

# Vita and Bibliography<sup>1</sup>

**Aaron L. Fogelson**

Professor

## Academic Degrees:

B.A. 1977 Wesleyan University  
M.S. 1979 Courant Institute of Mathematical Sciences,  
New York University  
Ph.D. 1982 Courant Institute of Mathematical Sciences,  
New York University

## Research Interests:

Modeling of Blood Clotting,  
Modeling Complex Viscoelastic Materials including Physiological Gels,  
Biological Fluid Dynamics, Scientific Computing,

## Professional Experience

1977-82 Research Assistant, New York University  
1980-82 Lecturer, New York University  
1982-84 NSF Postdoctoral Fellow, University of California and Lawrence  
Berkeley Laboratory  
1983-85 Lecturer, University of California, Berkeley  
1985-86 Associate Research Scientist, Courant Institute of Mathematical  
Sciences, New York University  
1985-89 Assistant Professor, University of Utah (on leave 1985–1986)  
1989 Visiting Member, Courant Institute of Mathematical Sciences,  
New York University (April-July)  
1989- Associate Professor, University of Utah (on leave 1992–93)  
1992-93 Visiting Associate Professor, University of Washington  
1994- Professor, University of Utah  
2000- Adjunct Professor of Bioengineering, University of Utah  
Jan 2006 Visiting Professor, Institute for High Performance Computing, Singapore  
2014-17 Associate Dean for Research, College of Science

## Academic Honors:

1976 Phi Beta Kappa  
1977 Summa Cum Laude  
1977-79 Courant Institute Research Assistantship  
1979-82 SIAM Institute of Mathematics for Society (SIMS) Fellowship  
1982-84 NSF Postdoctoral Fellowship

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<sup>1</sup>New activities are in red.

- 1987-91 Alfred P. Sloan Research Fellowship
- 1996-99 NSF Creativity Award
- 1998-99 University of Utah Faculty Fellow Award
- 1999-2000 John Simon Guggenheim Memorial Foundation Fellowship
- 2003 Plenary speaker, Society of Mathematical Biology Annual Meeting, Dundee, Scotland.
- 2006 Plenary speaker invitation, ECCOMAS-CFD 2006, Egmond aan Zee, The Netherlands.
- 2018 Best Paper Prize (2016-2017) Mathematical Medicine and Biology: A Journal of the IMA for 'A two-phase mixture model of platelet aggregation', with Jian Du.
- 2018 Editors' Choice Award for most outstanding paper Cellular and Molecular Bioengineering for 'A microfluidic model of hemostasis sensitive to platelet function and coagulation, with R.M. Shoeman et al.

**Research Grant Support:**

- 2022- NHLBI: 1R01HL157631 Computational and Experimental Modeling of Subclinical Leaflet Thrombosis in Bioprosthetic Aortic Valves, B.E. Griffith UNC. PI, AF Utah PI, Total Budget: \$2,668,850.
- 2020- NHLBI: R01HL151984 An integrated computational and experimental approach to understanding the hemostatic response during treatment of bleeding A.F., Karin Leiderman, Keith B Neeves (MPIs) Total Budget: \$2,641,394.
- 2018- NHLBI: 1U01HL143336 Multiscale Modeling of Clotting Risk in Atrial Fibrillation, B.E. Griffith UNC, PI, A.F. Utah PI Total Budget: \$2,757,900.
- 2018- NIGMS: 1R01GM131408 Modeling gastric mucus layer physiology, A.F. PI. Total Budget: \$1,500,000.
- 2017- NSF DMS-1716898: Collaborative Research: Blood Clotting at the Extreme – Mathematical and Experimental Investigation of Platelet Deposition in Stenotic Arteries, A.F. (PI), J. Du, D. Ku, Total budget: \$553,191.
- 2015-2019 NSF DMS-1521748: The Best of Both: Toward a hybrid discrete and continuum multiscale platelet aggregation and coagulation model, R.M. Kirby, A.F., V. Shankar, Total budget: \$449,751.
- 2015-2019 NHLBI 1R01HL126864: Upstream priming of platelets for adhesion to biomaterials Vladimir Hlady, A.F. (MPIs), Total budget: \$1,490,000.
- 2014-2020 NHLBI 1R01HL120728: A Systems Biology Approach to Predicting Bleeding in Hemophilia Keith Neeves, A.F., Karin Leiderman, Jorge De Paolo (MPIs), Total budget: \$2,786,400.
- 2012-2017 NSF DMS-1160432 FRG: Collaborative Research: Chemically-active Viscoelastic Mixture Models in Physiology: Formulation, Analysis, and Computation, A.F. (PI), J. Keener, J. Du, R. Guy, G. Wright, (co-PIs), Total budget \$1,100,000, Utah portion \$686,490.
- 2012-2019 NSF RTG: Research Training in Mathematical and Computational Biology, J. Keener (PI), F. Adler, A. Borisyuk, P. Bressloff, A.F. (co-PIs), \$2,496,299.
- 2009-2014 NIGMS: Multiscale Computational Modeling of Platelet Deposition and Coagulation in Flow, (A.F. PI, R. Kirby, V. Turitto, C. Hall, co-PIs) (\$1,295,163)
- 2006-2013 NSF: Formation and Function of Physiological Gels (A.F. PI, J. Keener, R. Guy, and G. Wright, co-PIs) (\$2,000,000)
- 2004-2012 NSF RTG: Research Training Group in Mathematical and Computational Biology (J. Keener PI, A. F. co-PI) (\$2,400,000)

2002-2009	NSF IGERT Grant (J. Keener PI, A. F. co-PI) (\$2,940,000)
2002-2007	NSF FRG Grant (A.F. PI, J. Keener co-PI) (\$1,014,555)
1998-2003	NSF Research Grant (A.F. PI, \$310,000 and \$53,000 supplement)
1997-1999	University of Utah Seed Grant (\$35,000)
1996-1999	NSF Research Grant - Creativity Extension (A.F. PI, \$134,390)
1993-1997	NSF Research Grant (A.F. PI, \$290,000)
1991-1993	NSF Research Grant (A.F. PI, \$74,740)
1990-1991	University of Utah Research Committee Grant (\$5,000)
1988-1991	NSF Research Grant (A.F. PI, \$45,240)
1988-1990	University of Utah Research Committee Grant (\$5,000)
1986-1988	NSF Research Grant (A.F. PI, \$48,100)
1985-1986	NSF Research Grant (with A. Chorin) (\$13,350)

**Professional Affiliations:**

Society for Industrial and Applied Mathematicians  
Biophysical Society  
International Society on Thrombosis and Hemostasis  
American Association for the Advancement of Science

**Professional Activities:**

Associate Editor, Gels, 2021-

Member, 2020 AMS Birkhoff Prize Committee.

Treasurer, SIAM Northern States Section, 2019-

Organizing committee member for conference 'Utah MathBio Alumni Conference - JPK 70', Salt Lake City, UT, July 14-15, 2017.

Organizing committee member for conference 'Modeling Complex Fluids and Gels for Biological Applications', Salt Lake City, UT, May 4-6, 2017.

Associate Editor, SIAM Journal for Applied Mathematics, 2017-

Member, Gene Golub SIAM Summer School Committee, 2012-2015

Vice-Chair, SIAM Activity Group on the Life Sciences, 2011-2013

Organizing committee member for SIAM Activity Group in the Life Sciences 2010 meeting

Chair of 2008 Gordon Research Conference on Theoretical Biology and Biomathematics, Barga, Italy. June 2008.

Guest editor for a special issue of Computer Methods in Applied Mechanics and Engineering devoted to Immersed Boundary Methods, 2008.

Organizer of symposium on Immersed Boundary methods at the 7th World Congress on Computational Mechanics, Los Angeles, July 2006.

Vice-Chair of 2006 Gordon Research Conference on Theoretical Biology and Biomathematics.

Chair of session on biofluids and biogels at the Gordon Research Conference on Theoretical Biology and Biomathematics, June 2004.

Co-organizer of International Conference on Mathematics in Biology, University of Utah, August 2000.

Co-organizer of Symposium of Adaptive Solution Methods for Partial Differential Equations, University of Utah, June 1998.

Chair of session on biofluid dynamics at the Gordon Research Conference on Theoretical Biology and Biomathematics, June 1996.

Co-organizer of minisymposium on biofluid dynamics, University of Utah, May 1996.

Organizer of session ‘Mathematical Models in Biomedical Research’, Biomedical Engineering Society Annual Meeting, Memphis State University, October 1993.

Workshop leader for Biological Fluid Dynamics Workshop: Modelling Flow with Immersed Elastic Structures, Pittsburgh Supercomputing Center, July 1991.

Organizer of Conference ‘Computational Methods for Fluid Dynamics and the Evolution of Fronts and Interfaces,’ University of Utah, October 1990.

Reviewer for:

National Science Foundation  
(Panels: KDI-1998; Fluids-1999, 2001, 2006, 2012; Career-2000; FRG-2002, 2003; Mathematical Biology-2005, 2012, 2018; NSF-NIGMS 2007, 2008, 2019; RTG-2015)  
National Institutes of Health (MABS Study Section 2008, 2009, 2011)  
Department of Energy

Referee for:

*Journal of Computational Physics,*  
*Mathematics of Computation, Bulletin of Mathematical Biology,*  
*Journal of Mathematical Biology, American Journal of Physiology,*  
*Journal of Theoretical Biology, Journal of Supercomputing,*  
*SIAM Journal of Applied Mathematics,*  
*SIAM Journal of Scientific Computing,*  
*Numerical Algorithms, Mathematical Biosciences,*  
*Biophysical Journal, PNAS,*  
*Journal of Thrombosis and Haemostasis, Nature,*  
*Blood, Physics of Fluids,*  
*Arteriosclerosis Thrombosis and Vascular Biology,*  
*Journal of Chemical Physics, PLOS-Computational Biology*  
*Biomechanics and Modeling in Mechanobiology, PLOS-ONE*

**Ph.D. Thesis Advisor for:**

Nien-Tzu Wang, June 1997, Computational Methods for Continuum Models of Platelet Aggregation.

Andrew Kuharsky, September 1998, Mathematical Modeling of Blood Coagulation,

Haoyu Yu, December 1999, Three-dimensional Computational Modeling and Simulation of Platelet Aggregation on Parallel Computers.

Chung-Seon Yi, 2001, Mathematical Models for Ionic Concentration Changes and Volume Shifts During Ischemia and Hypoxia.

Robert Guy, 2004, Continuum Models of Platelet Aggregation: Closure Models, Computational Methods, and Simulation.

Elijah Newren, 2007, Enhancing the Immersed Boundary Method: Stability, Volume Conservation, and Implicit Solvers.

Karin Leiderman, 2010, A Mathematical Model of Blood Coagulation and Platelet Deposition under Flow.

Lindsay Crowl, 2010, Blood Flow Dynamics: A Lattice Boltzmann Immersed Boundary Approach.

Brittany Bannish, 2012, Mathematical Models of Fibrinolysis. co-advised with J.P. Keener.

Varun Shankar, 2014, Radial Basis Function Methods for Fluid-structure Interaction and Numerical Solution of Partial Differential Equations in Platelet Aggregation. co-advised with R.M. Kirby.

Cheryl Zapata, 2016, Mathematical Modeling of Fibrin Gelation Dynamics and Structure Formation Under Flow.

Kathryn G Link, 2020, Mathematical Models of Flow-mediated Intravascular and Extravascular Blood Clotting.

Priscilla Elizondo, 2020, Mathematical Studies of Venous Thrombosis.

Anna C. Nelson, 2021, Kinetic Polymerization Models and the Roles of Fibrinogen in Fibrin Gel Formation.

Andrew Kassen, 2021, Continuous Energy, Shared Memory Parallel, 3D Whole Blood Simulations.

Andrew Watson, 2021, Mathematical Models of Platelet Interaction with a Reactive Surface under Flow.

Hallie Elich, 2021, A Fluid-Structure Interaction Model of Pumping in a Chain of Lymphangions

Keshav Patel (current).

**M.Sc. Thesis Advisor for:**

Elijah Newren, September 1998, Multilevel Distributed-Memory Solutions of Poisson's Equation.

Thomas Anderson (CES program) 2001-2003, The effect of spatial heterogeneity on blood coagulation dynamics.

**Undergraduate Thesis Advisor for:**

Gabriella Barnes 2019-2020, Models of TFPI Inhibition in Coagulation.

Yasmeen Hussain, 2006-2011, Coagulation Models.

**REU Advisor for:**

Michael Woodbury, 2002-2004, Models of Blood Clot Lysis.

Nathan Hancock, 2002-2004, Molecular Bond Breaking Under Dynamic Forcing.

Yasmeen Hussain, 2006-2011, Coagulation Models.

Gabrielle Barnes, Maycol Vilquez (current).

**Post-Doctoral Advisor for:**

David Eyre, Nien-Tzu Wang, Robert Guy, Grady Wright

Viktoria Hsu, Laura Miller, Jian Du, Lingxing Yao,

Mark Zajac, Sarthok Sircar, Tyler Skorczewski, Qinghai Zhang

Owen Lewis, Varun Shankar, Aaron Barrett

**New Courses Developed:**

- Advanced Numerical Analysis and Computation (Senior undergraduate)
- Mathematical Modeling (Senior undergraduate)
- Computational Fluid Dynamics (Graduate)
- Numerical Solution of Partial Differential Equations (Graduate)
- Mathematical Modeling of the Cardiovascular System (Graduate)
- Case Studies in Computational Engineering and Science (Graduate)
- Mathematical Modeling of Blood Clotting (Graduate)
- Fluids and Complex Fluids (with C. Hohenegger) (Graduate)

**Courses Taught:**

**Lower Division Undergraduate:** Calculus, Business Calculus, Mathematics for Life Scientists (2 semester sequence), Linear Algebra, Engineering Mathematics (Linear Algebra and ODEs), Engineering Mathematics (PDEs), Engineering Mathematics (Complex Variable)

**Upper Division Undergraduate/Beginning Graduate:** Mathematical Biology (2 semester sequence), Dynamic Systems and Chaos, Introduction to PDEs, Introduction to Numerical Analysis (2 semester sequence), Advanced Numerical Analysis and Computation, Mathematical Modeling

**Graduate:** Analysis of Numerical Methods (2 semester sequence), Numerical Solution of PDEs, Computational Fluid Dynamics, Fluid Mechanics, Mathematical Cell Physiology, Mathematical Modeling of the Cardiovascular System, Stochastic Processes in Biology (with Paul Bressloff), Mathematical Modeling of Blood Clotting, Mathematical Systems Physiology

**Major Committee Assignments:**

**Departmental:** Executive Committee, Hiring Committee, Instructorship Committee, Graduate Committee, Space Committee (building renovation), IGERT Steering Committee

**University:** Computational Engineering and Science Masters Program Steering Committee, Center for High Performance Computing Faculty Advisory Board, Internal Review Committees for Department of Meteorology and the School of Computing, Research Seed Grant Committee, Research Instrumentation Fund Committee, Graduate Education Strategy Group

**Community Activities:**

Teaching mathematics weekly at Lowell Elementary School (until 2003); Board of Directors and Treasurer, Utah School of Jewish Studies (until 2001); Main author: 'An Independent Look at Salt Lake School District Enrollment Data: Historical Trends and the (Un)Reliability of Projections', 34 page report presented to the Salt Lake City School Board, June 19, 2001; Board of Trustees, University of Utah Hillel (until 2006)



## Presentations:

- 1982 Duke University
- 1982 National Institute of Health
- 1983 Lawrence Berkeley Laboratory
- 1983 Courant Institute
- 1983 SIAM National Meeting, Denver
- 1984 (invited) AMS-Summer Seminars on Large-Scale Computations in Fluid Mechanics, San Diego
- 1985 Biophysical Society Annual Meeting, Baltimore
- 1985 University of Maryland
- 1985 University of North Carolina
- 1985 Duke University
- 1985 University of Waterloo
- 1985 Northeastern University
- 1985 Yale University
- 1985 Colorado State University
- 1985 University of New Mexico
- 1985 Los Alamos National Laboratory
- 1985 University of Utah
- 1985 Stanford University
- 1985 IMACS 11th World Congress, Oslo, Norway
- 1986 Courant Institute
- 1986 (invited) SIAM Workshop on Cross-Disciplinary Research in Multi-phase Flow, Leesburg, VA
- 1986 American Physical Society Annual Fluid Mechanics Meeting, Columbus, OH
- 1986 University of Utah
- 1987 Conference on Nonlinearities in Biology and Medicine, Los Alamos, NM
- 1987 (invited) AMS-MAA Joint Meeting, Salt Lake City, UT
- 1987 Mt. Sinai Medical Center, New York
- 1988 Tulane University
- 1988 Courant Institute
- 1988 University of California at Los Angeles
- 1988 Cedars Sinai Medical Center, Los Angeles
- 1988 (invited) National Heart, Lung and Blood Institute, DTB Annual Meeting, Bethesda, MD
- 1988 Duke University (Biomathematics Center)
- 1988 Duke University (Department of Computer Science)
- 1989 Tulane University
- 1990 (invited) AMS-SIAM Special Session on Mathematical Biology, Albuquerque, NM
- 1990 (invited) Gordon Research Conference on Theoretical Biology
- 1990 (invited) University of Utah Conference on Computational Methods for Fluid Dynamics and the Evolution of Fronts and Interfaces, Salt Lake City, UT

- 1991 (invited) Joint AMS-IMS-SIAM Summer Research Conference on Bio-fluidodynamics, Seattle, WA
- 1991 (invited) Pittsburgh Supercomputing Center's Biological Fluid Dynamics Workshop: Modeling Flows with Immersed Elastic Structures, Pittsburgh, PA
- 1991 (invited) Center for Biopolymer at Interfaces Semi-annual Meeting, University of Utah
- 1991 University of Michigan
- 1991 Washington State University
- 1992 University of Utah, Mechanical Engineering
- 1992 Brigham Young University, Chemical Engineering
- 1992 (invited) MSRI Workshop on Biofluid Dynamics
- 1993 University of Washington, Applied Mathematics
- 1993 University of British Columbia
- 1993 Gordon Research Conference: Biorheology of Cell Adhesion
- 1993 (invited) Biomedical Engineering Society Annual Meeting, Memphis, TN
- 1993 Tulane Univeristy
- 1994 University of Utah, College of Science
- 1994 University of Utah, Mathematics (Numerical Analysis)
- 1995 University of Utah, Mathematics (Math-Biology)
- 1996 University of Utah, Biofluid Dynamics Symposium, May 1996
- 1996 Gordon Research Conference on Theoretical Biology
- 1996 UU-BYU-USU Joint Meeting on Nonlinear Analysis
- 1997 University of Utah, Bioengineering
- 1998 (invited) Workshop on Cardiac Valve Prostheses, Hilton Head South Carolina, February 1998
- 1998 University of Tennessee, Department of Bioengineering
- 1998 (invited) Biomedical Engineering Society Annual Meeting, Cleveland Ohio
- 1999 (invited) Computational Modeling in Biological Fluid Dynamics Workshop, IMA, Minneapolis
- 1999 University of Utah, Applied Mathematics
- 1999 Worcester Polytechnic Institute
- 1999 North Carolina State University (Biomathematics)
- 1999 North Carolina State University (Numerical Analysis)
- 1999 (invited) Bioengineering Division, 1999 International Mechanical Engineering Congress and Exposition, Nashville, Tennessee, November 1999.
- 2000 (invited) International Workshop on Numerical Simulations of Polymer and Cell Dynamics, Bad Honnef, Germany, June 13-16, 2000.
- 2001 Tulane University, Mathematics Colloquium
- 2001 (invited) SIAM Annual Meeting, San Diego, July 10-13.
- 2001 (invited) University of Utah, GSAC Colloquium
- 2002 (invited) SIAM Annual Meeting, Philadelphia, July 7-11.
- 2002 (invited) SMB Annual Meeting, Knoxville, July 15-16.
- 2003 University of Utah, Undergrad Colloquium.
- 2003 Illinois Institute of Technology, Biomedical Engineering Seminar.
- 2003 (plenary) SMB Annual Meeting, Dundee, Scotland, August 6-9, 2003.
- 2003 University of Michigan, Distinguished Lecture in Mathematical Biology.

2004 University of Arizona  
 2004 XVIIIth International Fibrinogen Workshop,  
 University of North Carolina, Chapel Hill,  
 July 17-20, 2004.  
 2004 University of Utah, Biology Department  
 2005 (invited) CRM, Universite de Montreal, Workshop on Mini-invasive  
 procedures in medicine and surgery: Mathematical and numerical challenges,  
 Montreal May 23-27, 2005  
 2005 (invited) Biomedical Engineering Society Fall Meeting, Baltimore MD, Sept 29-Oct 1, 2005  
 2005 Bowdoin College mathematics colloquium  
 2006 (invited) Institute for High Performance Computing, Singapore  
 2006 Claremont Colleges mathematics colloquium  
 2006 (plenary) Physiological Flow Network Meeting, Oxford, UK  
 2006 Nottingham University, 'Bridging the physical/life science divide' lecture, Nottingham UK  
 2006 University of California, Irvine  
 2006 (keynote) VIIth World Congress on Computational Mechanics, Los Angeles, CA, July 16-22, 2006.  
 2006 (keynote) Computational Methods Session, 5th World Congress on Biomechanics,  
 Munich, Germany, July 29-August 4.  
 2006 (invited) Thrombosis Modeling Session, 5th World Congress on Biomechanics,  
 Munich, Germany, July 29-August 4.  
 2006 (invited) Conference on Applications of Mathematics in Biology, Physiology,  
 and Medicine, Courant Institute of Mathematical Sciences,  
 New York University, Oct 20-21, 2006  
 2007 (invited) Conference on Frontiers in Applied and Computational Mathematics,  
 New Jersey Institute of Technology, Newark, NJ, May 15-16, 2007.  
 2007 Brown University Center for Fluid Mechanics  
 2007 Tulane University Mathematics Colloquium  
 2007 Tulane University Applied Mathematics Seminar  
 2008 University of North Carolina, Department of Hematology/Oncology  
 2008 University of North Carolina, Mathematics  
 2008 (invited) FDA/NIH/NSF Workshop 'Computer Methods  
 for Cardiovascular Devices', Bethesda, MD, March 18-19.  
 2008 (invited) SIAM Materials Science Meeting, Philadelphia PA, May 11-14.  
 2008 (invited) IPAM Workshop, Los Angeles CA, May 19-23.  
 2008 (keynote) European Society for Minimally Invasive Neural Therapy (ESMINT) 2008 Teaching  
 Course, Lisbon, Portugal, September 6-12, 2008.  
 2008 (invited) Society for Advancement of Chicanos and Native Americans in Science (SACNAS)  
 2008 Annual Meeting, Salt Lake City, October 9-12, 2008.  
 2009 University of Utah, Department of Biomedical Informatics.  
 2009 (invited) Mathematical Biosciences Institute Conference 'Computational Challenges in  
 Integrative Biological Modeling, Columbus, OH, Oct 5-8, 2009.  
 2009 University of Arizona, Applied Mathematics Colloquium.  
 2009 UC Davis, Mathematical Biology Seminar.  
 2009 Illinois Institute of Technology, Biomedical Engineering Seminar.

2009 University of Connecticut Health Center, Center for Cell Analysis and Modeling Seminar.

2010 University of Houston, Department of Mathematics.

2010 Emory University, Department of Mathematics.

2010 5th Symposium on Hemostasis, University of North Carolina, April 29-May 1, 2010.

2010 SIAM Life Science Meeting, Pittsburgh, PA, July 12-16, 2010.

2010 Gordon Research Conference on Hemostasis, Waterville Valley, NH, July 25-29, 2010.

2010 (invited) IMA Workshop on Medical Device-Biological Interactions at the Material-Tissue Interface, Minneapolis, MN, Sept 13-15, 2010

2010 (invited) Swiss-Japanese International Seminar on Medical Engineering Based on Vessel Biology, Zurich, Nov 15-16, 2010

2011 Florida State Univeristy, Mathematics Colloquium

2011 Duke University, Mathematical Biology Colloquium

2011 Duke University, Presentation to Duke-UNC 'Clotters' Club'

2011 University of Pennsylvania, Systems Biology Seminar

2011 Colorado School of Mines, Chemical Engineering Seminar

2011 (invited) NCTS Workshop on Fluid-Structure Interaction Problems, Hsinchu, Taiwan, May 26-29, 2011

2011 ETH, Zurich, Switzerland, Electrical Engineering Seminar

2011 (invited) Oxford-Notre-Dame Workshop on Interdisciplinary Biomedical Research, London, UK, July 18-19, 2011

2011 UCSD Mechanical and Aerospace Engineering Department. November 30, 2011

2012 Montana State University Mathematics Department Colloquium, March 2012.

2012 University of California Davis SIAM Student Research Conference Keynote Lecture, May 2012

2012 (invited) Second International Conference on Scientific Computing, Nanjing, China, May 22-25, 2012.

2012 (invited) International Society for Thrombosis and Hemostasis - SSC Annual Meeting Biorheology Session, Liverpool, England, June 27-30, 2012.

2012 Gordon Research Conference on Hemostasis, Waterville Valley, NH, July 22-27, 2012.

2012 (invited) Pacific Northwest Numerical Analysis Seminar, Boise State University, October 27, 2012.

2012 University of Minnesota Mathematics Department Colloquium, November 2012.

2012 University of Minnesota Mathematical Biology Seminar, November 2012.

2012 (invited) Fluid Structure Interactions in Soft Matter Systems, School and Workshop, Prato, Italy, November 26-30, 2012.

2013 Temple University Mathematics Department Colloquium, February, 2013.

2013 Moscow State University Biophysics Department Seminar, May 24, 2013.

2013 Russian National Childrens' Center for Hematology, Immunology and Oncology seminar, Moscow, Russia, May 28, 2013.

2013 (invited) NIMBios Investigative Workshop on Modeling Blood Cell Interactions, Knoxville, TN, June 4-7, 2013.

2013 (invited) SJTU-INS Workshop on Fluid-Structure Interaction Problems, Shanghai Jiao Tong University, Shanghai, China, July 27-30, 2013.

2013 (invited) MBI Workshop: Mathematics Guiding Bioartificial Heart Valve Design, Ohio State University, October 28-31, 2013

- 2014 (invited) World Congress on Biomechanics, Boston, July 7-11, 2014.
- 2014 Gordon Research Conference on Hemostasis, Waterville Valley, NH, July 27-Aug 1, 2014.
- 2014 (invited) Fluid Dynamics in Living Systems Conference, Arlington, VA, September 15-16, 2014.
- 2015 (invited) SIAM Computational Science and Engineering Conference, Salt Lake City, UT, March 14-18, 2015.
- 2016 (invited) Genentech Corporation, South San Francisco, CA, March 10, 2016.
- 2016 XXVI<sup>th</sup> International Fibrinogen Workshop, Skukuza, Kruger National Park, South Africa, June 21-24, 2016.
- 2016 (invited) SIAM Life Sciences Conference, Boston, MA, July 11-14, 2016.
- 2016 Gordon Research Conference on Hemostasis, Stowe, Vermont, July 24-29, 2016.
- 2017 Modeling Complex Fluids and Gels for Biological Applications, Salt Lake City, UT, May 4-6, 2017.
- 2017 University of Wisconsin, Computational and Applied Mathematics Seminar, December 9, 2017.
- 2018 World Congress on Biomechanics, Dublin Ireland, July 9-12, 2018.
- 2018 Gordon Research Conference on Hemostasis, Waterville Valley, NH, July 29-August 3, 2018.
- 2018 University of Utah, Mathematical Biology Seminar, October 31, 2018.
- 2018 University of North Carolina, Applied Mathematics Colloquium, November 30, 2018.
- 2019 Temple University, Applied and Computational Mathematics Seminar, March 27, 2019.
- 2019 International Society of Thrombosis and Hemostasis, Melbourne, Australia, July 5-10, 2019.
- 2019 (invited) 2nd Annual Symposium on Multiscale Cell Fate, University of California, Irvine, October 28-29, 2019.
- 2020 (invited) 9th International Bio-Fluid Mechanics and Vascular Biology Symposium, University of Arizona, February 13-16, 2020.

**Bibliography:**  
**Journal Papers**

94. Anna C. Nelson, **Aaron L. Fogelson**, Understanding the effect of fibrinogen interactions on fibrin gel structure, 2022, *Physical Review E*, submitted.
93. Kenji Miyazawa, **Aaron L. Fogelson**, Karin Leiderman, Inhibition of platelet-surface-bound proteins during coagulation under flow II: AT and heparin, *Biophysical Journal*, 2022, submitted.
92. Kenji Miyazawa, **Aaron L. Fogelson**, Karin Leiderman, Inhibition of platelet-surface-bound proteins during coagulation under flow I: The role of TFPI, *Biophysical Journal*, 2022, submitted.
91. Jian Du, Owen Lewis, James P. Keener, **Aaron L. Fogelson** 'Modeling and Simulation of the Ion-Binding-Mediated Swelling Dynamics of Mucin-like Polyelectrolyte Gels', 2021, *Gels*, 7(4) 244; <https://doi.org/10.3390/gels7040244>.
90. Andrew Kassen, Aaron Barrett, Varun Shankar, **Aaron L. Fogelson**, 'Immersed boundary simulations of cell-cell interactions in whole blood', 2021, *Journal of Computational Physics*, submitted.
89. Jian Du, Bindi M. Nagda, Owen L. Lewis, Daniel B. Szyld, **Aaron L. Fogelson**, A computational framework for the swelling dynamics of mucin-like polyelectrolyte gels, 2021, *Journal of Computational Physics*, submitted.
88. **Aaron L. Fogelson**, Anna C. Nelson, Cheryl Zapata-Allegro, James P. Keener, Development of Fibrin Branch Structure Before and After Gelation', 2022, *SIAM Journal on Applied Mathematics*, 82, 267-293, doi: 10.1137/21M140102.
87. Aaron Barrett, **Aaron L. Fogelson**, Boyce E. Griffith, 'A Hybrid Semi-Lagrangian Cut Cell Method for Advection-Diffusion Problems with Robin Boundary Conditions in Moving Domains', 2022, *Journal of Computational Physics*, 449, 110805.
86. Varun Shankar, Grady B. Wright, **Aaron L. Fogelson**, 'An Efficient High-Order Meshless Method for Advection-Diffusion Equations on Time-Varying Irregular Domains, 2021, *Journal of Computational Physics*, 445, 110633.
85. Andrew Kassen, Varun Shankar, **Aaron L. Fogelson**, 'A fine-grained parallelization of the immersed boundary method', 2020, *International Journal of High Performance Computing Applications*, 2022, accepted.
84. Hallie Elich, Aaron Barrett, Varun Shankar, **Aaron L. Fogelson** 'Pump efficacy in a fluid-structure-interaction model of a chain of contracting lymphangions', *Biomechanics and Mechanical Biology*, 2021, doi: 10.1007/s10237-021-01486-w.

83. Jian Du, Elise Aspray, **Aaron L. Fogelson**, 'Computational Investigation of Platelet Thrombus Mechanics and Stability in Stenotic Channels', *Journal of Biomechanics*, 2021, 222, 110398.
82. Kathryn G. Link, Michael T. Stobb, Dougald M. Monroe, **Aaron L. Fogelson**, Keith B. Neeves, Suzanne S. Sindi, Karin Leiderman, 'Computationally Driven Discovery in Coagulation', *Arteriosclerosis, Thrombosis, and Vascular Biology*, 2021 41:79-86.
81. Karin Leiderman, Suzanne S. Sindi, Dougald M. Monroe, **Aaron L. Fogelson**, Keith B. Neeves, 'The art and science of building a computational model to understand hemostasis', *Seminars in Thrombosis and Hemostasis*, 2021, 47, 129-138.
80. Jian Du, Dongjune Kim, Ghadah Alhawael, David N. Ku, **Aaron Fogelson**, 'Clot Permeability, Agonist Transport, and Platelet Binding Kinetics in Arterial Thrombosis', *Biophysical Journal*, 2020,119:2102-2115.
79. Shekh Rahman, **Aaron Fogelson**, Vladimir Hlady, 'Effects of elapsed time on downstream platelet adhesion following transient exposure to elevated upstream shear forces', 2020, *Colloids and Surfaces B: Biointerfaces*, 193:111118.
78. Kathryn Link, Matthew Sorrells, Nicholas Danes, Keith Neeves, Karin Leiderman, and **Aaron Fogelson** ' A mathematical model of platelet aggregation in an extravascular injury under flow', *SIAM Multiscale Modeling and Simulation*, 2020, 18, 1489-1524.
77. Anna C. Nelson, James P. Keener, **Aaron L. Fogelson**, 'Kinetic model of two monomer polymerization', *Physical Review E*, 2020, 101(2-1):022501.
76. Kathryn G. Link, Michael T. Stobb, Matthew G. Sorrells, Maria Bortot Katherine Ruegg, Marilyn J. Manco-Johnson, Jorge A. Di Paola, Suzanne S. Sindi, **Aaron L. Fogelson**, Karin Leiderman, Keith B. Neeves, 'A mathematical model of coagulation under flow identifies factor V as a modifier of thrombin generation in hemophilia A', *Journal of Thrombosis and Hemostasis*, 2020, 18, 306-317.
75. Owen L. Lewis, James P. Keener, **Aaron L Fogelson**, 'Electrodifffusion-mediated swelling of a two-phase gel model of gastric mucus', *Gels*, 2018, 4, 76, doi:10.3390/gels4030076.
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