Vita and Bibliography

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:

Mathematical Physiology, Biological Fluid Dynamics, Scientific Computing

Professional Experience

1977-82	Research Assistant, New York University
1980-82	Lecturer, New York Universiy
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 Reserach, 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
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.

Research Grant Support:

2018- NHLBI: 1U01HL143336 Multiscale Modeling of Clotting Risk in Atrial Fibrilation, (B.E. Griffith UNC, PI)

2018- NIGMS: 1R01GM131408 Modeling gastric mucus layer physiology A.F. PI

2017- NSF: Collaborative Research: Blood Clotting at the Extreme – Mathematical and Experimental Investigation of Platelet Deposition in Stenotic Arteries
A.F. J. Du, D. Ku, Awarded August 2015
Utah budget: $193,191 (Total budget: $553,191).

2015- NSF: The Best of Both: Toward a hybrid discrete and continuum multiscale platelet aggregation and coagulation model,
R.M. Kirby, A.F., V. Shankar, Awarded July 2015
Total budget: $449,751.

2015- NIH: Upstream priming of platelets for adhesion to biomaterials
Vladimir Hlady, A.F., Awarded March 2015,
Total budget requested: $1,490,000.

2014- NIH: A Systems Biology Approach to Predicting Bleeding in Hemophilia,
Keith Neeves, A.F., Karin Leiderman, Jorge De Paolo, Awarded September 2014,
Total budget requested: $2,786,438.

2012-17 NSF 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- 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.

2009-14 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)

2006-13 NSF: Formation and Function of Physiological Gels
(A.F. PI, J. Keener, R. Guy, and G. Wright, co-PIs) ($2,000,000)

2004-12 NSF RTG: Research Training Group in Mathematical and Computational Biology (J. Keener PI) ($2,400,000)

2002-09 NSF IGERT Grant (J. Keener PI) ($2,940,000)

2002-07 NSF FRG Grant (A.F. PI, J. Keener co-PI) ($1,014,555)

1998-2003 NSF Research Grant ($310,000 and $53,000 supplement)

1997-99 University of Utah Seed Grant ($35,000)

1996-99 NSF Research Grant - Creativity Extension ($134,390)

1993-97 NSF Research Grant ($290,000)

1991-93 NSF Research Grant ($74,740)

1990-91 University of Utah Research Commitee Grant ($5,000)

1988-91 NSF Research Grant ($45,240)

1988-90 University of Utah Research Committee Grant ($5,000)

1986-88 NSF Research Grant ($48,100)

1985-86 NSF Research Grant (with A. Chorin) ($13,350)

Professional Affiliations:

Society for Industrial and Applied Mathematicians
Biophysical Society
International Society on Thrombosis and Hemostasis

Professional Activities:

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; NSF-NIGMS 2007, 2008; 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*,
Arterosclerosis 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.

Victor Camacho, Priscilla Elizondo, Hallie Elich, Andrew Kassen, Katie Link, Anna Nelson, Andrew Watson (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:

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.

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 (current), Varun Shankar (current)

Aaron L. Fogelson (continued)

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 (PDEs), Engineering Mathematics (Complex Variable)

Upper Division Undergraduate/Beginning Graduate: Mathematical Biology (2 semester sequence), 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 Multiphase 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, Bethseda, 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 Biofluiddynamics, 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) Compuational 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 Bioartifical 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 XXVIth 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.

Bibliography:

1. **Aaron L. Fogelson**, 'A Mathematical Model and Numerical Method for Studying Platelet Adhesion and Aggregation in the Early Stages of Blood Clotting,' Ph.D. thesis, New York University, 1982.

2. **Aaron L. Fogelson**, 'A Mathematical Model and Numerical Method for Studying Platelet Adhesion and Aggregation During Blood Clotting,' *Journal of Computational Physics,* 56, (1984), 111-134.

3. **Aaron L. Fogelson**, 'A Mathematical Model and Numerical Study of Platelet Aggregation During Blood Clotting,' *Lectures in Applied Mathematics, 22, Large-scale Computations in Fluid Mechanics,* Proc. of the 15th AMS-SIAM Summer Seminar on Applied Math., Scripps Institute of Oceanography, 1983, Vol. 1, pp. 119-148, American Mathematical Society, Providence, RI, 1985.

4. **Aaron L. Fogelson** and Robert S. Zucker, 'Presynaptic Calcium Diffusion from Various Arrays of Single Channels: Implications for Transmitter Release and Synaptic Facilitation,' *Biophysical Journal,* 48, (1985), 1003-1017.

5. **Aaron L. Fogelson**, 'Mathematical and Computational Aspects of Blood Clotting,' *Proceedings of the 11th IMACS World Congress,* Oslo, Norway, 1985.

6. Robert S. Zucker and **Aaron L. Fogelson**, 'Relationship Between Transmitter Release and Presynaptic Calcium Influx When Calcium Enters Through Discrete Channels,' *Proceedings of the National Academy of Science,* 83, (1986), 3032-3036.

7. 'Can Presynaptic Depolarization Release Transmitter Without Calcium Influx?' (with R. S. Zucker and L. Lando), *Journal of Physiology, Paris,* 81, (1986), 237-245.

8. **Aaron L. Fogelson** and Charles S. Peskin, 'Numerical Solution of the 3D Stokes' Equations in the Presence of Suspended Particles,' *Proceedings of the SIAM Multiphase Flow Workshop,* Leesburg, VA June 1986.

9. 'Mathematical Models in Physiology' (with C. Peskin, D. McQueen, D. Tranchina, H.M. Lacker and R. Novick), *Proc. of Conference on Technological Advances in Models for Biomedical Research (EMBS/IEEE),* Boston, Nov. 1987.

10. **Aaron L. Fogelson** and Charles S. Peskin, 'A Fast Numerical Method for Solving the Three-dimensional Stokes' Equations in the Presence of Suspended Particles,' *Journal of Computational Physics,* 79, (1988), 50-69.

.

11. Tamar Schlick and **Aaron L. Fogelson**, 'TNPACK - A Truncated Newton Minimization Package for Large-Scale Problems: I. Algorithm and Usage'. This is both a paper and a software package, *ACM Transactions on Mathematical Software,* 18, (1992), 46-70.

12. Tamar Schlick and **Aaron L. Fogelson**, 'TNPACK - A Truncated Newton Minimization Package for Large-Scale Problems: II. Implementation Examples', *ACM Transactions on Mathematical Software,* 18, (1992), 71-111.

13. **Aaron L. Fogelson**, 'Particle-Method Solution of Two-Dimensional Convection-Diffusion Equations', *Journal of Computational Physics,* 100, (1992), 1-16.

14. **Aaron L. Fogelson**, 'Continuum Models of Platelet Aggregation: Formulation and Mechanical Properties', *SIAM Journal of Applied Mathematics,* 52, (1992), 1089-1110.

15. Victor H. Moll and **Aaron L. Fogelson**, 'Activation Waves and Threshold Phenomena in Platelet Aggregation', *Partial Differential Equations* (J.Weiner and J.Hale, Eds.) Longman Scientific and Technical, Essex, England, 1992.

16. **Aaron L. Fogelson**, 'Continuum Models of Platelet Aggregation: Mechanical Properties and Chemically-induced Phase Transitions,' *Fluid Dynamics in Biology*, (A.Y. Cheer and C.P. van Dam, Eds.), Contemporary Mathematics Series, American Mathematical Society, Providence, RI, 1993.

17. Lisa J. Fauci and **Aaron L. Fogelson**, 'Truncated Newton Methods and the Modeling of Complex Immersed Elastic Structures', *Communications on Pure and Applied Mathematics,* 46, (1993), 787-818.

18. Victor H. Moll and **Aaron L. Fogelson**, 'Activation Waves in a Model of Platelet Aggregation: Existence of Solutions and Stability of Travelling Fronts', *Journal of Mathematical Biology,* 31, (1993), 675-701.

19. **Aaron L. Fogelson** and Robert H. Dillon, 'Optimal Smoothing in Function-transport Particle Methods for Diffusion Problems', *Journal of Computational Physics,* 109, (1993), 155-163.

20. **Aaron L. Fogelson**, 'Expansion Behavior of Filtration Media', Technical Report to EIMCO Process Equipment Company, November, 1994.

21. **Aaron L. Fogelson** and Nien-Tzu Wang, 'Platelet Dense Granule Centralization and the Persistence of ADP Secretion', *American Journal of Physiology*, 270, (1996) (*Heart Circ. Physiol.* 39): H1131-H1140.

22. Robert H. Dillon, Lisa J. Fauci, **Aaron L. Fogelson**, and Donald P. Gaver,'Modeling Biofilm Processes Using the Immersed Boundary Method', *Journal of Computational Physics,* 129, (1996), 57-73.

23. **Aaron L. Fogelson** and Andrew L. Kuharsky, 'Membrane Binding-site Density Can Modulate Activation Thresholds in Enzyme Systems', *Journal of Theoretical Biology*, 193, (1998), 1-18.

24. Daniel Grunbaum, David J. Eyre, and **Aaron L. Fogelson**, 'Functional geometry of ciliated tentacular arrays in active suspension feeders', *Journal of Experimental Biology*, 201, (1998), 2575-2589.

25. Nien-Tzu Wang and **Aaron L. Fogelson**, 'Computational Methods for Continuum Models of Platelet Aggregation', *Journal on Computational Physics*, 151, (1999), 649-675.

26. **Aaron L. Fogelson** and James P. Keener, 'Immersed Interface Methods for Neumann and Related Problems in Two and Three Dimensions', *SIAM Journal on Scientific Computing*, 22, (2000), 1630-1654.

27. Andrew L. Kuharsky and **Aaron L. Fogelson**, 'Surface-mediated Control of Blood Coagulation: The Role of Binding Site Densities and Platelet Deposition', *Biophysical Journal*, 80, (2001), 1050-1074. **(Selected by editors as 'New and Noteworthy Article'.)**

28. David J. Eyre and **Aaron L. Fogelson**,'IBIS: Immersed Boundary and Interface Software Package', http://www.math.utah.edu/IBIS

29. David J. Eyre and **Aaron L. Fogelson**, 'IBIS: Immersed Boundary and Interface Software Users Guide', http://www.math.utah.edu/IBIS

30. 'Computational Engineering and Science Program at the University of Utah', (with Carleton DeTar, Christopher R. Johnson, and Christopher A. Sikorski), Proceedings of the 2001 International CES conference, San Francisco, May, 2001.

31. Robert D. Guy and **Aaron L. Fogelson**, 'Probabilistic Modeling of Platelet Aggregation: Effects of Activation Time and Receptor Occupancy', *Journal of Theoretical Biology*, 219, (2002) 33-53.

32. Chung-Seon Yi, **Aaron L. Fogelson**, James P. Keener, and Charles S. Peskin, 'A Mathematical Study of Volume Shifts and Ionic Concentration Changes During Ischemia and Hypoxia', *Journal of Theoretical Biology*, 220, (2002), 83-106.

33. **Aaron L. Fogelson**, Haoyu Yu, and Andrew L. Kuharsky, 'Computational Modeling of Blood Clotting: Coagulation and Three-dimensional Platelet Aggregation', in Polymer and Cell Dynamics: Multicsale Modeling and Numerical Simulations, Alt et al (Editors), Birkhaeuser-Verlag, Basel, 2003.

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