004

“Visualization and Analysis of Diffusion Tensor Fields”

Advisor: Christopher R. Johnson

Cornell University, Ithaca, New York

M.S., Architecture (Computer Graphics), January 1999

“Semi-Automatic Generation of Transfer Functions for Direct Volume Rendering”

Advisor: Donald P. Greenberg.

Cornell University, Ithaca, New York

B.A., Mathematics, May 1995

RESEARCH GRANTS

National Science Foundation Grant [IOS-1555972](#). “The Roles of Pioneer Neurons and Adhesion Molecules in Neuronal Migration”, 2016–2019. Co-PI Victoria Prince (Dept Organismal Biology and Anatomy, University of Chicago). Investigating the origins, trajectory, and fate of pioneer facial branchiomotor neurons in zebrafish, imaged with light-sheet microscopy.

National Science Foundation Grant [CCF-1564298](#). “SHF:Medium:A DSL for Data Visualization and Analysis in Imaging-Based Science and Scientific Computing”, 2016–2020. Co-PI John Reppy (Dept of Computer Science, University of Chicago). Extends the compiler for the Diderot programming language with more language features and better debugging, and adding support for larger datasets and finite element meshes.

National Science Foundation Grant [ACI-1626552](#). “MRI: Acquisition of a Data Lifecycle Instrument (DaLI) for Management and Sharing of Data from Instruments and Observations”, 2016–2019. PI Birali Runesha (Research Computing Center, University of Chicago), Co-PI with Callum Ross (Organismal Biology and Anatomy). Equipment grant to simplify high-volume scientific data acquisition during experiments, computational pre- and post-processing, data sharing at publication, and long-term storage.

ADVISEES

Post-doctoral: Thomas Schultz (2009–2011)

Doctoral: Tri Huynh (2015– present), Charisee Chiw (2015–present, co-advising with John Reppy), Kai Li (2015–present), Nick Seltzer (2010–present), Tatiana Orlova (Master’s paper committee, 2013), Yun Li (Master’s paper committee, 2016), Yan Liu (Master’s paper committee, 2016–present), Hannah Morgan (PhD committee, advised by Ridgway Scott, 2016–present).

BS/MS (combined undergraduate and Master’s degree in computer science): Luke Peeler (2013–2014), Adam J Shaw (2014–2015).

Undergraduate REU: Megan Renshaw (2013–2016).

PUBLICATIONS

Publications list also online <http://people.cs.uchicago.edu/~glk/pubs/>

Refereed Journals

N Seltzer, G Kindlmann. “Glyphs for Asymmetric Second-Order 2D Tensors” *Computer Graphics Forum* (Proc. EuroVis; *Honorable Mention for Best Paper*), 35(3):141150, 2016. ([PDF](#))

G Kindlmann, C Chiw, N Seltzer, L Samuels, and J Reppy. “Diderot: a Domain-Specific Language for Portable Parallel Scientific Visualization and Image Analysis” *IEEE Transactions on Visualization and Computer Graphics*, 22(1):867-876, Jan 2016. ([PDF](#))

MW Scheeler, D Kleckner, D Proment, GL Kindlmann, WTM Irvine. “Helicity conservation by flow across scales in reconnecting vortex links and knots” *Proceedings of the National Academy of Sciences (PNAS)*, 111(43):1535015355, Oct 2014. ([DOI](#))

G Kindlmann, C Scheidegger. “An Algebraic Process for Visualization Design” *IEEE Transactions on Visualization and Computer Graphics* (Proc. VIS; *Best Paper Honorable Mention*), 20(12):2181–2190, Nov 2014. ([PDF](#))

JK Gahm, G Kindlmann, DB Ennis. “The Effects of Noise Over the Complete Space of Diffusion Tensor Shape” *Medical Image Analysis*, 18(1):197–210, Jan 2014. ([Publisher](#)) ([PMID 24239734](#))

JC Ross, GL Kindlmann, Y Okajima, H Hatabu, AA Díaz, EK Silverman, GR Washko, J Dy, and R San José Estépar. “Pulmonary lobe segmentation based on ridge surface sampling and shape model fitting” *Medical Physics*, 40(12):121903 Dec 2013 ([Publisher](#)) ([PMID 24320514](#)) ([PMCID PMC3843757](#))

T Schultz, GL Kindlmann. “Open-Box Spectral Clustering: Applications to Medical Image Analysis”

IEEE Transactions on Visualization and Computer Graphics (Proc. VIS), 19(12):2100–2108, Oct 2013. ([computer.org](#)) ([PDF](#))

R San José Estépar, GL Kinney, JL Black-Shinn, RP Bowler, [GL Kindlmann](#), JC Ross, R Kikinis, MK Han, CE Come, AA Díaz, MH Cho, CP Hersh, JD Schroeder, JJ Reilly, DA Lynch, JD Crapo, JM Wells, MT Dransfield, JE Hokanson, GR Washko. “Computed Tomographic Measures of Pulmonary Vascular Morphology in Smokers and Their Clinical Implications” *American Journal of Respiratory and Critical Care Medicine*, 188(2):231–239, July 2013. ([PMID 23656466](#)) ([Publisher](#))

G Douaud, S Jbabdi, TEJ Behrens, RA Menke, A Gass, AU Monsch, A Rao, B Whitcher, [G Kindlmann](#), PM Matthews, S Smith. “DTI measures in crossing-fibre areas: increased diffusion anisotropy reveals early white matter alteration in MCI and mild Alzheimer’s disease” *NeuroImage*, 55(3):880–890, April 2011. ([PMID 21182970](#)) ([Publisher](#))

AJ Golby, [G Kindlmann](#), I Norton, A Yarmarkovich, S Pieper, R Kikinis. “Interactive Diffusion Tensor Tractography Visualization for Neurosurgical Planning” *Neurosurgery*, 68(2):496–505, Feb 2011. ([PMID 21135713](#)) ([Web page](#))

T Schultz, [GL Kindlmann](#). “Superquadric Glyphs for Symmetric Second-Order Tensors” *IEEE Transactions on Visualization and Computer Graphics (Proc. Visweek)*, 16(6):1595–1604, 2010. ([IEEE](#)) ([ACM](#)) ([PDF](#))

T Schultz, [G Kindlmann](#). “A Maximum Enhancing Higher-Order Tensor Glyph” *Computer Graphics Forum (Proc. EuroVis)*, 29(3):1143–1152, 2010. ([Publisher](#)) ([PDF](#))

P Savadjiev, [GL Kindlmann](#), S Bouix, ME Shenton, C-F Westin. “Local white matter geometry from diffusion tensor gradients” *NeuroImage*, 49(4):3175–3186, 2010. ([PMID 19896542](#)) ([PDF](#))

M Hlawitschka, C Garth, X Tricoche, [G Kindlmann](#), G Scheuermann, KI Joy, B Hamann. “Direct visualization of fiber information by coherence” *International Journal of Computer Assisted Radiology and Surgery*, 5(2):125–131, April, 2010. ([PMID 20033521](#)) ([PDF](#))

[GL Kindlmann](#), R San José Estépar, SM Smith, C-F Westin. “Sampling and Visualizing Creases with Scale-Space Particles” *IEEE Transactions on Visualization and Computer Graphics*, 15(6):1415–1424, 2009. ([IEEE](#)) ([ACM](#)) ([PDF](#))

AA Qazi, A Radmanesh, L O’Donnell, [G Kindlmann](#), S Peled, S Whalen, C-F Westin, AJ Golby. “Resolving crossings in the corticospinal tract by two-tensor streamline tractography: Method and clinical assessment using fMRI” *NeuroImage*, 47(Supp.2):T98–T106, 2009. ([PMID 18657622](#)) ([Web page](#))

K Lee, T Yoshida, M Kubicki, S Bouix, C-F Westin, [G Kindlmann](#), M Niznikiewicz, A Cohen, RW McCarley, ME Shenton. “Increased diffusivity in superior temporal gyrus in patients with schizophrenia: A Diffusion Tensor Imaging study” *Schizophrenia Research*, 108(1):33–40, 2009. ([PMID 19135872](#)) ([Web page](#))

X Tricoche, [G Kindlmann](#), C-F Westin. “Invariant Crease Lines for Topological and Structural Analysis of Tensor Fields” *IEEE Transactions on Visualization and Computer Graphics*, 14(6):1627–1634, 2008.

[\(IEEE\)](#) [\(ACM\)](#) [\(PDF\)](#)

SX Vasquez, MS Hansen, AN Bahadur, MF Hockin, [GL Kindlmann](#), L Nevell, IQ Wu, DJ Grunwald, DM Weinstein, GM Jones, CR Johnson, JL Vandenberg, MR Capecchi, C Keller. “Optimization of volumetric computed tomography for skeletal analysis of model genetic organisms” *The Anatomical Record*, 291(5):475–487, 2008. [\(PDF\)](#)

[G Kindlmann](#), D B Ennis, R T Whitaker, C-F Westin. “Diffusion Tensor Analysis with Invariant Gradients and Rotation Tangents” *IEEE Transactions on Medical Imaging*, 26(11):1483–1499, 2007. [\(IEEE\)](#) [\(PDF\)](#)

[G Kindlmann](#), X Tricoche, C-F Westin. “Delineating White Matter Structure in Diffusion Tensor MRI with Anisotropy Creases” *Medical Image Analysis*, 11(5):492–502, 2007. [\(PMID 17804278\)](#) [\(PDF\)](#)

[G Kindlmann](#) and C-F Westin. “Diffusion Tensor Visualization with Glyph Packing” *IEEE Transactions on Visualization and Computer Graphics*, 12(5):1329–1336, Sep-Oct 2006. [\(IEEE\)](#) [\(ACM\)](#) [\(PDF\)](#)

DB Ennis and [G Kindlmann](#). “Orthogonal tensor invariants and the analysis of diffusion tensor magnetic resonance images” *Magnetic Resonance in Medicine*, 55(1):136–146, 2006. [\(PMID 16342267\)](#) [\(PDF\)](#)

[G Kindlmann](#), DM Weinstein, GM Jones, CR Johnson, MR Capecchi, C Keller. “Practical vessel imaging by computed tomography in live transgenic mouse models for human tumors” *Molecular Imaging*, 4(4):417–424, Oct–Dec 2005. [\(PMID 16285903\)](#) [\(PDF\)](#)

M Magnor, [G Kindlmann](#), C Hansen, N Duric. “Reconstruction and Visualization of Planetary Nebulae” *IEEE Transactions on Visualization and Computer Graphics*, 11(8):485–496, 2005. [\(IEEE\)](#) [\(ACM\)](#) [\(PDF\)](#)

DB Ennis, [G Kindlmann](#), I Rodriguez, PA Helm and ER McVeigh. “Visualization of tensor fields using superquadric glyphs” *Magnetic Resonance in Medicine*, 53(1):169–176, 2005. [\(PMID 15690516\)](#) [\(Publisher\)](#) [\(PDF\)](#)

J Kniss, [G Kindlmann](#), C Hansen. “Multidimensional Transfer Functions for Interactive Volume Rendering” *IEEE Transactions on Visualization and Computer Graphics*, 8(4):270–285, July 2002. [\(IEEE\)](#) [\(ACM\)](#) [\(PDF\)](#)

H Pfister, W Lorensen, C Bajaj, [G Kindlmann](#), W Schroeder, L Sobeierajski Avila, K Martin, R Machiraju, and J Lee. “The Transfer Function Bake-Off” *IEEE Computer Graphics and Applications*, 21(3):16–22, May/June 2001. [\(IEEE\)](#) [\(ACM\)](#) [\(PDF\)](#)

AL Alexander, K Hasan, [G Kindlmann](#), DL Parker, JS Tsuruda. “A Geometric Comparison of Diffusion Anisotropy Measures” *Magnetic Resonance in Medicine* 44:283–91, 2000. [\(PMID 10918328\)](#) [\(PDF\)](#)

[G Kindlmann](#), D Weinstein, and DA Hart. “Strategies for Direct Volume Renderings of Diffusion Tensor Fields” *IEEE Transactions on Visualization and Computer Graphics*, 6(2):124–138, April-June 2000. [\(IEEE\)](#) [\(ACM\)](#) [\(PDF\)](#)

CR Johnson, SG Parker, C Hansen, G Kindlmann, and Y Livnat. “Interactive Simulation and Visualization” IEEE Computer, 32(12):59–65, 1999. ([IEEE](#)) ([ACM](#)) ([PDF](#))

SJ Young, GY Fan, D Hessler, S Lamont, TT Elvins, M Hadida, G Hanyzewski, JW Durkin, P Hubbard, G Kindlmann, E Wong, D Greenberg, S Karin, MH Ellisman. “Implementing a Collaboratory for Microscopic Digital Anatomy” Supercomputer Applications and High Performance Computing, 10(2/3):170–181, 1996.

Conference Papers– full paper review

JK Gahm, N Wisniewski, G Kindlmann, G Kung, WS Klug, A Garfinkel, DB Ennis. “Linear Invariant Tensor Interpolation Applied to Cardiac Diffusion Tensor MRI” Proceedings MICCAI 2012 (Springer Lecture Notes in Computer Science Volume 7511) pp. 494–501, October 2012.

C Chiw, G Kindlmann, J Reppy, L Samuels, and N Seltzer ([alphabetical author ordering](#)). “Diderot: A Parallel DSL for Image Analysis and Visualization” Proceedings ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI ’12), pp. 111–120, June 2012.

R San José Estépar, J Ross, K Krissian, T Schultz, G Washko, G Kindlmann. “Computational Vascular Morphometry for the Assessment of Pulmonary Vascular Disease based on Scale-Space Particles” Proceedings Intl Symposium Biomedical Imaging (ISBI ’12), pp. 1479–1482, May 2012. ([PMID 23743962](#)) ([PMCID PMC3670102](#))

R San José Estépar, J Ross, G Kindlmann, A Diaz, Y Okajima, R Kikinis, C-F Westin, Edwin Silverman, G Washko. “Automatic Airway Analysis for Genome-Wide Association Studies in COPD” Proceedings Intl Symposium Biomedical Imaging (ISBI ’12), pp. 1467–1470, May 2012. ([PMID 23744052](#)) ([PMCID PMC3670103](#))

T Schultz, C-F Westin, G Kindlmann, “Multi-Diffusion-Tensor Fitting via Spherical Deconvolution: A Unifying Framework” Proceedings MICCAI 2010, pp. 673–680.

J Ross, R San José Estépar, G Kindlmann, A Diaz, C-F Westin, E Silverman, G Washko, “Automatic Lung Lobe Segmentation Using Particles, Thin Plate Splines, and Maximum a Posteriori Estimation” Proceedings MICCAI 2010, pp. 163–171. ([PMID 20879396](#)) ([PMCID PMC3049444](#))

P Savadjiev, G Kindlmann, S Bouix, ME Shenton, C-F Westin, “Local White Matter Geometry Indices from Diffusion Tensor Gradients” (oral presentation), Proceedings MICCAI 2009, pp. 345–352. September 2009.

A Qazi, G Kindlmann, L O’Donnell, S Peled, A Radmanesh, S Whalen, A Golby, C-F Westin. “Two-tensor streamline tractography through white matter intra-voxel fiber crossings: Assessed by fMRI” Proceedings Computer Vision and Pattern Recognition Workshop: Mathematical Methods in Biomedical Image Analysis, pp. 1–8. June 2008.

G Kindlmann, R San José Estépar, M Niethammer, S Haker, C-F Westin. “Geodesic-Loxodromes for Diffusion Tensor Interpolation and Difference Measurement” (oral presentation), Proceedings MICCAI 2007 (Springer Lecture Notes in Computer Science Volume 4792), pp. 1–9, October 2007.

O Bergmann, G Kindlmann, S Peled, C-F Westin. “Two-Tensor Fiber Tractography” Proceedings ISBI 2007, pp. 796–799, April 2007.

M Jolley, J Stinstra, D Weinstein, S Pieper, R San José Estépar, G Kindlmann, R MacLeod, DH Brooks, JK Triedman. “Open-Source Environment for Interactive Finite Element Modeling of Optimal ICD Electrode Placement” Proceedings 4th International Conference on Functional Imaging and Modeling of the Heart (Springer Lecture Notes in Computer Science Volume 4466), pp. 373–382, June 2007.

G Kindlmann, X Tricoche, C-F Westin. “Anisotropy Creases Delineate White Matter Structure in Diffusion Tensor MRI” (oral presentation), Proceedings MICCAI 2006 (Springer Lecture Notes in Computer Science Volume 4191), pp. 126–133, October 2006.

O Bergmann, G Kindlmann, A Lundervold, C-F Westin. “Diffusion k -tensor Estimation from Q-ball Imaging Using Discretized Principal Axes” In Proceedings MICCAI 2006 (Springer Lecture Notes in Computer Science 4191), pp. 268–275, October 2006.

M Magnor, G Kindlmann, C Hansen, N Duric. “Constrained Inverse Volume Rendering for Planetary Nebulae” In Proceedings IEEE Visualization 2004, pp. 83–90, Oct 2004.

X Tricoche, C Garth, G Kindlmann, E Deines, G Scheuermann, M Ruetten, C Hansen. “Visualization of Intricate Flow Structures for Vortex Breakdown Analysis” In Proceedings IEEE Visualization 2004, pp. 187–192, Oct 2004.

G Kindlmann, DM Weinstein, AD Lee, AW Toga, PM Thompson. “Visualization of Anatomic Covariance Tensor Fields” 26th Annual Conference of the IEEE Engineering in Medicine and Biology Society (EMBS), pp. 1842–1845, September 2004.

G Kindlmann. “Superquadric Tensor Glyphs” In Proceedings IEEE TVCG/EG Symposium on Visualization 2004, pp. 147–154, May 2004.

G Kindlmann, R Whitaker, T Tasdizen, T Möller. “Curvature-Based Transfer Functions for Direct Volume Rendering: Methods and Applications” In Proceedings IEEE Visualization 2003, pages 513–520, October 2003.

G Kindlmann, E Reinhard, S Creem. “Face-based Luminance Matching for Perceptual Colormap Generation” In Proceedings IEEE Visualization 2002, pp. 299–306, October 2002.

J Kniss, G Kindlmann, C Hansen. “Interactive Volume Rendering Using Multi-Dimensional Transfer Functions and Direct Manipulation Widgets” In Proceedings IEEE Visualization 2001, pages 255–262, October 2001. (*Awarded Best Paper*) ([ACM](#))

G Kindlmann and D Weinstein. “Hue-Balls and Lit-Tensors for Direct Volume Rendering of Diffusion Tensor Fields” In Proceedings IEEE Visualization 1999, pp. 183–189, October 1999. (*Awarded Best Paper*)

D Weinstein, G Kindlmann, and E Lundberg. “Tensorlines: Advection-Diffusion based Propagation through Diffusion Tensor Fields” In Proceedings IEEE Visualization 1999, pp. 249–253. October 1999

G Kindlmann and JW Durkin. “Semi-Automatic Generation of Transfer Functions for Direct Volume Rendering” In IEEE Symposium On Volume Visualization, pp. 79–86, October 1998. (*Awarded Best Paper*)

Book Chapters

SM Smith, G Kindlmann. “Cross-subject Comparison of Local Diffusion MRI Parameters” In H Johansen-Berg, TEJ Behrens, editors, “Diffusion MRI: From Quantitative Measurement to In-vivo Neuroanatomy” Chapter 8, pp. 148–175. Academic Press, 2009.

GL Kindlmann, C-F Westin. “Practical and Intuitive Basis for Tensor Field Processing with Invariant Gradients and Rotation Tangents” In S Aja-Fernández, R de Luis García, D Tao, X Li, editors, “Tensors in Image Processing and Computer Vision”, pp. 299–314. Springer London, 2009.

A Vilanova, S Zhang, G Kindlmann, D Laidlaw. “An Introduction to Visualization of Diffusion Tensor Imaging and Its Applications” In J Weickert and H Hagen, editors, “Visualization and Processing of Tensor Fields”, pp. 121–153. Springer Verlag, 2006.

G Kindlmann. “Tensor Invariants and their Gradients” In J Weickert and H Hagen, editors, “Visualization and Processing of Tensor Fields”, pp. 215–224. Springer Verlag, 2006.

J Kniss, G Kindlmann, CD Hansen. “Multidimensional Transfer Functions for Volume Rendering” In C Johnson, C Hansen, editors, “The Visualization Handbook”, pp. 189–210. Academic Press, 2004.

S Zhang, G Kindlmann, D Laidlaw. “Diffusion Tensor MRI Visualization” In C Johnson, C Hansen, editors, “The Visualization Handbook”, pp. 327–340. Academic Press, 2004.

CR Johnson, Y Livnat, L Zhukov, D Hart, and G Kindlmann. “Computational Field Visualization” In B Engquist and W Schmid, editors, “Mathematics Unlimited - 2001 and Beyond”, volume 2, pp. 605–630. Springer-Verlag, 2001.

Invited Papers

Ç Demiralp, CE Scheidegger, GL Kindlmann, DH Laidlaw, J Heer. “Visual Embedding: A Model for Visualization” IEEE Computer Graphics and Applications, 34(1):10–15, Jan/Feb 2014. ([PDF](#))

G Kindlmann, RA Normann, A Badi, C Keller, GM Jones, CR Johnson. “Scientific Visualization in Small Animal Imaging” ACM SIGGRAPH Computer Graphics Quarterly, 38(2):4-7, May 2004.

C Johnson, D Brederson, C Hansen, M Ikits, G Kindlmann, Y Livnat, S Parker, D Weinstein, R Whitaker. “Computational Field Visualization” ACM SIGGRAPH Computer Graphics Quarterly, 35(4):5-9, November 2001.

Conference Abstracts, Posters, Workshop or Short Papers

T Huynh, A Beiriger, V Prince, and G Kindlmann. “Visualizing the Trajectories and Contexts of Facial Branchiomotor Neuron Pioneers” Poster session, BioVis 2016 (IEEE VIS 2016), October 2016, Balti-

more, MD. ([PDF](#))

G Kindlmann and C Scheidegger. “Algebraic Visualization Design for Pedagogy” IEEE VIS Workshop on Pedagogy of Data Visualization, October 2016, Baltimore, MD. ([PDF](#))

G Kindlmann and C Scheidegger. “Sketching a Palette of Visualization Theories” IEEE VIS Workshop on Creation, Curation, Critique and Conditioning of Principles and Guidelines in Visualization, October 2016, Baltimore, MD. ([PDF](#))

A Beiriger, S Wanner, G Kindlmann, V Prince. “Developmental origins of the pioneer neuron and its role in facial branchiomotor neuron migration” Society for Developmental Biology (75th Annual Meeting), August 2016, Boston MA.

C Chiw, GL Kindlman, and J Reppy. “EIN: An Intermediate Representation for Compiling Tensor Calculus” 19th Workshop on Compilers for Parallel Computing (CPC 2016), July 2016, Valladolid, Spain.

N Seltzer, L Samuels, J Reppy, GL Kindlmann. “Diderot: A Parallel DSL for Computing on Multi-Dimensional Tensor Fields” Poster Session (scientific visualization track), IEEE Visweek, October 2011, Providence, RI. (*Awarded Best Poster*)

R San José Estépar, JC Ross, GL Kindlmann, AA Diaz, EK Silverman, GR Washko, and COPD Gene Investigators. “Airway Extraction In Inspiratory Volumetric CT Using Scale-Space Particles” Proc. Intl Conference of the American Thoracic Society (ATS ’11). page A4611, May 2011, Denver, CO.

PJ La Rivière, A Rojek, P Vargas, G Kindlmann, D Clark, K Cheng, X Xiao, F DeCarlo. “Optimizing synchrotron microCT for high-throughput phenotyping of zebrafish” Developments in X-Ray Tomography, Proc SPIE Vol. 7804, pp. 78040M, August 2010, San Diego, CA.

D P Clark, G Kindlmann, P La Riviere, X Xiao, F De Carlo, K C Cheng. “Morphological Phenotyping of Zebrafish Mutants Using Micron-Scale CT” 9th International Meeting on Zebrafish Development and Genetics, June 2010. Madison, WI.

R de Luis Garcia, CA Lopez, G Kindlmann, C-F Westin. “Automatic Segmentation of White Matter Structures from DTI Using Tensor Invariants and Tensor Orientation” Proceedings 17th Annual Meeting of International Society for Magnetic Resonance in Medicine (ISMRM), page 856, May 2009.

M Nakamura, U Khan, M Kubicki, G Kindlmann, S Bouix, K Quintus, M Niznikiewicz, C-F Westin, R Kikinis, R McCarley, M Shenton. “Global abnormalities in white and gray matter of chronic schizophrenia: A diffusion tensor imaging study” Ninth World Congress of Biological Psychiatry, June 2009, Paris, France.

AA Qazi, G Kindlmann, C-F Westin. “Simulated diffusion dataset for multi-tensor fiber tractography” 14th Annual Meeting of the Organization for Human Brain Mapping, June 2008.

G Kindlmann, S Whalen, R Suarez, A Golby, C-F Westin. “Quantification of white matter fiber orientation at tumor margins with diffusion tensor invariant gradients” In Proceedings 16th Annual Meeting of

International Society for Magnetic Resonance in Medicine (ISMRM), page 429, May 2008.

DB Ennis, [G Kindlmann](#), M Mogensen, T Vertinsky, SW Atlas, R Bammer. “Application of Novel Directionally Encoded Colormaps for Isolating Linear Anisotropic Structures in Human Brain Diffusion Tensor Magnetic Resonance Imaging” In Proceedings 14th Annual Meeting of International Society for Magnetic Resonance in Medicine (ISMRM), page 3164, May 2006.

DB Ennis and [G Kindlmann](#). “Orthogonal tensor decomposition for analysis of DTMRI anisotropy” In Proceedings 13th Annual Meeting of International Society for Magnetic Resonance in Medicine (ISMRM), page 627, 2005.

[G Kindlmann](#), AL Alexander, M Lazar, J Lee, T Tasdizen, R Whitaker. “Moment-Based Global Registration of Echo Planar Diffusion-Weighted Images” In Proceedings 12th Annual Meeting of International Society for Magnetic Resonance in Medicine (ISMRM), page 2200, May 2004.

DB Ennis, [G Kindlmann](#), PA Helm, I Rodriguez, H Wen, ER McVeigh. “Visualization of high-resolution myocardial strain and diffusion tensors using superquadric glyphs” In Proceedings 12th Annual Meeting of International Society for Magnetic Resonance in Medicine (ISMRM), page 2487, May 2004.

TALKS

“An Algebraic Process for Visualization Design”, [Joint Statistics Meeting \(JSM 2016\)](#) of the American Statistical Association. In “Recent Advances in Information Visualization”, Yihui Xie, organizer, with Carlos E. Scheidegger, chair. Chicago, August 2016.

“Introduction to an Algebraic Process for Visualization Design”, “Diderot: a Domain-Specific Language for Portable Parallel Scientific Visualization and Image Analysis”, and “Sampling and Visualizing Creases with Scale-Space Particles”, [Geilo Winter School on Scientific Visualization](#). André Brodtkorb and Helwig Hauser, organizers. Geilo, Norway, January 2016.

“Discovering Stable Features in Scientific Images”, [First Integrated Imaging Initiative Workshop: Tomography and Ptychography](#). Amanda Petford-Long, organizer. Argonne National Lab, September 2014.

“Fairly Sharing the Costs of Reproducibility: Precedents and Possibilities”, [EuroVis Workshop on Reproducibility, Verification, and Validation in Visualization](#). Leipzig, Germany, June 2013.

“Diderot: A Parallel Domain-Specific Language for Scientific Image Analysis and Visualization”, [University of Bonn, Summer Colloquium](#), Thomas Schultz, host, June 2013.

“on visualization in art and science”, with Jason Salavon, Wednesday Lunch series at the Franke Institute for the Humanities, May 2013.

“Diderot: A Parallel Domain-Specific Language for Image Analysis and Visualization”, Scientific Computing and Imaging (SCI) Institute, Christopher Johnson, host, January 2013.

“Ways of Seeing Data: A Survey of Fields of Visualization”, part of the “Show and Tell: Visualizing the Life of the Mind” speaker series at the new [Research Computer Center](#) at the University of Chicago,

(Biral H Runesha, organizer), November 2012.

“Particle systems for visualizing the connection between math and anatomy”, at the [BIRS Workshop on Geometry for Anatomy](#), August 2011.

“Bayesian evidence for visualizing model selection uncertainty”, at [Dagstuhl Seminar 11231](#) on Scientific Visualization, (Min Chen, Hans Hagen, Charles D. Hansen, and Arie Kaufman, organizers), Dagstuhl, Germany, June 2011.

“Diffusion Tensor MRI - Beyond Tractography” part of “Functional & Anatomic Data Analysis: Principles & Practicalities”, Educational course (PA Bandettini and C Pierpaoli, organizers), 19th Annual Meeting of International Society for Magnetic Resonance in Medicine (ISMRM), May 2011.

“Optimizing Particle Systems for Image Feature Sampling” Geometric Modeling and Scientific Visualization Center (Asst. Prof. Markus Hadwiger, host), King Abdullah University of Science and Technology, Jeddah, Saudi Arabia, December 2010.

“Probing the Scale-Space Structure of Anisotropy and its Orientation” Department of Simulation and Graphics (Prof. Dr. Holger Theisel, host), University of Magdeburg, Magdeburg, Germany, November 2009.

“Novel Mathematical Approaches (with Practical Considerations) to Biomedical Image Analysis” Committee on Medical Physics (P La Rivière, host), Chicago, August 2009.

“Sampling the Scale-Space behavior of Tensor Invariants” Dagstuhl Seminar 09302, “New Developments in the Visualization and Processing of Tensor Fields” (B Burgeth, D Laidlaw, organizers), Dagstuhl, Germany, July 2009.

“Sampling and Visualizing Creases with Scale-Space Particles” Max-Planck Institut für Informatik (H-P Seidel, host), Saarbrücken, Germany, July 2009.

“Symmetry and Continuity in Visualization and Tensor Glyph Design” Dagstuhl Seminar 09251, “Scientific Visualization” (DS Ebert, E Gröller, H Hagen, A Kaufman, organizers), Dagstuhl, Germany, June 2009.

“Visualization of Diffusion Image Data and its Models” Dagstuhl Seminar 07291, “Scientific Visualization” (DS Ebert, H Hagen, KI Joy, DA Keim, organizers), Dagstuhl, Germany, July 2007.

“Recent Developments in the Visualization, Interpolation, and Analysis of Diffusion Image Data and its Models” Technische Universiteit (TU) Eindhoven, TU Delft, and Visual Interactive Effective Worlds (VIEW) Workshop, (A Vilanova, C Botha, F Post, hosts), The Netherlands, June 2007.

“Anisotropy Creases and Extremal Surfaces in Diffusion Tensor Images” Visualization Research Lab (D Laidlaw, host), Brown University, February 2007.

“Anisotropy Creases and Extremal Surfaces” Dagstuhl Seminar 07022, “Visualization and Image Processing of Tensor Fields” (J Weickert and D Laidlaw, organizers), Germany, January 2007.

“An Open-Source Framework for Tensor Visualization and Analysis” University of Las Palmas de Gran Canaria (H Knutsson, D Sosa, hosts), Spain, November 2006.

“Crease Features in Tensor Invariants” Radiologic Sciences Laboratory (DB Ennis, host), Stanford University, February 2006.

“Visual Display of Diffusion Tensor Fields” PICASSo Research Seminar (A Finkelstein, host), Princeton University, November 2005.

“Visualization and Analysis of Diffusion Tensor Fields” Electrical and Computer Engineering Colloquium, (SA McKee, host), Cornell University, September 2005.

“Tensor Invariants, their Gradients, and their Failings” Dagstuhl Perspectives Seminar 04172 “Visualization and Image Processing of Tensor Fields” (H Hagen and J Weickert, organizers), Germany, April 2004.

CONFERENCE COURSES, TUTORIALS, PANELS

E Bertini (panel organizer), T Munzner, GL Kindlmann, J Freire, T Dwyer. “Reproducible Visualization Research: How Do We Get There?” IEEE VisWeek 2012 Panel, October 2012.

A Joshi (panel organizer), J Dykes, DF Keefe, GL Kindlmann, T Munzner. “Perspectives on Teaching Data Visualization” IEEE VisWeek 2010 Panel, October 2010. (*Awarded Best Panel*)

T Schultz (tutorial organizer), GL Kindlmann, X Tricoche, AO Vasilescu, A Vilanova, E Zhang. “Tensor Field Features” in IEEE VisWeek 2010 Tutorial “Tensors in Visualization”, October 2010.

A Joshi (panel organizer), J Heer, G Kindlmann, M Meyer. “New Faculty Members and Postdoctoral Fellows Spill the Beans” IEEE VisWeek 2009 Panel, October 2009. (*Awarded Best Panel*)

S Oeltze, D Bartz, F Link, G Kindlmann, K Mueller, B Preim, M Wacker, “Visual Medicine: Techniques, Applications and Software” IEEE Visualization 2006 Tutorial 1, October 2006.

TJ Jankun-Kelly (panel organizer), R Kosara, G Kindlmann, C North, C Ware, EW Bethel. “Is There Science In Visualization?” IEEE Visualization 2006 Panel, October 2006. (*Awarded Best Panel*)

D Bartz, G Kindlmann, K Mueller, B Preim, M Wacker, “Visual Medicine: Foundations of Medical Imaging” and “Visual Medicine: Advanced Applications for Medical Imaging” IEEE Visualization 2005 Tutorials 2 and 3, October 2005.

L Ibanez, G Kindlmann, S Aylward, “Hot Topics in 3D Medical Visualization” ACM SIGGRAPH 2005, Tutorial/Course 33, August 2005.

AL Alexander, G Kindlmann, D Weinstein, L Zhukov, EK Jeong, “Diffusion Tensor MRI: From Acquisition to Application”, SIAM Conference on Imaging Science, May 2004.

D Weinstein, PJ Basser, AL Alexander, E Hsu, G Kindlmann, D Laidlaw, L Zhukov, C-F Westin, J Tsuruda, “Diffusion Tensor MRI: From Acquisition to Application” IEEE Visualization 2003 Workshop

1, October 2003.

J Kniss, G Kindlmann, M Hadwiger, C Rezk-Salama, R Westermann, “High-Quality Volume Graphics on Consumer PC Hardware” IEEE Visualization 2002 Tutorial 2, October 2002.

T Yoo, G Gerig, R Whitaker, G Kindlmann, R Machiraju, and T Möller, “Image Processing for Volume Graphics” ACM SIGGRAPH 2002 Course 50, July 2002.

T Yoo, G Gerig, R Whitaker, G Kindlmann, R Machiraju, and T Möller, “From Transfer Functions to Level Sets: Advanced Topics in Volume Image Processing” IEEE Visualization 2001 Tutorial 5, October 2001.

H Pfister (panel organizer), B Lorensen, C Bajaj, G Kindlmann, W Schroeder, L Sobeierajski Avila, K Martin and R Machiraju. “The Transfer Function Bake-Off” In Proceedings IEEE Visualization 2000, pp. 523–526, October 2000. (*Awarded Best Panel*)

PROFESSIONAL SERVICE

Program Committee, IEEE Visualization	2005–2007, 2009, 2011–2013, 2016, 2017
Program Committee, Eurographics/IEEE Symp. on Visualization (EuroVis)	2008,2010,2012
Tutorials Co-Chair, IEEE Visualization	2012, 2013
Co-chair, EuroVis Workshop on Reproducibility, Verification, and Validation in Visualization	2013
Papers Co-Chair, IEEE/EG Intl. Symp. on Volume and Point-Based Graphics	2010
Co-Chair, Workshop on Visual Computing for Biomedicine (http://www.vcbm.org)	2008
Interactive Demos Co-Chair, IEEE Visualization	2008
Posters Co-Chair, IEEE Visualization	2006, 2007
Program Committee, Applied Perception in Graphics and Visualization	2006 – 2008
Program Committee, Volume Graphics	2007
Program Committee, Vision, Modeling, and Visualization	2004 – 2005
Reviewer, IEEE Visualization, IEEE Transactions on Visualization and Computer Graphics, ACM SIGGRAPH, ACM EuroGraphics, NeuroImage, International Society for Magnetic Resonance in Medicine (ISMRM), Medical Image Computing and Computer-Assisted Intervention (MICCAI).	