CURRICULUM VITAE
Michael J. Holst

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APPOINTMENTS

Distinguished Professor of Mathematics & Physics	University of California, San Diego	**2020–**
Chancellor's Associates Endowed Chair VIII	University of California, San Diego	**2012–**
Professor of Physics	University of California, San Diego	**2009–**
Professor of Mathematics	University of California, San Diego	**2003–**
Visiting Associate in Physics	California Institute of Technology	2002–2009
Associate Professor of Mathematics	University of California, San Diego	2000–2003
Assistant Professor of Mathematics	University of California, San Diego	1998–2000
Assistant Professor of Mathematics	University of California, Irvine	1997–1998
Von Karman Instructor of Applied Mathematics	California Institute of Technology	1995–1997

EDUCATION

California Institute of Technology	Applied Mathematics	Prize Research Fellow	1993–1995
University of Illinois	Numerical Analysis	Ph.D.	1993
University of Illinois	Numerical Analysis	M.S.	1990
Colorado State University	Mathematics	B.S.	1987

RESEARCH AREAS

General: Numerical Analysis, Applied Analysis, PDE, Mathematical Physics.
Specific: Adaptive Finite Element Methods, Geometric PDE, Biophysics, General Relativity.

UCSD SERVICE ACTIVITIES   *(Activities in last four years in **bold font** throughout this document.)*

Department Service:

VIGRE Committee, 2002–2004.
Colloquium Chair, 2005–2007.
Undergraduate Advisor, 2003–2006.
Computer Equipment Committee Chair, 2002–2004.
Graduate Admissions Committee, 2003–2006.
Graduate Affairs and Graduate Advising, 2003–2006, 2008–2009.
Qualifying Exam Appeals Committee (QEAC), 2003–2005, 2009–2010, **2011–2017**.
Qual Exam Reform Committee, 2008–2010, **2018–19**.
Hiring Committee, 2004–2005, 2008–2009, **2013–2017**.
Hiring Committee Chair, 2014–2016.
Area Course Coordinator, 2007–2010, 2011–2014, **2020–2021**.
Advisor, Mathematics Honors Program, **2001–**.
Co-Organizer, CSME Seminar, **2006–2020**.
Co-Organizer, CCoM Seminar, **1998–**.
Ad hoc committees for merit advancements, promotions, appointments, **2000–**.
Textbook Committee, **2021–**.
Department Council, 2004–2008, **2021–**.

Division-Wide Service:

Co-Director and Founding Faculty, Center for Computational Mathematics (CCoM), **2007–**.
Co-Director and Founding Faculty, CSME (Division/Campus-wide) *Doctoral Program*, **2008–2020**.
Co-Director and Founding Faculty, CSME (Division/Campus-Wide) *Masters Program*, **2009–2020**.
Director, NSF MRI/SCREMS-funded CCoM/CSME Computing Facility in APM 5301, **2010–**.
Member, Divisional Committee on Equity, Diversity, and Inclusion, **2018–.**
Member, Divisional Astronomy Task Force, **2018–.**

Campus-Wide (Selfless) Service:

Chairman, Warren College Executive Committee, 2004–2006.
Member, Academic Senate Committee on Academic Information Technology (CAIT), 2003–2006.
Member, Steering Committee, UCSD's La Jolla Interfaces in Science Program (LJIS), 1999–2004.
Member, Steering Committee, Triton Affiliates and Partners Program (TAPP), 2009–2013.
Member, Executive Committee for Electronic Research Administration (eRAP), 2010–2014.
Member, Executive Committee, San Diego Super Computer Center (SDSC), 2006–2013.
Member, Review Committee for the Institute for Nonlinear Science (INLS), 2005–2007.
Member, Review Committee for the Dean of Physical Sciences, 2009–2010.
Member, Search Committee for the Dean of Engineering, 2012–2013.
Member, Search Committee for the Dean of Biology, **2017–2018**.
Member, Committee on Limited Submissions in Sci & Engr (LSSE), **2015–2017**.
Participant, UCSD Faculty Leadership Academy (Completed Course), **2018–2019**.
Member, numerous qual and defense committees for PhD students across campus, **1998–**.
Member, numerous campus-wide promotion/appointment/chair ad-hoc committees, **2004–**.
Member, Faculty Advisory Committee for HDSI, **2018–**.
Member, Executive Committee, Center for Astrophysics and Space Sciences (CASS), **2021–**.
Member, Academic Senate Committee on Appointments & Promotions (CAP), **2018–2021**.
Member, Review Committee for the MSED Joint Doctoral Program (UCSD/SDSU), **2021–2022**.
Member, Academic Senate Committee on Campus, Community, & Environment (CCCE), **2021–**.
Member, Campus/Community Planning Committee (C/CPC; CCCE representative), **2021–**.
Member, Academic Senate Committee: Shadow CAP, **2022–**.

Additional Research-Related Campus-Wide (Self) Service:

Founding Faculty Member, Center for Theoretical Biological Physics (CTBP), 2002–2012.
Core Investigator, National Biomedical Computation Resource (NBCR), **2004–2019**.
Participating Faculty, Bioinformatics Ph.D. Program, **2002–**.
Participating Faculty, Interfaces Ph.D. Program, **2005–**.
Core and Founding Faculty, Bio Circuits Institute (BCI), **2009–**.
Faculty Member, Center for Astrophysics and Spaces Science (CASS), **2015–**.

MEMBERSHIPS

American Mathematical Society (AMS)
Society for Industrial and Applied Mathematics (SIAM)
Association for Computing Machinery (ACM)

HONORS AND AWARDS

Distinguished Professor of Mathematics & Physics (**2020–**)
Chancellor's Associates Endowed Chair VIII (**2017–**)
SIAM Fellow (**2016–**)
Chancellor's Associates Endowed Chair VIII (2012–2017)
Distinguished CSU Alumnus Award (2009)
Outstanding UCSD Faculty Mentor Award (2005–2006)
NSF CAREER Award (1999–2004)
Hellman Fellow (1999)
COR-UCI Award (1998)
Caltech von Karman Instructorship (1995–1997)
Caltech Prize Research Fellow (1993–1995)
Myron-Brown-Ludlow Award (1987)
President's Award (1987)

CONTRACTS AND GRANTS

G40. NSF DMS/CM AWARD 2012857: NUMERICAL METHODS FOR GEOMETRIC PARTIAL DIFFERENTIAL EQUATIONS WITH APPLICATIONS IN GENERAL RELATIVITY, *(PI; with R. Bank and L. Lindblom)*, $450,000, 07/01/20–06/30/23.

G39. NSF DMS/MB AWARD 1934411: MODULUS: MODELING AND EXPERIMENTAL INVESTIGATION OF PROTEIN CROWDING ON LIPID BILAYERS, *(Co-PI; with P. Rangamini(PI), S. Llewellyn Smith)*, $588,732, 10/01/19–09/30/22.

G38. NSF DMS/CM AWARD 1620366: NUMERICAL METHODS FOR GEOMETRIC PDE ON MANIFOLDS WITH ARBITRARY TOPOLOGY, *(PI; with L. Lindblom)*, $214,547, 07/01/16–06/30/19.

G37. NSF DMS/RTG AWARD 1345013: AN INTERDISCIPLINARY RESEARCH TRAINING PROGRAM IN APPLIED MATHEMATICS, COMPUTATIONAL SCIENCE, AND MATHEMATICAL PHYSICS, *(Co-PI; with R. Bank (PI), P. Gill, M. Leok, D. Meyer)*, $1,837,678, 09/01/14–08/31/19.

G36. NIH P41 P41RR008605-16: NATIONAL BIOMEDICAL COMPUTATION RESOURCE (NBCR), *(Senior Personnel; with R. Ammaro (PI))*, $10,305,420, 05/01/14–04/30/19.

G35. NSF NSF/NIGMS AWARD 1361421: OPT-PDE ANALYSIS AND FRET IMAGING OF CONSTITUTIVE CONNECTIONS BETWEEN PHYSICS AND CHEMISTRY IN LIVE CELLS, *(Co-PI; with S. Lu (PI), Y. Wang, R. Bank, P. Gill)*, $1,080,887, 09/01/14–08/31/19.

G34. NSF DMS/FRG AWARD 1262982: ANALYSIS OF THE EINSTEIN CONSTRAINT EQUATIONS, *(UCSD PI; with R. Mazzeo, Stanford; J. Isenberg, Oregon; D. Maxwell, Alaska)*, $251,491, 08/01/13–07/31/19 (no-cost extension).

G33. NSF DMS/CM AWARD 1318480: METHODS AND APPLICATIONS FOR OPTIMIZATION WITH DIFFERENTIAL EQUATIONS, *(Co-PI; with P. Gill (PI), R. Bank)*, $370,000, 07/15/13–07/14/16.

G32. UCSD/SIO INDUSTRIAL CONSORTIUM FOR PARALLEL ADAPTIVE FINITE ELEMENT METHODS FOR 3D ELECTROMAGNETIC GEOPHYSICS, *(Co-Investigator; with K. Key (PI))*, $432,000 (9 Industrial Partners at $48K), 10/31/13–10/31/15 (renewed every two years). Sponsors: Chevron, EMGS, Fugro, Petrobras, Rock Solid Images, Shell, Total, ExxonMobil, PGS.

G31. NSF DMS/CM AWARD 1217175: ADAPTIVE METHODS AND FINITE ELEMENT EXTERIOR CALCULUS FOR NONLINEAR GEOMETRIC PDE, *(PI; with R. Szypowski)*, $145,001, 09/01/12–08/31/15.

G30. AFOSR AWARD FA9550-12-1-0046: APPLICATIONS OF QUANTUM COMPUTING IN AEROSPACE SCIENCE AND ENGINEERING, *(Co-PI; with D. Meyer (PI), T. Bewley, Y. Bazilevs)*, $3,750,000, 03/15/12–03/14/17.

G29. DOE AWARD: SCALABLE ADAPTIVE MULTILEVEL SOLVERS FOR MULTIPHYSICS PROBLEMS, *(PI; with R. Bank)*, $107,804, 09/01/11–08/31/14.

G28. NSF DMS/FRG AWARD 1065972: ERROR QUANTIFICATION AND CONTROL FOR GRAVITATIONAL WAVEFORM SIMULATION, *(PI; with D. Estep, M. Leok, L. Lindblom)*, $454,906, 06/15/11–05/31/14.

G27. UCSD 50TH ANNIVERSARY EVENT AWARD, *(PI; with R. Bank (Co-PI))*, $2,500, 08/01/09–07/31/11.

G26. DOE APPLIED MATHEMATICS DIVISION CONFERENCE AWARD: TWENTIETH INTERNATIONAL CONFERENCE ON DOMAIN DECOMPOSITION METHODS, *(PI; with R. Bank (Co-PI))*, $25,000, 08/01/09–07/31/11.

G25. NSF DMS/CM AWARD 1035227: TWENTIETH INTERNATIONAL CONFERENCE ON DOMAIN DECOMPOSITION METHODS, *(Co-PI; with R. Bank (PI))*, $25,000, 08/01/09–07/31/11.

G24. NSF DMS/CM AWARD 0915220: OPTIMIZATION, DIFFERENTIAL EQUATIONS AND APPLICATIONS, *(Co-PI; with P. Gill (PI) and R. Bank)*, $290,000, 08/01/09–07/31/11.

G23. ONR/DTRA-09-1-0036: A POSTERIORI ERROR ANALYSIS AND UNCERTAINTY QUANTIFICATION FOR ADAPTIVE MULTISCALE OPERATOR DECOMPOSITION METHODS FOR MULTIPHYSICS PROBLEMS, *(Co-PI; with D. Estep (PI))*, $279,482, 06/04/09–04/05/13.

G22. UC LAB RESEARCH PROGRAM AWARD 0118418: ADAPTIVE RADIOTHERAPY BASED ON HIGH PERFORMANCE COMPUTING, *(Co-PI; with S. Jiang (PI), A. Majumdar, D.J. Choi)*, $1,499,631, 05/01/09–04/30/12.

G21. NIH P41 P41RR008605-16: NATIONAL BIOMEDICAL COMPUTATION RESOURCE (NBCR), *(Senior Personnel; with P. Arzberger (PI))*, $10,305,420, 05/01/09–04/30/14.

G20. NSF PHY/PFC 0822283: PHYSICS FRONTIER CENTER: CENTER FOR THEORETICAL BIOLOGICAL PHYSICS (CTBP), *(Senior Personnel; with J.N. Onuchic (PI))*, $7,648,900, 09/01/08–08/31/13.

G19. NSF DMS/MRI 0821816: MRI: ACQUISITION OF A PARALLEL COMPUTING AND VISUALIZATION FACILITY TO ENABLE INTEGRATED RESEARCH AND TRAINING IN MODERN COMPUTATIONAL SCIENCE, MATHEMATICS, AND ENGINEERING, *(PI; with S. Baden, J. Remmel, J. Weare, R. Bank)*, $502,091, 09/01/08–08/31/12.

G18. NSF DMS/CM 0715146: COLLABORATIVE RESEARCH: FINITE ELEMENT METHODS FOR DISCRETIZING GEOMETRIC PDEs WITH NONLINEAR CONSTRAINTS AND GAUGE FREEDOM, *(PI; with D. Estep, G. Nagy)*, $180,000, 09/01/07–08/31/10.

G17. NSF DMS/SCREMS 0619173, *(PI; with R. Bank, L.-T. Cheng, P. Gill, B. Li)*, $130,000, 09/01/06–08/31/07.

G16. DOE DE-FG02-05ER25707, *(PI; with B. Li, J. Weare)*, $797,032, 08/15/05–08/14/08.

G15. NSF DMS/CM 0511766, *(Co-PI; with R. Bank (PI), L.-T. Cheng, P. Gill)*, $505,108, 09/01/05–08/31/08.

G14. NSF DMS/CM 0411723, *(PI; single investigator)*, $239,000, 09/01/04–08/31/07.

G13. DOE DE-FG02-04ER25620, *(Co-PI; with D. Estep (PI), S. Tavener)*, $940,972, 09/01/04–08/31/07.

G12. NIH P41 RR08605: NATIONAL BIOMEDICAL COMPUTATION RESOURCE (NBCR), *(Senior Personnel; with P. Arzberger (PI))*, $8,998,955, 05/01/04–04/30/09.

G11. NSF PHY/PFC/ITR 0225630: CENTER FOR THEORETICAL BIOLOGICAL PHYSICS (CTBP), *(Co-PI; with H. Levine (PI), J.N. Onuchic, K.K. Baldridge, W.-J. Rappel)*, $5,000,000, 10/01/02–09/30/07.

G10. NSF DMS/CM 0208449, *(Co-PI; with P. Gill (PI), R. Bank, L.-T. Cheng)*, $431,000, 07/01/02–06/30/05.

G9. NSF DMS/CM CAREER AWARD 9875856, *(PI; single investigator)*, $200,000, 08/01/99–07/31/04.

G8. DOE SCI-DAC 21-6993, *(Co-PI; with J. Mitchell (PI), L. Ten Eyck, A. McCammon, V. Roberts, B. Rosen)*, $1,044,240, 09/29/01–09/28/04.

G7. NSF DMS/SCREMS 0112413, *(PI; with R. Bank, L.-T. Cheng, P. Gill)*, $45,000, 08/01/01–07/31/02.

G6. NSF DMS/CM 9973276, *(Co-PI; with R. Bank (PI), P. Gill)*, $245,000, 07/01/99–06/30/02.

G5. DASSAULT AVIATION, *(Co-PI; with R. Bank (PI))*, $20,000, 07/01/99–06/30/00.

G4. UCSD HELLMAN FELLOWSHIP, *(PI; single investigator)*, $27,300, 07/01/99–06/30/00.

G3. UCI COR AWARD, *(PI; single investigator)*, $3,500, 07/01/97–6/30/98.

G2. CALTECH VON KARMAN INSTRUCTORSHIP, *(PI; single investigator)*, 1995–1997.

G1. CALTECH PRIZE RESEARCH FELLOWSHIP, *(PI; single investigator)*, 1993–1995.

EXTERNAL PROFESSIONAL ACTIVITIES

Scientific Advisory Boards:

ICERM: The Institute for Computational and Experimental Research in Mathematics (**2021–2024**)

Editorial Boards/Editorial Advisory Boards:

Computational and Mathematical Biophysics (**2018–**), DD20 Proceedings Volume (2011), SIAM CS&E Book Series (2009–2014), Numerische Mathematik (2008–2012), SIAM J. Numer. Anal. (2004–2008), SIAM Rev. (2003–2006), Comm. in Math. Sci. (2003–2006)

Technical Reviewer: (**periodic and ongoing**)

Numerische Mathematik; SIAM Journal on Numerical Analysis; SIAM Review; SIAM Journal on Scientific Computing; Communications in the Mathematical Sciences; Communications in Computational Physics; Journal of Computational Physics; Journal of Computational Chemistry; Computer Methods in Applied Mechanics and Engineering; Communications in Mathematical Physics; Annales Henri Poincare; Classical and Quantum Gravity; SIAM, AMS, and Springer Books, Films, and other material; NSF, DOE, DOD, and NIH Funding Proposals (panels and individual reviews).

ORGANIZATION AND PARTICIPATION: WORKSHOPS, CONFERENCES, RESEARCH PROGRAMS

W85. *FEniCS Workshop 2022*, Workshop (**Co-Organizer**, with D. Kemensky, D. May, and P. Rangamani), UC San Diego, San Diego, CA, October 2022.

W84. *Workshop on Hilbert Complexes: Analysis, Applications, and Discretizations*, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, June 2022.

W83. *Neural Networks, Machine Learning, and Multilevel Finite Element Methods*, Workshop (**Co-Organizer**, with L. Zikatanov, L. Chen, and X. Hu), The Penn State University, State College, PA, November 2021.

W82. *Workshop on Advances in Computational Relativity*, Institute for Computational and Experimental Research in Mathematics (ICERM), Brown University, Providence, RI, October 2020.

W81. *Stucture Preservation and General Relativity*, Workshop (**Co-Organizer**, with D. Arnold, D. Garfinkle, L. Lehner, and Reinout Quispel), Isaac Newton Institute for Mathematical Sciences, Cambridge University, Cambridge, UK, September 2019.

W80. *FRG-GR Workshop 11 (Final Workshop)*, NSF-Sponsored FRG Workshop (**Primary Organizer**), UC San Diego, San Diego, CA, July 2019.

W79. *Numerical Methods for Geometric Partial Differential Equations*, Minisymposium (**Co-Organizer**, with E. Gawlik and M. Licht), AMS Sectional Meeting, Honolulu, HI, March 2019.

W78. *Workshop on Mathematical General Relativity*, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, August 2018.

W77. *FRG-GR Workshop 10*, NSF-Sponsored FRG Workshop (**Primary Organizer**), UC San Diego, San Diego, CA, January 2018.

W76. *Geometric Numerical Methods for PDE (GPDE 2013)*, Workshop (**Primary Organizer**, with J. Dilts), UC San Diego, San Diego, CA, January 2018.

W75. *General Relativity and Finite Element Exterior Calculus*, Minisymposium (**Co-Organizer**, with J. Dilts), AMS-SIAM Joint Math Meeting, San Diego, CA, January 2018.

W74. *FRG-GR Workshop 9*, NSF-Sponsored FRG Workshop, University of Alaska, Fairbanks, AK, August 2016.

W73. *FRG-GR Workshop 8*, NSF-Sponsored FRG Workshop, University of Oregon, Eugene, OR, February 2016.

W72. *FRG-GR Workshop 7*, NSF-Sponsored FRG Workshop, University of Alaska, Fairbanks, AK, September 2015.

W71. *Workshop on Mathematical General Relativity*, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, July 2015.

W70. *Constraint equations and Mass-Momentum inequalities*, Focus Week, (**Co-Organizer**, with S. Dain and M.T. Wang), The Fields Institute, Toronto, Canada, May 11-15, 2015.

W69. *Focus Program on 100 Years of General Relativity*, Workshop, The Fields Institute, Toronto, Canada, May 2015.

W68. *FRG-GR Workshop 6*, NSF-Sponsored FRG Workshop, Stanford University, Palo Alto, CA, April 2015.

W67. *PCGM31: 31st Pacific Coast Gravity Meeting*, Conference (**Co-Organizer**, with J. Isenberg), University of Oregon, Eugene, OR, March 2015.

W66. *FRG-GR Workshop 5*, NSF-Sponsored FRG Workshop (**Primary Organizer**), UC San Diego, San Diego, CA, February 2015.

W65. *IMA Workshop on Structure-Preserving Discretizations of Partial Differential Equations*, IMA Workshop, Institute for Mathematics and its Applications, University of Minnesota, Minnesota, MN, October 2014.

W64. *FRG-GR Workshop 4*, NSF-Sponsored FRG Workshop, University of Alaska, Fairbanks, AK, September 2014.

W63. *FRG-GR Workshop 3*, NSF-Sponsored FRG Workshop, University of Oregon, Eugene, OR, May 2014.

W62. *ICERM Workshop on Robust Discretization and Fast Solvers for Computable Multi-Physics Models*, Workshop (**Co-Organizer**, with F. Brezzi, J. Hesthaven, J. Xu), Brown University, Providence, RI, May 2014.

W61. *PCGM30: 30th Pacific Coast Gravity Meeting*, Conference (**Primary Organizer**, with J. Isenberg), UC San Diego, La Jolla, CA, March 2014.

W60. *FRG-GR Workshop 2*, NSF-Sponsored FRG Workshop (**Primary Organizer**), UC San Diego, San Diego, CA, February 2014.

W59. *FRG-GR Workshop 1*, NSF-Sponsored FRG Workshop (Kickoff Meeting), MSRI/Berkeley and Stanford/Palo Alto, CA, October 2014.

W58. *Mathematical General Relativity*, Mathematical Sciences Research Institute (MSRI), Berkeley, CA, Fall 2013.

W57. *Geometric Numerical Methods for PDE (GPDE 2013)*, Workshop (**Primary Organizer**, with A. Gillette, R. Szypowski), UC San Diego, San Diego, CA, January 2013.

W56. *Recent Developments in the Finite Element Exterior Calculus*, Minisymposium (**Co-Organizer**, with D. Arnold, A. Gillette), AMS-SIAM Joint Math Meeting, San Diego, CA, January 2013.

W55. *Southern California Analysis and Partial Differential Equations Conference*, Workshop (**Co-Organizer**, with J. Sterbenz, J. Isenberg), UC San Diego, La Jolla, CA, May 2012.

W54. *Physics at CSU: Neutrinos to Nano Science*, CSU Resarch Colloquium, Colorado State University, Fort Collins, CO, March 2012.

W53. *JTO Faculty Fellowship Lecturer (Visit 2 of 2)*, Institute for Computational Engineering and Science (ICES), University of Texas, Austin, TX, January 2012.

W52. *JTO Faculty Fellowship Lecturer (Visit 1 of 2)*, Institute for Computational Engineering and Science (ICES), University of Texas, Austin, TX, December 2011.

W51. *Mathematical and Numerical General Relativity Seminar Series and Reading Course (MNGR/FRG)*, Seminar Series, UC San Diego, San Diego, CA, Fall 2011.

W50. *Workshop on Geometric Partial Differential Equations: Theory, Numerics and Applications*, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, November 2011.

W49. *Exploiting Geometry in the Development of Numerical Methods of Partial Differential Equations*, Minisymposium (**Primary Organizer**, with A. Demlow, R. Szypowski), SIAM Analysis of PDE Conference, San Diego, CA, November 2011.

W48. *Geometric Numerical Methods for PDE (GPDE 2011)*, Workshop (**Primary Organizer**, with A. Demlow, A. Gillette, Y. Zhu), San Diego, CA, November 2011.

W47. *Workshop on Schnelle Löser für partielle Differentialgleichungen*, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, May 2011.

W46. *Workshop on Advances and Challenges in Computational General Relativity*, Brown University, Providence, RI, May 2011.

W45. *Numerical Methods for Implicit Models in Biomolecular Systems*, Minisymposium (**Co-Organizer**, with J. Hameed), SIAM CSE Conference, Reno, NV, March 2011.

W44. *DD20: 20th International Conference on Domain Decomposition Methods*, San Diego, CA, February 2011.

W43. *WUMDS: Workshop on Unstructured Meshes in Dynamical Spacetimes*, Jena, Germany, August 2010.

W42. *SI2010: 6th Annual Structured Integrators Workshop*, UC San Diego, La Jolla, CA, April 2010.

W41. *PCGM26: 26th Pacific Coast Gravity Meeting*, Conference (**Primary Organizer**, with J. Isenberg), UC San Diego, La Jolla, CA, March 2010.

W40. *REB60: Adaptive and Multilevel Methods for Partial Differential Equations*, UC San Diego, La Jolla, CA, November 2009.

W39. *Mathematical Aspects of General Relativity*, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, October 2009.

W38. *Workshop on Numerical Methods for Geometric Partial Differential Equations, SFB/TR 71 Geometric Partial Differential Equations*, Freiburg, Germany, September 2009.

W37. *FEniCS Workshop 2009*, Simula Research, Oslo, Norway, June 2009.

W36. *Fifth Annual Structured Integrators Workshop*, California Institute of Technology, Pasadena, CA, May 2009.

W35. *IMA Workshop on Solvation*, University of Minnesota, Minneapolis, MN, December 2008.

W34. *IMA Year-long Program on Mathematics and Chemistry*, University of Minnesota, Minneapolis, MN, July 2008 – June 2009.

W33. *Schnelle Löser für partielle Differentialgleichungen*, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, May 2008.

W32. *Recent Developments in Numerical Methods and Algorithms for Geometric Evolution Equations (***Co-Organizer***, with X.-B. Feng, H. Zhao)*, Mathematical Sciences Research Institute (MSRI), Berkeley, CA, March 2007.

W31. *Mathematical Research Challenges in Optimization of Complex Systems*, DOE Funding Workshop, Bethesda, MD, December 2006.

W30. *Workshop on Adaptive and Multilevel Methods for PDE (***Co-Organizer***, with J. Xu)*, Peking University, Beijing, China, August 2006.

W29. *Global Problems in Mathematical Relativity*, Isaac Newton Institute for Mathematical Sciences, University of Cambridge, Cambridge, U.K., August 2005 – December 2005.

W28. *IPAM/UCLA Workshop on Bridging Time and Length Scales in Materials Science and Bio-Physics*, UCLA, Los Angeles, CA, September 2005.

W27. *Workshop on Geometry and Symmetry in Numerical Computation*, Colorado State University, Fort Collins, CO, August 2005.

W26. *Schnelle Löser für partielle Differentialgleichungen*, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, May 2005.

W25. *IPAM/UCLA Workshop on Relativistic Astrophysics (***Co-Organizer***)*, UCLA, Los Angeles, CA, May 2005.

W24. *BIRS Numerical Relativity Workshop*, Banff International Research Station, Banff AB, Canada, April 2005.

W23. *CTBP Summer Workshop*, UC San Diego, La Jolla, CA, August 2004.

W22. *Third DOE Workshop on Multiscale Modeling*, Broomfield, CO, July 2004.

W21. *IMA Workshop on Compatible Discretizations*, University of Minnesota, Minneapolis, MN, May 2004.

W20. *IPAM/UCLA Workshop on Geometric Flows*, UCLA, Los Angeles, CA, February 2004.

W19. *Miami Waves Workshop (***Session Organizer***)*, University of Miami, Miami, FL, January 2004.

W18. *Dept. of Physics*, California Institute of Technology, Pasadena, CA, January 2004 – July 2004.

W17. *AIM/Stanford Workshop on Relativity*, Stanford University, Stanford, CA, November 2003.

W16. *Caltech Program on Numerical Relativity: Initial Data Problem (***Co-Organizer***)*, California Institute of Technology, Pasadena, CA, January 2003 – May 2003.

W15. *Caltech Program on Numerical Relativity: Formulations of the Evolution Equations (***Co-Organizer***)*, California Institute of Technology, Pasadena, CA, September 2002 – December 2002.

W14. *Beijing parallel computing workshop (***Session Organizer***)*, Peking University, Beijing, China, June 2002.

W13. *IMA Workshop on Numerical Relativity*, University of Minnesota, Minneapolis, MN, June 2002.

W12. *Schnelle Löser für partielle Differentialgleichungen*, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, May 2001.

W11. *Claes Johnsson Research Group*, Chalmers University, Goteborg, Sweden, September 2000.

W10. *A posteriori Error Estimation and Adaptive Approaches in the Finite Element Method*, Mathematical Sciences Research Institute (MSRI), Berkeley, CA, April 2000.

W9. *Schnelle Löser für partielle Differentialgleichungen*, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, May 1999.

W8. *Seminar fuer Angewandte Mathematik*, ETH Zuerich, Zuerich, Switzerland, July 1998.

W7. *Dept. of Mathematics*, Tsian-Tan University, Changsha, People's Republic of China, August 1997.

W6. *Dept. of Applied Mathematics and Theoretical Physics*, Cambridge University, Cambridge, England, April 1997.

W5. *Departement Computerwetenschappen*, Katholieke Universiteit Leuven, Leuven, Belgium, March 1997.

W4. *Dept. of Mathematics*, University of Kansas, Lawrence, KA, April 1995.

W3. *Dept. of Biochem. and Biophys.*, Columbia Univ., New York, NY, November 1994.

W2. *Dept. of Mathematics*, UC San Diego, San Diego, CA, September 1994.

W1. *Dept. of Biochem. and Biophys.*, Columbia Univ., New York, NY., September 1993.

INVITED LECTURES, COLLOQUIA, SEMINARS, CONFERENCE PRESENTATIONS

L184. Invited Lecture, Workshop on Neural Networks, Machine Learning, and Multilevel Finite Element Methods, The Penn State University, State College, PA, November 2021.

L183. Invited Panel Speaker, Workshop on Advances in Computational Relativity, Institute for Computational and Experimental Research in Mathematics (ICERM), Brown University, Providence, RI, October 2020.

L182. Invited Lecture, Workshop on Structure Preservation and General Relativity, Isaac Newton Institute for Mathematical Sciences, Cambridge University, Cambridge, UK, September 2019.

L181. Minisymposium Lecture, Special Session on Numerical Methods for Geometric Partial Differential Equations, AMS Sectional Meeting, Honolulu, HI, March 2019.

L180. Invited Lecture, Areteem Mathematics Summer workshop, University of California, San Diego, CA, August 2018.

L179. Invited Lecture, Physics and Astronomy Club, Canyon Crest Academy, San Diego, CA, May 2018.

L178. Invited Lecture, CEER-Sandia Workshop, University of California, San Diego, CA, November 2017.

L177. Invited Lecture, Applied Mathematics Seminar, McGill University, Montreal, Canada, October 2017.

L176. Invited Lecture, Applied Mathematics Seminar, University of Southern California, Los Angeles, CA, November 2016.

L175. Invited Lecture, The SCI Institute, University of Utah, Salt Lake City, UT, October 2016.

L174. Contributor, FRG-GR Workshop 9, University of Alaska, Fairbanks AK, August 2016.

L173. Invited Lecture, Special Joint Mathematics and Physics Colloquium, University of Arizona, Tuscon, AZ, April 2016.

L172. Contributor, FRG-GR Workshop 8, University of Oregon, Eugene, CA, February 2016.

L171. Contributor, FRG-GR Workshop 7, University of Alaska, Fairbanks AK, September 2015.

L170. Invited Lecture, Workshop on Mathematical General Relativity, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, July 2015.

L169. Invited Lecture, Focus Program on 100 Years of General Relativity, The Fields Institute, Toronto, Canada, May 2015.

L168. Contributor, FRG-GR Workshop 6, Stanford University, Stanford, CA, April 2015.

L167. Lecture, Graduate Student Colloquium, University of California, San Diego, CA, March 2015.

L166. Contributor, FRG-GR Workshop 5, UCSD, San Diego, CA, February 2015.

L165. Invited Lecture, Workshop on Structure-Preserving Discretizations of Partial Differential Equations, Institute for Mathematics and its Applications, University of Minnesota, Minnesota, MN, October 2014.

L164. Contributor, FRG-GR Workshop 4, University of Alaska, Fairbanks, AK, September 2014.

L163. Contributor, FRG-GR Workshop 3, University of Oregon, Eugene, CA, May 2014.

L162. Contributor, FRG-GR Workshop 2, UCSD, San Diego, CA, February 2014.

L161. Plenary Lecture, Inspiring Minds Lecture Series, IBM, Palo Alto, CA, February 2014.

L160. Contributor, FRG-GR Workshop 1 (Kick-off Meeting), MSRI/Berkeley and Stanford/Palo Alto, CA, October 2013.

L159. Plenary Lecture, MSRI Program in Mathematical General Relativity, MSRI, Berkeley, CA, October 2013.

L158. Contributed Lecture, FEEC + AFEM Workshop (GPDE 2013), UCSD, San Diego, CA, January 2013.

L157. Contributed Lecture, Minisymposium on Recent Developments in the Finite Element Exterior Calculus, Joint Math Meeting, San Diego, CA, January 2013.

L156. Plenary Lecture, 21st International Conference on Domain Decomposition Methods, Rennes, France, June 2012.

L155. Workshop Lecture, AFOSR TCI Kickoff Meeting for AFOSR-sponsored Quantum Computing Project, UCSD, San Diego, CA, May 2012.

L154. Plenary Lecture, CSU Research Colloquium, Physics at CSU: Neutrinos to Nano Science, Colorado State University, Fort Collins, CO, March 2012.

L153. Plenary Lecture, JTO Faculty Fellowship Lecture (2 of 2), Institute for Computational Engineering and Science (ICES), University of Texas, Austin, TX, January 2012.

L152. Plenary Lecture, JTO Faculty Fellowship Lecture (1 of 2), Institute for Computational Engineering and Science (ICES), University of Texas, Austin, TX, November 2011.

L151. Invited Lecture, Workshop on Geometric Partial Differential Equations: Theory, Numerics and Applications, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, November 2011.

L150. Invited Lecture, Schnelle Löser für partielle Differentialgleichungen, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, May 2011.

L149. Plenary Lecture, ICERM Workshop on Advances and Challenges in Computational General Relativity, Brown University, Providence, RI, May 2011.

L148. Invited Lecture, Pacific Northwest National Laboratory, Richland, WA, May 2011.

L147. Colloquium, Department of Applied Mathematics, University of Washington, Seattle, WA, May 2011.

L146. Colloquium, Department of Mathematics, The Penn State University, State College, PA, April 2011.

L145. Colloquium, Department of Mathematics, University of Wisconsin, Madison, WI, April 2011.

L144. Invited ICES Lecture, University of Texas, Austin, TX, February 2011.

L143. Invited CVS Lecture, University of Texas, Austin, TX, February 2011.

L142. Invited Lecture, Workshop on Latest Trends and Developments in Computational Technology and Methods for Solids, Structures, Fluids and Fluid-Structure Interaction, La Jolla, CA, September 2010.

L141. Invited Lecture, Department of Mathematics, Jacobs University, Bremen, Germany, September 2010.

L140. Invited Lecture, Department of Mathematik, Freie Universitat Berlin, Berlin, Germany, August 2010.

L139. Plenary Lecture, Workshop on Unstructured Meshes in Dynamical Spacetimes, Jena, Germany, August 2010.

L138. Lecture, 2010 DTRA Technical Review, Washington, D.C., August 2010.

L137. Lecture, 26th Pacific Coast Gravity Meeting (PCGM26), San Diego, CA, March 2010.

L136. Plenary Lecture, Symposium on Mathematical Systems Biology, UCI, Irvine, California, January 2010.

L135. Minisymposium Lecture, ICNAAM 2009, Crete, Greece, September 2009.

L134. Plenary Lecture, Workshop on Numerical Methods for Geometric Partial Differential Equations, SFB/TR 71 Geometric Partial Differential Equations, Freiburg, Germany, September 2009.

L133. Lecture, 2009 DTRA Technical Review, Washington, D.C., August 2009.

L132. Plenary Lecture, Numerische Mathematik 50, Munich, Germany, June 2009.

L131. Plenary Lecture, FEniCS 2009 Workshop, Oslo, Norway, June 2009.

L130. Plenary Lecture, 5th Annual Stuctured Integrators Workshop, Caltech, Pasadena, CA, May 2009.

L129. Lecture, 25th Pacific Coast Gravity Meeting (PCGM25), Eugene, OR, March 2009.

L128. Colloquium, Department of Mathematics, University of Tennesee, Knoxville, TN, September 2008.

L127. Colloquium, Department of Mathematics, University of Kentucky, Lexington, KY, September 2008.

L126. Colloquium, Department of Mathematics, Purdue University, West Lafayette, IN, September 2008.

L125. Plenary Lecture, Herbert Bishop Keller Memorial Symposium, California Institute of Technology, Pasadena, CA, September 2008.

L124. Colloquium, Department of Mathematical Sciences, RPI, Troy, NY, July 2008.

L123. Invited Minisymposium Lecture on Recent Advances in A Posteriori Error Estimation and Adaptive Methods, SIAM Annual Meeting, San Diego, CA, July 2008.

L122. Invited Minisymposium Lecture on PDE Software and Applications, SIAM Annual Meeting, San Diego, CA, July 2008.

L121. Invited Lecture, Foundations of Computational Mathematics, Hong Kong, June 2008.

L120. Invited Lecture, Schnelle Löser für partielle Differentialgleichungen, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, May 2008.

L119. Fachbereichs-Kolloquium, Department of Mathematik, Freie Universitat Berlin, Berlin, Germany, May 2008.

L118. Invited Lecture, Max Planck Institute for Gravitational Physics (Albert Einstein Institute – AEI), Golm, Germany, May 2008.

L117. Colloquium, Department of Mathematics, Oxford, UK, May 2008.

L116. Colloquium, Department of Mathematics, University of Arizona, Tucson, AZ, May 2008.

L115. Colloquium, Department of Mathematics, California State University Northridge, Northridge, CA, April 2008.

L114. Lecture, 24th Pacific Coast Gravity Meeting (PCGM24), Santa Barbara, CA, March 2008.

L113. Plenary Lecture, 18th International Conference on Domain Decomposition Methods, Jerusalem, Israel, January 2008.

L112. Colloquium, Applied and Computational Mathematics, California Institute of Technology, Pasadena, CA, November 2007.

L111. Invited Minisymposium Lecture on Computational Geometry and Analysis, Nineth US National Congress on Computational Mechanics, San Francisco, CA, July 2007.

L110. Invited Minisymposium Lecture on Adaptive and Multilevel Methods: Design, Analysis and Application, ICIAM Conference, Zurich, Switzerland, July 2007.

L109. Invited Minisymposium Lecture on Applications and Numerical Approximation of Geometric Partial Differential Equations, ICIAM Conference, Zurich, Switzerland, July 2007.

L108. Lecture, CTBP Site Visit, La Jolla, CA, June 2007.

L107. Invited Lecture, CCR/IDA, La Jolla, CA, June 2007.

L106. Colloquium, Department of Mathematics, Michigan State University, Lansing, MI, April 2007.

L105. Keynote Speaker, CSE Symposium, University of Illinois at Urbana-Champaign, Champaign, IL, April 2007.

L104. Invited Minisymposium Lecture on the Development and Application of Adaptive Methods for Partial Differential Equations, SIAM Conference on Computational Science and Engineering, Costa Mesa, CA, February 2007.

L103. Invited Panelist, Special Session on CSE Research Directions and Enabling Technology, SIAM Conference on Computational Science and Engineering, Costa Mesa, CA, February 2007.

L102. Invited Panelist, Special Session on CSE Programs and Disciplinary Degree Programs, SIAM Conference on Computational Science and Engineering, Costa Mesa, CA, February 2007.

L101. Invited Lecture, Special Session on Numerical General Relativity, Joint AMS Conference, New Orleans, LA, January 2007.

L100. Seminar, Department of Mathematics, University of Arizona, Tucson, AZ, November 2006.

L99. Colloquium, Department of Mathematics, University of Arizona, Tucson, AZ, November 2006.

L98. Lecture, NSF/CTBP Site Visit, University of California, San Diego, CA, November 2006.

L97. Seminar, Department of Mathematics, University of California at Irvine, Irvine CA, October 2006.

L96. Lecture, Second Multiscale Workshop, Department of Mathematics, Colorado State University, Fort Collins, CO, September 2006.

L95. Invited Lecture, Institute of Computational Mathematics, Chinese Academy of Sciences, Beijing, China, August 2006.

L94. Invited Lecture, International Conference on Multilevel Iterative Methods, Peking University, Beijing, China, August 2006.

L93. Seminar, Mechanical and Aerospace Engineering, University of California, San Diego, CA, June 2006.

L92. Lecture, NBCR PI Meeting, University of California, San Diego, CA, June 2006.

L91. Invited Lecture, Global Problems in Mathematical Relativity, Isaac Newton Institute for Mathematical Sciences, University of Cambridge, Cambridge, U.K., December 2005.

L90. Invited Lecture, IPAM/UCLA Workshop on Bridging Time and Length Scales in Materials Science and Bio-Physics, UCLA, Los Angeles, CA, September 2005.

L89. Invited Lecture, IPAM/UCLA Workshop on Bridging Time and Length Scales in Materials Science and Bio-Physics, UCLA, Los Angeles, CA, September 2005.

L88. Invited Lecture, 14th International Meshing Roundtable, San Diego, CA, September 2005.

L87. Invited Lecture, Workshop on Geometry and Symmetry in Numerical Computation, Colorado State University, Fort Collins, CO, August 2005.

L86. Invited Lecture, BIRS Numerical Relativity Workshop, Pacific Institute for the Mathematical Sciences, Banff International Research Station (BIRS), Banff AB, Canada, April 2005.

L85. Invited Lecture, Computing the Future Lecture Series, Center for Computation and Technology, Lousiana State University, Baton Rouge, LA, February 2005.

L84. Invited Lecture, CTBP Summer Workshop, University of California, San Diego, CA, August 2004.

L83. Invited Lecture, Third DOE Workshop on Multiscale Modeling, Broomfield, CO, July 2004.

L82. Colloquium, Department of Mathematics, University of Utah, Salt Lake City, UT, April 2004.

L81. Colloquium, Applied and Computational Mathematics, California Institute of Technology, Pasadena, CA, April 2004.

L80. Invited Lecture, Conference on Multiscale Computational Modeling for Biomedical Research, University of California, San Diego, CA, March 2004.

L79. Applied Mathematics Seminar, Department of Mathematics, Colorado State University, Fort Collins, CO, March 2004.

L78. Colloquium, Department of Mathematics, Colorado State University, Fort Collins, CO, March 2004.

L77. Invited Lecture, IPAM/UCLA Geometric Flows Workshop, UCLA, Los Angeles, CA, February 2004.

L76. Invited Lecture, AIM/Stanford Relativity Workshop, Stanford University, Stanford, CA, November 2003.

L75. CIMMS Seminar, California Institute of Technology, Pasadena, CA, February 2003.

L74. Invited Minisymposium Lecture on Multiscale Numerical Methods, SIAM Conference on Computational Science and Engineering, San Diego, CA, February 2003.

L73. Numerical Relativity Seminar, California Institute of Technology, Pasadena, CA, January 2003.

L72. Four Invited Lectures, Parallel Scientific Computing Workshop, Peking University, Beijing, China, July 2002.

L71. Invited Lecture, Hot Topics Workshop on Numerical Relativity, Institute for Mathematics and its Applications, Minneapolis, MN, June 2002.

L70. CACR Seminar, California Institute of Technology, Pasadena, CA, April 2002.

L69. Plenary Lecture, 14th International Conference on Domain Decomposition Methods, Mexico City, Mexico, January 2002.

L68. Invited Lecture, Schnelle Löser für partielle Differentialgleichungen, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, May 2001.

L67. Seminar, Department of Mathematics, Colorado State University, February 2001.

L66. Seminar, KTH, Stockholm, Sweden, September 2000.

L65. Seminar, Chalmers University of Technolgy, Goteborg, Sweden, September 2000.

L64. Seminar, Center for Applied Scientific Computing, Lawrence Livermore National Laboratory, Livermore, CA, August 2000.

L63. Invited Lecture, Conference on Solution Methods for Large-Scale Nonlinear Problems (a.k.a. The Root Finders Ball), Pleasanton, CA, July 2000.

L62. Analysis Seminar, Department of Mathematics, University of Southern California, Los Angeles, CA, May 2000.

L61. Lecture in the MSRI Program on A posteriori Error Estimation and Adaptive Approaches in the Finite Element Method, Berkeley, CA, April 2000.

L60. Lecture, 16th Pacific Coast Gravity Meeting (PCGM16), California Institute of Technology, Pasadena, CA, March 2000.

L59. Contributed Presentation, 12th International Conference on Domain Decomposition Methods, Chiba University, Chiba, Japan, October 1999.

L58. Colloquium, Department of Physics, The Pennsylvania State University, State College, PA, September 1999.

L57. Colloquium, Department of Mathematics, The Pennsylvania State University, State College, PA, September 1999.

L56. Lecture, Schnelle Löser für partielle Differentialgleichungen, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, May 1999.

L55. Applied Mathematics Colloquium, California Institute of Technology, Pasadena, CA, May 1999.

L54. Lecture, Finite Element Circus, Pennsylvania State University, State College, PA, May 1999.

L53. Seminar, Department of Mathematics, Stanford University, Stanford, CA, December 1998.

L52. Seminar, Center for Applied Scientific Computing, Lawrence Livermore National Laboratory, Livermore, CA, December 1998, December 1998.

L51. Seminar, Summer School on Finite Element Methods, Department of Mathematics, ETH/Zurich, Zurich, Switzerland, July 1998.

L50. Seminar, Summer School on Finite Element Methods, Department of Mathematics, ETH/Zurich, Zurich, Switzerland, July 1998.

L49. Seminar, Copper Mountain Conference on Iterative Methods, Copper Mountain, CO, April 1998.

L48. Lecture, The Finite Element Circus, University of Colorado, Denver, CO, March 1998.

L47. Colloquium, Department of Mathematics, The Pennsylvania State University, State College, PA, February 1998.

L46. Thorne Relativity Group Seminar, Department of Physics, California Institute of Technology, Pasadena, CA, December 1997.

L45. Seminar, Department of Mathematics, University of California, San Diego, CA, November 1997.

L44. Seminar, Summer School on Multilevel Methods, Department of Mathematics, Tsian-Tan University, Changsha, People's Republic of China, August 1997.

L43. Seminar, Department of Applied Mathematics and Theoretical Physics, Cambridge University, Cambridge, England, April 1997.

L42. Seminar, Max-Planck-Institute for Gravitationsphysik, Albert-Einstein-Institut, Potsdam-Berlin, Germany, March 1997.

L41. Seminar, Departement Computerwetenschappen, Katholieke Universiteit Leuven, Belgium, March 1997.

L40. Seminar, Department of Mathematics, University of California at Irvine, Irvine, CA, February 1997.

L39. Seminar, Department of Mathematics, Arizona State University, Temp, AZ, February 1997.

L38. Seminar, 18th Texas Symposium on Relativisitic Astrophysics, Chicago, IL, December 1996.

L37. Seminar, Elasticity Workshop, Department of Methematics, University of Kansas, Kansas City, KA, July 1996.

L36. Invited Minisymposium Lecture on Mathematical Molecular Modeling, SIAM Annual Meeting, Kansas City, KA, July 1996.

L35. Seminar, Department of Mathematics, Arizona State University, Tempe, AZ, March 1996.

L34. Seminar, Department of Mathematics, University of Colorado, Denver, CO, February 1996.

L33. Seminar, Department of Mathematics, Colorado State University, Fort Collins, CO, February 1996.

L32. Colloquium, Department of Mathematics, Colorado State University, Fort Collins, CO, February 1996.

L31. Seminar, Department of Mathematics, University of California, Irvine, CA, February 1996.

L30. Seminar, Department of Mathematics and Kansas Institute for Theoretical and Computational Science, University of Kansas, Lawrence, KA, April 1995.

L29. Applied Mathematics Seminar, California Institute of Technology, Pasadena, CA, March 1995.

L28. Department of Mathematics Seminar, UCLA, Los Angeles, CA, February 1995.

L27. Department of Mathematics Seminar, Courant Institute of Mathematical Sciences, New York University, New York, NY, December 1994.

L26. Department of Biochemistry and Molecular Biophysics Seminar, Columbia University, New York, NY, November 1994.

L25. Invited Lecture, Workshop on Algorithms for Macromolecular Modeling, Lawrence, KA, October 1994.

L24. Keller Group Lecture, Applied Math, California Institute of Technology, Pasadena, CA, September 1994.

L23. CRPC Meeting, Rice University, Houston TX, August 1994.

L22. Keller Group Lecture, Applied Math, California Institute of Technology, Pasadena, CA, August 1994.

L21. Contributed Presentation, SIAM Annual Conference, San Diego, CA, July 1994.

L20. Keller Group Lecture, Applied Math, California Institute of Technology, Pasadena, CA, July 1994.

L19. Department of Chemistry Seminar, California Institute of Technology, Pasadena, CA, April 1994.

L18. Department of Mathematics Colloquium, University of Houston, Houston, TX, March 1994.

L17. Department of Mathematics Colloquium, University of California at San Diego, San Diego, CA, February 1994.

L16. CRPC Annual Meeting, California Institute of Technology, Pasadena, CA, January 1994.

L15. Keller Group Lecture, Applied Math, California Institute of Technology, Pasadena, CA, December 1993.

L14. Contributed Presentation, Seventh International Conference on Domain Decomposition Methods, The Pennsylvania State University, State College, PA, November 1993.

L13. Department of Computer Science Colloquium, University of Illinois, Urbana, IL, October 1993.

L12. Four Invited Lectures, Department of Biochemistry and Molecular Biophysics, Columbia University, New York, NY, September 1993.

L11. CRPC Invited Forum, Applied Mathematics, California Institute of Technology, Pasadena, CA, May 1993.

L10. Department of Biochemistry and Molecular Biophysics Seminar, Columbia University, New York, NY, July 1992.

L9. Department of Mathematics Colloquium, University of Kansas, Lawrence, KA, May 1992.

L8. Numerical analysis seminar, University of Illinois, Urbana, IL, January–May 1992.

L7. A summer series of lectures presented at Lawrence Livermore National Laboratory, Livermore, CA, July 1991.

L6. Contributed Presentation, Second International Conference on Industrial and Applied Mathematics, Washington, D.C., July 1991.

L5. Contributed Presentation, Copper Mountain Multigrid Conference, Copper Mountain, CO, April 1991.

L4. Contributed Presentation, Cray Research and Development Grant Program, Urbana, IL, April 1990.

L3. Contributed Presentation, SIAM Annual Conference, Chicago, IL, July 1990.

L2. Poster Presentation, UIUC Annual Review of Computing, Urbana, IL, September 1990.

L1. Contributed Presentation, Parallel Circus, Toronto, Canada, October, 1990.

EQUITY, DIVERSITY, AND INCLUSION ACTIVITIES

Lecturer, Freshman Seminar Program, 2003–2006.
Advisor, Cal(IT)^2 Undergraduate Summer Research Program, 2002–2003, 2005–2007.
Advisor, UC STARS Undergraduate Summer Research Program, 2005–2006.
Advisor, UC LEADS Undergraduate Summer Research Program, 2005–2006.
Advisor, CAMPS Undergraduate Summer Research Program, 2007–2009.
Advisor, CTBP Undergraduate Internship Program, 2007–2008.
Participant, UCSD Faculty Leadership Academy (Completed Course), **2018–2019**.
Advisor for 10 completed Female and/or URM undergraduate REU students, **2001–**.
Advisor for 4 completed Female and/or URM doctoral students, **2001–**.
Advisor for 3 completed Female and/or URM postdoctoral students, **2001–**.
Member, Divisional Committee on Equity, Diversity, and Inclusion, **2018–.**

STUDENT INSTRUCTIONAL ACTIVITIES

High School Research Students Supervised (2018–, 2 completed, 0 current; 0 Female/URM):

M. Holst (Canyon Crest Academy, Science Fair Project; ISEF Qualifier);
B. Faktor (Canyon Crest Academy, Science Fair Project; ISEF Qualifier).

Instructor for Math League (Solana Pacific Elementary School, San Diego, CA; 2014-2016)

Approximately 20 Elementary and Middle School Students Mentored.

MATH 299 Research Students (2015–, 25; 4 Female/URM):

Z. AlAwwad; O. Alolayan; A. Behzadan; D. Bosey; J. Briones; G. ChandrasekarIyer; S. Cheng; T. Farnan; Z. Finnley; F. Grogan; A. Hoang; B. Humm; D. Lenz; X. Lin; M. Loschen; W. MendozaGopar; N. Meyer; J. Moody; A. Nayak; P. Shah; Y. Shi; B. Whiteaker; Y. Zhang; V. Duruisseaux; Z. Han.

MATH 199/199H Research Students (2015–, 10; 5 Female/URM):

R. Borum; J. Gilby; T. Kozareva; W. MendozaGopar; S. Sanchez; I. Timalsina; B. Whiteaker; M. Olsen; L. Thapa; B. Tran.

Doctoral Students Supervised (19 completed, 1 current, 1 advanced to candidacy; 4 Female/URM):

B. Aksoylu (UCSD Math, 2001; Wayne State); N. Baker (UCSD Chem, 2001; PNNL); K. Tai (UCSD Chem, 2002; Oxford U.); K. Scully (UCSD Math, 2003; Aero. Corp.); J. Fenwick (UCSD Math, 2005; Far-Tech); R. Szypowski (UCSD Math, 2008; Cal Poly); C. Meier (UCSD Math, 2012; Parsons Inc.); S. Pollock (UCSD Math/CSME, 2012; U. Florida); J. Serencsa (UCSD Math/CSME, 2012; Workday); H. Hu (UCSD Phys/CSME, 2014; Microsoft); A. Mihalik (UCSD Math/CSME, 2014; Citadel); A. Behzadan (UCSD Math, 2015; UCSD); S. Cheng (UCSD Math/CSME, 2015; Startup); C. Tiee (UCSD Math, 2015; Helm.ai). J. Moody (UCSD Math/CSME, 2016; ViaSat); J. Salamon (UCSD Phys, 2016; Mira Costa College); F. Grogan (UCSD Math/CSME, 2017; PNNL); J. Briones (UCSD Math/CSME, 2022; UCSD); J. Laughlin (UCSD MAE/CSME, 2022; UCSD). Current: M. Ebrahimi (UCSD Math/CSME).

Postdoctoral Students Supervised (29 completed, 0 current; 3 Female/URM):

F. Wang (2000-2001; Math Zoom); S. Bond (2000-2003; SNL); H. MacMillan (2001-2003; Food & Water Watch); J. Suen (2002-2004; UCLA); J. Erway (2006-2007; Wake Forest); O. Sarbach (2005-2006; Univ. Michoacana); L. Chen (2005-2006; UC Irvine); A. Malqvist (2006-2007; Chalmers Univ.). G. Nagy (2004-2008; MSU); D. Reynolds (2005-2008; SMU); B. Lu (2006-2008; Chin. Acad. Sci.); Y. Cheng (2006-2009; PNNL); Z. Yu (2006-2008; Wisconsin-Milwaukee); Y. Zhou (2006-2008; Colorado State); G. Tsogtgerel (2006-2009; McGill Univ.); E. Lunasin (2006-2010; US Naval Academy); R. Szypowski (2008-2011; Cal Poly Pomona); Y. Zhu (2008-2012; Idaho State); A. Stern (2009-2012; Washington Univ.); A. Gillette (2011-2013; Univ. Arizona and LLNL); S. Pollock (2012-2013; Univ. Florida); P. Kekenes-Huskey (2010-2014; Loyola Univ.); C. Tiee (2015-2016; helm.ai); C. Meier (2012-2014; Parsons Inc.); J. Moody (2016-2017; ViaSat); J. Dilts (2015-2018; Stellar Science); E. Gawlik (2016-2018; Univ. Hawaii); A. Behzadan (2015-2020; CSU Sacramento); M. Licht (2017-2021; EPFL). Current: None.

Undergraduate Research Students Supervised (27 completed, 0 current; 12 Female/URM):

J. Kleint (2002; UCSD, CalIT2 Summer Program); J. Noble (2003; UCSD, Math Honors Thesis); R. Page (2006; UC Berkeley, UC STARS/UC LEADS Summer Program); P. Sanan (2006; UCSD); B. Nguyen (2006; UCSD, CalIT2 Summer Program); J. Kommemi (2006-2007; UCSD, Enrichment/CalIT2 Summer Program, Math Honors Thesis, Dean's Award); E. Eldridge (2007-2008; UCSD, CTBP Academic Year and Summer Internships); J. Webster (2007-2008; UCSD, Math Honors Thesis); C. Wood (2008; UCSD, CAMPS Summer Internship); K. Farrell (2008-2009; UCSD, Math Honors Thesis, Dean's Award, Silagi Award); N. Miller (2008-2010; UCSD); J. Lee (2009; UC Santa Cruz); H. Miles-Leighton (2009-2010; UCSD); J. Cochran (2012; UC Irvine); M. Olson (2014-2015; UCSD, Math Honors Thesis); B. Whiteaker (2015-2016; UCSD, RTG Research Student); T. Kozareva (2015-2017; UCSD, RTG Research Student); S. Sanchez (2015-2017; UCSD, RTG Research Student); B. Tran (2016-2017; UCSD, Math Honors Thesis, Silagi Award); R. Borum (2017-2018; UCSD, RTG Research Student); J. Gilby (2017-2018; UCSD, RTG Research Student); L. Thapa (2017-2018; UCSD, Math Honors Thesis); I. Timalsina (2016-2019; UCSD, Math Honors Thesis); A. Nguyen (2019-2020; UCSD, Undergraduate Research Project); J. Oshiro (2019-2020; UCSD, Undergraduate Research Project); M. Rowan (2019-2020; UCSD, Undergraduate Research Project); W. Ning (2019–2021; UCSD, Undergraduate Research Student). Current: None.

REFEREED JOURNAL ARTICLES

A89. A. BEHZADAN AND M. HOLST, *On the space of locally Sobolev-Slobodeckij functions*, Journal of Function Spaces, Volume 2022, Article 9094502 (2022), pp. 1–30. Available as arXiv:1806.02188 [math.AP].

A88. A. BEHZADAN AND M. HOLST, *On certain geometric operators between Sobolev spaces of sections of tensor bundles on compact manifolds equipped with rough metrics*, Contemporary Mathematics, 3 (2022), pp. 89–140. Available as arXiv:1704.07930v2 [math.AP].

A87. A. BEHZADAN AND M. HOLST, *Sobolev-Slobodeckij spaces on compact manifolds, revisited*, Mathematics, 10 (2022), pp. 522:1–103. Available as arXiv:1704.07930v3 [math.AP].

A86. A. BEHZADAN AND M. HOLST, *Multiplication in Sobolev spaces, revisited*, Arkiv för Matematik, 59 (2021), pp. 275–306. Available as arXiv:1512.07379 [math.AP].

A85. E. GAWLIK, M. HOLST, AND M. LICHT, *Local finite element approximation of Sobolev differential forms*, ESAIM: Mathematical Modelling and Numerical Analysis, 55 (2021), pp. 2075–2099. Available as arXiv:2011.00634 [math.NA].

A84. P. RANGAMANI, A. BEHZADAN, AND M. HOLST, *Local sensitivity analysis of the "membrane shape equation" derived from the Helfich energy*, Mathematics and Mechanics of Solids, 26 (2021), pp. 1–42. Available as arXiv:2005.12550 [math.NA].

A83. C. LEE, J. LAUGHLIN, N. ANGLIVIEL DE LA BEAUMELLE, R. AMARO, J. MCCAMMON, R. RAMAMOOR-THI, M. HOLST, AND P. RANGAMANI, *3d mesh processing using GAMer 2 to enable reaction-diffusion simulations in realistic cellular geometries*, PLOS Computational Biology, 16 (2020), pp. 1–35. Available as arXiv:1901.11008 [q-bio.QM].

A82. C. LEE, J. LAUGHLIN, J. MOODY, R. AMARO, J. MCCAMMON, M. HOLST, AND P. RANGAMANI, *An open source mesh generation platform for biophysical modeling using realistic cellular geometries*, Biophys. J., 118 (2020), pp. 1003–1008. Available as arXiv:1909.04781 [physics.comp-ph].

A81. R. VASAN, M. ROWAN, C. LEE, G. JOHNSON, P. RANGAMANI, AND M. HOLST, *Applications and challenges of machine learning to enable realistic cellular simulations*, Frontiers in Physics, 7 (2020), pp. 1–10. Available as arXiv:1911.05218 [physics.bio-ph].

A80. L. STOLERMAN, M. GETZ, S. LLEWELLYN SMITH, , M. HOLST, AND P. RANGAMANI, *Stability analysis of a bulk-surface reaction model for membrane protein clustering*, Bull. Math. Biol., 82 (2020), pp. 1–34. Available as arXiv:1908.05214 [math.AP].

A79. M. HOLST, Y. LI, A. MIHALIK, AND R. SZYPOWSKI, *Convergence and optimality of adaptive mixed methods for Poisson's equation in the FEEC framework*, J. Comput. Math., 38 (2020), pp. 748–767. Available as arXiv:1306.1886 [math.NA].

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