CURRICULUM VITAE

Dr. Jan F. Prins
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Education

Ph.D.	1987	Computer Science	Cornell University
	1986-87	Programming Languages Group	Univ. of Wisconsin at Madison
	1983-84	Programming Research Group	Oxford University, UK
M.Sc.	1983	Computer Science	Cornell University
B.Sc.	1978	Mathematics (Honors)	Syracuse University

My thesis research was supervised by David Gries at Cornell University and described a framework for reusability and rapid prototyping in program development; my minor concentration was in neurobiology. I was a member of the Programming Research Group at Oxford University during the 1983-84 academic year and spent an undergraduate year in 1977 at the Technische Hogeschool Eindhoven (The Netherlands) with the research group directed by Edsger Dijkstra.

Academic Experience

5/10 –   Research Fellow, Renaissance Computing Institute (RENCI), Chapel Hill, NC.

7/04–6/09   Department Chair, Department of Computer Science, University of North Carolina at Chapel Hill.

4/01–   Faculty member, Program in Bioinformatics and Computational Biology, UNC-Chapel Hill.

5/98–   Faculty member, Program in Molecular and Cellular Biophysics, UNC-CH.

7/96–7/97   Visiting Professor, Institute for Theoretical Computer Science, Swiss Federal Institute of Technology (ETH), Zürich, Switzerland.

8/87–   Assistant Professor (8/87 – 12/93), Associate Professor (1/94 – 12/01), Full Professor (1/02 –), Department of Computer Science, University of North Carolina, Chapel Hill, NC.

6/87–6/94   Instructor, IBM University-Level Course Curriculum. Condensed one-week courses taught in various locations around the country. Courses taught include Algorithms, Programming Languages & Environments, and Software Engineering Principles.

9/86–8/87   Research Associate to Tom Reps, Department. of Computer Sciences, University of Wisconsin - Madison, Madison, WI. Investigation of issues in programming languages and systems.

6/84–7/84   Instructor, Johns Hopkins Center for Academically Talented Youth. An intensive introduction to the mathematical foundations of computer science for nationally selected students aged 12-15.

1/80–5/81   Teaching Fellow, Cornell University, Ithaca, NY. Instructor for two introductory programming courses based on *APL* and PASCAL respectively.

Industry Experience

5/00 – 8/00   3rdTech, Inc. Consultant and software developer for DeltaSphere 3D Laser Scanner system.

4/95 – 7/96   Gerald Pechanek, IBM MWAVE group, RTP, NC (spun-out to create BOPS, Inc.). Consultant on parallel computing issues in DSP chip and system design.

6/81 – 8/83   Ken Wilson, Department of Physics, Cornell University, Ithaca, NY. Development of a machine code optimizer for the FPS array processors using stochastic methods.

4/78 – 8/81   STSC, Inc., Rockville, MD. Systems Programmer. Member of the four man development team responsible for the design and implementation of the *APL*PLUS* interpreters, primarily the production time-sharing system programmed in IBM 370 assembler code.

9/75 – 1/81   Digital Effects, Inc., New York. Founding member. Development of an animation production system and rendering software, used to produce computer generated film sequences for the television and motion picture industry. Sample productions include portions of the original Disney film "TRON".

Research Areas

High-performance computing: algorithms, programming languages, compilers and architectures. Scientific computing with focus on bioinformatics and computational biology. High-level programming languages and problem solving environments.

Honors

INCITE award (2014, 2016, 2018), US Department of Energy (385 million core-hours on ORNL Titan XK7 – #1 US Leadership Computing Facility).

Best Student Paper Award, *International Conference on Supercomputing* (SC12), 2012.

Outstanding Teaching Award (2001, 2017), Computer Science Students Association.

Research Fellow, Renaissance Computing Institute (RENCI), 2010.

IBM Faculty award (2006, 2009).

Fellow of the Institute of Arts and Humanities, Academic Leadership Program, Fall 2006.

Research Development Award, UNC-CH 1995

Junior Faculty Development Award, UNC-CH 1989

Post-doctoral Supervision

Jennifer Waugh, MD 2009 Immunology, University of Michigan, 2015 (co-supervision with Paul Armistead, MD, PhD)

Susan Paulsen, Ph.D. 1994 Quantitative Genetics, Duke University (2003 - 2007),

Martin Simons, Ph.D. 1996 Computer Science, Technische Universität Berlin (1998-1999).

Lars Nyland, Ph.D. 1991 Computer Science, Duke University (1991-1997)

PhD Supervision

Shengjie Chai, Ph.D. Oct 2019, *Bioinformatics methods for the prediction of splice variant neoantigens* (Co-advisor with Benjamin Vincent and Jonathon Serody), Data Scientist, Conversant/Epsilon, Chicago, IL.

Sridutt Bhalachandra, Ph.D. Jan 2018, *Runtime Methods to Improve Energy Efficiency in Supercomputing Applications* (Co-adviser with Allan Porterfield), HPC Architecture and Performance Engineer, Advanced Technologies Group, Lawrence Berkeley Lab.

Joshua D. Welch, Ph.D. Aug 2017, *Computational Methods for Transcriptome Analysis*, Asst. Prof. of Computational Medicine and Bioinformatics with additional appointment in Computer Science, University of Michigan, Ann Arbor MI.

Stephen L. Olivier, Ph.D. May 2012, *Locality-Aware Scheduling for Task Parallel Programming Languages*, Senior Research Scientist, Center for Computing Research, Sandia National Laboratories, Albuquerque, NM.

Jun (Luke) Huan, Ph.D. Oct. 2006, *Discovering Patterns in Families of Protein Structures*, (Co-advisor with W. Wang), Director of Big Data, Baidu Beijing, China.

Wolf Pfannenstiel, Ph.D. Dec. 2000 (TU Berlin), *Piecewise Execution of Nested Data Parallel Programs*, (Co-advisor with S. Jaehnichen, TU Berlin), Member of the Technical Staff, Dangelmayer & Seemann, Bonn, DE.

James W. Riely, Ph.D. Aug. 1999, *Abstract Values and Cost Models for Concurrent Programs*, Professor, DePaul University.

Rickard E. Faith, Ph.D. Dec. 1997*, Debugging Programs After Structure-Changing Transformation*, Senior Member of the Technical Staff, Nutanix, Inc.

Daniel W. Palmer, Ph.D. Nov. 1996, *Compiling High-Level Data-Parallel Programs for Parallel Execution*, Professor, John Carroll University.

Edoardo S. Biagioni, Ph.D. May 1992 (Co-advisor with G. Magó), *Scan-Directed Load Balancing*, Systems Scientist, Carnegie Mellon University (FOX group on foundations of programming languages); Professor, Univ. of Hawaii.

MS thesis Supervision

Only MS thesis supervision is listed. This option is infrequently chosen in our department.

Duo Zhao, M. Sc. Mathematics, 2015, *A Pipelined Symmetric Gauss-Seidel Preconditioned Conjugate Gradient Solver for the HPCG Benchmark*, Google, Mountain View, CA

J. Christopher Ramming, M. Sc. 1989, LLPT: A Little-Language Prototyping Tool, Director, Intel Academic Research Collaborations Office.

Ph.D. Committee memberships

I have served on over 100 PhD committees in Computer Science at UNC or as external examiner on Computer Science PhD committees at other universities. In addition, I have served on more than 25 PhD committees departments other than Computer Science at UNC including: Biochemistry and Biophysics (6), Biology (2), Environmental Science and Engineering (5), Genetics (4), Immunology (1), Mathematics (5), Pharmacology (1), and Pharmacy (1), Virology (1).

Professional Activities

Journal Editorial Boards

Journal of Scientific Programming (2004 -)

Co-editor, special issue of Scientific Programming on High Performance Computing on Cell B.E. Processors

Journal reviewer (TOPLAS, Supercomputing, Parallel and Distributed Computing, Genome Biology, Bioinformatics, Nature Methods, Nucleic Acids Research, BMC Bioinformatics, European Bioinformatics Journal)

Program Committee Memberships and conference reviews

Supercomputing, IPDPS, RECOMB/ISCB Regulatory and Systems Genomics, ACM BCB

Proposal review

NSF, NIH, National research agencies in Switzerland and Austria.

Invited talks

Distinguished Lecturer, MD Anderson Cancer Center, Houston, TX

University Activities

Administrative Board of the Graduate School

Royster Society of Fellows Advisory Board

Mentor, Chancellor's Science Scholars Program

ITS Research Computing Advisory Board

Carolina Center for Genomic Sciences, Advisory Board on Sequencing Informatics

Review Committee member, Statistics and OR Dept., 10-year Review

Provost's Committee on Research Computing at UNC

Distinguished Dissertation Award Panel

IAH Fellow in the Academic Leadership Program

University Faculty Council.

Departmental Activities

I served as department chair for 5 years and as director of the graduate studies committee for 20 years. I produced substantial portions of all 10-year departmental reviews conducted during my time at UNC (three to date) and was chair of the reviews in 1991 and 2009.

Committee memberships
>   BSMS program
>   Graduate Studies Committee
>   Graduate Curriculum and Planning Committee
>   Post Tenure Review Committees
>   Teaching Review Committees
>   BSMS program advisor

Courses Taught
Bioinformatics
>   Sequence Analysis, Bioinformatics and Computational Biology PhD Curriculum (BCB 716)
>   Predictive Models for High-Dimensional Data Analysis (UNC COMP 790-201, 1 credit module course for NIH BD2K training program).
>   Bioalgorithms (UNC COMP 555 grad/undergrad course)

Parallel Computing
>   Parallel Computing (UNC COMP 633 graduate course)
>   Parallel Computing: Theory and Practice (ETH D-INFK undergraduate course)
>   Parallel and Distributed Computing (with P. Widmayer, ETH D-INFK, graduate course)
>   Parallel Algorithms (UNC COMP 790 graduate course)
>   Parallel Programming Languages (UNC COMP 790 graduate course)

Compiler Construction
>   Compilers (UNC COMP 520 undergraduate course)
>   Advanced Compiler Design (UNC COMP 720 graduate course)

Algorithms and Theory of Computation
>   Models of Languages and Computation (UNC COMP 455 undergraduate course)
>   Algorithm Design and Analysis (IBM internal course)

Programming Languages
>   Advanced Topics in Programming Languages (UNC COMP 724 graduate course)
>   Programming Paradigms (UNC COMP 790 graduate course)
>   Comparative Programming Languages (UNC COMP 590)
>   Programming Languages and Programming Environments (IBM internal course)

Software Engineering
>   Formal Methods in Software Engineering (CMU SEI/UNC graduate course)
>   Software Engineering (IBM internal course)

Introduction to Programming
>   Introduction to Functional Programming (UNC COMP 121 ugrad CS major course)
>   Introduction to Programming (UNC COMP 110 undergraduate introductory course)

Research Support

Role	Agency	Title	Total Award	Dates
Co-I	NIH	Semiparametric Analysis of Big Censored Data (HL 2R01 HL149683 - 29A1), PI: Danyu Lin	$467,993 (Y1)	4/21/20 – 3/31/24
PI	NIH	F31 FELLOW: J WELCH -Computational Modeling of Heterogeneous Gene Expression in Single Cells (NHGRI F31 HG008912), PI: Prins	$66,518	6/1/16 – 5/31/18
Co-I	DOE	INCITE award: Advancing Models for Multiphase Flow and Transport in Porous Medium Systems, PI:McClure	115M CPU hrs annually Cray XK7 "Titan"	1/1/17 – 12/31/18
Co-PI	NIH	Leukemia Specific Splice Isoforms as Neo-Antigens for T-Cell Immunotherapy (NCI R01 CA201225), PI: P. Armistead	$2,402,020	2/1/16 – 12/31/21
PI	NIH	Hybrid Sequencing to Define the Full-Length Transcriptome of Double Stranded DNA Viruses (NIAID R21 AI123811), PIs: Moorman, Prins	$375,891	2/1/16 – 12/31/17
PI	Intel	Heterogeneous Parallel Programming – Intel Xeon server and 8 Intel Xeon Phi accelerators (equipment and funding)	$50,000	10/15
Co-PI	NSF	XPS: FULL: DSD: Parallel Motion Planning for Cloud-connected Robots (CCF-1533844), PI: R. Alterovitz	$670,536	9/1/15 – 8/31/20
Co-PI	NC TraCS	Role of Viral Factors in Triple-Negative Breast Cancer Pathogenesis (TraCS 550KR71420)	$50,000	5/1/14 – 4/30/15
Co-I	DOE	INCITE award: Advancing Models for Multiphase Flow and Transport in Porous Medium Systems, PI:McClure	60M CPU hrs annually Cray XK7 "Titan"	1/1/14 – 12/31/16
Co-I	UCRF	IgH Repertoire sequencing to predict early response to HER-2/neu Vaccination in Breast Cancer (2012 UCRF IA), PI: Serody	$184,374	1/1/13 – 12/31/14
MPI	NIH	Unlocking transcript diversity via differential analyses of splice graphs (NHGRI R01 HG006272), MPI: Prins, Liu	$1,340,000	5/28/12 – 3/31/16
SI	DOE	XPRESS: eXascale Programming Environment and System Software (DE- FC02-l2ER26102),PI: Porterfield	$950,000	9/1/12 – 8/31/16

Role	Agency	Title	Total Award	Dates
Co-PI	NSF	Collaborative Research: CDI-Type II - Revolutionary Advances in Modeling Transport Phenomena in Porous Medium Systems (CDI-0941235), PI: Miller	$1,100,000	12/1/09 – 11/30/15
PI	IBM	Dynamic Load Balancing Techniques for Extreme-Scale Business Applications (IBM Faculty Award)	$30,000	2009 – 2010
Co-PI	NSF	ABI: Exon Splice Pattern Characterization of the Whole mRNA Transcriptome (DBI- 0850237), PI: J. Liu	$1,027,384	8/1/09 – 7/31/13
Co-PI	NSF	FRG - Advanced Algorithms and Software for Problems in Computational Bio-Fluid Dynamics (DMS-0854961), PI: Minion	$870,478	7/1/09 – 6/30/13
Co-PI	NSF	III-Core: Discovering and Exploring Patterns in Subspaces (IIS-0812464), PI: Wang	$444,711	9/1/08 – 8/31/11
SI	NSF	CRI-IAD: Integrated Projector-Camera Modules for the Capture and Creation of Wide-Area Immersive Experiences, PI: Fuchs	$310,000	4/1/08 – 3/31/11
PI	IBM	Novel Applications for Cell B.E. (Faculty Research Award)	$15,000	2006 – 2007
Co-PI	NIH	Protein Structure/Function Specific Packing Motifs (1R01GM068665-01A3) PI: Tropsha	$1,089,388	9/1/06- 8/31/10/
PI	IBM	Shared University Research (Equipment Grant)	$83,000	2006-07
SI	NIEHS	Superfund Basic Research Program - Mathematical and Statistical Analysis and Modeling Core (P42ES05948)	$5,000,000	10/1/06 – 9/30/10
Co-PI	NSF	Identifying Spatial Motifs for Classification of Protein Structure and Function (CCF-EMT 0523875), PI: Wang	$300,000	7/15/05 – 7/14/08
Co-PI	EPA	Carolina Environmental Bioinformatics Research Center (EPA R832720)	$4,000,000	8/1/05 – 7/31/10
SI	ARO	Computer Generated Force Scalability using GPUs, PI: Manocha	$2,400,000	1/15/05 – 1/14/08
Co-PI	NIH	(P20) Carolina Center for Experimental Genetic Analysis (P20-RR2075), PI: Reed	$1,795,000	10/1/04 – 9/30/07
Co-PI	NSA	Parallel Unbalanced Tree Search	$500,000	5/1/04 – 12/31/06

Role	Agency	Title	Total Award	Dates
SI	UNC GA	UNC Training Program in Bioinformatics	$450,000	4/19/02 – 8/31/05
Co-PI	Lucite Foundn	Parallel Programming Paradigms for Distributed Memory and DSM multiprocessors	$345,000	4/1/02 – 8/30/03
Co-PI	DOE	Environmental Modeling System	$969,000	2/1/02 – 1/31/05
Co-PI	NSF	A Distributed, High-Performance Computing Environment for the Applied Sciences	$1,024,000	9/01/01 – 8/31/04
Co-PI	Lucite Foundn	Parallel Programming Paradigms for Distributed Memory and DSM multiprocessors	$325,000	11/01/00– 3/31/02
Co-PI	NSF	ITR-ACS: Self-Scheduling N-body simulation algorithms	$450,649	10/1/00 – 9/30/03
Co-PI	EPA	An Object-oriented Integrated Framework for Multi-discipline Ecosystem Modeling	$863,049	8/20/00 – 9/30/02
SI	NIH	Parallel Computing in Structural Biology	$2,500,000	10/1/98 – 9/30/03
PI	NSF	Cooperative Research (with TU Berlin): Nested Parallelism in Fortran 90 Programs	$10,060	3/1/98 – 8/31/01
SI	NSF	SGI Reality Monster (equipment grant)	$1,900,000	9/1/98 – 8/31/01
Co-PI	Cray NCSC	Nested Parallelism in Fortran 90	$8,000	1/1/98 – 12/31/98
Co-PI	Intel Corp.	Computing Power for Collaborative Science (equipment grant)	$2,858,747	8/1/97 – 7/31/00
PI	CSCS, CH	Generating efficient parallel implementations for irregular problems on the NEC SX-4	CHF 7,500	9/1/96 – 8/31/98
	ETH Zürich	Salary support for visiting sabbatical position	CHF 80,000	7/15/96 – 7/15/97
PI	ARPA	Software Infrastructure for the Rapid Development of Interactive and Collaborative Educational Simulations	$193,447	8/28/95 – 8/27/97
PI	UNC (URC)	University Faculty Research Grant	$1,500	4/26/96 – 4/25/98

Role	Agency	Title	Total Award	Dates
PI	Cray NCSC	High Performance Irregular Algorithms via High-Level Notations and Novel Compilation Techniques	$8,000	1/1/96 – 12/31/97
PI	UNC	Research Development Award	$700	2/1/95 – 12/31/95
PI	NSWC	Advanced Geoserver Prototyping Experiment	$12,499	8/1/94 – 9/30/94
PI	Rome Labs	A Refinement-Based Methodology for the Architecture-Independent Design and Development of Parallel Software	$990,000	5/1/94 – 8/15/96
SI	NIH	Parallel Computing Resource for Structural Biology	$3,349,000	7/1/93 – 6/30/98
PI	EPA	Application of Highly Parallel Computers to Air Quality Simulation	$78,370	10/1/92 – 6/30/94
PI	DARPA	A Prototyping System for Parallel and Distributed Applications	$2,150,000	9/1/92 – 2/29/96
SI	NCI	HPCC Technology for Realtime Medical Decision Support	$460,432	9/1/92 – 8/31/95
PI	STSC, inc.	Use of *APL*PLUS* in a Programming Paradigms course (software)	$36,000	8/17/92 – 12/31/94
Co-PI	ARO	An Investigation of Fluid Flow and Contaminant Transport Processes in Heterogeneous Multiphase Systems	$2,356,310	7/1/92 – 6/30/97
PI	DARPA	Design and Demonstration of a Common Prototyping System	$720,000	5/1/91 – 6/30/92
PI	MasPar Corp.	Research Agreement	$18,225	2/1/91 – 1/31/92
PI	DARPA	Proposal for a Common Prototyping Language Based on Unity, Refine, and SETL	$500,000	5/1/90 – 4/30/91
PI	ONR	Compiling Data-Parallel Programming Languages for SIMD Execution	$87,000	3/15/89 – 6/30/90
PI	UNC-CH Found'n	Investigation of Issues in Parallel Programming	$3,000	1/1/89 – 12/31/89

Publications

I maintain a curated list of publications using Google Scholar (search for my name), which can be accessed in reverse chronological order or by number of citations as computed by google. Within bioinformatics and computational biology the most selective publication venues are high impact journals, while in computer science the most selective publication venues are top ranked international conference proceedings.

I. Refereed Journal Articles, Book Chapters, and Edited Volumes

1. JE Keating, C Chung, S Chai, JF Prins, BG Vincent, SA Hunsucker, PM Armistead, GL Glish, "Alkali Metal Cationization of Tumor-associated Antigen Peptides for Improved Dissociation and Measurement by Differential Ion Mobility-Mass Spectrometry", *Journal of Proteome Research*, July 6, 2020.

2. J Ichnowski, JF Prins, R Alterovitz, "The Economic Case for Cloud-Based Computation for Robot Motion Planning", *Robotics Research*, Nov 28, 2019.

3. Y Zhou, Z Liu, JD Welch, X Gao, L Wang, T. Garbutt, B. Keepers, H Ma, JF Prins, W Shen, J Liu, L Qian, "Single-cell transcriptomic analyses of cell fate transitions during human cardiac reprogramming", *Cell Stem cell* **25:1**, July 3, 2019.

4. Z Liu, L Wang, JD Welch, H Ma, Y Zhou, HR Vaseghi, S Yu, JB Wall, S Alimohamadi, M Zheng, C Yin, W Shen, JF Prins, J Liu, L Qian, "Single-cell transcriptomics reconstructs fate conversion from fibroblast to cardiomyocyte", *Nature* **551**:7678, Nov 2, 2017.

5. JD Welch, A Hartemink, JF Prins, "MATCHER: manifold alignment reveals correspondence between single cell transcriptome and epigenome dynamics", *Genome Biology* **18**:138, 24 July 2017.

6. C. Zhang, X. Lu, Z. Zhu, Y. Hu, D. Singh, C. Jones, J. Liu, J.F. Prins, Y. Liu, "REC: fast sparse regression-based multicategory classification", *Statistics and Its Interface*, **10**(2), 31 Oct 2016.

7. JD Welch, LA Williams, M DiSalvo, AT Brandt, R Marayati, CE Sims, NL Allbritton, JF Prins, JJ Yeh, CD Jones, "Selective single cell isolation for genomics using microraft arrays", *Nucleic Acids Research* **44**(17), doi:10.1093/nar/gkw700, PMID 27530426, 16 Aug 2016.

8. T Hudson, S Harrison, Dukka KC, JF Prins, PM Muganda, "Abstract 1120: Differential expression of human cytomegalovirus microRNA in triple-negative breast cancer tumors", *Cancer Research*, doi:10.1158/1538-7445.AM2016-1120, 15 July 2016.

9. JD Welch, A Hartemink, JF Prins, "SLICER: Inferring Branched, Nonlinear Cellular Trajectories from Single Cell RNA-seq", *Genome Biology special issue on Single-Cell Omics,* **17**:106, PMID: 27215581, PMC48777993, 23 May 2016.

10. JD Welch, Y. Hu, JF Prins, "SingleSplice: Robust detection of alternative splicing in a population of single cells", *Nucleic Acids Research* **44**(8):e73, doi: 10.1093/nar/gkv1525, PMID 26740580, PMCID: PMC4856971, 5 Jan 2016.

11. JD Welch, MK Slevin, DC Tatomer, RJ Duronio, JF Prins, WF Marzluff, "EnD-Seq and AppEnD: sequencing 3' ends to identify nontemplated tails and degradation intermediates", *RNA* 21:1375-1389, PMID: 26015596, 26 May 2015.

12. JD Welch, J Baran-Gale, C Perou, P Sethupathy, JF Prins, "Pseudogenes transcribed in breast invasive carcinoma show subtype-specific expression and ceRNA potential", *BMC Genomics* **16**:113, doi: 10.1186/s12864-015-1227-8, PMID: 25765044, 22 Feb 2015.

13. Cancer Genome Atlas Network, "Comprehensive genomic characterization of head and neck squamous cell carcinomas", *Nature* **517**:576-582, doi:10.1038/nature14129, PMID: 25631445, PMC4647579, 29 Jan 2015.

14. M. Parfenov et al., "Characterization of HPV and host genome interactions in primary head and neck cancers", *PNAS* **111**:15544 - 15549, PMID: 25313082, 28 Oct 2014.

15. Cancer Genome Atlas Network, "Integrated Genomic Characterization of Papillary Thyroid Carcinoma", *Cell* **159** (3), 676-90, PMID: 25417114, PMC4243044, 23 Oct 2014.

16. Cancer Genome Atlas Network, "Comprehensive molecular profiling of lung adenocarcinoma", *Nature* **511**:543-550, doi:10.1038/nature13385, PMID: 25079552, PMC4231481, 31 July 2014.

17. J.E. McClure, J.F. Prins, C.T. Miller, "A novel heterogeneous algorithm to simulate multiphase flow in porous media on multicore CPU-GPU systems", *Computer Physics Communications* **185**:1865-1874, http://dx.doi.org/10.1016/j.cpc.2014.03.012, 2014.

18. M.K. Slevin, S. Meaux, J.D. Welch, R. Bigler,P.L. Miliani de Marval,W. Su, R.E. Rhoads, J.F. Prins, W.F. Marzluff, "Deep Sequencing Shows Multiple Oligouridylations Are Required for 3' to 5' Degradation of Histone mRNAs on Polyribosomes", *Molecular Cell* **53**:1020-1030, doi:10.1016/j.molcel.2014.02.027. PMID:24656133, 2014.

19. S. Olivier, B. De Supinski, M. Schulz, J. Prins, "Characterizing and Mitigating Work Time Inflation in Task Parallel Programs", *Scientific Programming* **21**(3-4):123-136, doi: 10.3233/SPR-130369, 2013.

20. P.G. Engström, T.Steijger, B. Sipos, G.R. Grant, A. Kahles, T. Alioto, J. Behr, P. Bertone, R. Bohnert, D. Campagna, C.A. Davis, A. Dobin, T.R. Gingeras, J. Harrow, G. Jean, P. Kosarev, S. Li, J. Liu, C.E. Mason, V. Molodtsov, Z. Ning, H. Ponsting, J.F. Prins, P. Ribeca, I. Seledtsov, V. Solovyev, G. Valle, N. Vitulo,K. Wang, T.D. Wu, G. Zeller, G. Rätsch, N. Goldman, T.J. Hubbard, J. Harrow, R. Guigó, P. Bertone, "Systematic evaluation of spliced aligners for RNA-seq data", *Nature Methods* **10**(12):1185-1191, doi:10.1038/nmeth.2722, PMID: 24185836, PMCID: PMC4018468, Dec. 2013.

21. J. Simon, K. Hacker, D. Singh, R. Brannon, J. Parker, M. Weiser, T. Ho, P.-F. Kuan, E. Jonasch, T. Furey, J.F. Prins, J. Lieb, K. Rathmell, I. Davis, "Variation in chromatin accessibility in human kidney cancer links H3K36 methyltransferase loss with widespread RNA processing defects", *Genome Research*, doi:10.1101/gr.158253.113, PMID: 24158655, PMC3912414, Oct. 2013.

22. C. R. Cabanski, M. D. Wilkerson, M. Soloway, J. S. Parker, J. Liu, J. F. Prins, J. S. Marron, C. M. Perou, D. N. Hayes, BlackOPs: increasing confidence in variant detection through mappability filtering, *Nucleic Acids Research*, doi: 10.1093/nar/gkt692, PMID: 23935067, PMCID: PMC3799449, Aug 2013.

23. Y. Huang, Y. Hu, C.D. Jones, J.N. Macleod, D.Y. Chiang, Y. Liu, J.F. Prins, J. Liu, "A Robust Method for Transcript Quantification with RNA-seq Data", *Journal of Computational Biology* **20**(3):167-187. doi:10.1089/cmb.2012.0230, PMID: 23461570, PMCID: PMC3590898, March 2013.

24. Y. Hu, Y. Huang, Y. Du, C. F. Orellana, D. Singh, A. R. Johnson, A. Monroy, P.-F. Kuan, S. M. Hammond, L. Makowski, S. H. Randell, D. Y. Chiang, D. Neil Hayes, C.D. Jones, Y. Liu, J. F. Prins, J. Liu, "DiffSplice: the genome-wide detection of differential splicing events with RNA-seq", *Nucleic Acids Research* **41**(2):e39 doi:10.1093/nar/gks1026, PMID: 23155066, PMCID: PMC3553996, January 2013.

25. Cancer Genome Atlas Network, "Comprehensive genomic characterization of squamous cell lung cancers", *Nature* **489**(7417):519–525, DOI:10.1038/nature11404, PMID: 22960745, PMCID: PMC3466113, 27 September 2012.

26. Cancer Genome Atlas Network, "Comprehensive molecular characterization of human colon and rectal cancer", *Nature* **487**(7407):330–337, DOI:10.1038/nature11252, PMID: 22810696, PMCID: PMC3401966, 18 July 2012.

27. Y. Huang, Y. Hu, C. Jones, J. MacLeod, D. Chiang, Y. Liu, J. Prins, J. Liu, "A Robust Method for Transcript Quantification with RNA-seq Data", *Research in Computational Molecular Biology* (RECOMB), LNCS **7262**:127-147, 2012.

28. M. D. Wilkerson, W. Sun, K. Wang, C. R. Cabanski, K. A. Hoadley, J. Liu, J. Prins, D. N. Hayes, "Detecting patient mutomes by integrating DNA and RNA sequencing", *Cancer Research* **72**(8 Suppl), 15 April 2012.

29. S. Olivier, A. Porterfield, K. Wheeler, M. Spiegel, J. Prins, "OpenMP Task Scheduling Strategies for Multicore NUMA Systems", *International Journal of High Performance Computing Applications*, **26**(2):110-124, 2012.

30. D. Singh, C. F. Orellana, Y. Hu, C. D. Jones, Y. Liu, D. Y. Chiang, J. Liu, J. F. Prins, "FDM: A Graph-based Statistical Method to Detect Differential Transcription using RNA-seq Data"*, Bioinformatics* **27**(19), DOI:10.1093/bioinformatics/btr458, PMID: 21824971, PMCID: PMC3179659, Oxford Journals, 2011 (pp 2633-2640).

31. Y. Hu, K. Wang, X. He, D. Y. Chiang, J. F. Prins, J. Liu, "A probabilistic framework for aligning paired-end RNA-seq data", *Bioinformatics* **26**; DOI: 10.1093/bioinformatics/btq336, PMID: 20576625, PMCID: PMC2916723, Oxford Journals, 2010 (pp 1950-1957).

32. K. Wang, D. Singh, Z. Zeng, S. Coleman, Y. Huang, G. L. Savich, X. He, P. Mieczkowski, S. Grimm, C. Perou, J. MacLeod, D. Chiang, J. F. Prins, J. Liu, "MapSplice: "Accurate mapping of RNA-seq reads for splice junction discovery", *Nucleic Acids Research,* **38**(18):e178, DOI: 10.1093/nar/gkq622, PMID: 20802226, PMCID: PMC2952873, Oxford Journals, 27 Aug 2010 (pp 1 – 14)

33. D. Bandyopadhyay, J. Huan, J. Liu, J. Prins, J. Snoeyink, W. Wang, A. Tropsha, Functional Neighbors: Relationships between Non-homologous Protein Families Inferred Using Family-Specific Fingerprints, *IEEE Trans. on Information Technology in Biomedicine* **14** (5), PMID: 20570776, 2010 (pp 1137 – 1143).

34. S. Olivier, J. Prins, "Comparison of OpenMP 3.0 and Other Task Parallel Frameworks on Unbalanced Task Graphs", *International Journal of Parallel Programming* (IJPP) **38** (5-6), Springer, DOI: 10.1007/s10766-010-0140-7, (pp 341-360), 2010.

35. D. Bandyopadhyay, J. Huan, J. Prins, J. Snoeyink, W. Wang, A. Tropsha, "Identification of Family-Specific Residue Packing Motifs and their use for Structure-Based Protein Function Prediction: I. Method Development", *Journal of Computer Aided Molecular Design* **23**, PMID: 19543979 (pp 773 - 784), 2009.

36. D. Bandyopadhyay, J. Huan, J. Prins, J. Snoeyink, W. Wang, A. Tropsha, "Identification of Family-Specific Residue Packing Motifs and their use for Structure-Based Protein Function Prediction: II. Case Studies and Applications", *Journal of Computer Aided Molecular Design* **23**, PMID: 19548090, (pp 785 - 797), 2009.

37. S. Olivier, J. Prins, "Evaluating OpenMP 3.0 run time systems on unbalanced task graphs", in *Evolving OpenMP in an Age of Extreme Parallelism*, (pp 63 – 78), Springer-Verlag, 2009.

38. M. Gschwind, F. Gustavson, J. Prins, eds, "High Performance Computing on Cell B.E. Processors", special issue of *Scientific Programming* **17** (1-2)**,** IOS Press, 2009 (pp 1 – 214).

39. J. Dinan, S. Olivier, G. Sabin, J. Prins, P. Sadayappan, C-W Tseng, "A Message Passing Benchmark for Unbalanced Applications", *Simulation Modeling Practice and Theory* **16** (8), Elsevier, (pp 1177 – 1189), 2008.

40. L. Nyland, M. Harris, J. Prins, "Fast N-Body Simulation with CUDA" in *GPU Gems* 3, H. Nguyen, ed., Addison Wesley, 2007 (pp 677 – 696).

41. J. Huan, J. Prins, W. Wang, "Local Structure Comparison of Proteins", *Computational Biology and Bioinformatics* (*Advances in Computers* **68***)*, C.-W. Tseng (ed.), Elsevier, 2006 (pp 178 – 253).

42. D. Bandyopadhyay, J. Huan, J. Liu, J. Prins, J. Snoeyink, W. Wang, A. Tropsha, "Structure-based function inference using protein family-specific fingerprints", *Protein Science* **15** (6), PMID: 16731985, 2006 (pp 1537 – 1543).

43. J. Huan, W. Wang, D. Bandyopadhyay, J. Snoeyink, J. Prins, and A. Tropsha, "Comparing graph representations of protein structure for mining family-specific residue-based packing motifs", *Journal of Computational Biology* (JCB) **12** (6), PMID: 16108709, 2005 (pp 657 – 671).

44. C. Pan, J. Prins, C. Miller, "A High-performance Lattice Boltzmann Implementation to Model Flow in Porous Media", *Computer Physics Communications* **158**, 2004 (pp 89 – 105).

45. G. Mann, R. Yun, L. Nyland, J. Prins, J. Board, J. Hermans, "The Sigma MD program and a generic interface applicable to multi-functional programs with complex, hierarchical command structure", in *Computational Methods for Macromolecules*, T. Schlick, H.-H. Gan, eds., *LNCSE* **24**, Springer – Verlag, 2002 (pp 129 – 145).

46. S. Midkiff, J. Moreira, S. Chatterjee, J. Ferrante, M. Gupta, J. Prins, C-W Tseng, eds., *Thirteenth International Workshop on Languages and Compilers for Parallel Computing (LCPC 2000), LNCS* **2017**, Springer-Verlag, 2001 (383 pp).

47. L. Nyland, J. Prins, A. Goldberg, P. Mills, "A Design Methodology for Data-Parallel Applications", *Transactions on Software Engineering* **26** (4), IEEE, 2000 (pp 293 - 315).

48. L. Carter, J. Ferrante, S. Chatterjee, Z. Li, J. Prins, D. Sehr, P. Yew, eds., Proceedings of the *Twelfth International Workshop on Languages and Compilers for Parallel Computing (LCPC 99),* Springer-Verlag 2000.

49. D. Talia, P. Srimani, M. Jazayeri, L.S. Nyland, J.F. Prins, A. Goldberg, P.H. Mills, T. Rauber, G.Rünger, D. Kadamuddi, J.J.P. Tsai, Y. Chen, M. Winslett, "Special Issue on Architecture-independent Languages and Software Tools for Parallel Processing", IEEE Computer Society, 2000.

50. A. Goldberg, J. Prins, J. Reif, R. Faith, Z. Li, P. Mills, L. Nyland, D. Palmer, J. Riely, S. Westfold, "The Proteus System for the Development of Parallel Applications", in *Prototyping and Software Development*, M. Harrison, ed., Springer-Verlag (44 pp)

51. J. Prins, S. Chatterjee, M. Simons, "Irregular Computations in Fortran – Expression and Implementation Strategies", *Scientific Programming* **7,** 1999 (pp 313-326).

52. J. Prins, J. Hermans, G. Mann, L. Nyland, M. Simons, "A Virtual Environment for Steered Molecular Dynamics", *Future Generation Computer Systems* **15,** 1999 (pp 485-495)

53. S. Chatterjee, J. Prins, L. Carter, J. Ferrante, Z. Li, D. Sehr, P. Yew, eds., Proceedings of the *Eleventh International Workshop on Languages and Compilers for Parallel Computing (LCPC 98), LNCS* **1656**, Springer-Verlag, 1999 (384 pp).

54. L. Nyland, J. Prins, R.H. Yun, J. Hermans, H.-C. Kum, L. Wang, "Achieving Scalable Parallel Molecular Dynamics Using Dynamic Domain Decomposition Techniques", *Journal of Parallel and Distributed Computing*, 1998. (pp 125-138)

55. J. Prins, M. Ballabio, M. Boverat, M. Hodous, D. Maric, "Fast Primitives for Irregular Computations on the NEC SX-4", *Crosscuts* **6** (4), CSCS, 1997. (pp 6-10)

56. S. Kumar, S. Goddard, J. Prins, "Connected Components Algorithms for Mesh-Connected Parallel Computers", in *Parallel Algorithms*, S. Bhatt, ed., AMS, 1997. (pp 43-58)

57. J. Leech, J. Prins, J. Hermans, "SMD: Visual Steering of Molecular Dynamics for Protein Design", *Computational Science & Engineering* **3** (4), IEEE, 1996. (pp 38-45)

58. S. Horwitz, J. Prins, T. Reps, "Integrating Non-Interfering Versions of Programs", in *Software Merging and Slicing*, V. Berzins (Ed.), IEEE Computer Society Press, Los Alomitos, CA, 1995. (pp 137-190)

59. A. Goldberg, P. Mills, L. Nyland, J. Prins, J. Reif, J. Riely, "Specification and Development of Parallel Algorithms with the *Proteus* System", in *Specification of Parallel Algorithms*, G. Blelloch, M. Chandy, S. Jagannathan, eds., AMS, 1995. (pp 383-399)

60. P. Mills, L.Nyland, J. Prins, J. Reif, "Software Issues in High-Performance Computing and a Framework for the Development of HPC Applications", in *Computer Science Agendas for High Performance Computing*, U. Vishkin, ed., 1994. (pp 110-117)

61. J. Butterworth, J. Prins, "A Comparison of Lattice-Gas Automata Implementations on the MasPar MP-1"", in *Parallel Computational Fluid Dynamics*, J. Häuser, ed., Elsevier Scientific, 1993. (pp 42-56)

62. E. Biagioni, J. Prins, "Scan-Directed Load Balancing for Mesh-Connected Highly-Parallel Computers", in *Unstructured Scientific Computation on Scalable Multiprocessors*, P. Mehrotra, J. Saltz, R. Voigt (eds.), MIT Press, 1992. (pp 371-395)

63. S. Horwitz, J. Prins, T. Reps, "Integrating Non-Interfering Versions of Programs", *Transactions on Programming Languages and Systems* **11** (3), ACM, 1989. (pp 345-387)

64. T. Reps, S. Horwitz, J. Prins, "Support for Integrating Program Variants in an Environment for Programming in the Large", in *Software Version and Configuration Control*, J. Winkler (ed), Teubner, 1988. (pp 197-216)

65. D. Gries, J. Prins, "McLaren's Masterpiece", *Science of Computer Programming* **8,** 1987. (pp 139-145)

66. J. Prins, *Partial Implementations in Program Derivation*, Ph. D. thesis, Cornell University, 1987. (153 pp)

II. Refereed Conference Papers

67. J Ichnowski, JF Prins, R Alterovitz, "Cloud-based motion plan computation for power-constrained robots", Algorithmic Foundations of Robotics (WAFR 2020), June 2020.

68. S Bhalachandra, A Porterfield, SL Olivier, JF Prins, RJ Fowler, "Improving energy efficiency in memory-constrained applications using core-specific power control", *Proc. 5th Intnl Workshop on Energy Efficient Supercomputing.*, ACM, Nov 12, 2017.

69. A. Rey, FD Igual, M Prieto-Matias, J.F. Prins, "Performance and Scalability Study of FMM Kernels on Novel Multi- and Many-core Architectures", *International Conference on Computational Science* (ICCS 2017), Zurich, CH, June 2017.

70. S. Bhalachandra, A. Porterfield; S.L. Olivier; J.F. Prins, "An Adaptive Core-Specific Runtime for Energy Efficiency", *International Parallel and Distributed Processing Symposium* (IPDPS 2017), Orlando, FL, May 2017.

71. J. Ichnowski, J.F. Prins and R. Alterovitz, "Cloud-based Motion Plan Computation for Power-Constrained Robots", *12th International Workshop on the Algorithmic Foundations of Robotics* (WAFR 2016), San Francisco, CA, Dec. 2016.

72. J.E. McClure, M. Berrill, J.F. Prins, C.T. Miller, "Asynchronous in situ connected-components analysis for complex fluid flows", *In Situ Infrastructures for Enabling Extreme-scale Analysis and Visualization* (ISAV 16), Supercomputing 16, Salt Lake City, UT, November 2016.

73. J.D. Welch, Y. Hu, J.F. Prins, "SingleSplice: Robust detection of alternative splicing in a population of single cells", (Highlight presentation) ISMB, Orlando, FL, July 2016.

74. C.F. Orellana, J.E. Bogerd, N. Moorman, P. Armistead, C. D. Jones, J. F. Prins, "EDGAR: Full-length RNA transcript identification by hybrid sequencing and best edit-distance graph alignment of a single molecule read", *High Throughput Sequencing Algorithms and Applications* (HitSeq 2016), ISMB, Orlando, FL, July 2016.

75. J. Welch, A. Hartemink, J.F. Prins, "SLICER: Inferring Branched, Nonlinear Cellular Trajectories from Single Cell RNA-seq Data", *Annual International Conference on Research in Computational Molecular Biology* (RECOMB), Santa Monica, CA, April 2016.

76. S. Bhalachandra, A. Porterfield, J.F. Prins, "Using Dynamic Duty Cycle Modulation to improve energy efficiency in High Performance Computing", *Proc. HPPAC 015 Workshop*, (IPDPSW), 2015.

77. J. Ichnowski, J.F. Prins, R. Alterovitz, "Cache-Aware Asymptotically-Optimal Sampling-Based Motion Planning", *Proc. IEEE International Conference on Robotics and Automation* (ICRA), May 2014.

78. J.E. McClure, H. Wang, J.F. Prins, C.T. Miller, W.-C. Feng, "Petascale Application of a Coupled CPU-GPU Algorithm for Simulation and Analysis of Multiphase Flow Solutions in Porous Medium Systems", *Proc. International Parallel and Distributed Processing Symposium* (IPDPS), 2014.

79. R.E. Overman, J.F. Prins, L.A. Miller, M.L. Minion, "Dynamic Load Balancing of the Adaptive Fast Multipole Method in Heterogeneous Systems", *Proc. ASHES 2013 workshop* (IPDPSW), IEEE, Boston, 2013.

80. A. Porterfield, S. Olivier, S. Balachandran, J.F. Prins, "Power Measurement and Energy-Saving Automatic Concurrency Throttling for OpenMP Programs", *Proc. HP-PAC 2013 workshop* (IPDPSW), IEEE, 2013.

81. S. Olivier, B. De Supinski, M. Schulz, J. Prins, "Characterizing and Mitigating Work Time Inflation in Task Parallel Programs", (awarded **Best Student Paper**) *Proc Intnl Conf Supercomputing* (SC12), 2012.

82. Y. Huang, Y. Hu, C. D. Jones, J. N. MacLeod, D. Y. Chiang, Y. Liu, J.F. Prins, J. Liu. "A Linear Framework for Transcript Quantification from RNA-seq Data", *Proc. Intelligent Systems for Molecular Biology* (ISMB), Long Beach, CA, 2012.

83. R. Overman, R. Oritz, V. Kushwaha, J. Prins, M. Minion, "CPU-GPU hybrid implementation of the multipole method for the method of regularized stokeslets", *15th SIAM Conference on Parallel Processing for Scientific Computing* (PP12), 2012.

84. S. Olivier, A. Porterfield, K. Wheeler, J. Prins, "Scheduling Task Parallelism on Multi-Socket Multicore Systems"*, Proc. International Workshop on Runtime and Operating Systems for Supercomputers* (ROSS), (pp 49 – 56), 2011.

85. D. Singh, C. F. Orellana, Y. Hu, C. D. Jones, Y. Liu, D. Y. Chiang, J. Liu, J. F. Prins, "FDM: A Graph-based Statistical Method to Detect Differential Transcription using RNA-seq Data"*, High Throughput Sequencing Algorithms and Applications* (HitSeq 2011), ISMB, Vienna, Austria 2011.

86. Y. Huang, Y. Hu, M. S. Hestand, C. D. Jones, J. N. MacLeod, D. Y. Chiang, Y. Liu, J. F. Prins, J. Liu, "A Robust Method for Transcript Quantification with RNA-seq Data" (poster) *High Throughput Sequencing Algorithms and Applications*, ISMB, Vienna, Austria 2011.

87. J. Prins, R. Overman, S. Olivier, A. Porterfield, B. Zhang, J. Huang, M. Minion, "Evaluation of OpenMP Task-Based Parallelism for the Adaptive Fast Multipole Algorithm", *Proc. SIAM Conference on Computational Science and Engineering* (CSE11), SIAM, 2011.

88. J. E. McClure, J. F. Prins, C. T. Miller, "Comparison of CPU and GPU implementation of the Lattice Boltzmann Method", *XVIII International Conference on Computational Methods in Water Resources* (CMWR 2010), CIMNE, Barcelona, 2010.

89. J. MacLeod, S. Coleman, J. Prins, J. Liu, "Analyses of the Equine mRNA transcriptome using RNA-seq", *XVIII International Conference on Plant & Animal Genomes* (PAG), 2010.

90. Y. Hu, K. Wang, X. He, D. Y. Chiang, J. F. Prins, J. Liu, "A probabilistic framework for aligning paired-end RNA-seq data", *High Throughput Sequencing Algorithms and Applications, ISMB*, Boston, 2010.

91. S. Olivier, J. Prins, "Load Balancing for On-Demand Business Event Processing", *Proc. 3rd International Conference on the Virtual Computing Initiative* (ICVCI), RTP, ACM. Oct 2009.

92. J. Liu, K. Wang; S. Coleman; J. Macleod; J. Prins, "Characterization of transcriptome splicing structure using high-throughput RNA-seq data" (Poster), *Proc. ECCB/ISMB 2009* (ISMB), Stockholm, June 2009.

93.   S. Olivier, J. Prins, "Evaluating OpenMP 3.0 Run Time Systems on Unbalanced Task Graphs", *Proc of 5th International Workshop on OpenMP* (IWOMP), Dresden, Germany, June 2009.

94.   J. Liu, K. Wang, Z. Zeng, S. Coleman, J. Macleod, and J. Prins, Mapping RNA-seq Short Reads for Splice Junction Discovery, ISMB/ECCB SIG: *Next Generation Sequencing and Algorithms for Short Read Analysis*, Stockholm, Sweden, July 2009.

95.   D. Bandyopadhyay, J. Huan, J. Liu, J. Prins, J. Snoeyink, W. Wang, and A. Tropsha, "Functional Neighbors: Relationships between Non-homologous Protein Families Inferred Using Family-Specific Fingerprints", in *Proceedings of 2008 Conference on Bioinformatics and Biomedicine (BIBM'08)*, IEEE, 2008.

96.   Q. Zhang, W.Wang, L. McMillan, J. Prins F. Pardo-Manuel de Villena, D. Threadgill, "Genotype Sequence Segmentation: Handling Constraints and Noise", *Proceedings of the 8th Workshop on Algorithms in Bioinformatics* (WABI), LNBI 5251, Springer, 2008.

97.   S. Olivier, J. Prins, "Scalable Load Balancing Using UPC", *Proc. Intnl Conf on Parallel Programming* (ICPP), IEEE, 2008 (pp 123 – 131).

98.   S. Olivier, J. Prins, J. Derby, K. Vu, "Porting the GROMACS Molecular Dynamics Code to the Cell Processor", *Proc. of 8th IEEE Intl. Workshop on Parallel and Distributed Scientific and Engineering Computing* (PDSEC-07), 2007.

99.   J. Dinan, S. Olivier, J. Prins, G. Sabin, P. Sadayappan, C.-W. Tseng, "Dynamic Load Balancing of Unbalanced Computations Using Message Passing", *Proc. of 6th Intl. Workshop on Performance Modeling, Evaluation, and Optimization of Parallel and Distributed Systems* (PMEO-PDS 2007), 2007.

100. J. Liu, Q. Zhang, W. Wang, L. McMillan, J. Prins, "Poclustering: lossless clustering of dissimilarity data", *Proc 7th SIAM Conference on Data Mining* (SDM), 2007.

101. S. Olivier, J. Huan, J. Liu, J. Prins, J. Dinan, P. Sadayappan, C.-W. Tseng, "UTS: An Unbalanced Tree Search Benchmark", *19th International Workshop on Languages and Compilers for Parallel Computing* (LCPC), 2006.

102. J. Liu, Q. Zhang, W. Wang, L. McMillan, J. Prins, "Clustering pair-wise dissimilarity data into partially ordered sets", *Proc. 12th ACM International Conference on Knowledge Discovery and Data Mining* (SIGKDD), 2006.

103. J. Huan, D. Bandyopadhyay, J. Prins, J. Snoeyink, A. Tropsha, W. Wang, "Distance-based Identification of Spatial Motifs in Proteins Using Constrained Frequent Subgraph Mining", *Computational Systems Bioinformatics Conference* (CSB), 2006.

104. J. Liu, S. Paulsen, X. Sun, W. Wang, A. Nobel, J. Prins, Mining Approximate Frequent Itemsets In the Presence of Noise: Algorithm and Analysis, *SIAM Conference on Data Mining* (SDM), 2006.

105. J. Huan, D. Bandyopadhyay, J. Liu, J. Prins, J. Snoeyink, A. Tropsha, W. Wang, "Rapid determination of local structural features common to a set of proteins" (demo), *Proc. of the 13th International Conference on Intelligent Systems for Molecular Biology (ISMB)*, 2005.

106. J. Liu, S. Paulsen, W. Wang, A. Nobel, J. Prins, "Mining Approximate Frequent Itemsets from Noisy Data", *Proceedings of the 5th IEEE International Conference on Data Mining* (ICDM), 2005.

107. D. Bandyopadhyay, J. Huan, J. Liu, J. Prins, J. Snoeyink, A. Tropsha, and W. Wang, "Function inference using family-specific subgraph fingerprints mined from protein families", *Proceedings of the 13th International Conference on Intelligent Systems for Molecular Biology (ISMB)*, 2005.

108. J. Huan, W, Wang, J. Prins, J. Yang, "SPIN: Mining Maximal Frequent Subgraphs from Graph Databases", in *Proceedings of the 10th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD), 2004.

109. M. Farthing, C. Miller, D. Sassen, J. Prins, "A problem solving environment for subsurface flow and transport phenomena", in *International Conference on Computational Methods in Water Resources* XV (CMWR), Elsevier, 2004.

110. J. Huan, W. Wang, D. Bandyopadhyay, J. Snoeyink, J. Prins, A. Tropsha, "Mining Protein Family Specific Residue Packing Patterns From Protein Structure Graphs", in *Proceedings of the Intl Conf on Research in Computational Molecular Biology* (RECOMB), 2004.

111. C. Miller, C. Abhishek, A. Sallerson, J. Prins, M. Farthing, "A comparison of computational and algorithmic advances for solving Richards' equation" in *International Conference on Computational Methods in Water Resources* XV (CMWR), Elsevier, 2004.

112. J. Huan, W. Wang, A. Washington, J. Prins, R. Shah, A. Tropsha, "Accurate classification of protein structural families using coherent subgraph analysis", in *Proceedings of the Pacific Symposium on Biocomputing* (PSB), 2004.

113. K. Berlin, J. Huan, J. Prins, W. Pugh, P. Sadayappan, J. Spacco, C.-W. Tseng, "Evaluating the Impact of Programming Language Features on the Performance of Parallel Applications on Cluster Architectures", *Proceedings of the 14th International Workshop on Languages and Compilers for High Performance Computing* (LCPC), 2003.

114. J. Huan, W. Wang, J. Prins, "Efficient mining of frequent subgraphs in the presence of isomorphism", *Proceedings of the 3rd IEEE International Conference on Data Mining* (ICDM), 2003.

115. J. Huan, J. Prins, W. Wang, T. Vision, "Reconstructing of ancestral gene order after segmental duplication and gene loss", *Proceedings of the IEEE Computer Society Bioinformatics Conference* (CSB), 2003.

116. C. Pan, J. Prins, and C. Miller, "A High-Performance Lattice Boltzmann Implementation of Multiphase Flow in Porous Media", *Workshop on Simulation and Optimization*, SAMSI, Research Triangle Park, North Carolina, 28-30 April 2003.

117. D. Stotts, J. Prins, L. Nyland, "CobWeb: Visual Design of Collaboration Protocols for Dynamic Group Web Browsing", Workshop on Visual Computing (part of *Distributed multimedia Systems 2002*), IEEE, 2002.

118. J. Riely, J. Prins, "Flattening is an Improvement", in *Proceedings of the Seventh Static Analysis Symposium* (SAS), LNCS **1284**, Springer-Verlag, 2000.

119. L. Nyland, J. Prins, R.H. Yun, J. Hermans, H.-C. Kum, L. Wang, "Modeling Dynamic Load Balancing in Molecular Dynamics to Achieve Scalable Parallel Execution", in *Fifth International Symposium on Solving Irregularly Structured Problems in Parallel (Irregular 98)*, Ferreira, A. and Rolim, J. and Simon, H. and Teng, S.-H, eds., LNCS 1457, Springer-Verlag, 1998. (pp 356-365)

120. J. Prins, S. Chatterjee, M. Simons, "Expressing Irregular Computations in Modern Fortran Dialects", in *Languages, Compilers and Runtime Systems* (LCR98)*, D. O'Hallaron, ed., LNCS 1511, Springer-Verlag, 1998 (pp 1-16).

121. R. Faith, L. Nyland, J. Prins, "Khepera: A System for the Rapid Implementation of Domain Specific Languages*, Proc. ACM/USENIX conference on Domain Specific Languages*, ACM, 1997. (pp 243-255)

122. L. Nyland, S. Chatterjee, J. Prins, "Parallel Solutions to Irregular Problems Using HPF", First HPF UG meeting, Santa Fe, NM, Feb. 1997.

123. L. Nyland, J. Prins, A. Goldberg, P. Mills, J. Reif, R. Wagner, "A Refinement Methodology for Data-Parallel Applications", in *Proc. EuroPar 96 Parallel Processing Conference*, Lyon, France, LNCS 1123, Springer-Verlag, 1996 (pp 145-151).

124. D. Palmer, J. Prins, S. Chatterjee, R. Faith, "Piecewise Execution of Nested Data-Parallel Programs", in *Languages and Compilers for Parallel Computing* (LCPC 95), Huang et al., eds., LNCS 1033, Springer-Verlag 1996. (pp 346-362)

125. J. Riely, J. Prins, S. Iyer, "Provably Correct Vectorization of Nested Parallel Programs", *Massively Parallel Programming Models: Suitability, Realization and Performance*, Berlin, IEEE 1995. (pp 213-223)

126. D. Palmer, J. Prins, "Work-efficient Nested Data-Parallelism", *Proc. of the 5th Symposium on the Frontiers of Massively Parallel Processing*, IEEE, 1995. (pp 186-193)

127. L. Nyland, J. Prins, J. Reif, "A Data-Parallel Implementation of the Adaptive Fast Multipole Algorithm", 1993 DAGS/PC Workshop on Practical Parallel Algorithms, Dartmouth University, 1993. (17 pp)

128. J. Prins, D. Palmer, "Transforming High-level Data-Parallel Programs into Vector Operations", *Proc. 5th ACM Symposium on Principles and Practice of Parallel Programming*, ACM, 1993.   (pp 119-128)

129. P. Mills, J. Prins, J. Reif, "Rate-Control as a Language Construct for Parallel and Distributed Programming", *Proc. IEEE Workshop on Parallel and Distributed Real-Time Systems*, IEEE, 1993. (pp 164-171)

130. M. Parris, C. Mueller, J. Prins, A. Duggan, Q. Zhou, E. Erikson, "A Distributed Implementation of an N-body Virtual World Simulation", *IEEE Workshop on Parallel and Distributed Real-Time Systems*, IEEE, 1993. (pp 66-- 71)

131. W. Hightower, J. Prins, J. Reif, "Implementations of Randomized Sorting on Large Parallel Machines", *Proc. 3rd Symposium on Parallel Architectures and Algorithms*, ACM, 1992. (pp 158-167)

132. P. Mills, L. Nyland, J. Prins, J. Reif, "Prototyping High-performance Parallel Computing Applications in Proteus", *Proc. 1992 DARPA Software Technology Conference*, Meridian, 1992. (pp 443-442)

133. P. Mills, L. Nyland, J. Prins, J. Reif, "Prototyping N-body simulation in Proteus", *Proc. 6th International Parallel Processing Symposium*, IEEE, 1992. (pp 476-482)

134. L. Nyland, J. Prins, "Prototyping Parallel Algorithms", 1992 DAGS /PC Workshop on Issues and Obstacles in the Implementation of Parallel Algorithms and the Use of Parallel Machines, Dartmouth University, 1992. (pp 31-39)

135. A. Varshney, J. Prins, "An Environment-Projection Approach to Radiosity for Mesh-Connected Computers", in *Third Eurographics Workshop on Rendering*, A. Chalmers, D. Paddon, F. Sillion (eds), Alpha Press (U.K.), 1992. (pp 271-281)

136. J. Prins, D. Palmer, "Transforming High-level Data-Parallel Programs into Vector Operations", *International Workshop on Array Structures*, University of Montreal, 1992 (13 pp).

137. P. Mills, L. Nyland, J. Prins, J. Reif, R. Wagner, "Prototyping Parallel and Distributed Programs in Proteus", *Proc. 3rd Symposium on Parallel and Distributed Processing* , IEEE, 1991. (pp 26-34)

138. J. Prins, "A Framework for Efficient Execution of Array-based Languages on SIMD Computers", *Proc. of the 3rd Symposium on the Frontiers of Massively Parallel Processing*, IEEE, 1990. (pp 462-470)

139. J. Prins, J. Smith, "Parallel Sorting of Large Arrays on the MasPar MP-1", *Proc. of the 3rd Symposium on the Frontiers of Massively Parallel Processing*, IEEE, 1990. (pp 59-64)

140. S. Horwitz, J. Prins, T. Reps, "Integrating Non-Interfering Versions of Programs", *Conference Record of the 15th ACM Symposium on Principles of Programming Languages*, ACM, 1988. (pp 133-145)

141. S. Horwitz, J. Prins, T. Reps, "On the Adequacy of Program Dependence Graphs for Representing Programs", *Conference Record of the 15th ACM Symposium on Principles of Programming Languages*, ACM, 1988. (pp 146-157)

142. D. Gries, J. Prins, "A New Notion of Encapsulation", *Proceedings ACM SIGPLAN Symposium on Programming Languages and Environments*, ACM, 1985. (pp 131-139)

143. D. Jacobs, J. Prins, P. Siegel, K. Wilson, "Monte Carlo Methods in Code Optimization", *Proc. 15th Conference on Microprogramming*, IEEE/ACM, 1982. (pp 143-148)

144. D. Jacobs, J. Prins, K. Wilson, "Report on the Construction of a Monte Carlo Optimizer", *Proceedings ARRAY 82*, 1982, FPS. (pp 44-53)

145. J. Prins, "Automated Testing in APL: An Application of Exception Handling", *Proceedings APL82 Conference*, 1982, ACM. (pp 260-264)