

CURRICULUM VITAE

David T. Blaauw

September 2021

I Personal Data

Office Address: Advanced Computer Architecture Laboratory, 2417C EECS
The University of Michigan
1301 Beal Ave.
Ann Arbor, Michigan 48109-2122

Home Address: 1811 Glenwood Rd.
Ann Arbor, Michigan 48104

Phone: (734) 763-4526 (work)
FAX: (734) 763-4617
E-mail: blaauw@umich.edu

II Employment History

A. Education

Doctor of Philosophy in Computer Science, University of Illinois, Urbana-Champaign, January 1992.
Thesis: “Functional Abstraction in Switch-Level Simulation.”
Advisor: Professor Jacob A. Abraham

Master of Science in Computer Science, University of Illinois, Urbana-Champaign, May 1989.
Thesis: “Automatic Generation of Behavioral Models.”
Advisor: Professor Jacob A. Abraham

Bachelor of Science in Physics with a second major in Computer Science, Duke University, May 1986.

B. Present Position

Professor of Electrical Engineering and Computer Science, University of Michigan, Ann Arbor, Michigan.

C. Employment History

- September 2007 - Present: Professor, Department of Electrical Engineer and Computer Science, University of Michigan, Ann Arbor, Michigan
- August 2001 - September 2007: Associate Professor, Department of Electrical Engineer and Computer Science, University of Michigan, Ann Arbor, Michigan.
- September 1994 - August 2001: Engineering Manager, Advanced Design Technology, Motorola, Inc., Austin, Texas.
- August 1993 - September 1994: Staff engineer, Semiconductor Systems Design Technology Group, Motorola, Inc., Austin, Texas.
- August 1992 - August 1993: Development Staff Member, IBM Corporation, Endicott, New York.

D. Honors and Awards

- Winner, 2019 Monarch Butterfly Fund for creating a system to track the flight of individual monarch butterflies on their migration to Mexico
- 2019 Distinguished University Innovator Award given to one team in the university for developing and marketing transformative ideas and technologies
- Named the Kensall D. Wise Collegiate Professor of Electrical Engineering and Computer Science, 2019
- Best Student Paper Award, "A 4×4×4-mm³ Fully Integrated Sensor-to-Sensor Radio using Carrier Frequency Interlocking IF Receiver with -94 dBm Sensitivity," IEEE Radio Frequency Integrated Circuits Symposium (RFIC), June 2019
- 2019 IEEE Micro Top Picks special issue on the Computer Architecture Conferences, "Neural Cache: Bit-Serial In-Cache Acceleration of Deep Neural Networks"
- 15 year retrospective most influential paper in ISCA 2002 award for groundbreaking research in power-efficient computing, ACM/IEEE International Conference on Computer Architecture (ISCA), 2017
- Member of University of Illinois Engineering Advisory Panel. 2015 through current.
- Ranked as the top publishing author at IEEE VLSI Circuits Symposium over the last 30 years of the conference with 38 publications. June, 2017
- 2016 University Researcher Award, Semiconductor Industry Association (SIA) – Semiconductor Research Corporation (SRC), established by the semiconductor industry association to recognize lifetime research contributions to the U.S. semiconductor industry by university faculty. One award given per year for circuits and technology each.
- 2016 IEEE Micro Top Picks special issue "MBus: The Missing Interconnect that Enables the Modular Millimeter-Scale Computing Class and Connects the World's Smallest Computer,"
- Best Paper Award, "Racetrack Converter: A Low Power and Compact Data Converter Using Race-track Spintronic Devices," IEEE International Symposium on Circuits and Systems (ISCAS), May 2015
- 2014 John von Neumann Student Research Award for Excellence in Systems Research – SONIC Annual Review Meeting
- Recognized as top 50 innovator over the last 50 years graduating from the University of Illinois EECS department in 2014

- College of Engineering Innovation Excellence Award for 2013-2014
- Design Automation Conference (DAC) 50th Anniversary award for being the top 10 most cited DAC authors in DAC's 50 year history, June 2013
- Design Automation Conference (DAC) 50th Anniversary award for publishing the most papers in the fifth decade of DAC's history, June 2013
- 2013 University of Michigan Electrical Engineering and Computer Science (EECS) Department Outstanding Achievement Award for innovative research in variation-tolerant and energy efficient integrated circuit design, and exceptional mentoring and teaching in the area of VLSI circuits
- International Solid-State Circuits Conference (ISSCC) 60th Anniversary Special Recognition top 10 contributing author over the last 10 years, February 2013
- IEEE/ACM International Conference on Computer-Aided Design (ICCAD) Ten Year Retrospective Most Influential Paper Award, "Combined Dynamic Voltage Scaling and Adaptive Body biasing for Lower Power Microprocessors under Dynamic Workloads," ICCAD 2002 Conference, November 2012
- Second Prize in the 18th Samsung Human-Tech Thesis Competition for research on millimeter sensor design, February 2012
- IEEE Fellow status, January 2012
- Winner MuSyC Research Consortium annual best poster award, "A Modular 1mm³ Die-Stacked Sensing Platform," Nov 2011
- Winner 11th International VLSI-Symposium Low Power Design Contest, "SWIFT: A 2.1Tb/s 32x32 Self-Arbitrating Manycore Interconnect Fabric," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2011
- Winner Design Automation Conference (DAC)/International Solid-State Circuits Conference (ISSCC) Design contest, "Design and Implementation of Centip3De, a 7-layer Many-Core System," Design Automation Conference (DAC)/International Solid-State Circuits Conference (ISSCC), Feb/June 2011
- Best Paper Award, "Low Power Circuit Design Based on Heterojunction Tunneling Transistors (HETTs)," ACM/IEEE International Symposium on Low-Power Electronics and Design (ISLPED), August 2009
- 2008 Ted Kennedy Family Team Excellence Award (award shared with Todd Austin, Scott Mahlke, Trevor Mudge, Marios Papaefthymiou). The Ted Kennedy Family Team Excellence Award is an annual award given by the University of Michigan, College of Engineering that recognizes the production of an extraordinary and significant piece of work from current or recent collaboration in teaching or research to the College of Engineering.
- 2008 Richard Newton GSRC Industrial Impact Award for "development of the Razor technology" (award shared with Professor Todd Austin). The Richard Newton GSRC Industrial Impact Award is an annual award given by the GSRC DARPA/MARCO center that recognizes research that is "at least five years old and has had a significant industrial impact."
- University of Michigan College of Engineering Research Excellence Award for 2007-2008, January 2008
- Best Paper Nomination, "Energy Efficient Near-threshold Chip Multi-processing," ACM/IEEE International Symposium on Low-Power Electronics and Design (ISLPED), August 2007
- Best Paper Nomination, "Self-timed Regenerators for High-speed and Low-power Interconnect," ACM/IEEE International Symposium on Quality Electronic Design (ISQED), March 2007

- Microprocessor Review Analysts' Choice Award in Innovation for "Introducing Speculation on Correctness as a Method for Allowing Circuit Operation Beyond Worst-Case Design," Microprocessor Review, February 2007
- 2004 IEEE Micro Top Picks special issue on the most industry relevant and significant papers of the year in computer architecture, "Razor: Circuit-Level Correction of Timing Errors for Low-Power Operation"
- University of Michigan Henry Russel Award for "Exceptional Scholarship and Conspicuous Ability as a Teacher," November 2004
- Best Paper Nomination, "Parametric Yield Estimation Considering Leakage Variability," ACM/IEEE Design Automation Conference (DAC), June 2004
- Best Paper Award, "Razor: A Low-Power Pipeline Based on Circuit-Level Timing Speculation," ACM/IEEE International Symposium on Microarchitecture (MICRO), November 2003
- Best Regular Paper Award, "Noise Analysis Methodology for Partially Depleted SOI Circuits," IEEE Custom Integrated Circuits Conference (CICC), September 2003
- IBM Faculty Award, IBM Center for Advanced Studies, June 2003
- Best Paper Award, "Statistical Delay Computation Considering Spatial Correlations," ACM/IEEE Asia-Pacific Design Automation Conference (ASP-DAC), January 2003
- IBM Faculty Award, IBM Center for Advanced Studies, June 2002
- Best Paper Nomination, "Pre-route Noise Estimation in Deep Submicron Integrated Circuits," ACM/IEEE International Symposium on Quality Electronic Design (ISQED), March 2002
- Best Paper Nomination, "Driver Modeling and Alignment for Worst-Case Delay Noise," ACM/IEEE Design Automation Conference (DAC), June 2001
- Best Paper Award, "On-Chip Inductance Modeling and Analysis," ACM/IEEE Design Automation Conference (DAC), June 2000
- Motorola Innovation Award, 1997
- Motorola High Impact Technology Award, 1996

III Research Experience

A. Research Interests

My research interests focus on high-performance and low-power VLSI circuits, particularly addressing nano-meter design issues pertaining to power, performance and robustness. My aim is to develop novel circuit design techniques for effective VLSI design in the nano-meter era, in conjunction with efficient and accurate analysis and optimization methods for large, multi-million transistor designs.

B. Doctoral Students Supervised

<u>Student</u>	<u>Thesis Title/Topic</u>	<u>Graduation Date</u>
Alhad Daftardar	High Performance Computing	In Progress
Jungho Lee	Neural Stimulation Inprogress	In Progress
Kuan Yu Chen	Low Power Signal Processing Through Reconfigurable Systolic Arrays	In Progress
Andrea Bejarano	mm-Scale Image Sensing Through Low Power Circuit and Algorithm Co-Design	In Progress
Chien-Wei Tseng	Ultra-Low Power RF-Localization for Asset Management	In Progress
Yichen Gu	Computational Genomics for RNA Velocity Modeling	In Progress
Rohit Rothe	Ultra-Low Power Audio Amplification Through Switch Capacitor T-Ohm Resistance Circuits	In Progress
Zhen Feng	mm-Scale RF Communications	In Progress
Jihwan Seol	PLL Design Through Over Sampling Techniques	In Progress
Zhehong Wang	Application of New Technologies to Neural Networks Processors	In Progress
Xiao Wu	Energy Efficient Circuits and System for Internet of Things and Hardware Accelerator Design for Genome Sequencing	July 2019

Li-Xuan Chuo	Miniaturized Low-Power and Energy-Efficient RF Wireless Communication and Sensing Systems	June 2019
Ziyun Li	Energy-Efficient Mobile Computer Vision and Machine Learning Processors	May 2019
Kyojin Choo	Charge-domain analog/mixed-signal circuits and applications	Sept 2018
Yao Shi	Millimeter-Scale and Energy-Efficient RF Wireless System	Aug 2018
Wootae Lim	Ultra-low Power Circuit Design for Miniaturized IoT Platform	May 2018
Taekwang Jang	Circuit and System Designs for Millimeter Scale IoT and Wireless Neural Recording	Dec 2017
Wanyeong Jung	Low-Power Energy Efficient Circuit Techniques for Small IoT Systems	April 2017
Supreet Jeloka	Cross-point Circuits for Computation, Interconnects, Security and Storage	Jan 2017
Yejoong Kim	Robust Circuit Design for Low-Voltage VLSI	May 2015
Nathaniel Pinckney	Near-Threshold design	July 2015
Dongmin Yoon	Low power timer references	Jan 2015
Inhee Lee	Power management for ultra-low power sensors systems	Oct 2014
Gyouho Kim	Ultra-low power visual monitoring	Aug 2014
Bharan Giridhar	Adaptive Computing	Dec 2013
Zhi Yoong Foo	Low power processor design techniques	Aug 2013
Sudhir Satpathy	Fast and low power interconnect fabrics	Dec 2012
David Fick	Adaptive Low-power design	Aug 2012
Yoonmyung Lee	Ultra Low-Power Memory Design	April 2012

Prashant Singh	Reliability analysis and wear-out detection	April 2010
Nurrachman Liu	Automatic tuning of VLSI circuits	April 2010
Brian Cline	Process variation modeling for advance semiconductor circuits	Feb 2010
Cheng Zhuo	VLSI wearout modeling	Dec 2010
Ravikishore Gandikota	Crosstalk-Noise analysis for nanometer VLSI circuits	Aug 2009
Carlos Tokunaga	Circuits and architectures for secure processing	Sep 2008
Shidhartha Das	Razor: circuit speculation for power and performance efficient design	Oct 2008
Kaviraj Chopra	Statistical timing analysis including spatial correlations	Apr 2008
Eric Karl	Reliable computing on unpredictable silicon	Mar 2008
Sanjay Pant	Power grid analysis and design	Dec 2007
Mini Nanua	Leakage and noise analysis in nano-scale technologies	Apr 2007
Bo Zhai	Dynamic voltage scaling for embedded processor designs	Mar 2007
Rajeev Rao	Modeling and design of low-power VLSI systems under for multiple sources of uncertainty	Jul 2006
Dongwoo Lee	Analysis and minimization of leakage current	May 2005
Aseem Agarwal	Statistical timing analysis for VLSI circuits	Mar 2005

C. Masters Students Supervised

<u>Student</u>	<u>Thesis Title/Topic</u>	<u>Graduation Date</u>
Peijun Hou	Capacitance to Digital Conversion	In Progress
Li Yu Chen	High Voltage Upconversion	May 2021
Hengfei Zhong	Power Circuit Design	May 2020
Ashwin Bhat	Error Tolerant Long-Read Alignment for Genomic Sequencing	April 2020
Hyungjoo Seo	Low Power Energy Harvesting	May 2019
Tim Wesley	Low Power Neural Network Accelerators	May 2019
Yu Zeng	Low Power Crystal Oscillator Circuits	Dec 2017
Dongkwun Kim	Low Power Voltage References	May 2017
Skyler Skrzyniarz	Low Power Correlation Architectures for GPS	June 2015
Junhua Gu	Low Power Circuits for Analog to digital interfaces	May 2015
Ruochen Xie	Energy Reduction of FeRAM Memories for Millimeter Sensors	May 2015
Allen Wang	Low Power Level Conversion	May 2014
Naveen Akesh	Low Power Audio Device for Developing World	May 2014
Zhe Yu	RF Communication for Millimeter Scale Sensors	May 2014
Hsi-Shou Wu	Low Power Word-Spotting	April 2014

Siddharth Saxena	Low power correlation circuits	May 2013
Karan Jain	Low power synchronization using ambient RF signals	April 2012
Jordan LeNoach	pH sensor for millimeter sensors	Dec 2011
Jeffrey Yeh	Chip design for the developing world	April 2011
Nate Robert	Low power LDO	Dec 2010
Vikas Vinay	Low power Class-D amplifier for developing world applications	Dec 2010
Abhishek Madhavan	Low power chip design	Dec 2010
Junsun Park	Intra-cellular chip design	May 2010
Jou-ching (George) Sung	Low power ADC design	Aug 2009
Mao-Ter Chen	Low power sensor node design	Dec 2008
Sudharsen Kalaiselvan	Razor-3: A circuit speculation and SEU tolerant circuit technique	May 2007
Deepesh John	Low power design through typical-case optimization	May 2006
Yueh-Chuan Tzeng	Encryption processor for side channel attack avoidance	May 2006
Meghna Singhal	Low power design using subthreshold operation	May 2006
Amir Borna	Analysis of lithographic variations for chip performance	Aug 2005
Amit Jain	Delay modeling for non-ramp input transitions	Nov 2004
Toan Pham	Clock skew reduction using Razor flip-flops	Dec 2003
Bhavana Thudi	Non-iterative switching window computation for delay noise	May 2003

Wesley Kwong	Efficient circuit-level analysis of gate-oxide tunneling current in VLSI designs	May 2003
--------------	--	----------

D. Research Grants

- National Science Foundation (NSF), “StiMote: An Ultrasmall, Modular Neurophotonic Stimulator,” PI: James Weiland, \$ 649,130, with \$216,376 to Blaauw, 06/24/2021 – 6/23/2023
- Ministry of Defense, “Low Power Localization,” PI: David Blaauw, \$840,000, with \$420,000 to Blaauw, 3/12/2020 - 3/31/2022
- Intel Corporation, “Valleytronics Circuit Design for Efficient Realization of Computational Logic,” \$555,000 to Blaauw, PI: Blaauw, 6/31/2020-6/30/23
- DARPA “Datalink Applications of DSSoC-DASH (KESTREL),” \$720,000 with \$360,000 to Blaauw, PI: Hun Seok Kim, 1/1/2020-1/17/2023
- Semiconductor Research Corporation (SRC), “Analog and Digital Assist Techniques to Improve Mixed-Signal,” \$130,000 with \$65,000 to Blaauw, PI: Dennis Sylvester, 9/1/2020 - 12/31/2021
- Facebook, “Context-Aware Multi-Sensor Fusion System and SoC Integrated Circuits and Digital Signal Processing,” \$239,752, with \$119,876 to Blaauw, PI: Dennis Sylvester, 1/1/20-12/31/21
- National Geographic Society, “M3 Monarch Migration Study,” \$150,000 with \$75,000 to Blaauw, PI: David Blaauw, 10/11/2019-10/10/2022
- ARM, “ULP Sensor Fusion SoC for Micro Robots and Tiny IoT,” \$320,000 with \$160,000 to Blaauw, PI: David Blaauw, 9/1/19-8/31/21
- Sony Corporation of America, “Ultra Low Power intelligent imaging sensors for the Internet of Things,” \$1,493,433, with \$511,041 to Blaauw, PI: Dennis Sylvester, 9/1/19-8/31/22
- Ministry of Defense “Ultra-Miniature Imager Technical Demonstrator,” \$1,057,762, with \$657,762 to Blaauw, PI: David Blaauw, 7/18/19-3/31/2021
- Ministry of Defense “M3 Audio-Logger,” \$1,204,352, with \$704,352 to Blaauw, PI: David Blaauw, 2/18/19-3/31/2021
- Semiconductor Research Corporation (SRC), “Mixed-Signal Circuits Enabling Ultra-Low Power Wireless Sensors,” \$270,000, with \$139,995 to Blaauw, PI: David Blaauw, 1/1/18-12/31/20
- Advanced Energy Consortium (AEC), “Millimeter Scale Down-hole Sensors,” \$650,000, with \$400,000 to Blaauw, PI: David Blaauw, 3/1/18-02/28/21
- National Science Foundation (NSF), “NCS FR - Elucidating the relationship between motor cortex neural firing rates and dextrous finger movement EMG for use in brain computer interfaces,” \$2,276,395, with \$194,603 to Blaauw, PI: Cindy Chestek, 9/1/19-8/31/23
- DARPA, “Domain-focused Advanced Software-reconfigurable Heterogeneous System-on-Chip (DASH-SoC),” \$2,420,233, with \$1,318,078 to Blaauw, PI: Hun-Seok Kim, 7/18/18-6/30/22

- National Science Foundation (NSF), “SHF: Medium: Compute Caches: Opportunistic Extreme Scale Parallelism In General Purpose Processors,” \$300,000, with \$80,579 to Blaauw, PI: Reetuparna Das, 10/1/18-9/30/20
- Leidos, “Trestle – small acoustic sensors” \$1,882,300, with \$983,104 to Blaauw, PI: David Blaauw, 5/3/19-2/28/2021
- National Institute of Health (NIH), “A 100 μ m Scale Single Unit Neural Recording Probe Using IR-Based Powering and Communication,” \$429,971, with \$224,890 to Blaauw, PI: David Blaauw, 9/1/18-8/31/2021
- DARPA, “Transmuter: A Reconfigurable Computer,” \$5,845,690, with \$1,524,096 to Blaauw, PI: Ron Dreslinski, 8/6/18-3/30/21
- DARPA, “OpenROAD: Foundations and Realization of Open, Accessible Design Integrated Circuits and Digital Signal Processing,” \$1,600,000, with \$248,754 to Blaauw, PI Andre Kahng, 6/1/18-5/31/22
- DARPA, “Fully-Autonomous SoC Synthesis using Customizable Cell-Based Synthesizable Analog Circuits,” \$3,199,021, with \$482,255 to Blaauw, PI: David Wentzloff, 6/12/18-6/11/20
- Leidos, “NZero Acoustic Switch (Dorado),” 930,000, with \$699,424 to Blaauw, PI: David Blaauw, 11/11/17-6/30/19
- National Institute of Standards and Technology (NIST), United States Department of Commerce (DoC), “Decimeter Accurate, Long Range Non-Line-of-Sight RF Localization Solution for Public Safety Applications,” \$997,873, with \$310,041 to Blaauw, PI: Hun Seok Kim, 6/1/17-5/31/21
- Ministry of Defense, “Highly Size Constrained Logging Sensor Development,” \$2,580,843, with \$1,131,882 to Blaauw, PI: David Blaauw, 10/01/16 – 08/15/18
- Sony Electronics, Inc., “Low Power Motion Detection for the Internet of Things,” 1,193,000, with \$400,000 to Blaauw, PI: Dennis Sylvester, 8/1/2016-12/31/2019
- DARPA, “Support for Porting S2CFF Design and Near-Threshold Voltage (NTV) Design Methodology to 32nm CMOS,” \$310,829 to Blaauw, PI: David Blaauw, 12/8/2015-8/31/2017
- DARPA, “Near Zero-Power, Continuous Acoustic Sensing Microsystem using Active Integrated Circuits and Digital Signal Processing,” \$2,505,000, with \$835,000 to Blaauw, PI: Dennis Sylvester, 9/28/2015-7/31/2019
- Semiconductor Research Corporation (SRC), “Infrared-Based Power Delivery and Communication for Implanted Sensors,” \$375,000 to Blaauw, PI: David Blaauw, 6/1/2015-5/31/2018
- Advanced Energy Consortium (AEC), “An Autonomous Microsystem Test-Bed for Extreme Environments: Strategic Options and Scalability Limits,” \$1,170,000, with \$585,000 to Blaauw, PI: David Blaauw, 1/1/2015-7/1/2017
- ARM Ltd, “ARM III: Research into Low Energy Computer Systems,” \$3,000,148, with \$555,555 to Blaauw, PI: Trevor Mudge, 2015-2018
- National Institute of Health (NIH), “SCH: INT: Wireless Implantable Electronic Biosensors for Tumor Monitoring,” \$1,759,460 with \$849,804 to Blaauw, PI: David Blaauw, 9/22/2014 - 8/31/2018
- Ministry of Defense, “M3 mm scale computing GPS logger,” \$1,352,145, with \$250,000 to Blaauw, PI: David Blaauw, 04/01/14 - 03/31/16
- Ministry of Defense, “Dstl Sensor Development Kits,” \$400,000, with \$112,500 to Blaauw, PI: David Blaauw, 12/13/13 - 3/17/14
- Ministry of Defense, “Architectural Design Study for M3 mm Scale Computing GPS Logger,” \$400,000, with \$175,000 to Blaauw, PI: David Blaauw, 8/15/2013-3/14/2014

- National Science Foundation (NSF), “SHF: Small: Minimally Invasive Error Detection/Correction for Runtime Margin Elimination,” \$450,000, with \$252,750 to Blaauw, PI: David Blaauw, 7/2012-6/2015
- BAE Systems/United States Army, “Center for Objective Microelectronics and Biomimetic Adaptive Technology (COM-BAT),” \$400,000, with \$135,000 to Blaauw, PI:Kamal Sarabandi, 9/2013-8/2016
- DARPA, “The TerraSwarm Research Center,” \$4,234,183, with \$1,624,897 to Blaauw, PI: Edward Lee, 1/15/2013-12/31/2017
- ARM, Ltd, “Low Power Computing for Embedded Applications,” \$5,000,000, with \$925,000 to Blaauw, PI: Trevor Mudge, 5/2010-5/2015
- Advanced Energy Consortium (AEC), “An Autonomous Microsystem Test-Bed for Extreme Environments: Integrating Sensor Elements, Electronics, and Packaging,” \$950,000, with \$226,625 to Blaauw, PI: Yogesh Gianchandani, 6/2012-12/2014
- Semiconductor Research Corporation (SRC), “Fast Power Supply Boosting for Energy-Efficient, High-Performance Processors,” \$360,000, with \$180,000 to Blaauw, PI: David Blaauw 8/2012 - 7/2015
- DARPA, “Systems on Nanoscale Information Fabrics (SONIC) Center,” \$7,008,335, with \$1,401,667 to Blaauw PI: Naresh Shanbhag, 1/2013-10/2017
- Ministry of Defense, “MM scale computing for GPS logger,” \$400,000, with \$175,000 to Blaauw, PI: David Blaauw
- Isocline Engineering LLC, “Power Efficient Software Define Radio (SDR) Mobile Architecture Technology for Handheld Devices,” \$220,093 to Blaauw, PI: David Blaauw, 03/01/2013 - 02/28/2015
- Isocline Engineering LLC, “ Programmable Microchip for Accelerating Neuromorphic Object Recognition,” \$45,715 to Blaauw, PI: David Blaauw, 07/01/2013 - 12/31/2013
- QUALCOMM, “Near Threshold Computing,” \$100,000, gift, 8/2011-8/2013
- Oracle, “High Performance Razor Architecture ” \$80,000, gift, 8/2013-8/2014
- AMD, “*In Situ* Wearout Detection and Mitigation,” \$100,000, gift, with \$50,000 to David Blaauw, 11/2011
- Food and Drug Administration, “Smart Rapid Palatal Expander for Pediatric Cleft and Palate Patients,” \$312,000, with \$136,000 to Blaauw, PI: Jeanne Nervina, 9/2011-8/2013
- National Science Foundation (NSF), “Integrating Circuits, Sensing, and Software to Realize the Cubic-mm Computing Class,” \$2,533,000, with \$519,265 to Blaauw, PI: David Wentzloff, 08/2011 - 7/2016
- Qualcomm, “Near-Threshold Computing,” \$50,000, gift, PI: David Blaauw, 05/2011
- Department of Energy, “Hardware-Software Co-Design for Non-Volatile Memory in Exascale Systems,” \$525,000 with \$202,747 to Blaauw, PI: Trevor Mudge, 1/2011-12/2013
- Intel Corporation, “A Confidence-Driven Model for Predictable Computing in Future Technologies,” \$249,000 with \$65,916 to Blaauw, PI: Zhengya Zhang, 1/2010-10/2010
- QUALCOMM, “Adaptive Design Solutions for VLSI Circuits,” \$50,000, gift, 09/01/09
- National Science Foundation (NSF), “Reclaiming Moore’s Law through Ultra Energy Efficient Computing,” \$2,778,507, with \$643,700 to Blaauw, PI: Prof. David Blaauw, 9/2009-08/2014
- National Science Foundation (NSF), “Probabilistic Wearout in Nanoscale,” \$300,000, with \$150,000 to Blaauw, PI: Dennis Sylvester, 8/2008-7/2011
- IBM Corporation/Defense Advanced Research Projects Agency (DARPA), “Strained Si/SiGe/Ge Heterojunction Tunneling Transistor (HETT) e with Steep Subthreshold Slope for Extremely Low Power Electronics,” \$17,971,252, with \$600,000 to Blaauw, PI: Steve Koester, 1/2008-12/2009

- BAE Systems/United States Army, “Center for Objective Microelectronics and Biomimetic Adaptive Technology (COM-BAT),” \$8,962,200 with \$700,000 to Blaauw, PI:Kamal Sarabandi, 5/2008-5/2013
- Intel Corporation, “Adaptive Digital Design in the Nanometer Regime,” \$100,000, gift, 3/2008-3/2010
- Sun Microsystems, “Robust Low Voltage SRAM Design,” \$150,000, gift, 9/2007-9/2010
- Intel Corporation, “Circuit and Microarchitectural Methods for Subthreshold Design,” \$40,000, gift, 7/2007
- MARCO/DARPA - Gigascale Systems Research Center (GSRC), “Elastic: An Adaptive Self-Healing Architecture for Unpredictable Silicon,” \$600,000 to Blaauw, PI: David Blaauw, 9/2006 - 9/2009
- Semiconductor Research Corporation (SRC), “A Design Optimization Framework for Process Variation Tolerance,” \$390,000, with \$195,000 to Blaauw, PI: Dennis Sylvester, 9/2006 - 8/2009
- Intel Corporation, “Circuit and Microarchitectural Methods for Subthreshold Design” \$40,000, gift, 7/2006
- Semiconductor Research Corporation (SRC), “CAD Solutions for Parametric Yield Optimization,” \$321,000, with \$160,000 to Blaauw, PI Dennis Sylvester, Co-PI: David Blaauw, University of Michigan, 9/2005-7/2008
- Intel Corporation, “Circuit and Microarchitectural Methods for Subthreshold Design” \$40,000, gift, 7/2005
- NSF Engineering Research Center (ERC) for Wireless Integrated Micro Systems (WIMS), “Sub-threshold Processor Design,” \$60,000 to Blaauw, PI: Kenneth Wise, 5/2005-5/2010
- ARM, Ltd, “Low Power Computing for Embedded Applications,” \$5,000,000, with approx. \$1,600,000 to Blaauw, PI: Trevor Mudge, 5/2005-5/2010
- Semiconductor Research Corporation (SRC), “Optimization of Lithographic Induced Variability for Improved Circuit Performance,” \$161,029 to Blaauw, PI: David Blaauw, 9/2004-8/2007
- Intel Corporation, “Power Grid Integrity Analysis,” \$50,000, gift, 7/2004
- Photonics, Inc. \$75,000, gift, 6/2004-5/2005
- ARM, Ltd, “Low Power Computing for Embedded Applications,” \$240,000, with \$60,000 to Blaauw, PI: Trevor Mudge, 5/2004-5/2005
- National Science Foundation (NSF), Information Technology Research (ITR), “Collaborative Research ITR: Mobile Supercomputing,” \$1,900,000, with \$320,603 to Blaauw, PI: Trevor Mudge, 11/2003-11/2007
- Intel Corporation, “VLSI Design Curriculum,” \$247,292, with \$61,823 to Blaauw, PI: Richard Brown, 10/2003-10/2004
- MARCO/DARPA - Gigascale Systems Research Center (GSRC), “Power Aware Systems,” \$600,000, PI: David Blaauw, 9/2003-9/2006
- IBM Corporation, Center for Advanced Studies, “Static Performance Analysis under Process and Environment Variations,” \$40,000, Faculty Award, 9/2003
- Intel Corporation, “Power Grid Integrity Analysis,” \$50,000, gift, 7/2003
- Semiconductor Research Corporation (SRC), “Analysis and Reduction of Simultaneous Gate-Oxide Tunneling and Subthreshold Leakage Current,” \$360,000, with \$160,000 to Blaauw, PI: David Blaauw, 7/2003-7/2006
- National Science Foundation (NSF), “Performance Analysis and Optimization for Nanometer Design,” \$375,000, PI: David Blaauw, 6/2003-6/2006

- ARM, Ltd, “Low Power Computing for Embedded Applications,” \$240,000, with \$60,000 to Blaauw, PI: Trevor Mudge, 5/2003-5/2004
- IBM Corporation, Center for Advanced Studies, “Leakage Characterization and Analysis,” \$40,000, Faculty Award, 9/2002
- National Science Foundation (NSF), Information Technology Research (ITR), “Methodologies for Robust Design of Information Systems under Multiple Sources of Uncertainty”, \$1,800,00 with \$450,000 to Blaauw, PI: David Blaauw, 8/2002-8/2006
- Intel Corporation, “Power Grid Integrity Analysis,” \$50,000, gift, 7/2002
- MARCO/DARPA - Giga-Scale Research Center (GSRC), “Power Management for Nanometer design,” \$197,000, PI: David Blaauw, 10/2001-8/2003
- Semiconductor Research Corporation (SRC), “Variability in Chip-Level Performance and Signal Integrity Verification,” \$257,000, PI: David Blaauw, 10/2001-10/2004

IV Teaching Experience

<u>Semester</u>	<u>Class</u>	<u>Course Number</u>	<u>Size</u>	<u>Rating (out of 5) Course/Instructor</u>
Winter 2021	Advanced VLSI Design	EECS 627	27	4.3/4.2
Winter 2020	Advanced VLSI Design	EECS 627	26	4.5/4.3
Winter 2019	Advanced VLSI Design	EECS 627	24	4.5/4.6
Winter 2018	Advanced VLSI Design	EECS 627	18	4.08/4.75
Fall 2016	VLSI Design I	EECS 427	36	4.85/4.91
Fall 2015	Digital Integrated Circuits	EECS 312	35	4.58/4.81
Fall 2014	Advanced VLSI Design II	EECS 628	26	4.86/4.90
Winter 2014	Advanced VLSI Design	EECS 627	38	4.77/4.77
Fall 2013	VLSI Design I	EECS 427	39	4.74/4.78
Winter 2013	Introduction to Electronic Circuits	EECS 215	120	3.56/4.09
Winter 2012	Advanced VLSI Design	EECS 627	37	4.87/4.87
Fall 2011	VLSI Design I (Section 2)	EECS 427	18	4.79/4.79
Fall 2011	VLSI Design I (Section 1)	EECS 427	35	4.83/4.83
Winter 2011	Advanced VLSI Design	EECS 427	9	4.88/4.88
Fall 2010	Advanced VLSI Design II	EECS 628	19	4.81/5.00
Winter 2010	Advanced VLSI Design	EECS 627	19	4.85/4.96
Winter 2009	Advanced VLSI Design	EECS 627	23	4.75/4.75
Fall 2008	VLSI Design I	EECS 427	28	4.67/4.56
Winter 2007	Advanced VLSI Design	EECS 627	20	4.79
Fall 2006	VLSI Design I	EECS 427	31	4.89
Winter 2006	Advanced VLSI Design	EECS 627	22	4.55
Fall 2005	Topics in VLSI Design	EECS 598	12	4.25

Winter 2005	Advanced VLSI Design	EECS 627	20	4.79
Winter 2004	Advanced VLSI Design	EECS 627	35	4.59
Fall 2003	Introduction to Logic Design	EECS 270	87	4.77
Winter 2003	Advanced VLSI Design	EECS 627	36	4.61
Fall 2002	Introduction to Logic Design	EECS 270	109	4.77
Winter 2002	Advanced VLSI Design	EECS 627	40	4.31
Fall 2001	Issues in High-Performance Deep-Submicron Design	EECS 598	11	4.75

V Publications

A. Books

1. Ashish Srivastava, Dennis Sylvester and David Blaauw, *Statistical Analysis and Optimization for VLSI: Timing and Power*, Kluwer Academic Publishers, 2005

B. Book Chapters

1. Sechang Oh, Yao Shi, Gyouho Kim, Yejoong Kim, Taewook Kang, Seok Hyeon Jeong, Dennis Sylvester, David Blaauw, “Low-Power Resistive Bridge Readout Circuit Integrated in Two Millimeter-Scale Pressure-Sensing Systems,” in *Low-Power Analog Techniques, Sensors for Mobile Devices, and Energy Efficient Amplifiers : Advances in Analog Circuit Design 2018*, K. A. A. Makinwa, A. Baschiroto, and P. Harpe, Eds. Springer International Publishing, 2019
2. Sechang Oh, Wanyeong Jung, Hyunsoo Ha, Jae-Yoon Sim, David Blaauw, “Energy-Efficient CDCs for Millimeter Sensor Nodes,” in *Efficient Sensor Interfaces, Advanced Amplifiers and Low Power RF Systems : Advances in Analog Circuit Design 2015*, K. A. A. Makinwa, A. Baschiroto, and P. Harpe, Eds. Springer International Publishing, 2016
3. Shidhartha Das, David Roberts, David Blaauw, David Bull, Trevor Mudge, “Architectural Techniques for Adaptive Computing”, Chapter in *Adaptive Techniques for Dynamic Processor Optimization: Theory and Practice*, Alice Wang and Sam Naffziger, editors, Springer Publishing Company, 2008
4. David Blaauw, Sanjay Pant, Rajat Chaudhry and Rajendran Panda, “Design and Analysis of Power Supply Networks,” Chapter in *Electronic Design Automation for Integrated Circuits Handbook*, Louise Sheffer, Luciano Lavagno and Grant Martin, editors, CRC Press, 2005
5. Sarvesh Kulkarni, Ashish Srivastava, Dennis Sylvester, David Blaauw, “Power Optimization Techniques using Multiple Supply Voltages,” Chapter in *Closing the Power Gap between ASIC and Custom*, David Chinnery and Kurt Keutzer, editors, Kluwer Academic Publishers, 2005
6. Dongwoo Lee, Bo Zhai, David Blaauw, Dennis Sylvester, “Static Leakage Reduction through Simultaneous $V_{T_{ox}}$ and State Assignment,” Chapter in *Ultra Low-Power Electronics and Design*, Enrico Macii, editor, Kluwer Academic Publishers, 2004
7. David Blaauw, Abhijit Dharchoudhury, Rajendran Panda, “Design and Analysis of Power Distribution Networks for Processor Design,” Chapter in *IEEE Design of High Performance Microprocessors Circuits*, Anantha Chandrakasan, William Bowhill, and Frank Fox, editors, IEEE Press, 2000
8. Abhijit Dharchoudhury, Shantanu Ganguly, David Blaauw, “Timing and Signal Integrity Analysis,” Chapter in *Handbook for VLSI Design*, Wai Kai Chen, editor, IEEE Press, 2000

C. Invited Articles

1. Li Xu, Jeongsup Lee, Mehdi Saligane, David Blaauw, Dennis Sylvester, “Design Techniques of Integrated Power Management Circuits for Low Power Edge Devices,” *IEEE Custom Integrated Circuits Conference (CICC)*, April 2021
2. Sechang Oh, Minchang Cho, Xiao Wu, Yejoong Kim, Li-Xuan Chuo, Wootae Lim, Pat Pannuto, Suyoung Bang, Kaiyuan Yang, Hun-Seok Kim, Dennis Sylvester, David Blaauw, “IoT2 — the Internet of Tiny Things: Realizing mm-Scale Sensors through 3D Die Stacking,” *ACM/IEEE Design Automation and Test in Europe Conference (DATE)*, March 2019, pgs. 686-691

3. David Blaauw, “Unlocking New IoT Application Domains Through Ultra-Low Power mm-Scale Sensor Node Design,” Keynote Address at ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED), July 2018
4. Taekwang Jang, Gyouho Kim, Benjamin Kempke, Michael Henry, Nikolaos Chiotellis, Carl Pfeiffer, Dongkwun Kim, Yejoong Kim, Zhiyoong Foo, Hyeongseok Kim, Anthony Grbic, Dennis Sylvester, Hun-Seok Kim, David Wentzloff, David Blaauw, “Circuit and System Designs of Ultra-low Power Sensor Nodes with illustration in a miniaturized GNSS Logger for Position Tracking: Part I—Analog Circuit Techniques,” *IEEE Transactions on Circuits and Systems I (TCAS-I)*, Vol. 64, No. 9, September 2017, pgs. 2237-2249
5. Taekwang Jang, Gyouho Kim, Benjamin Kempke, Michael Henry, Nikolaos Chiotellis, Carl Pfeiffer, Dongkwun Kim, Yejoong Kim, Zhiyoong Foo, Hyeongseok Kim, Anthony Grbic, Dennis Sylvester, Hun-Seok Kim, David Wentzloff, David Blaauw, “Circuit and System Designs of Ultra-low Power Sensor nodes with Illustration in a Miniaturized GNSS Logger for Position Tracking: Part II—Data Communication, Energy Harvesting, Power Management and Digital Circuits,” *IEEE Transactions on Circuits and Systems I (TCAS-I)*, Vol. 64, No. 9, September 2017, pgs. 2250-2262
6. Wanyeong Jung, Dennis Sylvester, David Blaauw, “Low-Power Switched-Capacitor Converter Techniques for Small IoT Systems,” European Conference on Circuit Theory and Design (ECCTD), September 2017
7. Taekwang Jang, Myungjoon Choi, Yao Shi, Inhee Lee, Dennis Sylvester and David Blaauw, “Millimeter-Scale Computing Platform for Next Generation of Internet of Things,” IEEE International Conference on RFID (RFID), May 2016
8. Taekwang Jang, Seokhyeon Jeong, Myungjoon Choi, Wanyeong Jung, Gyouho Kim, Yen-Po Chen, Yejoong Kim, Wootae Lim, Dennis Sylvester, David Blaauw, “Key Building Blocks and Integration Strategy of a Miniaturized Wireless Sensor Node,” IEEE European Solid-State Circuits Conference (ESSCIRC), September 2015
9. Nathaniel Pinckney, David Blaauw, Dennis Sylvester, “Low Power Near-Threshold Design,” IEEE Solid-State Circuits Magazine, June 2015
10. Inhee Lee, Yejoong Kim, Suyoung Bang, Gyouho Kim, Hyunsoo Ha, Yen-Po Chen, Dongsuk Jeon, Seokhyun Jeong, Wanyeong Jung, Mohammad Hassan Ghaed, Zhiyoong Foo, Yoonmyung Lee, Jae-Yoon Sim, Dennis Sylvester, and David Blaauw, “Circuit Techniques for Miniaturized Bio-medical Sensors,” IEEE Custom Integrated Circuits Conference (CICC), September 2014
11. David Blaauw, Dennis Sylvester, Prabal Dutta, Yoonmyung Lee, Inhee Lee, Sechang Bang, Yejoong Kim, Gyouho Kim, Pat Pannuto, Ye-Shang Kuo, Dongmin Yoon, Wanyeong Jung, ZhiYoong Foo, Yen-Po Chen, Seok Hyeon Jeong, Myungjoon Choi, “IoT Design Space Challenges: Circuits and Systems” 2014 IEEE Symposium on VLSI Technology, June 2014
12. Yoonmyung Lee, Dennis Sylvester, David Blaauw, “Circuits for Ultra-Low Power Millimeter-Scale Sensor Nodes,” 2012 Asilomar Conference on Signals, Systems and Computers (Asilomar), November 2012
13. David Blaauw, Dennis Sylvester, Yoonmyung Lee, Inhee Lee, Suyoung Bang, Yejoong Kim, Gyouho Kim, Hassan Ghaed, “From Digital Processors to Analog Building Blocks: Enabling New Applications through Ultra-Low Voltage Design,” **Invited paper** to the IEEE Subthreshold Microelectronics Conference (SubVt), Plenary Keynote, October 2012
14. Nathaniel Pinckney, Korey Sewell, Ronald Dreslinski, Dave Fick, David Blaauw, Dennis Sylvester, Trevor Mudge, “Assessing the Performance of Parallelized Near-Threshold Computing,” ACM/IEEE Design Automation Conference (DAC), June 2012

15. Yoonmyung Lee, YeJoong Kim, Dongmin Yoon, David Blaauw, Dennis Sylvester, "Circuit and System Design Guidelines for Ultra-Low Power Sensor Nodes," ACM/IEEE Design Automation conference (DAC), June 2012
16. Yoonmyung Lee, Dennis Sylvester, David Blaauw, "Synchronization of Ultra-Low Power Wireless Sensor Nodes", *IEEE International Midwest Symposium on Circuits and Systems (MWSCAS)*, August 2011
17. Gregory Chen, Scott Hanson, David Blaauw, Dennis Sylvester, "Circuit Design Advances for Wireless Sensing Applications," Proceedings of the IEEE, Special Issue on Wireless Sensor Networks, Vol. 98, No. 11, November 2010, pg. 1808 - 1827
18. Prashant Singh, Dennis Sylvester, David Blaauw, "Adaptive Sensing and Design for Reliability," IEEE International Reliability Physics Symposium, May 2010
19. Ronald G. Dreslinski, Michael Wiecekowsk, David Blaauw, Dennis Sylvester, Trevor Mudge, "Near-Threshold Computing: Reclaiming Moore's Law Through Energy Efficient Integrated Circuits," Proceedings of the IEEE, Special Issue on Ultra-Low Power Circuit Technology, Vol. 98, No. 2, February 2010, pg. 253 - 266
20. Prashant Singh, Cheng Zhuo, Eric Karl, David Blaauw, Dennis Sylvester, "Sensor Driven Reliability and Wearout Management," *IEEE Design and Test of Computers (D&T)*, Vol. 26, No. 6, November/December 2009, pg. 40 - 49
21. David Blaauw, Shidhartha Das, "CPU, Heal Thyself," IEEE Spectrum, August 2009
22. Shidhartha Das, David Blaauw, David Bull, Krisztian Flautner, Rob Aitken, "Addressing Design Margins through Error-tolerant Circuits," ACM/IEEE Design Automation Conference (DAC), July 2009
23. Shidhartha Das, David Blaauw, "Adaptive Design for Nanometer Technology," IEEE International Symposium on Circuits and Systems (ISCAS), May 2009
24. Dennis Sylvester, Scott Hanson, Seok, Yu-Shiang Lin, David Blaauw, "Designing Robust Ultra-Low Power Circuits," International Electron Devices Meeting (IEDM), December 2008
25. David Blaauw, Kaviraj Chopra, Ashish Srivastava, Lou Sheffer, "Statistical Timing Analysis: Basic Principles to State-of-the-Art," *Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, invited review article, Vol. 27, No. 4, April 2008, pg. 589-607
26. Scott Hanson, Bo Zhai, David Blaauw, Dennis Sylvester, "Energy-Optimal Circuit Design," IEEE International SoC Design Conference, November 2007
27. Sanjay Pant, Eli Chiprout, David Blaauw, "Power Grid Physics and Implications for CAD," *IEEE Design and Test of Computers (D & T)*, Vol. 24, No. 3, May-June 2007, pg. 246-254
28. Dennis Sylvester, Scott Hanson, Bo Zhai, and David Blaauw, "Design strategies for ultra-low voltage circuits," IEEE International SoC Design Conference, September 2006
29. Scott Hanson, Bo Zhai, David Blaauw, Dennis Sylvester, Andres Bryant, Xinlin Wang, "Energy Optimality and Variability in Subthreshold Design," ACM/IEEE International Symposium on Low-Power Electronics and Design (ISLPED), September 2006
30. Shidhartha Das, David Roberts, Seokwoo Lee, Sanjay Pant, David Blaauw, Todd Austin, Trevor Mudge, Krisztián Flautner, "A Self-Tuning Dynamic Voltage Scaled Processor Using Delay-Error Detection and Correction," IEEE International Conference on Integrated Circuit Design & Technology (ICICDT), May 2006
31. David Blaauw and Bo Zhai, "Energy Efficient Design for Subthreshold Supply Voltage Operation," IEEE International Symposium on Circuits and Systems (ISCAS), May 2006

32. Rajeev R. Rao, David Blaauw, Dennis Sylvester, Anirudh Devgan, "Modeling and Analysis of Parametric Yield Under Power and Performance Constraints," *IEEE Design and Test of Computers (D&T)*, Vol. 22, No. 4, July-August 2005, pg. 376-385
33. Todd Austin, Valeria Bertacco, David Blaauw, Trevor Mudge, "Opportunities and Challenges for Better Than Worst-Case Design," ACM/IEEE Asia-Pacific Design Automation Conference (ASP-DAC), January 2005, pg. I-2
34. Bo Zhai, David Blaauw, Dennis Sylvester, Krisztián Flautner, "Extended Dynamic Voltage Scaling for Low Power Design," IEEE International SOC Conference, September 2004, pg. 389-394
35. Todd Austin, David Blaauw, Trevor Mudge, Krisztián Flautner, "Making Typical Silicon Matter with Razor" *IEEE Computer*, March 2004, pg. 57-65
36. David Blaauw, Kaushik Gala, "Inductance: Implications and Solutions for High-Speed Digital Circuits - Inductance Extraction and Modeling," IEEE International Solid-State Circuits Conference (ISSCC), February 2002, pg. 548-553
37. David Blaauw, "Signal Integrity Issues in High Performance Design," IEEE International Workshop on Power and Timing Modeling, Optimization and Simulation (Patmos), September 2001, pg. 5.1.1-5.1.4
38. Kaushik Gala, David Blaauw, Junfeng Wang, Vladimir Zolotov, Min Zhao, "Inductance 101: Analysis and Design Issues," ACM/IEEE Design Automation Conference (DAC), June 2001, pg. 329-334
39. David Blaauw, Kaushik Gala, Vladimir Zolotov, Rajendran Panda, Junfeng Wang, "On-Chip Inductance Modeling," ACM/IEEE Great Lake Symposium on VLSI Design (GLSVLSI), March 2000, pg. 75-80
40. David Blaauw, "Power Management Issues in High Performance Processor Design," IEEE Alessandro Volta Workshop on Low-Power Design (VOLTA), March 1999, pg. 2
41. David Blaauw, Abhijit Dharchoudhury, Rajendran Panda, Supamas Sirichotiyakul, Chanhee Oh, Tim Edwards, "Industrial Perspectives on Emerging CAD Tools for Low Power Processor Design," ACM/IEEE International Symposium on Low-Power Electronics and Design (ISLPED), August 1998, pg. 143-148
42. Abhijit Dharchoudhury, Rajendran Panda, David Blaauw, Ravi Vaidyanathan, Bogdan Tutuianu, David Bearden, "Methodology for the Design and Analysis of Power Distribution Networks on the PowerPC Microprocessor," ACM/IEEE Design Automation Conference (DAC), June 1998, pg. 738-743

D. Journals

1. Cindy S. Bick, Inhee Lee, David Blaauw, Trevor Coote, Amanda E. Haponski, and Diarmaid Ó Foighil, "Millimeter-sized smart sensors reveal that a solar refuge protects tree snail *Partula hyalina* from extirpation," *Communications Biology*, accepted
2. Li Xu, David Blaauw and Dennis Sylvester, "Ultra-Low Power 32kHz Crystal Oscillators: Fundamentals and Design Techniques," *Open Journal of the Solid-State Circuits Society*, accepted
3. Ji-Hwan Seol, Kyojin Choo, David Blaauw, Dennis Sylvester, Taekwang Jang, "A Reference Oversampling PLL achieving -256 -dB FoM and -78 -dBc Reference Spur," *IEEE Journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on ASSCC 2020*, Vol. 56, No. 10, October 2021, pgs. 2993-3007

4. Li Xu, Kyojin Choo, David Blaauw, Dennis Sylvester, "An Analog-Assisted Digital LDO with Single Subthreshold Output PMOS Achieving 1.44fs FOM," *IEEE Solid-State Circuits Letters*, August 2021, pgs. 154 - 157
5. Li Xu, Taekwang Jang, Jongyup Lim, Kyojin Choo, David Blaauw, and Dennis Sylvester, "A 510pW 32kHz Crystal Oscillator with High Energy-to-Noise-Ratio Pulse Injection," *IEEE Journal of Solid-State Circuits (JSSC)*, July 2021
6. Jongyup Lim, Jungho Lee, Eunseong Moon, Michael Barrow, Gabriele Atzeni Joseph Letner, Joseph Costello, Samuel R. Nason, Paras R. Patel, Parag G. Patil, Hun-Seok Kim, Cynthia A. Chestek, Jamie Phillips, David Blaauw, Dennis Sylvester, Taekwang Jang, "A Light Tolerant Neural Recording IC for Near-Infrared-Powered Free Floating Motes," *IEEE Journal of Solid-state Circuits (JSSC)*, **Invited Paper** to the *Special Issue on VLSI 2021*, June 2021
7. Rohit Rothe, Minchang Cho, Kyojin Choo, Seokhyeon Jeong, Sechang Oh, Dennis Sylvester, David Blaauw, "A 192 nW 0.02 Hz High Pass Corner Acoustic Analog Front-End with Automatic Saturation Detection and Recovery," *IEEE Journal of Solid-state Circuits (JSSC)*, **Invited Paper** to the *Special Issue on VLSI 2021*, June 2021
8. Najme Ebrahimi, Hun Seok Kim, David Blaauw, "Physical Layer Secret Key Generation Using Joint Interference and Phase-Shift Keying Modulation" *IEEE Transaction on Microwave Theory and Techniques (TMTT)*, Vol. 69, No. 5, May 2021, pgs. 2673-2685
9. Eunseong Moon, Michael Barrow, Jongyup Lim, Jungho Lee, Samuel Nason, Joseph Costello, Hun Seok Kim, Cynthia Chestek, Taekwang Jang, David Blaauw, Jamie Phillips, "Bridging the Last Millimeter Gap of Brain-Machine Interfaces via Near-Infrared Wireless Power Transfer and Data Communications," *ACS Photonics*, Vol. 8, No. 5, April 2021, pgs. 1430–1438
10. Xiao Wu, Arun Subramaniyan, Zhehong Wang, Satish Narayanasamy, Reetuparna Das, David Blaauw, "A High-Throughput Pruning-based Pair-Hidden-Markov-Model Hardware Accelerator for Next-Generation DNA Sequencing," *IEEE Solid-State Circuits Letters*, **Invited Paper** to the *Special Issue on VLSI 2020*, Vol. 4, 2021, pgs. 31-35
11. Ziyun Li, Zhehong Wang, Li Xu, Qing Dong, Bowen Liu, Chin-I Su, Wen-Ting Chu, George Tsou, Yu-Der Chih, Tsung-Yung Jonathan Chang, Dennis Sylvester, Hun-Seok Kim, David Blaauw, "RRAM-DNN: An RRAM and Model-Compression Empowered All-Weights-on-Chip DNN Accelerator," *IEEE Journal of Solid-state Circuits (JSSC)*, **Invited Paper** to the *Special Issue on VLSI 2020*, Vol. 56, No. 4, April 2021, pgs. 1105-1115
12. Jingcheng Wang, Hyochan An, Qirui Zhang, Hun Seok Kim, David Blaauw, Dennis Sylvester, "A 40nm Ultra-low Leakage Voltage-Stacked SRAM for Intelligent IoT Sensors," *IEEE Solid-State Circuits Letters*, **Invited Paper** to the *Special Issue on VLSI 2020*, April 2021, Vol. 4, 2021, pgs. 14-17
13. Hyochan An, Sam Schiferl, Siddharth Venkatesan, Tim Wesley, Qirui Zhang, Jingcheng Wang, Kyojin Choo, Shiyu Liu, Bowen Liu, Ziyun Li, Luyao Gong, Hengfei Zhong, David Blaauw, Ronald Dreslinski, Hun Seok Kim, Dennis Sylvester, "An Ultra-low-power Image Signal Processor for Hierarchical Image Recognition with Deep Neural Networks," *IEEE Journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on VLSI 2020*, Vol. 56, No. 4, April 2021, pgs. 1071-1081
14. Zhehong Wang, Tianjun Zhang, Daichi Fujiki, Arun Subramaniyan, Xiao Wu, Makoto Yasuda, Satoru Miyoshi, Masaru Kawaminami, Reetuparna Das, Satish Narayanasamy, David Blaauw, "A 2.46M reads/s Seed-Extension Accelerator for Next-Generation-Sequencing using a String-Independent PE Array," *IEEE Solid-State Circuits Letters*, **Invited Paper** to the *Special Issue on CICC 2020*, Vol. 56, No. 3, March 2021, pgs. 824-833

15. Ji-Hwan Seol, Kyojin Choo, David Blaauw, Dennis Sylvester, Taekwang Jang, "A 67-fs_{rms} Jitter, -130 dBc/Hz In-Band Phase Noise, -256-dB FoM Reference Oversampling Digital PLL With Proportional Path Timing Control," *IEEE Solid-State Circuits Letters*, **Invited Paper** to the Special Issue on ASSCC 2020, Vol. 3, September 2020, pg. 430-433
16. Eunseong Moon, Michael Barrow, Jongyup Lim, David Blaauw, Jamie D. Phillips, "Dual-Junction GaAs Photovoltaics for Low Irradiance Wireless Power Transfer in Sub Millimeter-scale Sensor Nodes," *IEEE Journal of Photovoltaics*, Vol. 10, No. 6, November 2020, pg. 1721-1726
17. Samuel R. Nason, Alex K. Vaskov, Matthew S. Willsey, Elissa J. Welle, Hyochan An, Philip P. Vu, Autumn J. Bullard, Chrono S. Nu, Jonathan C. Kao, Krishna V. Shenoy, Taekwang Jang, Hun-Seok Kim, David Blaauw, Parag G. Patil, Cynthia A. Chestek, "A low-power band of neuronal spiking activity dominated by local single units improves the performance of brain-machine interfaces," *Nature Biomedical Engineering*, Vol. 4, July 2020, pg. 973-983
18. Jeongsup Lee, Mehdi Saligane, David Blaauw and Dennis Sylvester, "A 0.3V to 1.8-3.3V Leakage-Biased Synchronous Level Converter for ULP SoCs," *IEEE Solid-State Circuits Letters*, Vol. 3, July 2020, pg. 130 - 133
19. Samuel R. Nason, Alex K. Vaskov, Matthew S. Willsey, Elissa J. Welle, Hyochan An, Philip P. Vu, Autumn J. Bullard, Chrono S. Nu, Jonathan C. Kao, Krishna V. Shenoy, Taekwang Jang, Hun-Seok Kim, David Blaauw, Parag G. Patil, and Cynthia A. Chestek. "A low-power band of neuronal spiking activity dominated by local single-unit spikes improves the performance of brain-machine interfaces." *Nature Biomedical Engineering*, Vol. 4, October 2020, pg. 973-983
20. Li-Xuan Chuo, Zhen Feng, Yejoong Kim, Nikolaos Chiotellis, Makoto Yasuda, Satoru Miyoshi, Masaru Kawaminami, Anthony Grbic, David Wentzloff, David Blaauw, and Hun-Seok Kim, "Millimeter-Scale Node-to-Node Radio Using a Carrier Frequency Interlocking IF Receiver for a Fully Integrated 4x4x4mm³ Wireless Sensor Node," *IEEE Journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on RFIC 2019*, Volume: 55, No. 5, May 2020, pg. 1128 - 1138
21. Dong-Hyeon Park, Subhankar Pal, Siying Feng, Paul Gao, Jielun Tan, Austin Rovinski, Shaolin Xie, Chun Zhao, Aporva Amarnath, Timothy Wesley, Jonathan Beaumont, Kuan-Yu Chen, Chaitali Chakrabarti, Michael Taylor, Trevor Mudge, David Blaauw, Hun-Seok Kim, Ronald Dreslinski, "A 7.3 M Output Non-Zeros/J, 11.7 M Output Non-Zeros/GB Reconfigurable Sparse Matrix-Matrix Multiplication Accelerator," *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on VLSI 2019*, Vol. 55, No. 4, April 2020, pg. 933-944
Jeongsup Lee, Yiqun Zhang, Qing Dong, Wooteak Lim, Mehdi Saligane, Yejoong Kim, Seokhyeon Jeong, Jongyup Lim, Makoto Yasuda, Satoru Miyoshi, Masaru Kawaminami, David Blaauw, Dennis Sylvester, "A Self-Tuning IoT Processor Using Leakage-Ratio Measurement for Energy Optimal Operation," *IEEE Journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on ISSCC 2019*, Vol. 55, No. 1, January 2020, pg. 87 - 97
22. Jingcheng Wang, Xiaowei Wang, Charles Eckert, Arun Subramaniyan, Reetuparna Das, David Blaauw, Dennis Sylvester, "A 28-nm Compute SRAM with Bit-Serial Logic/Arithmetic Operations for Programmable In-Memory Vector Computing," *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on ISSCC 2019*, Vol. 55, No. 1, January 2020, pg. 76 - 86
23. Yimai Peng, David Kyojin Choo, Sechang Oh, Inhee Lee, Taekwang Jang, Yejoong Kim, Jongyup Lim, David Blaauw, Dennis Sylvester, "An Efficient Piezoelectric Energy Harvesting Interface Circuit Using a Sense-and-Set Rectifier," *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on ISSCC 2019*, Vol. 54, No. 12, December 2019, pg. 3348-3361

24. Kyojin D. Choo, Li Su, Yejoong Kim, Ji-Hwan Seol, Xiao Wu, Dennis Sylvester, David Blaauw, “Energy-Efficient Motion-Triggered IoT CMOS Image Sensor with Capacitor Array-Assisted Charge-Injection SAR ADC,” *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on ISSCC 2019*, Vol. 54, No. 11, November 2019, pg. 2921-2931
25. Sechang Oh, Minchang Cho, Zhan Shi, Jongyup Lim, Yejoong Kim, Seokhyeon Jeong, Yu Chen, Rohit Rothe, David Blaauw, Hun-Seok Kim, Dennis Sylvester, “An Acoustic Signal Processing Chip With 142-nW Voice Activity Detection Using Mixer-Based Sequential Frequency Scanning and Neural Network Classification,” *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on ISSCC 2019*, Vol. 54, No. 11, November 2019, pg. 3005-3016
26. Paolo Bollella, Inhee Lee, David Blaauw, Evgeny Katz, “A Microelectronic Sensor Device Powered by a Small Implantable Biofuel Cell †,” *ChemPhysChem*, **Selected as a VIP article**, Vol. 21, August 2019 pg. 120 –128
27. Ziyun Li, Jingcheng Wang, Dennis Sylvester, David Blaauw, Hun Seok Kim “A 1920 × 1080 25-Frames/s 2.4-TOPS/W Low-Power 6-D Vision Processor for Unified Optical Flow and Stereo Depth with Semi-Global Matching,” *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on VLSI 2017*, Vol. 54, No. 4, April 2019, pg. 1048-1058
28. Junwon Jeong, Seokhyeon Jeong, Dennis Sylvester, David Blaauw, and Chulwoo Kim, “A 42 nJ/conversion On-Demand State-of-Charge Indicator for Miniature IoT Li-ion Batteries,” *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, Vol. 54, No. 2, February 2019, pg. 524-537
29. Eunseong Moon, Inhee Lee, David Blaauw and Jamie D. Phillips, “High-Efficiency Photovoltaic Modules on a Chip for Millimeter-Scale Energy Harvesting,” *Progress in Photovoltaics: Research and Applications*, No. 27, February 2019, pg. 540–546
30. Qing Dong, Zhehong Wang, Jongyup Lim, Yiqun Zhang, Mahmut E. Sinangil, Yi-Chun Shih, Yuder Chih, Jonathan Chang, David Blaauw, Dennis Sylvester, “A 1Mb 28nm 1T1MTJ STT-MRAM with Single-Cap Offset-Cancelled Sense Amplifier and In-situ Self-Write-Termination,” *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, Vol. 54, No. 1, January 2019, pg. 231-239
31. Ziyun Li, Jiang Xiang, Luyao Gong, David Blaauw, Chaitali Chakrabarti, Hun Seok Kim “Low Complexity, Hardware-Efficient Neighbor-Guided SGM Optical Flow for Low Power Mobile Vision Applications,” *IEEE Transactions on Circuits and Systems for Video Technology*, Vol. 29, No. 7, July 2018, pg. 2191-2204
32. Pat Pannuto, Benjamin Kempke, Li-Xuan Chuo, David Blaauw, Prabal Dutta, “Harmonium: Ultra Wideband Pulse Generation with Bandstitched Recovery for Fast, Accurate, and Robust Indoor Localization,” *ACM Transactions on Sensor Networks*, Vol. 14, No. 2, June 2018
33. Yiqun Zhang, Li Xu, Qing Dong, Jingcheng Wang, Kaiyuan Yang, Supreet Jeloka, David Blaauw, Dennis Sylvester “Recryptor: A Reconfigurable Cryptographic Cortex-M0 Processor with In-Memory and Near-Memory Computing for IoT Security,” *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on VLSI 2017*, Vol. 53, No. 4, April 2018, pg. 995-1005
34. Qing Dong, Supreet Jeloka, Mehdi Saligane, Yejoong Kim, Masaru Kawaminami, Akihiko Harada, Satoru Miyoshi, Makoto Yasuda, David Blaauw, Dennis Sylvester “A 4+2T SRAM for Searching and In-Memory Computing with 0.3V VDDmin,” *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on VLSI 2017*, Vol. 53, No. 4, April 2018, pg. 1006-1015

35. Yiqun Zhang, Mahmood Khayatzadeh, Kaiyuan Yang, Mehdi Saligane, Nathaniel Pinckney, Massimo Alioto, David Blaauw, Dennis Sylvester, "iRazor: Current-Based Error Detection and Correction for PVT Variation Tolerance in 40-nm ARM Cortex-R4 Processor," *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, Vol. 53No. 2, February 2018, pg. 619-631
36. Maria Gamella, Inhee Lee, Nataliia Guz, David Blaauw, Evgeny Katz, "Bioelectronic Interface between Biomolecular Logic Systems and Microelectronics," *International Journal of Unconventional Computing*, Vol. 14, No. 1, January 2018, pg. 27-41
37. Taekwang Jang, Seokhyeon Jeong, Dongsuk Jeon, Kyojin Choo, Dennis Sylvester, David Blaauw, "A Noise Reconfigurable All Digital Phase Locked Loop using a Switched Capacitor based Frequency Locked Loop and a Noise Detector," *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on ISSCC 2017*, Vol. 53, No. 1, January 2018, pg. 50-65
38. Xiao Wu, Kyojin Choo, Yao Shi, Li-Xuan Chuo, Dennis Sylvester, David Blaauw, "A Fully Integrated Counter Flow Energy Reservoir for Peak Power Delivery in Small Form-Factor Sensor Systems," *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, **Invited paper** to the *Special issue on ISSCC 2017*, Vol. 52, No. 12, December 2017, pg. 3155-3167
39. Kaiyuan Yang, David Blaauw, Dennis Sylvester, "Hardware Designs for Security in Ultra-Low-Power IoT Systems – An Overview and Survey," *IEEE Micro on Ultra Low Power Processors*, Vol. 37, No. 6, November 2017, pg. 72-89
40. Ziyun Li, Qing Dong, Mehdi Saligane, Benjamin Kempke, Luyao Gong, Zhengya Zhang, Ron Dreslinski, David Blaauw, Hun Seok Kim, "A 1920×1080 30-frames/s 2.3 TOPS/W Stereo-Depth Processor for Energy-Efficient Autonomous Navigation of Micro Aerial Vehicles," *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on ISSCC 2017*, Vol. 53, No. 1, September 2017, pg. 76-90
41. Eunseong Moon, David Blaauw, Jamie Phillips, "Infrared Energy Harvesting in mm-Scale GaAs Photovoltaics," *IEEE Transactions on Electron Devices (T-ED)*, Vol. 64, No. 11, September 2017, pg. 4554-4560
42. Eunseong Moon, David Blaauw, Jamie Phillips, "Subcutaneous Photovoltaic Infrared Energy Harvesting for Bio-Implantable Devices," *IEEE Transactions on Electron Devices (T-ED)*, Vol. 64, No. 5, May 2017, pg. 2432-237
43. Qing Dong, Kaiyuan Yang, Laura Fick, David Fick, David Blaauw, Dennis Sylvester "Low-Power and Compact Analog-to-Digital Converter Using Spintronic Racetrack Memory Devices," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 25, No. 3, March 2017, pgs. 907-918
44. Minseob Shim, Seokhyeon Jeong, Paul Myers, Suyoung Bang, Chulwoo Kim, Dennis Sylvester, David Blaauw, Wanyeong Jung, "Edge-Pursuit Comparator: An Energy-Scalable Oscillator Collapse-Based Comparator with Application in a 74.1dB SNDR, 20kS/s 15b SAR ADC," *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on VLSI 2015*, Vol. 52, No. 4, April 2017, pg. 1077-1090
45. Xiao Wu, Yao Shi, Supreet Jeloka, Kaiyuan Yang, Inhee Lee, Yoonmyung Lee, Dennis Sylvester, David Blaauw, "A 20pW Discontinuous Switched-Capacitor Energy Harvester for Smart Sensor Applications," *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on VLSI 2016*, Vol. 52, No. 4, January 2017, pgs. 972-984
46. Inhee Lee, Dennis Sylvester, David Blaauw "A Subthreshold Voltage Reference with Scalable Output Voltage for Low-Power IoT Systems," *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, No. 9, January 2017, pg. 1-7

47. Myungjoon Choi, Taekwang Jang, Junwong Jeong, Seokhyeong Jeong, David Blaauw, Dennis Sylvester, "A Resonant Current-Mode Wireless Power Receiver and Battery Charger With -32 dBm Sensitivity for Implantable Systems," *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on ISSCC 2016*, Vol. 51, No. 51, December 2016, pg. 2880-2892
48. Mohit Shah, Sairam Arunachalam, Jingcheng Wang, David Blaauw, Dennis Sylvester, Hun-Seok Kim, Jae-sun Seo, Chaitali Chakrabarti, "A Fixed-Point Neural Network Architecture for Speech Applications on Resource Constrained Hardware," *Journal of Signal Processing*, November 2016, pg. 1-15
49. Eunseong Moon, David Blaauw, Jamie Phillips, "Small-area Si Photovoltaics for Low-Flux Infrared Energy Harvesting," *IEEE Transactions on Electron Devices (T-ED)*, Vol. 64, No. 1, November 2016, pg. 15-20
50. Inhee Lee, Yoonmyung Lee, Dennis Sylvester, David Blaauw, "Battery Voltage Supervisors for Miniature IoT Systems," *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, Vol. 51, No. 11, November 2016, pg. 2743-2756
51. Nathaniel Pinckney, Lucian Shifren, Brian Cline, Saurabh Sinha, Supreet Jeloka, Ron Dreslinski, Trevor Mudge, Dennis Sylvester, David Blaauw, "Impact of FinFET on Near-Threshold Voltage Scalability" *SI: Computing in the Dark Silicon Era issue of IEEE Design & Test*, Vol. 34, No. 2, November 2016, pg. 31-38
52. Yao Shi, Myungjoon Choi, Ziyun Li, Zhihong Luo, Gyouho Kim, Zhiyoong Foo, Hun-Seok Kim, David Wentzloff, David Blaauw, "A 10mm³ Inductive-Coupling Near-Field Radio for Syringe-Implantable Smart Sensor Nodes," *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, Vol. 51, No. 11, September 2016, pg. 2570-2583
53. Yajing Chen, Nikolaos Chiotellis, Li-Xuan Chuo, Carl Pfeiffer, Yao Shi, Ronald Dreslinski, Anthony Grbic, Trevor Mudge, David Wentzloff, David Blaauw, Hun Seok Kim, "Energy-Autonomous Wireless Communication for Millimeter-Scale Internet-of-Things Sensor Nodes," *JSAC - IEEE Journal on Selected Areas - Series on Green Communications and Networking*, No. 99, September 2016
54. Myungjoon Choi, Taekwang Jang, Suyoung Bang, Yao Shi, David Blaauw, Dennis Sylvester, "A 110nW Resistive Frequency Locked On-Chip Oscillator with 34.3 ppm/°C Temperature Stability for System-on-Chip Designs," *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, Vol. 51, No. 9, September 2016, pg. 2106-2118
55. Yoonmyung Lee, Dennis Sylvester, David Blaauw, "Ultra-Low Power Circuit Design for Wireless Sensor Nodes for Structural Health Monitoring," *IEEE Journal of Solid-State Circuits (JSSC)*, Vol. 104, No. 8, August 2016, pg. 1529-1546
56. Pat Pannuto, Yoonmyung Lee, Ye-Sheng Kuo, ZhiYoong Foo, Benjamin Kempke, Gyouho Kim, Ronald G. Dreslinski, David Blaauw, and Prabal Dutta, "MBus: A System Integration Bus for the Modular Microscale Computing Class," *Top Picks Special Issue of IEEE Micro*, Vol. 36, No. 3, May-June 2016, pg. 60-70
57. Supreet Jeloka, Naveen Akesh, Dennis Sylvester, and David Blaauw, "A 28nm configurable memory (TCAM / BCAM / SRAM) using push-rule 6T bit cell enabling logic-in-memory," *IEEE Journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on VLSI 2015*, Vol. 51, No. 4, April 2016, pg. 1009-1021
58. Kaiyuan Yang, David Blaauw, Dennis Sylvester, "An All-Digital Edge Racing True Random Number Generator Robust Against PVT Variations," *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, Vol. 51, No. 4, April 2016, pg. 1022-1031

59. Suyoung Bang, Jae-sun, Seo, Leland Chang, David Blaauw, Dennis Sylvester, "A Low Ripple Switched-Capacitor Voltage Regulator Using Flying Capacitance Dithering," *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, Vol. 51, No. 4, April 2016, pg. 919-929
60. Inhee Lee, Dennis Sylvester, and David Blaauw, "A Constant Energy-per-Cycle Ring Oscillator over Wide Frequency Range for Wireless Sensor Nodes," *IEEE Journal of Solid-State Circuits (JSSC)*, Vol. 51, No. 3, March 2016, pg. 697-711
61. Dongmin Yoon, Taekwang Jang, Dennis Sylvester, David Blaauw, "A 5.58 nW Crystal Oscillator Using Pulsed Driver for Real-Time Clocks," *IEEE Journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on ISSCC 2012*, Vol. 51, No. 2, February 2016, pgs. 509-522
62. Fabio Frustaci, David Blaauw, Dennis Sylvester, Massimo Alioto, "Approximate SRAMs with Dynamic Energy-Quality Management TVLSI-00402-2015.R1," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 55, January 2016, No 90, pg. 1-14
63. Suyoung Bang, David Blaauw, and Dennis Sylvester, "A Successive-Approximation Switched-Capacitor DC-DC Converter with Resolution of $V_{IN}/2N$ for a Wide Range of Input and Output Voltages," *IEEE Journal of Solid-State Solid-State Circuits (JSSC)*, Vol. 51, No. 2, January 2016, pg. 543-556
64. Seok Hyeon Jeong, Inhee Lee, David Blaauw, Dennis Sylvester, "A 5.8nW CMOS Wake-up Timer for Ultra-Low Power Wireless Applications" *IEEE Journal of Solid-State Circuits (JSSC)*, Vol. 50, No. 8, August 2015, pg. 1754-1763
65. Sechang Oh, Yoonmyung Lee, Jingcheng Wang, Zhiyong Foo, Yejoong Kim, David Blaauw, Dennis Sylvester, "Dual-Slope Capacitance to Digital Converter Integrated in an Implantable Pressure Sensing System," *IEEE Journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on ESSCIRC 2016*, Vol. 50, No. 7, July 2015, pg. 1581-1591
66. Alan S. Teran, Joeson Wong, Wootae Lim, Gyouho Kim, Yoonmyoung Lee, David Blaauw, Jamie D. Phillips, "AlGaAs Photovoltaics for Indoor Energy Harvesting in mm-Scale Wireless Sensor Nodes," *IEEE Transactions on Electron Devices (T-ED)*, Vol. 62, No. 7, June 2015, pg. 2170-2175
67. Fabio Frustaci, Mahmood Khayatzadeh, David Blaauw, Dennis Sylvester, Massimo Alioto, "SRAM for Error-Tolerant Applications with Dynamic Energy-Quality Management in 28nm CMOS," *IEEE Journal of Solid-State Circuits (JSSC)*, Vol. 50, No. 5, May 2015, pg. 1310 - 1323
68. Inhee Lee, Gyouho Kim, Suyoung Bang, Adriane Wolfe, Richard Bell, Seokhyeon Jeong, Yejoong Kim, Jeffrey Kagan, Meriah Arias-Thode, Bart Chadwick, Dennis Sylvester, David Blaauw, Yoonmyung Lee, "System-On-Mud: Ultra-Low Power Oceanic Sensing Platform Powered by Small-Scale Benthic Microbial Fuel Cells," *IEEE Transactions on Circuits and Systems I (TCAS-I)*, Vol. 62, No. 4, April 2015, pg. 1126-1135
69. Dong-Woo Jee, Dennis Sylvester, David Blaauw, Jae-Yoon Sim, "Digitally Controlled Leakage-Based Oscillator and Fast Relocking MDLL for Ultra Low Power Sensor Platform," *IEEE Journal of Solid-State Circuits (JSSC)*, Vol. 50, No. 5, May 2015, pg. 1-12
70. Edward A. Lee, Jan Rabaey, David Blaauw, Prabal Dutta, Kevin Fu, Carlos Guestrin, Bjorn Hartmann, Roozbeh Jafari, Doug Jones, John Kubiawicz, Vijay Kumar, Rahul Mangharam, Richard M. Murray, George Pappas, Kris Pister, Anthony Rowe, Alberto Sangiovanni-Vincentelli, Sanjit A. Seshia, Tajana Simunic Rosing, Ben Taskar, John Wawrzynek, David Wessel, "The Swarm at the Edge of the Cloud," *IEEE Design and Test*, Vol. 31, No. 3, April 2014, pg. 8-20
71. Yen-Po Chen, Dongsuk Jeon, Yoonmyung Lee, Yejoong Kim, Zhiyong Foo, Inhee Lee, Nicholas B. Langhals, Grant Kruger, Hakan Oral, Omer Berenfeld, Zhengya Zhang, David Blaauw, and

- Dennis Sylvester, "An Injectable 64nW ECG Mixed-Signal SoC in 65nm for Arrhythmia Monitoring," *IEEE Journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on ISSCC 2014*, Vol. 50, No. 1, January 2015, pg. 375-390
72. Wangyeong Jung, Sechang Oh, Suyoung Bang, Yoonmyung Lee, Zhiyoong Foo, Gyouho Kim, Yiquan Zhang, Dennis Sylvester, David Blaauw, "An Ultra-Low Power Fully Integrated Energy Harvester Based on Self-Oscillating Switched-Capacitor Voltage Doubler," *IEEE Journal of Solid-State Circuits (JSSC)*, Vol. 49, No. 12, December 2014, pg. 2800-2811
 73. Laura Fick, David Fick, Massimo Alioto, David Blaauw, Dennis Sylvester, "A 346 μ m² VCO-based, Reference-Free, Self-Timed Sensor Interface for Cubic-Millimeter Sensor Nodes in 28nm CMOS," *IEEE journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on ASSCC 2013*, Vol. 49, No. 11, November 2014, pg. 2462-2473
 74. Chia-Hsiang Chen, David Blaauw, Dennis Sylvester, Zhengya Zhang, "Design and Evaluation of Confidence-Driven Error-Resilient Systems," *IEEE Very Large Scale Integration Systems (TVLSI)*, Vol. 22, No. 8, August 2014, pg. 1727-1737
 75. Seokhyeon Jeong, Jae-Yoon Sim, David Blaauw, Dennis Sylvester, "A Fully-Integrated 71nW CMOS Temperature Sensor for Low Power Wireless Sensor Nodes," *IEEE Journal of Solid-State Circuits (JSSC)*, Vol. 49, No. 8, August 2014, pg. 1682-1693
 76. Dongsuk Jeon, Michael Henry, Yejoong Kim, Inhee Lee, Zhengya Zhang, David Blaauw, Dennis Sylvester, "An Energy Efficient Full-Frame Feature Extraction Accelerator with Shift-Latch FIFO in 28nm CMOS," *IEEE Journal of Solid-State Circuits (JSSC)*, Vol. PP, No. 99, March 2014, pg. 1-14
 77. Youn Sung Park, David Blaauw, Dennis Sylvester, Zhengya Zhang, "Low-Power High-Throughput LDPC Decoder using Non-Refresh Embedded DRAM," *IEEE Journal of Solid-State Circuits (JSSC)*, Vol. 49, No. 3, March 2014, pg. 783-794
 78. Yoonmyung Lee, Mingoo Seok, Scott Hanson, Dennis Sylvester, David Blaauw, "Achieving Ultra-low Standby Power with an Efficient SCCMOS Bias Generator," *IEEE Transactions on Circuits and Systems II (TCAS II)*, Vol. 60, No. 12, December 2013, pg. 842-851
 79. Mohammad Hassan Ghaed, Gregory Chen, Razi-ul Haque, Michael Wieckowski, Yejoong Kim, Gyouho Kim, Yoonmyung Lee, Inhee Lee, David Fick, Daeyeon Kim, Mingoo Seok, Kensall Wise, David Blaauw, Dennis Sylvester, "Circuits for a Cubic-Millimeter Energy-Autonomous Wireless Intraocular Pressure Monitor," *IEEE Transactions on Circuits and Systems I (TCAS-I)*, Vol. 60, No. 12, December 2013, pg. 3152-3162
 80. Nathaniel Pinckney, Ronald Dreslinski, Korey Sewell, David Fick, Trevor Mudge, Dennis Sylvester, David Blaauw, "Limits of Parallelism and Boosting in Dim Silicon," *IEEE Micro*, Vol. 33, No. 5, October 2013, pg. 30-37
 81. Yoonmyung Lee, Bharan Ghiridar, Zhiyoong Foo, Dennis Sylvester, David Blaauw, "A Sub-nW Multi-stage Temperature Compensated Timer for Ultra-Low-Power Sensor Nodes," *IEEE Journal of Solid-State Circuits (JSSC)*, Vol. 48, No. 10, October 2013, pg. 2511-2521
 82. ZhiYoong Foo, David Devescery, Mohammad Ghaed, Inhee Lee, Abishek Madhavan, Youn Sung Park, Arvind Rao, Zachary Renner, Nathan Roberts, Aaron Schulman, Vikas Vinay, Michael Wieckowski, Dongmin Yoon, Cliff Schmidt, Thomas Schmid, Prabal Dutta, Peter Chen, David Blaauw, "A Low-cost Audio Computer for Information Dissemination among Illiterate People Groups," *IEEE Transactions on Circuits and Systems (TCAS)*, Vol. 60, No. 8, August 2013, pg. 2039-2050

83. Chia-Hsiang Chen, David Blaauw, Dennis Sylvester, Zhengya Zhang, "Design and Evaluation of Confidence-Driven Error-Resilient Systems," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, August 2013, pg. 1-11
84. Yoonmyung Lee, Daeyeon Kim, Jin Cai, Isaac Lauer, Leland Chang, Steven J. Koester, David Blaauw, Dennis Sylvester, "Low Power Circuit Analysis and Design Based on Heterojunction Tunneling Transistors (HETTs)," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 21, No. 9, September 2013, pg. 1632-1643
85. Ronald Dreslinski, David Fick, Bharan Ghiridar, Gyouho Kim, Sangwon Seo, Matthew Fojtik, Sudhir Satpathy, Yoonmyung Lee, Daeyeon Kim, Nurrachman Liu, Michael Wieckowski, Gregory Chen, Trevor Mudge, Dennis Sylvester, David Blaauw, "Centip3De: A 64-Core, 3D Stacked, Near-Threshold System," *IEEE Micro*, Vol. 33, No. 2, March/April 2013, pg. 8-16
86. Cheng Zhuo, David Blaauw, Dennis Sylvester, "A Statistical Framework for Post-Fabrication Oxide Breakdown Reliability Prediction and Management," *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, Vol. 32, No. 4, April 2013, pg. 630-643
87. Matthew Fojtik, Daeyeon Kim, Gregory Chen, Yu-Shiang Lin, David Fick, Junsun Park, Mingoo Seok, Mao-Ter Chen, Zhiyong Foo, David Blaauw, Dennis Sylvester, "A Millimeter-Scale Energy-Autonomous Sensor System with Stacked Battery and Solar Cells," *IEEE Journal of Solid-State Circuits (JSSC)*, March 2013, pg. 801-813
88. Yoonmyung Lee, Suyoung Bang, Inhee Lee, Yejoong Kim, Gyouho Kim, Prabal Dutta, Dennis Sylvester, David Blaauw, "A Modular 1mm³ Die-Stacked Sensing Platform with Low Power I²C Inter-die Communication and Multi-Modal Energy Harvesting," *IEEE Journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on ISSCC 2012*, Vol. 48, No.1, January 2013, pg. 229-243
89. Matthew Fojtik, David Fick, Yejoong Kim, Nathaniel Pinckney, David Harris, David Blaauw, Dennis Sylvester, "Bubble Razor: Eliminating Timing Margins in an ARM Cortex-M3 Processor in 45nm CMOS Using Architecturally Independent Error Detection and Correction," *IEEE Journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on ISSCC 2012*, Vol. 48, No. 1, January 2013, pg. 66-81
90. David Fick, Ronald Dreslinski, Bharan Giridhar, Gyouho Kim, Sangwon Seo, Matthew Fojtik, Sudhir Satpathy, Yoonmyung Lee, Daeyeon Kim, Nurrachman Liu, Michael Wieckowski, Gregory Chen, Trevor Mudge, David Blaauw, Dennis Sylvester, "Centip3De: A Cluster-Based NTC Architecture with 64 ARM Cortex-M3 Cores in 3D Stacked 130nm CMOS," *IEEE Journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on ISSCC 2012*, Vol. 48, No. 1, January 2013, pg. 104-117
91. Dongsuk Jeon, Mingoo Seok, Zhengya Zhang, David Blaauw, Dennis Sylvester, "A Design Methodology for Voltage Overscaled Ultra-Low Power Systems," *IEEE Transactions on Circuits and Systems II (TCAS-II)*, December 2012, pg. 952-956
92. Mingoo Seok, David Blaauw, Dennis Sylvester, Gyouho Kim, "A Portable 2-Transistor Picowatt Temperature-Compensated Voltage Reference Operating at 0.5V," *IEEE Journal of Solid-State Circuits (JSSC)*, Vol. 47, No. 10, October 2012, pg. 2534-2545
93. Korey Sewell, Ronald Dreslinski, Thomas Manville, Sudhir Satpathy, Nathaniel Pinckney, Geoffrey Blake, Michael Cieslak, Reetuparna Das, Thomas Wenisch, Dennis Sylvester, David Blaauw, Trevor Mudge, "Swizzle-Switch Networks for Many-Core Systems," *IEEE Emerging and Selected Topics in Circuits and Systems (JETCAS)*, Vol. 2, No. 2, June 2012, pg. 278-294

94. Andrew DeOrior, David Fick, Valeria Bertacco, Dennis Sylvester, David Blaauw, Jin Hu, Gregory Chen, "A Reliable Routing Architecture and Algorithm for NoCs," *IEEE Transactions on Computer-Aided Design (TCAD)*, Vol. 31, No. 5, May 2012, pg. 726 – 739
95. Mingoo Seok, Scott Hanson, Dennis Sylvester, David Blaauw, "Analysis and Optimization with Minimal-Sized Power Gating Switch for Ultra-Low Vdd Operation," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 20, No. 4, April 2012, pg. 605 - 615
96. Dongsuk Jeon, Mingoo Seok, Chaitali Chakrabarti, David Blaauw, and Dennis Sylvester, "A Super-Pipelined Energy Efficient Subthreshold 240MS/s FFT Core in 65nm," *IEEE Journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on ISSCC 2011*, Vol. 47, No. 1, January 2012, pg. 23-34
97. Jae-Sun Seo, David Blaauw, Dennis Sylvester, "Crosstalk-Aware PWM-Based On-Chip Links With Self-Calibration in 65 nm CMOS," *IEEE Journal of Solid-State Circuits (JSSC)*, Vol. 46, No. 9, September 2011, pg. 2041 - 2052
98. Cheng Zhuo, Kaviraj Chopra, Dennis Sylvester, David Blaauw, "Process Variation and Temperature-Aware Full Chip Oxide Breakdown Reliability Analysis," *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 30, No. 9, September 2011, pg. 1321 - 1334
99. Prashant Singh, Eric Karl, Dennis Sylvester, David Blaauw, "Compact Degradation Sensors for Monitoring NBTI and Oxide Degradation," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 20, No. 9, September 2012, pg. 1645-1655
100. Vineeth Veetil, Kaviraj Chopra, David Blaauw, Dennis Sylvester, "Fast Statistical Static Timing Analysis Using Smart Monte Carlo Techniques," *Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 30, No. 6, June 2011, pgs. 852 - 865
101. Mingoo Seok, Gregory Chen, Scott Hanson, Michael Wieckowski, David Blaauw, Dennis Sylvester, "CAS-FEST 2010: Mitigating Variability in Near-Threshold Computing," *IEEE Transactions on Emerging and Selected Topics in Circuits and Systems (T-ESTCS)*, Vol. 1, No. 1, March 2011, pg. 42 - 49
102. Mingoo Seok, Scott Hanson, Dennis Sylvester, David Blaauw, "Sleep Mode Analysis and Optimization with Minimal-Sized Power Gating Switch for Ultra-Low Vdd Operation," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 20, No. 4, pg. 605-615, February 2011
103. Jae-Sun Seo, Dennis Sylvester, David Blaauw, Himanshu Kaul, Ram Krishnamurthy, "A Robust Edge Encoding Technique for Energy-Efficient Multi-Cycle Interconnect," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 19, No. 2, February 2011, pg. 264 - 273
104. David Bull, Shidhartha Das, Karthik Shivashankar, Ganesh Dasika, Krisztian Flautner, David Blaauw, "A Power-efficient 32bit ARM Processor using Timing-error Detection and Correction for Transient-error Tolerance and Adaptation to PVT Variation," *IEEE Journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on ISSCC 2010*, Vol. 46, No. 1, January 2011, pg. 18 - 31
105. Gregory Chen, Dennis Sylvester, David Blaauw, Trevor Mudge, "Yield-driven Near-threshold SRAM Design," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 18, No. 11, November 2010, pg. 1590 – 1598
106. Gregory Chen, Scott Hanson, David Blaauw, Dennis Sylvester, "Circuit Design Advances for Wireless Sensing Applications," *Proceedings of the IEEE, Special Issue on Wireless Sensor Networks*, Vol. 98, No. 11, November 2010, pg. 1808 - 1827

107. Vivek Joshi, Brian Cline, Dennis Sylvester, David Blaauw, Kanak Agarwal, "Mechanical Stress Aware Optimization for Leakage Power Reduction," *Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 29, No. 5, May 2010, pg. 722 - 736
108. Scott Hanson, ZhiYoong Foo, David Blaauw, Dennis Sylvester, "A 0.5V Sub-Microwatt CMOS Image Sensor with Pulse-Width Modulation Read-Out," *IEEE Journal of Solid-State Circuits (JSSC)* **Invited Paper** to the *Special Issue on VLSI 2008*, Vol. 45, No. 4, April 2010, pg. 759 - 767
109. Shidhartha Das, Carlos Tokunaga, Sanjay Pant, Wei-Hsiang Ma, Sudherssen Kalaiselvan, Kevin Lai, David Bull, David Blaauw, "Razor II: In Situ Error Detection and Correction for PVT and SER Tolerance," *IEEE Journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on ISSCC 2007*, Vol. 44, No. 1, January 2008, pg. 32 - 48
110. Ravikishore Gandikota, Kaviraj Chopra, David Blaauw, Dennis Sylvester, "Victim-Alignment in Crosstalk-Aware Timing Analysis," *Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 29, No. 2, February 2010, pg. 261 - 274
111. Carlos Tokunaga and David Blaauw, "Securing encryption systems with a switched capacitor current equalizer," *IEEE Journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on ISSCC 2009*, Vol. 45, No. 1, January 2010, pg. 23 - 31
112. Rajeev Rao, Vivek Joshi, David Blaauw, Dennis Sylvester, "Circuit Optimization Techniques to Mitigate the Effects of Soft Errors in Combinational Logic," *ACM Transactions on Design Automation of Electronic Systems (TODAES)*, Vol. 15, Issue 1, December 2009, Article 5
113. Bo Zhai, Sanjay Pant, Leyla Nazhandali, Scott Hanson, Javin Olson, Ann Reeves, Michael Minuth, Ryan Helfand, Todd Austin, Dennis Sylvester, David Blaauw, "Energy Efficient Subthreshold Processor Design," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 17, No. 8, August 2009, pg. 1127 - 1137
114. Yu-Shiang Lin, Dennis Sylvester, David Blaauw, "Alignment Independent Chip-to-Chip Communication for Sensor Applications using Passive Capacitive Signaling," *IEEE Journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on VLSI 2008*, Vol. 44, No. 4, April 2009, pg. 1156 - 1166
115. Scott Hanson, Mingoo Seok, Yu-Shiang Lin, Zhiyoong Foo, Daeyon Kim, Yoonmyung Lee, Nurachman Liu, Dennis Sylvester, David Blaauw, "A Low-Voltage Processor for Sensing Applications with Picowatt Standby Mode," *IEEE Journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on VLSI 2008*, Vol. 44, No. 4, April 2009, pg. 1145 - 1155
116. Fabio Albano, Yu-Shiang Lin, David Blaauw, Dennis Sylvester, Kensall Wise, Ann Marie Sastry, "A fully integrated microbattery for an implantable microelectromechanical system," *Journal of Power Sources*, Vol. 185, No. 2, December 2008, pg. 1524-1532
117. Bo Zhai, Scott Hanson, David Blaauw, Dennis Sylvester, "A Variation-Tolerant Sub-200mV 6-T Subthreshold SRAM," *IEEE Journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on the 2008 CSICS 2008*, Vol. 43, No. 10, October 2008, pg. 2338 - 2348
118. Scott Hanson, Bo Zhai, Mingoo Seok, Brian Cline, Kevin Zhou, Meghna Singhal, Michael Minuth, Javin Olson, Leyla Nazhandali, Todd Austin, Dennis Sylvester, David Blaauw, "Exploring Variability and Performance in a Sub-200 mV Processor", *IEEE Journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on VLSI 2007*, Vol. 43, No. 4, April 2008, pg. 881 - 891
119. Prashant Singh, Jae-Sun Seo, David Blaauw, Dennis Sylvester, "Self-timed Regenerators for High-speed and Low-power On-chip Global Interconnect," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 16, No. 6, June 2008, pg. 673-677

120. Sarvesh Kulkarni, Dennis Sylvester, David Blaauw, "Design-Time Optimization of Post-Silicon Tuned Circuits using Adaptive Body Bias," *Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 27, No. 3, March 2008, pg. 481-494
121. Eric Karl, David Blaauw, Dennis Sylvester, Trevor Mudge, "Multi-Mechanism Reliability Modeling and Management in Dynamic Systems," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 16, No. 4, April 2008, pg. 476-487
122. Carlos Tokunaga, David Blaauw, Trevor Mudge, "True Random Number Generator with a Metastability-based Quality Control," *IEEE Journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on the ISSCC 2007*, Vol. 43, No. 1, January 2008, pg. 78 - 85
123. Ashish Srivastava, Kaviraj Chopra, Saumil Shah, Dennis Sylvester, David Blaauw, "A Novel Approach to Perform Gate-level Yield Analysis and Optimization Considering Correlated Variations in Power and Performance," *Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 27, No. 2, February 2008, pg. 272-285
124. Scott Hanson, Mingoo Seok, Dennis Sylvester, David Blaauw, "Nanometer Device Scaling in Sub-threshold Logic and SRAM," *Special Issue of IEEE Transactions on Electron Devices (T-ED)*, Vol. 55, Issue 1, January 2008, pg. 175 - 185
125. Rajeev Rao, Kaviraj Chopra, David Blaauw, Dennis Sylvester, "Computing the Soft Error Rate of a Combinational Logic Circuit Using Parameterized Descriptors," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 26, Issue 3, March 2007, pg. 468 - 479
126. Dennis Sylvester, David Blaauw, Eric Karl, "ElastiC: An Adaptive Self-Healing Architecture for Unpredictable Silicon," *IEEE Design and Test of Computers (D&T)*, Vol. 23, No. 6, November 2006, pg. 484 - 490
127. Dongwoo Lee, David Blaauw, Dennis Sylvester, "Runtime Leakage Minimization through Probability-Aware Optimization," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 14, No. 10, October 2006, 1075-1088
128. Rajeev Rao, Anirudh Devgan, David Blaauw, Dennis Sylvester, "Analytical Yield Prediction Considering Leakage/Performance Correlation," *Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 25, Issue 9, September 2006, pg. 1685-1695
129. Scott Hanson, Bo Zhai, Kerry Bernstein, David Blaauw, Andres Bryant, Leland Chang, Koushik Das, Wilfried Haensch, Edward Nowak, Dennis Sylvester, "Ultra-Low Voltage Minimum Energy CMOS" *IBM Journal of Research and Development*, Vol. 50, No. 4/5, July/September 2006, pg. 469-490
130. Kanak Agarwal, Mridul Agarwal, Dennis Sylvester, David Blaauw, "Statistical Interconnect Metrics for Physical-Design Optimization," *Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 25, Issue 7, July 2006, pg. 1273-1288
131. Kanak Agarwal, Dennis Sylvester, David Blaauw, "Modeling and Analysis of Crosstalk Noise in Coupled RLC Interconnects," *Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 25, No. 5, May 2006, pg. 892-901, short paper
132. Shidhartha Das, David Roberts, Seokwoo Lee, Sanjay Pant, David Blaauw, Todd Austin, Krisztián Flautner, Trevor Mudge, "A Self-Tuning DVS Processor using Delay-Error Detection and Correction," *IEEE Journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on VLSI 2005*, Vol. 41, No. 4, April 2006, pg. 792-804.
133. Rajeev Rao, Harmander Deogun, David Blaauw, Dennis Sylvester, "Bus Encoding for Total Power Reduction using a Leakage-Aware Buffer Configuration," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 13, No. 2, December 2005, pg. 1376-1383

134. Sarvesh Bhardwaj, Sarma Vrudhula, David Blaauw, "Probability Distribution of Signal Arrival Times Using Bayesian Networks," *Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 24, No. 11, November 2005, pg. 1784-94
135. Bo Zhai, David Blaauw, Dennis Sylvester, Krisztián Flautner, "The Limit of Dynamic Voltage Scaling and Insomniac Dynamic Voltage Scaling," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 13, No. 11 November 2005, pg. 1239-1252
136. Nam Sung Kim, David Blaauw, Trevor Mudge, "Quantitative Analysis and Optimization Techniques for On-Chip Cache Leakage Power," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 13, No. 10, October 2005, pg. 1147-1156
137. Dongwoo Lee, David Blaauw, Dennis Sylvester, "Static Leakage Reduction through Simultaneous V_{DD} and State Assignment," *Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 24, No. 7, July 2005, pg. 1014-1029
138. Murat R. Becer, David Blaauw, Ilan Algor, Rajendran Panda, Chanhee Oh, Vladimir Zolotov, Ibrahim Hajj, "Post-Route Gate Sizing for Crosstalk Noise Reduction," *Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 23, No. 12, December 2004, pg. 1670, short paper
139. Himanshu Kaul, Dennis Sylvester, David Blaauw, "Performance Optimization of Critical Nets through Active Shielding," *IEEE Transactions on Circuits and Systems I: Analog and Digital Signal Processing (T-CAS)*, Vol. 51, No. 12, December 2004, pg. 2417-2435
140. Dan Ernst, Shidhartha Das, Seokwoo Lee, David Blaauw, Todd Austin, Trevor Mudge, Nam Sung Kim, Krisztián Flautner, "Razor: Circuit-Level Correction of Timing Errors for Low-Power Operation," *IEEE*, May/June 2004 Top Picks special issue of IEEE Micro, Vol. 24, No. 6, November-December 2004, pg. 10-20
141. Kanak Agarwal, Dennis Sylvester, David Blaauw, "A Simple Metric for Slew Rate of RC Circuits Based on Two Circuit Moments," *Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 23, No. 9, September 2004, pg. 1346-1354, short paper
142. Mini Nanua, David Blaauw, "Noise Analysis Methodology for partially depleted SOI Circuits," *IEEE Journal of Solid-State Circuits (JSSC)*, **Invited Paper** to the *Special Issue on CICC 2003*, Vol. 39, No. 9, September 2004, pg. 1581-1585
143. Aseem Agarwal, Vladimir Zolotov, David Blaauw, "Statistical Clock Skew Analysis Considering Intra-die Process Variations," *Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 23, No. 8, August 2004, pg. 1231-1242
144. Todd Austin, David Blaauw, Scott Mahlke, Trevor Mudge, Chaitali Chakrabarti, Wayne Wolf, "Mobile supercomputers," *Communications of the ACM*, Vol. 37, No 5, May 2004, pg. 81 - 83
145. Nam Sung Kim, Krisztián Flautner, David Blaauw, Trevor Mudge, "Circuit and Microarchitectural Techniques Reducing Cache Leakage Power," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 12, No. 2, February 2004, pg. 167-184
146. Dongwoo Lee, David Blaauw, Dennis Sylvester, "Gate Oxide Leakage Current Analysis and Reduction for VLSI Circuits," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 12, No. 2, February 2004, pg. 155-166
147. Rajeev Rao, Ashish Srivastava, David Blaauw, Dennis Sylvester, "Statistical Analysis of Sub-threshold Leakage Current for VLSI Circuits," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 12, No. 2, February 2004, pg. 131-139

148. Kanak Agarwal, Dennis Sylvester, David Blaauw, "An Effective Capacitance Based Driver Output Model for On-Chip RLC Interconnects," *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 23, No. 1, January 2004, pg. 128-136, short paper
149. Kanak Agarwal, Dennis Sylvester, David Blaauw, "A Library Compatible Driver Model for On-Chip RLC Transmission Lines," *Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 23, No. 1, January 2004, pg. 128-136, short paper
150. Nam Sung Kim, Todd Austin, David Blaauw, Trevor Mudge, Krisztián Flautner, Jie Hu, Mary Jane Irwin, Mahmut Kandemir, Vijaykrishnan Narayanan, "Leakage Current: Moore's Law Meets Static Power," *IEEE Computers*, Vol. 36, No. 12, December 2003, pg. 68-75
151. Aseem Agarwal, Vladimir Zolotov, David Blaauw, "Statistical Timing Analysis Using Bounds and Selective Enumeration," *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 22, No. 9, September 2003, pg. 1243-1260
152. Sarma Vrudhula, David Blaauw, Supamas Sirichotiyakul, "Probabilistic Analysis of Interconnect Coupling Noise," *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 22, No. 9, September 2003, pg. 1188-1203
153. David Blaauw, Luciano Lavagno, "Guest editorial," *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 22, No. 8, August 2003, pg. 962-963, guest editorial
154. Rajendran Panda, Savithri Sundareswaran, David Blaauw, "Impact of Low-Impedance Substrate on Power Supply Integrity," *IEEE Design and Test of Computers (D&T)*, Vol. 20, No. 3, May-June 2003, pg. 16-22
155. Vladimir Zolotov, David Blaauw, Rajendran Panda, Chanhee Oh, "Cross-Coupled Noise Propagation in VLSI Designs," *International Journal of Analog Integrated Circuits and Signal Processing*, Kluwer press, Vol. 35, No. 2-3, I-2, May 2003, pg. 133-142
156. Li Ding, David Blaauw, Pinaki Mazumder, "Accurate Crosstalk Noise Modeling for Early Signal Integrity," *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 22, No. 5, May 2003, pg. 627-634, short paper
157. David Blaauw, Supamas Sirichotiyakul, Chanhee Oh, "Driver Modeling and Alignment for Worst-Case Delay Noise," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 11, No. 2, April 2003, pg. 157-166
158. Murat Becer, David Blaauw, Rajendran Panda, Ibrahim Hajj, "Early Probabilistic Noise Estimation for Capacitively Coupled Interconnects," *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 22, No. 3, March 2003, pg. 337-345, short paper
159. Haitian Hu, David Blaauw, Vladimir Zolotov, Kaushik Gala, Min Zhao, Rajendran Panda, Sachin Sapatnekar, "Fast On-Chip Inductance Simulation Using a Precorrected-FFT Method," *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 22, No. 1, January 2003, pg. 49-66
160. David Blaauw, Chanhee Oh, Vladimir Zolotov, Arubindo Dasgupta, "Static Electromigration Analysis for On-Chip Signal Interconnects," *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 22, No. 1, January 2003, pg. 39-48
161. Kaushik Gala, David Blaauw, Vladimir Zolotov, Pravin Vaidya, Anil Joshi, "Inductance Model and Analysis Methodology for High-Speed On-Chip Interconnect," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 10, No. 6, December 2002, pg. 730-745

162. David Blaauw, Steve Martin, Krisztián Flautner, Trevor Mudge, "Leakage Current Reduction in VLSI Systems," *Journal of Circuits, Systems, and Computers*, Vol.11, No.6, December 2002, pg. 621-635
163. David Blaauw, Vladimir Zolotov, Savithri Sundareswaran, "Slope Propagation in Static Timing Analysis," *Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 21, No. 10, October 2002, pg. 1180-1195
164. David Blaauw, Luciano Lavagno, "Hot Topics at This Year's Design Automation Conference," *IEEE Design and Test of Computers (D&T)*, Vol. 19, No. 4, July-August 2002, pg. 72-73, guest editorial
165. Alexey Glebov, Sergey Gavrilov, Vladimir Zolotov, David Blaauw, "False-Noise Analysis Using Logic Implications," *ACM Transactions on Design Automation of Electronic Systems (TODAES)*, Vol. 7, No. 3, July 2002, pg. 1-25
166. Supamas Sirichotiyakul, Tim Edwards, Chanhee Oh, Rajendran Panda, David Blaauw, "Duet: an Accurate Leakage Estimation and Optimization Tool for Dual-Vt Circuits," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 10, No. 2, April 2002, pg. 79-90
167. Min Zhao, Rajendran Panda, Sachin Sapatnekar, David Blaauw, "Hierarchical Analysis of Power Distribution Networks," *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 21, No. 2, February 2002, pg. 159-168
168. David Blaauw, Thaddeus Gabara, "Guest Editorial Low Power Electronics and Design," *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, Vol. 9, No. 1, February 2001, pg. 1-2, guest editorial
169. Larry Jones, David Blaauw, "A Cache-based Method for Accelerating Switch-Level Simulation," *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (T-CAD)*, Vol. 13, No. 2, February 1994, pg. 211-218
170. Daniel Saab, Robert Mueller-Thuns, David Blaauw, Jacob Abraham, Joe Rahmeh, "Hierarchical Multi-level Fault Simulation of Large Systems," *JETTA: Journal of Electric Testing: Theory and Applications*, Vol. 1, No. 2, March 1990, pg. 139-149

E. Conference Papers

1. Tim Dunn, Hari Sadasivan, Jack Wadden, Kush Goliya, Kuan-Yu Chen, David Blaauw, Reetuparna Das, Satish Narayanasamy, "SquiggleFilter: An Accelerator for Portable Virus Detection," International Symposium on Microarchitecture (MICRO-54), October 2021
2. Rohit Rothe, Minchang Cho, Kyojin Choo, Seokhyeon Jeong, Dennis Sylvester, David Blaauw, "A 192 nW 0.02 Hz High Pass Corner Acoustic Analog Front-End with Automatic Saturation Detection and Recovery," IEEE Symposium on VLSI Circuits (VLSI-Symp), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on VLSI*, June 2021
3. Jongyup Lim, Jungho Lee, Eunseong Moon, Michael Barrow, Gabriele Atzeni, Joseph Letner, Joseph Costello, Samuel R. Nason, Paras R. Patel, Parag G. Patil, Hun-Seok Kim, Cynthia A. Chestek, Jamie Phillips, David Blaauw, Dennis Sylvester, Taekwang Jang, "Light Tolerant Neural Recording IC for Near-Infrared-Powered Free Floating Motes," IEEE Symposium on VLSI Circuits (VLSI-Symp), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on VLSI*, June 2021
4. Sujin Park, Ji-Hwan Seol, Li Xu, Dennis Sylvester, David Blaauw, "A 43nW 32kHz Pulsed Injection TCXO with ± 4.2 ppm Accuracy Using DS Modulated Load Capacitance," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2021

5. Sung Kim, Morteza Fayazi, Alhad Daftardar, Kuan-Yu Chen, Jielun Tan, Subhankar Pal, Tutu Ajayi, Yan Xiong, Trevor Mudge, Chaitali Chakrabarti, David Blaauw, Ronald Dreslinski, Hun-Seok Kim, "Versa: A Dataflow-Centric Multiprocessor with 36 Systolic ARM Cortex-M4F Cores and a Reconfigurable Crossbar-Memory Hierarchy in 28nm," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2021
6. Arun Subramanian, Yufeng Gu, Timothy Dunn, Somnath Paul, Md Vasimuddin, Sanchit Misra, David Blaauw, Satish Narayanasamy, Reetuparna Das, "GenomicsBench: A Benchmark Suite for Genomics," International Symposium on Performance Analysis of Systems and Software (ISPASS), March 2021
7. Kyojin Choo, Hyochan An, Dennis Sylvester, David Blaauw, "14.1-ENOB 184.9dB-FoM Capacitor-Array-Assisted Cascaded Charge-Injection SAR ADC," IEEE International Solid-State Circuits Conference (ISSCC), February 2021
8. Mingyu Yang, Roger Hsiao, Gordy Carichner, Katherine Ernst, Jaechan Lim, Delbert A. Green II, Inhee Lee, David Blaauw, Hun-Seok Kim, "Migrating Monarch Butterfly Localization Using Multi-Modal Sensor Fusion Neural Networks," European Signal Processing Conference (EU-SIPCO), January 2021
9. Ji-Hwan Seol, Kyojin Choo, David Blaauw, Dennis Sylvester, Taekwang Jang, "A 67fs_{rms} Jitter, -130dBc/Hz In-Band Phase Noise, -256-dB FoM Reference Oversampling Digital PLL With Proportional Path Timing Control," IEEE Asian Solid-State Circuits Conference (A-SSCC), **Invited Paper** to the *IEEE Solid-State Circuits Letters, Special Issue on ASSCC 2020*, November 2020
10. Jeongsup Lee, Yejoong Kim, Minchang Cho, Makoto Yasuda, Satoru Miyoshi, Masaru Kawaminami, David Blaauw, Dennis Sylvester, "A μ Processor Layer for mm-Scale Die-Stacked Sensing Platforms Featuring Ultra-Low Power Sleep Mode at 125°C," IEEE Asian Solid-State Circuits Conference (A-SSCC), November 2020
11. Daichi Fujiki, Shunhao Wu, Nathan Ozog, Kush Goliya, David Blaauw, Satish Narayanasamy, Reetuparna Das, "SeedEx: A Genome Sequencing Accelerator for Optimal Alignments in Subminimal Space," ACM/IEEE International Symposium on Microarchitecture (MICRO), October 2020
12. Subhankar Pal, Siying Feng, Dong-hyeon Park, Sung Kim, Aporva Amarnath, Chi-Sheng Yang, Xin He, Jonathan Beaumont, Kyle May, Yan Xiong, Kuba Kaszyk, John Magnus Morton, Jiawen Sun, Michael O'Boyle, Murray Cole, Chaitali Chakrabarti, David Blaauw, Hun-Seok Kim, Trevor Mudge, Ronald Dreslinski, "Transmuter: Bridging the Efficiency Gap using Memory and Dataflow Reconfiguration," 29th International Conference on Parallel Architectures and Compilation Techniques (PACT), October 2020
13. Y. Xiong, J. Zhou, Pal, , D. Blaauw, H.-S. Kim, T. Mudge, R. Dreslinski, C. Chakrabarti, "Accelerating Deep Neural Network Computation on a Low Power Reconfigurable Architecture," IEEE International Symposium on Circuits and Systems (ISCAS), October 2020
14. Jongyup Lim, Myungjoon Choi, Bowen Liu, Taewook Kang, Ziyun Li, Zhehong Wang, Yiqun Zhang, Kaiyuan Yang, David Blaauw, Hun-Seok Kim, Dennis Sylvester, "AA-ResNet: Energy Efficient All-Analog ResNet Accelerator," Midwest Symposium and Circuits and Systems (MWSCAS), August 2020
15. Zhen Feng, Li-Xuan Chuo, Yao Shi, Yejoong Kim, HunSeok Kim, David Blaauw, "A mm-Scale Sensor Node with a 2.7 GHz 1.3 μ W Transceiver using Full-Duplex Self-Coherent Backscattering Achieving 3.5 m Range," IEEE Radio Frequency Integrated Circuits Symposium (RFIC), June 2020
16. Hyochan An, Siddharth Venkatesan, Sam Schiferl, Tim Wesley, Qirui Zhang, Jingcheng Wang, Kyojin Choo, Shiyu Liu, Bowen Liu, Ziyun Li, Hengfei Zhong, Luyao Gong, David Blaauw,

- Ronald Dreslinski, Dennis Sylvester, Hun Seok Kim, "A 170 μ W Image Signal Processor Enabling Hierarchical Image Recognition for Intelligence at the Edge," IEEE Symposium on VLSI Circuits (VLSI-Symp), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on VLSI*, June 2020
17. Jingcheng Wang, Hyochan An, Qirui Zhang, Hun Seok Kim, David Blaauw, Dennis Sylvester, "1.03pW/b Ultra-low Leakage Voltage-Stacked SRAM for Intelligent Edge Processors," IEEE Symposium on VLSI Circuits (VLSI-Symp), **Invited Paper** to the *IEEE Journal of Solid-State Circuits letters, Special Issue on VLSI*, June 2020
 18. Rohit Rothe, Sechang Oh, Kyojin Choo, Seokhyeon Jeong, Minchang Cho, Dennis Sylvester, David Blaauw, "Sample and Average Common-Mode Feedback in a 101 nW Acoustic Amplifier," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2020
 19. Seokhyeon Jeong, Yejoong Kim, Gyouho Kim, David Blaauw, "A Pressure Sensing System with ± 0.75 mmHg (3σ) Inaccuracy for Battery-Powered Low Power IoT applications," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2020
 20. Xiao Wu, Arun Subramaniyan, Zhehong Wang, Satish Narayanasamy, Reetu Das, David Blaauw, "17.3 GCUPS Pruning-based Pair-Hidden-Markov-Model Accelerator for Next-Generation DNA Sequencing," IEEE Symposium on VLSI Circuits (VLSI-Symp), **Invited Paper** to the *IEEE Solid-State Circuits Letters, Special Issue on VLSI*, June 2020
 21. Zhehong Wang, Ziyun Li, Li Xu, Qing Dong, Chin-I Su, Wen-Ting Chu, George Tsou, Yu-Der Chih, Tsung-Yung Jonathan Chang, Dennis Sylvester, Hun Seok Kim, David Blaauw, "An All-Weights-on-Chip DNN Accelerator in 22nm ULL Featuring 24 \times 1 Mb eRRAM," IEEE Symposium on VLSI Circuits (VLSI-Symp), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on VLSI*, June 2020
 22. Anuraag Soorishetty, Jian Zhou, Subhankar Pal, David Blaauw, Hun Seok Kim, Trevor Mudge, Ronald Dreslinski, Chaitali Chakrabarti, "Accelerating Linear Algebra Kernels on a Massively Parallel Reconfigurable Architecture," IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), May 2020
 23. Zhehong Wang, Tianjun Zhang, Daichi Fujiki, Arun Subramaniyan, Xiao Wu, Makoto Yasuda, Satoru Miyoshi, Masaru Kawaminami, Reetuparna Das, Satish Narayanasamy, David Blaauw, "A 2.46M reads/s Genome Sequencing Accelerator using a 625 Processing-Element Array," IEEE Custom Integrated Circuits Conference (CICC), March 2020
 24. Jongyup Lim, Eunseong Moon, Michael Barrow, Samuel R. Nason, Paras R. Patel, Parag G. Patil, Sechang Oh, Inhee Lee, Hun-Seok Kim, Dennis Sylvester, David Blaauw, Cynthia A. Chestek, Jamie Phillips, Taekwang Jang, "A 0.19 \times 0.17mm² Wireless Neural Recording IC for Motor Prediction with Near-Infrared-Based Power and Data Telemetry," IEEE International Solid-State Circuits Conference (ISSCC), February 2020
 25. Li Xu, Taekwang Jang, Jongyup Lim, Kyojin Choo, David Blaauw, Dennis Sylvester, "A 0.51nW 32kHz Crystal Oscillator Achieving 2ppb Allan Deviation Floor Using High-Energy-to-Noise-Ratio Pulse Injection," IEEE International Solid-State Circuits Conference (ISSCC), February 2020
 26. Charles Eckert, Xiaowei Wang, Jingcheng Wang, Arun Subramaniyan, Ravi Iyer, Dennis Sylvester, David Blaauw, Reetuparna Das, "*Neural Cache*: Bit-Serial In-Cache Acceleration of Deep Neural Networks," ACM/IEEE International Symposium on Microarchitecture (MICRO), June 2019
 27. Li-Xuan Chuo, Yejoong Kim, Nikolaos Chiotellis, Makoto Yasuda, Satoru Miyoshi, Masaru Kawaminami, Anthony Grbic, David Wentzloff, Hun-Seok Kim, David Blaauw, "A 4 \times 4 \times 4-mm³ Fully Integrated Sensor-to-Sensor Radio using Carrier Frequency Interlocking IF Receiver with -94 dBm Sensitivity," IEEE Radio Frequency Integrated Circuits Symposium (RFIC), **Invited Paper** to the

IEEE Journal of Solid-State Circuits (JSSC), Special Issue on RFIC, June 2019, **Best Paper Award**

28. Najme Ebrahimi, Behzad Yektakhah, Kamal Sarabandi, Hun Seok Kim, David Wentzloff, David Blaauw, "A Novel Physical Layer Security Technique Using Master-Slave Full Duplex Communication," IEEE MTT-S International Microwave Symposium (IMS), June 2019
29. Inhee Lee, David Blaauw, "A 31 pW-to-113 nW Hybrid BJT and CMOS Voltage Reference with $3.6\% \pm 3\sigma$ -inaccuracy from 0 °C to 170 °C for Low-Power High-Temperature IoT Systems," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2019
30. Inhee Lee, Eunseong Moon, Yejoong Kim, Jamie Phillips, David Blaauw, "A 10mm³ Light-Dose Sensing IoT2 System with 35-to-339nW 10-to-300klx Light-Dose-to-Digital Converter," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2019
31. Taewook Kang, Inhee Lee, Sechang Oh, Taekwang Jang, Yejoong Kim, Hyochan Ahn, Gyouho Kim, Se-Un Shin, Seokhyeon Jeong, Dennis Sylvester, David Blaauw, "A 1.7×4.1×2 mm³ Fully Integrated pH Sensor for Implantable Applications using Differential Sensing and Drift-Compensation," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2019
32. Subhankar Pal, Dong-hyeon Park, Siying Feng, Paul Gao, Jielun Tan, Austin Rovinski, Shaolin Xie, Chun Zhao, Aporva Amarnath, Timothy Wesley, Jonathan Beaumont, Kuan-Yu Chen, Chaitali Chakrabarti, Michael Taylor, Trevor Mudge, David Blaauw, Hun-Seok Kim, Ronald Dreslinski, "A 7.3 M Output Non-Zeros/J Sparse Matrix-Matrix Multiplication Accelerator using Memory Reconfiguration in 40 nm," IEEE Symposium on VLSI Circuits (VLSI-Symp), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on VLSI*, June 2019
33. Ji-Hwan Seol, Dennis Sylvester, David Blaauw, Taekwang Jang, "A Reference Oversampling Digital Phase-Locked Loop with -240 dB FOM and -80 dBc Reference Spur," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2019
34. Jingcheng Wang, Xiaowei Wang, Charles Eckert, Arun Subramaniyan, Reetuparna Das, David Blaauw, Dennis Sylvester, "A Compute SRAM with Bit-Serial Integer/Floating-Point Operations for Programmable In-Memory Vector Acceleration," IEEE International Solid-State Circuits Conference (ISSCC), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on ISSCC*, February 2019
35. Yimai Peng, David Kyojin Choo, Sechang Oh, Inhee Lee, Taekwang Jang, Yejoong Kim, Jongyup Lim, Dennis Sylvester, David Blaauw, "An Adiabatic Sense and Set Rectifier for Improved Maximum Power Point Tracking in Piezoelectric Harvesting with 541% Energy Extraction Gain," IEEE International Solid-State Circuits Conference (ISSCC), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on ISSCC*, February 2019
36. Kyojin D. Choo, Li Xu, Yejoong Kim, Ji-Hwan Seol, Xiao Wu, Dennis Sylvester, David Blaauw, "Energy-Efficient Low-Noise CMOS Image Sensor with Capacitor Array-Assisted Charge-Injection SAR ADC for Motion-Triggered Low-Power IoT Applications," IEEE International Solid-State Circuits Conference (ISSCC), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on ISSCC*, February 2019
37. Minchang Cho, Sechang Oh, Zhan Shi, Jongyup Lim, Yejoong Kim, Seokhyeon Jeong, Yu Chen, David Blaauw, Hun-Seok Kim, Dennis Sylvester, "A 142nW Voice and Acoustic Activity Detection Chip for mm-Scale Sensor Nodes Using Time-Interleaved Mixer-Based Frequency Scanning," IEEE International Solid-State Circuits Conference (ISSCC), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on ISSCC*, February 2019

38. Jeongsup Lee, Yiqun Zhang, Qing Dong, Wooteak Lim, Mehdi Saligane, Yejoong Kim, Seokhyeon Jeong, Jongyup Lim, Makoto Yasuda, Satoru Miyoshi, Masaru Kawaminami, David Blaauw, Dennis Sylvester, "A 6.4pJ/cycle Self-tuning Cortex-M0 IoT Processor based on Leakage-Ratio Measurement for Energy Optimal Operation across Wide-Range PVT Variation," IEEE International Solid-State Circuits Conference (ISSCC), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on ISSCC*, February 2019
39. Yao Shi, Xing Chen, Hun-Seok Kim, David Blaauw, David Wentzloff, "A 606- μ W Millimeter-Scale Bluetooth Low Energy Transmitter using Co-Designed 3.5x3.5 mm² Loop Antenna and Transformer-Boost Power Oscillator," IEEE International Solid-State Circuits Conference (ISSCC), February 2019
40. Ziyun Li, Ziyun Li, Yu Chen, Luyao Gong, Lu Liu, Dennis Sylvester, David Blaauw, Hun-Seok Kim, "An 879GOPS 243mW 80fps VGA Fully Visual CNN-SLAM Processor for Wide-Range Autonomous Exploration," IEEE International Solid-State Circuits Conference (ISSCC), February 2019
41. Mehdi Saligane, Jeongsup Lee, Qing Dong, Makoto Yasuda, Kazuyuki Kumeno, Fumitaka Ohno, Satoru Miyoshi, Masaru Kawaminami, David Blaauw, Dennis Sylvester, "An Adaptive Body-Biasing SoC using in situ Slack Monitoring for Runtime Replica Calibration," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2018
42. Jongyup Lim, Taekwang Jang, Mehdi Saligane, Makoto Yasuda, Satoru Miyoshi, Masaru Kawaminami, David Blaauw, Dennis Sylvester, "A 224 pW 260 ppm/ $^{\circ}$ C Gate-Leakage-based Timer for Ultra-Low Power Sensor Nodes with Second-Order Temperature Dependency Cancellation," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2018
43. Taekwang Jang, Jongyup Lim, Kyojin Choo, Samuel Nason, Jeongsup Lee, Sechang Oh, Seokhyeon Jeong, C. Chestek, Dennis Sylvester, David Blaauw, "A 2.2 NEF Neural-Recording Amplifier Using Discrete-Time Parametric Amplification," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2018
44. Xiao Wu, Inhee Lee, Qing Dong, Kaiyuan Yang, Dongkwun Kim, Jingcheng Wang, Yimai Peng, Yiqun Zhang, Mehdi Saligane, Makoto Yasuda, Kazuyuki Kumeno, Fumitaka Ohno, Satoru Miyoshi, Masaru Kawaminami, Dennis Sylvester, David Blaauw, "A 0.04mm³ 16nW Wireless and Batteryless Sensor System with Integrated Cortex-M0+ Processor and Optical Communication for Cellular Temperature Measurement," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2018
45. Inhee Lee, Gyouho Kim, Eunseong Moon, Seokhyeon Jeong, Dongkwun Kim, Jamie Phillips, David Blaauw, "A 179-lux Energy-Autonomous Fully-Encapsulated 17-mm³ Sensor Node with Initial Charge Delay Circuit for Battery Protection," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2018
46. Kaiyuan Yang, Qing Dong, Zhehong Wang, Yi-Chun Shih, Yu-Der Chih, Jonathan Chang, David Blaauw, Dennis Sylvester, "A 28nm Integrated True Random Number Generator Harvesting Entropy from MRAM," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2018
47. Supreet Jeloka, Zhehong Wang, Ruochen Xie, Sudhanshu Khanna, Steven Bartling, Dennis Sylvester, David Blaauw, "Energy Efficient Adiabatic FRAM with 0.99 pJ/bit Write for IoT Applications," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2018
48. Ziyun Li, Jingcheng Wang, Dennis Sylvester, David Blaauw, Hun-Seok Kim, "A 1920 \times 1080 25fps, 2.4TOPS/W Unified Optical Flow and Depth 6D Vision Processor for Energy-Efficient, Low Power Autonomous Navigation," IEEE Symposium on VLSI Circuits (VLSI-Symp), **Invited Paper** to the *IEEE Journal of Solid-State Solid-States Circuits (JSSC), Special Issue on VLSI*, June 2018

49. Daichi Fujiki, Arun Subramaniyan, Tianjun Zhang, Yu Zeng, Reetuparna Das, David Blaauw, Satish Narayanasamy, "GenAx: A Genome Sequencing Accelerator," IEEE International Symposium on Computer Architecture (ISCA), May 2018
50. Charles Eckert, Xiaowei Wang, Jingcheng Wang, Arun Subramaniyan, Ravi Iyer, Dennis Sylvester, David Blaauw, Reetuparna Das, "Neural Cache: Bit-Serial In-Cache Acceleration of Deep Neural Networks," IEEE International Symposium on Computer Architecture (ISCA), **Invited Paper to Top Picks Special Issue of IEEE Micro**, May 2018
51. Hyeongseok Kim, Nikolaos Chiotellis, Elnaz Ansari, Muhammad Faisal, Taekwang Jang, Anthony Grbic, Hun-Seok Kim, David Blaauw, David Wentzloff, "A Receiver/Antenna Co-Design for a 1.5mJ per Fix Fully-Integrated 10x10x6mm³ GPS Logger," IEEE Custom Integrated Circuits Conference (CICC), April 2018
52. Qing Dong, Zhehong Wang, Jongyup Lim, Yiqun Zhang, Yi-Chun Shih, Yu-Der Chih, Jonathan Chang, David Blaauw, Dennis Sylvester, "A 1Mb 28nm STT-MRAM with 2.8ns Read Access Time at 1.2V VDD Using Single-Cap Offset-Cancelled Sense Amplifier and In-situ Self-Write-Termination," IEEE International Solid-State Circuits Conference (ISSCC), February 2018
53. Sechang Oh, Yao Shi, Gyouho Kim, Yejoong Kim, Taewook Kang, Seokhyeon Jeong, Dennis Sylvester, David Blaauw, "A 2.5nJ Duty-Cycled Bridge-to-Digital Converter Integrated in a 13mm³ Pressure-Sensing System," IEEE International Solid-State Circuits Conference (ISSCC), February 2018
54. Subhankar Pal, Jonathan Beaumont, Dong-Hyeon Park, Aporva Amarnath, Siying Feng, Chaitali Chakrabarti, Hun-Seok Kim, David Blaauw, Trevor Mudge, Ronald Dreslinski, "OuterSPACE: An Outer Product based Sparse Matrix Multiplication Accelerator," IEEE International Symposium on High Performance Computer Architecture (HPCA), February 2018
55. Inhee Lee, Dennis Sylvester, David Blaauw, "Subthreshold Voltage Reference With Nwell/Psub Diode Leakage Compensation for Low-Power High-Temperature Systems," IEEE Asian Solid-State Circuits Conference (A-SSCC), November 2017
56. Li-Xuan Chuo, Zhihong Luo, Dennis Sylvester, David Blaauw, Hun-Seok Kim, "RF-Echo: A Non-Line-of-Sight Indoor Localization System Using a Low-Power Active RF Reflector ASIC Tag," International Conference on Mobile Computing and Networking (MobiCom), October 2017
57. Qing Dong, Inhee Lee, Kaiyuan Yang, David Blaauw, Dennis Sylvester, "A 1.02nW PMOS-Only, Trim-Free Current Reference with 282ppm/°C from -40°C to 120°C and 1.6% within-Wafer Inaccuracy," IEEE European Solid-State Circuits Conference (ESSCIRC), September 2017
58. Yu Zeng, Taekwang Jang, Qing Dong, Mehdi Saligane, Masaru Kawaminami, Akihiko Harada, Satoru Miyoshi, Taiji Ema, Makoto Yasunda, Kazuyuki Kumeno, Dennis Sylvester, David Blaauw, "A 1.7nW PLL-Assisted Current Injected 32KHz Crystal Oscillator for IoT," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2017
59. Supreet Jeloka, Jeongsup Lee, Ziyun Li, Jinal Shah, Qing Dong, Kaiyuan Yang, Dennis Sylvester, David Blaauw, "An ultra-wide program, 122pJ/bit flash memory using charge recycling," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2017
60. Supreet Jeloka, Kaiyuan Yang, Michael Orshansky, Dennis Sylvester, David Blaauw, "A sequence dependent challenge-response PUF using 28nm SRAM 6T bit cell," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2017
61. Junwon Jeong, Seokhyeon Jeong, Chulwoo Kim, Dennis Sylvester, David Blaauw, "A 42nJ/conversion On-Demand State-of-Charge Indicator for Miniature IoT Li-ion Batteries," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2017

62. Qing Dong, Supreet Jeloka, Mehdi Saligane, Yejoong Kim, Masaru Kawaminami, Akihiko Harada, Satoru Miyoshi, David Blaauw, Dennis Sylvester, "A 0.3V VDDmin 4+2T SRAM for Searching and In-Memory Computing Using 55nm DDC Technology," IEEE Symposium on VLSI Circuits (VLSI-Symp), **Invited Paper** to the *IEEE Journal of Solid-State Solid-States Circuits (JSSC), Special Issue on VLSI*, June 2017
63. Yiqun Zhang, Li Xu, Jingcheng Wang, Kaiyuan Yang, Qing Dong, Supreet Jeloka, David Blaauw, Dennis Sylvester, "Recryptor: A Reconfigurable In-Memory Cryptographic Cortex-M0 Processor for IoT," IEEE Symposium on VLSI Circuits (VLSI-Symp), **Invited Paper** to the *IEEE Journal of Solid-State Solid-States Circuits (JSSC), Special Issue on VLSI*, June 2017
64. Sechang Oh, Taekwang Jang, Kyojin D. Choo, David Blaauw, Dennis Sylvester, "A 4.7 μ W Switched-Bias MEMS Microphone Preamplifier for Ultra-Low-Power Voice Interfaces," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2017
65. Minchang Cho, Sechang Oh, Seokhyeon Jeong, Yiqun Zhang, Inhee Lee, Yejoong Kim, Li-Xuan Chuo, Dongkwun Kim, Qing Dong, Yen-Po Chen, Martin Lim, Mike Daneman, David Blaauw, Dennis Sylvester, Hun-Seok Kim, "A 6 \times 5 \times 4mm³ General Purpose Audio Sensor Node with a 4.7 μ W Audio Processing IC," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2017
66. Qing Dong, Kaiyuan Yang, Laura Fick, David Blaauw, Dennis Sylvester, "Rectified-linear and Recurrent Neural Networks Built with Spin Devices," IEEE International Symposium on Circuits and Systems (ISCAS), May 2017
67. Laura Fick, Skylar Skrzyniarz, Malav Parikh, David Fick, David Blaauw, Dennis Sylvester, "Analog In-Memory Subthreshold Deep Neural Network Accelerator," IEEE Custom Integrated Circuits Conference (CICC), May 2017
68. Seokhyeon Jeong, Yu Chen, Julius Tsai, Taekwang Jang, David Blaauw, Hun-Seok Kim, Dennis Sylvester, "Always-On 12nW Acoustic Sensing and Object Recognition Microsystem for Unattended Ground Sensor Nodes," IEEE International Solid-State Circuits Conference (ISSCC), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on ISSCC*, February 2017
69. Ziyun Li, Qing Dong, Mehdi Saligane, Benjamin Kempke, Shijia Yang, Zhengya Zhang, Ronald Dreslinski, Dennis Sylvester, David Blaauw, Hun Seok Kim, "A 1920 \times 1080 30fps 2.3TOPS/W Stereo-Depth Processor for Robust Autonomous Navigation," IEEE International Solid-State Circuits Conference (ISSCC), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on ISSCC*, February 2017
70. Kaiyuan Yang, Qing Dong, Wanyeong Jung, Yiqun Zhang, Myungjoon Choi, David Blaauw, Dennis Sylvester, "A 0.6nJ -0.22/+0.19 $^{\circ}$ C Inaccuracy Temperature Sensor Using Exponential Sub-threshold Oscillation Dependence," IEEE International Solid-State Circuits Conference (ISSCC), February 2017
71. Kaiyuan Yang, Qing Dong, David Blaauw, Dennis Sylvester, "A 553F2 2-Transistor Amplifier-Based Physically Unclonable Function (PUF) with 1.67% Native Instability," IEEE International Solid-State Circuits Conference (ISSCC), February 2017
72. Wooteak Lim, Taekwang Jang, Inhee Lee, Hun-Seok Kim, Dennis Sylvester, David Blaauw, "A 380pW Dual Mode Optical Wake-up Receiver with Ambient Noise Cancellation," IEEE International Solid-State Circuits Conference (ISSCC), February 2017
73. Qing Dong, Yejoong Kim, Inhee Lee, Myungjoon Choi, Ziyun Li, Jingcheng Wang, Kaiyuan Yang, Yen-Po Chen, Junjie Dong, Minchang Cho, Gyouho Kim, Wei-Keng Chang, Yun-Sheng Chen, Yuder Chih, David Blaauw, Dennis Sylvester, "A 1Mb Embedded NOR Flash Memory with 39 μ W

- Program Power for mm-Scale High-Temperature Sensor Nodes,” IEEE International Solid-State Circuits Conference (ISSCC), February 2017
74. Xiao Wu, Kyojin Choo, Yao Shi, Li-Xuan Chuo, Dennis Sylvester, David Blaauw, “A Fully Integrated Counter Flow Energy Reservoir for 70% Efficient Peak-Power Delivery in Ultra-Low-Power Systems,” IEEE International Solid-State Circuits Conference (ISSCC), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC)*, *Special Issue on ISSCC*, February 2017
 75. Taekwang Jang, Soekhyeon Jeong, Dongsuk Jeon, Kyojin Choo, Dennis Sylvester, David Blaauw, “A 2.5ps 0.8-to-3.2GHz Bang-Bang Phase- and Frequency-Detector-Based All-Digital PLL with Noise Self-Adjustment,” IEEE International Solid-State Circuits Conference (ISSCC), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC)*, *Special Issue on ISSCC*, February 2017
 76. Li-Xuan Chuo, Yao Shi, Zhihong Luo, Nikolaos Chiotellis, Zhiyoong Foo, Gyouho Kim, Yejoong Kim, Anthony Grbic, David Wentzloff, Hun-Seok Kim, David Blaauw, “A 915MHz Asymmetric Radio Using Q-Enhanced Amplifier for a Fully Integrated 3×3mm³ Wireless Sensor Node with 20m Non-Line-of-Sight Communication,” IEEE International Solid-State Circuits Conference (ISSCC), February 2017
 77. Suyoung Bang, Jingcheng Wang, Ziyun Li, Cao Gao, Yejoong Kim, Qing Dong, Yen-Po Chen, Laura Fick, Xun Sun, Ron Dreslinski, Trevor Mudge, Hun Seok Kim, David Blaauw, Dennis Sylvester, “A 288μW Programmable Deep-Learning Processor with 270KB On-Chip Weight Storage Using Non-Uniform Memory Hierarchy for Mobile Intelligence,” IEEE International Solid-State Circuits Conference (ISSCC), February 2017
 78. Shaizeen Aga, Supreet Jeloka, Arun Subramaniyan, Satish Narayanasamy, David Blaauw, Reetuparna Das, “Compute Caches for Efficient Very Large Vector Processing,” IEEE International Symposium on High Performance Computer Architecture (HPCA), February 2017
 79. Jiang Xiang, Ziyun Li, David Blaauw, Hun Seok Kim, Chaitali Chakrabarti, “Low Complexity Optical Flow Using Neighbor –Guided Semi-Global Matching,” IEEE International Conference on Image Processing (ICIP), September 2016
 80. Minseob Shim, Seokhyeon Jeong, Paul Myers, Suyoung Bang, Chulwoo Kim, Dennis Sylvester, David Blaauw, Wanyeong Jung, “An Oscillator Collapse-Based Comparator with Application in a 74.1dB SNDR, 20KS/s 15b SAR ADC,” IEEE Symposium on VLSI Circuits (VLSI-Symp), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC)*, *Special Issue on VLSI*, June 2016
 81. Qing Dong, Yejoong Kim, Myungjoon Choi, Ziyun Li, Jingcheng Wang, Yen-Po Chen, Inhee Lee, Minchang Cho, Yun-Sheng Chen¹, David Blaauw, Dennis Sylvester, and Yu-Der Chih, “A 114-pW PMOS-Only, Trim-Free Voltage Reference with 0.26% within-Wafer Inaccuracy for nW Systems,” IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2016
 82. Sechang Oh, Ngoc Le Ba, Suyoung Bang, Junwon Jeong, David Blaauw, Tony T. Kim, Dennis Sylvester, “A 260μW Infrared Gesture Recognition System-on-Chip for Smart Devices,” IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2016
 83. Wootae Lim, Taekwang Jang, Inhee Lee, Hun-Seok Kim, Dennis Sylvester, David Blaauw, “A 380pW Dual Mode Optical Wake-up Receiver with Ambient Noise Cancellation,” IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2016
 84. Yiqun Zhang, Kaiyuan Yang, Mehdi Saligane, David Blaauw, Dennis Sylvester, “A Compact 446 Gbps/W AES accelerator for Mobile SoC and IoT in 40nm,” IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2016
 85. Xiao Wu, Yao Shi, Supreet Jeloka, Kaiyuan Yang, Inhee Lee, Dennis Sylvester, David Blaauw, “A 66pW Discontinuous Switch-Capacitor Energy Harvester for Self-Sustaining Sensor Application,” IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2016

86. Nathaniel Pinckney, Lucian Shifren, Brian Cline, Saurabh Sinha, Supreet Jeloka, Ronald Dreslinski, Trevor Mudge, Dennis Sylvester, David Blaauw, "Near-Threshold Computing in FinFET Technologies: Opportunities for Improved Voltage Scalability," ACM/IEEE Design Automation Conference (DAC), June 2016
87. Yajing Chen, Shengshuo Lu, Hun-Seok Kim, David Blaauw, Ronald Dreslinski Jr, Trevor Mudge, "A Low Power Software-Defined-Radio Baseband Processor for the Internet of Things," IEEE International Symposium on High Performance Computer Architecture (HPCA), March 2016
88. Mahmood Khayatzadeh, Mehdi Saligane, Jingchen Wang, Massimo Alioto, David Blaauw, Dennis Sylvester, "A Reconfigurable Dual-Port Memory with Error Detection and Correction in 28nm FDSOI," IEEE International Solid-State Circuits Conference (ISSCC), February 2016
89. Wanyeong Jung, Dennis Sylvester, David Blaauw, "A Rational-Conversion-Ratio Switched-Capacitor DCDC Converter Using Negative-Output Feedback," IEEE International Solid-State Circuits Conference (ISSCC), February 2016
90. Wanyeong Jung, Junhua Gu, Paul D. Myers, Minseob Shim, Seokhyeon Jeong, Kaiyuan Yang, Myungjoon Choi, ZhiYoong Foo, Suyoung Bang, Sechang Oh, Dennis Sylvester, David Blaauw, "A 60%-Efficiency 20nW-500 μ W Tri-Output Fully Integrated Power Management Unit with Environmental Adaptation and Load-Proportional Biasing for IoT Systems," IEEE International Solid-State Circuits Conference (ISSCC), February 2016
91. Myungjoon Choi, Taekwang Jang, Junwon Jeong, Seokhyeon Jeong, David Blaauw, Dennis Sylvester "A Current-mode Wireless Power Receiver with Optimal Resonant Cycle Tracking for Implantable Systems" IEEE International Solid-State Circuits Conference (ISSCC), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on ISSCC*, February 2016
92. Taekwang Jang, Myungjoon Choi, Seokhyeon Jeong, Suyoung Bang, Dennis Sylvester, David Blaauw, "A 4.7nW 13ppm/ $^{\circ}$ C Self-Biased Wakeup Timer Using a Switched-Resistor Scheme," IEEE International Solid-State Circuits Conference (ISSCC), February 2016
93. Yiqun Zhang, Mahmood Khayatzadeh, Kaiyuan Yang, Mehdi Saligane, Nathaniel Pinckney, Massimo Alioto, David Blaauw, Dennis Sylvester, "iRazor: 3-Transistor Current-Based Error Detection and Correction in an ARM Cortex-R4 Processor," IEEE International Solid-State Circuits Conference (ISSCC), February 2016
94. Inhee Lee, Wootak Lim, Alan Teran, Jamie Phillips, Dennis Sylvester, David Blaauw, "A >78%-Effective Light Harvester over 100-to-100klux with Reconfigurable PV-Cell Network and MPPT Circuit," IEEE International Solid-State Circuits Conference (ISSCC), February 2016
95. Skylar Skrzyniarz, Laura Fick, Jinal Shah, Yejoong Kim, Dennis Sylvester, David Blaauw, "A 36.8 2b-TOPS/W Self-Calibrating GPS Accelerator Implemented Using Analog Calculation in 65nm LP CMOS," IEEE International Solid-State Circuits Conference (ISSCC), February 2016
96. Yao Shi, Myungjoon Choi, Ziyun Li, Gyouho Kim, Zhiyoong Foo, Hun-Seok Kim, David Wentzloff, David Blaauw, "A 10mm³ Syringe-Implantable Near-Field Radio System on Glass Substrate," IEEE International Solid-State Circuits Conference (ISSCC), February 2016
97. Jingcheng Wang, Nathaniel Pinckney, David Blaauw, and Dennis Sylvester, "Reconfigurable Self-Timed Regenerators for Wide-Range Voltage Scaled Interconnect," IEEE Asian Solid-State Circuits Conference (A-SSCC), November 2015
98. Inhee Lee, Wanyeong Jung, Hyunsoo Ha, Seokhyeong Jeong, Yejoong Kim, Zhiyoong Foo, Jae-Yoon Sim, Dennis Sylvester, David Blaauw, "An Ultra-Low-Power Biomedical Chip for Injectable Pressure Monitor," Biomedical Circuits & Systems Conference (BIOCAS), October 2015

99. Mohit Shah, Jingcheng Wang, David Blaauw, Dennis Sylvester, Hun-Seok Kim, Chaitali Chakrabarti, "A Fixed-Point Neural Network for Keyword Detection on Resource Constrained Hardware," IEEE International Workshop on Signal Processing Systems (SIPS), October 2015
100. Mehdi Saligane, Mahmood Khayatzadeh, Yiqun Zhang, Seokhyeon Jeong, David Blaauw, Dennis Sylvester "All-digital SoC Thermal Sensor using On-chip High Order Temperature Curvature Correction," IEEE Custom Integrated Circuits Conference (CICC) September 2015
101. Myungjoon Choi, Junhua Gu, David Blaauw, Dennis Sylvester, "Wide Input Range 1.7 μ W 1.2kS/s Resistive Sensor Interface Circuit with 1 cycle/sample Logarithmic Sub-Ranging," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2015
102. Dongsuk Jeon, Qing Dong, Yejoong Kim, Xiaolong Wang, Shuai Chen, Hao Yu, David Blaauw, Dennis Sylvester, "A 23mW Face Recognition Accelerator in 40nm CMOS with Mostly-Read 5T Memory," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2015
103. Suyoung Bang, Jae-sun Seo, Inhee Lee, Seokhyeon Jeong, Nathaniel Pinckney, David Blaauw, Dennis Sylvester, and Leland Chang, "A Fully-Integrated 40-Phase Flying-Capacitance-Dithered Switched-Capacitor Voltage Regulator with 6mV Output Ripple," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2015
104. Supreet Jeloka, Naveen Akesh, Dennis Sylvester, David Blaauw, "A Configurable TCAM / BCAM / SRAM using 28nm push-rule 6T bit cell," IEEE Symposium on VLSI Circuits (VLSI-Symp), **Invited Paper** to the *IEEE Journal of Solid-State Solid-State Circuits (JSSC), Special Issue on VLSI*, June 2015
105. Hyeongseok Kim, Gyouho Kim, Yoonmyung Lee, Zhiyong Foo, Dennis Sylvester, David Blaauw, David Wentzloff, "A 10.6mm³ Fully-Integrated, Wireless Sensor Node with 8GHz UWB Transmitter," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2015
106. Seokhyeon Jeong, Wanyeong Jung, Dongsuk Jeon, Omer Berenfeld, Hakan Oral, Grant Kruger, David Blaauw, Dennis Sylvester, "A 120nW 8b Sub-ranging SAR ADC with Signal-Dependent Charge Recycling for Biomedical Applications," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2015
107. Myungjoon Choi, Suyoung Bang, Tae-Kwang Jang, David Blaauw, Dennis Sylvester, "A 99nW 70.4kHz Resistive Frequency Locking On-Chip Oscillator with 27.4ppm/ $^{\circ}$ C Temperature Stability," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2015
108. Mahmood Khayatzadeh, Fabio Frustaci, David Blaauw, Dennis Sylvester, Massimo Alioto, "A Reconfigurable Sense Amplifier with 3X Offset Reduction in 28nm FDSOI CMOS," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2015
109. Kaiyuan Yang, David Blaauw, Dennis Sylvester, "A Robust -40 to 120 $^{\circ}$ C All-Digital True Random Number Generator in 40nm CMOS," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2015
110. Pat Pannuto, Yoonmyung Lee, Ye-Sheng Kuo, Zhi Yoong Foo, Ben Kempke, Gyouho Kim, Ronald Dreslinski Jr, David Blaauw, and Prabal Dutta, "MBus: An Ultra-Low Power Interconnect Bus for Next Generation Nanopower Systems," IEEE International Symposium on Computer Architecture (ISCA), **Invited Paper** to the *Top Picks Special Issue of IEEE MICRO*, June 2015
111. Qing Dong, Kaiyuan Yang, Laura Fick, David Fick, David Blaauw, Dennis Sylvester, "Racetrack Converter: A Low Power and Compact Data Converter Using Racetrack Spintronic Devices," IEEE International Symposium on Circuits and Systems (ISCAS), May 2015
112. Wootae Lim, Inhee Lee, Dennis Sylvester, David Blaauw, "Battery-Less, sub-nW Cortex M0+ Processor with Dynamic Leakage-Suppression Logic," IEEE International Solid-State Circuits Conference (ISSCC), February 2015

113. Kaiyuan Yang, David Blaauw, Dennis Sylvester, "A Physical Unclonable Function with BER < 10⁻⁸ for Robust Chip Authentication Using Oscillator Collapse in 40nm CMOS," IEEE International Solid-State Circuits Conference (ISSCC), February 2015
114. Wanyeong Jung, Seokhyeon Jeong, Dennis Sylvester, David Blaauw, "A 46.9fJ/c.s, Fully-Digital Capacitance-to-Digital Converter using Iterative Delay-Chain Discharge." IEEE International Solid-State Circuits Conference (ISSCC), February 2015
115. Supreet Jeloka, Reetuparna Das, Ronald G. Dreslinski, Trevor Mudge, David Blaauw, "Hi-Rise: A High-Radix Switch for 3D Integration with Single-cycle Arbitration," ACM/IEEE International Symposium on Microarchitecture (MICRO), December 2014
116. Mohammad Hassan Ghaed, Skylar Skrzyniarz, David Blaauw, Dennis Sylvester, "A 1.6nJ/bit, 19.9 μ A Peak Current Fully Integrated 2.5mm² Inductive Transceiver for Volume-Constrained Microsystems," IEEE Custom Integrated Circuits Conference (CICC), September 2014
117. Ye-Sheng Kuo, Pat Pannuto, Gyouho Kim, Zhiyoong Foo, Inhee Lee, Ben Kempke, Prabal Dutta, David Blaauw, and Yoonmyung Lee, "Mbus: A 17.5 pj/bit/chip Portable Interconnect Bus for Millimeter-Scale Sensor Systems with 8 nW Standby Power," IEEE Custom Integrated Circuits Conference (CICC), September 2014
118. Seokhyeon Jeong, Inhee Lee, David Blaauw, Dennis Sylvester, "A 5.8nW, 45ppm/ $^{\circ}$ C On-Chip CMOS Wake-up Timer Using a Constant Charge Subtraction Scheme," IEEE Custom Integrated Circuits Conference (CICC), September 2014
119. David Fick, Gyouho Kim, Allan Wang, David Blaauw, and Dennis Sylvester, "Mixed-Signal Stochastic Computation Demonstrated in an Image Sensor with Integrated 2D Edge Detection and Noise Filtering," IEEE Custom Integrated Circuits Conference (CICC), September 2014
120. Sechang Oh, Yoonmyung Lee, Jingcheng Wang, Zhiyoong Foo, Yejoong Kim, David Blaauw, Dennis Sylvester, "Dual-Slope Capacitance to Digital Converter Integrated in an Implantable Pressure Sensing System," IEEE European Solid-State Circuits Conference (ESSCIRC), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC)*, *Special Issue on ESSCIRC*, September 2014
121. Myungjoon Choi, Inhee Lee, Tae-Kwang Jang, David Blaauw, Dennis Sylvester "A 23pW, 780ppm/ $^{\circ}$ C Resistor-less Current Reference Using Subthreshold MOSFETs," (ESSCIRC) September 2014
122. Inhab Nahlus, Eric P. Kim, Naresh R. Shanbhag, and David Blaauw, "Energy-Efficient Dot Product Computation using a Switched Analog Circuit Architecture," ACM/IEEE International Symposium on Low-Power Electronics and (ISLPED), August 2014
123. Gyouho Kim, Yoonmyung Lee, Zhiyoong Foo, Pat Pannuto, Ye-Sheng Kuo, Ben Kempke, Mo Ghaed, Suyoung Bang, Inhee Lee, Yejoong Kim, Seokhyeon Jeong, Prabal Dutta, Dennis Sylvester and David Blaauw, "A Millimeter-Scale Wireless Imaging System with Continuous Motion Detection and Energy Harvesting," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2014
124. Inhee Lee, Yoonmyung Lee, Dennis Sylvester, David Blaauw, "Low Power Battery Supervisory Circuit with Adaptive Battery Health Monitor," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2014
125. Sechang Oh, Wanyeong Jung, Kaiyuan Yang, David Blaauw, Dennis Sylvester, "15.4b Incremental Sigma-Delta Capacitance-to-Digital Converter with Zoom-in 9b Asynchronous SAR," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2014
126. Yen-Po Chen, David Blaauw and Dennis Sylvester, "A 266nW Multi-Chopper Amplifier with 1.38 Noise Efficiency Factor for Neural Signal Recording," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2014

127. Nilmini Abeyratne, Supreet Jeloka, Yiping Kang, Reetuparna Das, Ronald Dreslinski, David Blaauw, Trevor Mudge, "Quality-of-Service for a High-Radix Switch," ACM/IEEE Design Automation Conference (DAC), June 2014
128. Supriya Rao, Reetuparna Das, Supreet Jeloka, David Blaauw, Ronald G. Dreslinski, Trevor Mudge, "VIX: Virtual Input Crossbars for Efficient Switch Allocation," ACM/IEEE Design Automation Conference (DAC), June 2014
129. Gyouho Kim, Adriane Wolfe, Richard Bell, Suyoung Bang, Yoonmyung Lee, Inhee Lee, Yejoong Kim, Lewis Hsu, Jeffery Kagan, Meriah Arias-Thode, Bart Chadwick, Dennis Sylvester, David Blaauw, "Chip-On-Mud: Ultra-Low Power ARM-Based Oceanic Sensing System Powered by Small-Scale Benthic Microbial Fuel Cells," IEEE International Symposium on Circuits and Systems (ISCAS), June 2014
130. Fabio Frustaci, Mahmood Khayatzaeh, David Blaauw, Dennis Sylvester, Massimo Alioto, "A 32kb SRAM for Error-Free and Error-Tolerant Applications with Dynamic Energy-Quality Management in 28nm CMOS," IEEE International Solid-State Circuits Conference (ISSCC), February 2014
131. Dongsuk Jeon, Yen-Po Chen, Yoonmyung Lee, Yejoong Kim, Zhiyoong Foo, Grant Kruger, Hakan Oral, Omer Berenfeld, Zhengya Zhang, David Blaauw, Dennis Sylvester, "An Implantable 64nW ECG-Monitoring Mixed-Signal SoC for Arrhythmia Diagnosis," IEEE International Solid-State Circuits Conference (ISSCC), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC)*, *Special Issue on ISSCC*, February 2014
132. Kaiyuan Yang, David Fick, Michael B. Henry, Yoonmyung Lee, David Blaauw, Dennis Sylvester, "A 23Mb/s 23pJ/b Fully Synthesized True-Random-Number Generator in 28nm and 65 nm CMOS," IEEE International Solid-State Circuits Conference (ISSCC), February 2014
133. Wanyeong Jung, Sechang Oh, Suyoung Bang, Yoonmyung Lee, Dennis Sylvester, David Blaauw, "A 3nW Fully Integrated Energy Harvester Based on Self-Oscillating Switched-Capacitor DC-DC Converter," IEEE International Solid-State Circuits Conference (ISSCC), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC)*, *Special Issue on ISSCC*, February 2014
134. Hyunsoo Ha, Dennis, Sylvester, David Blaauw, Jae-Yoon Sim, "A 160nW 63.9fJ/conversion-step Capacitance-to-Digital Converter for Ultra-Low Power Wireless Sensor Nodes," IEEE International Solid-State Circuits Conference (ISSCC), February 2014
135. Yejoong Kim, Wanyeong Jung, Inhee Lee, Qing Dong, Michael Henry, Dennis Sylvester, David Blaauw, "A Static Contention-Free Single-Phase-Clocked 24T Flip-Flop in 45nm for Low-Power Applications," IEEE International Solid-State Circuits Conference (ISSCC), February 2014
136. Bharan Giridhar, Nathan Pinckney, Dennis Sylvester, David Blaauw, "A Reconfigurable Sense Amplifier with Auto-Zero Calibration and Pre-Amplification in 28nm CMOS," IEEE International Solid-State Circuits Conference (ISSCC), February 2014
137. Laura Freyman, David Fick, David Blaauw, Dennis Sylvester, Massimo Alioto, "A 346 μm^2 Reference-Free Sensor Interface for Highly Constrained Microsystems in 28nm CMOS," IEEE Asian Solid-State Circuits Conference (A-SSCC), November 2013
138. Bharan Giridhar, Michael Cieslak, Deepankar Duggal, Ronald Dreslinski, Robert Patti, Betina Hold, Chaitali Chakrabarti, Trevor Mudge, David Blaauw, "Exploring DRAM Organizations for Energy-Efficient and Resilient Exascale Memories," Supercomputing Conference (SC13), November 2013
139. Yen-Po Chen, Yoonmyung Lee, Jae-Yoon Sim, Massimo Alioto, David Blaauw, "45pW ESD Clamp Circuit for Ultra-Low Power Applications," IEEE Custom Integrated Circuits Conference (CICC), September 2013

140. Bharan Giridhar, Matthew Fojtik, David Fick, Dennis Sylvester, David Blaauw, "Pulse Amplification Based Dynamic Synchronizers with Metastability Measurement using Capacitance De-rating," IEEE Custom Integrated Circuits Conference (CICC), September 2013
141. Seokheon Jeong, Jae-yoon Sim, David Blaauw, Dennis Sylvester, "65nW CMOS Temperature Sensor for Ultra-Low Power Microsystems," IEEE Custom Integrated Circuits Conference (CICC), September 2013
142. Inhee Lee, Suyoung Bang, Dongmin Yoon, Myungjoon Choi, Seokhyeon Jeong, Dennis Sylvester, David Blaauw, "A Ripple Voltage Sensing MPPT Circuit for Ultra-Low Power Microsystems," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2013
143. Nathaniel Pinckney, Matthew Fojtik, Bharan Giridhar, Dennis Sylvester, and David Blaauw, "Shortstop: An On-Chip Fast Supply Boosting Technique," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2013
144. Suyong Bang, Yoonmyung Lee, Inhee Lee, Yejoong Kim, Gyouho Kim, David Blaauw, Dennis Sylvester, "A Fully Integrated Switched-Capacitor Based PMU with Adaptive Energy Harvesting Technique for Ultra- Low Power Sensing Applications," IEEE International Symposium on Circuits and Systems (ISCAS), May 2013
145. Dongsuk Jeon, Yejoong Kim, Inhee Lee, Zhengya Zhang, David Blaauw, Dennis Sylvester, "A Low Power VGA Full-Frame Feature Extraction Processor," International Conference on Acoustics, Speech, and Signal Processing (ICASSP), May 2013
146. Nilmini Abeyratne, Reetuparna Das, Qingkun Li, Korey Sewell, Bharan Giridhar, Ronald Dreslinski, David Blaauw, Trevor Mudge, "Scaling Towards Kilo-Core Processors with Asymmetric High Radix Topologies," IEEE International Symposium on High Performance Computer Architecture (HPCA-19), February 2013
147. Suyoung Bang, Yoonmyung Lee, Inhee Lee, Yejoong Kim, Gyouho Kim, David Blaauw, Dennis Sylvester, "Fully Integrated Switched-Capacitor Based PMU with Adaptive Energy Harvesting Technique for Ultra-Low Power Sensing Applications," IEEE International Symposium on Circuits and Systems (ISCAS), February 2013
148. Dong-Woo Jee, Dennis Sylvester, David Blaauw, Jae-Yoon Sim, "A 0.45V, 423 nW, 3.2 MHz Multiplying DLL with Leakage-Based Oscillator for Ultra-Low-Power Sensor Platforms," IEEE International Solid-State Circuits Conference (ISSCC), February 2013
149. Seon-Kyoo Lee, Seung-Hun Lee, Dennis Sylvester, David Blaauw, Jae-Yoon Sim, "A 95fJ/b Current-Mode Transceiver for 10mm On-Chip Interconnect," IEEE International Solid-State Circuits Conference (ISSCC), February 2013
150. Gyouho Kim, Mahmood Barangi, Zhiyong Foo, Nathaniel Pinckney, Suyoung Bang, David Blaauw, Dennis Sylvester, "A 467nW CMOS Visual Motion Sensor with Temporal Averaging and Pixel Aggregation," IEEE International Solid-State Circuits Conference (ISSCC), February 2013
151. Dongsuk Jeon, Yejoong Kim, Inhee Lee, Zhengya Zhang, David Blaauw, Dennis Sylvester, "A 470m2.7mW Feature Extraction Accelerator for Micro Autonomous Vehicle Navigation in 28nm CMOS," IEEE International Solid-State Circuits Conference (ISSCC), February 2013
152. Ronald Dreslinski, Thomas Manville, Korey Sewell, Reetuparna Das, Nathaniel Pinckney, Sudhir Satpathy, David Blaauw, Dennis Sylvester, Trevor Mudge, "XPoint Cache: Scaling Existing Bus Based Coherence Protocols for 2D and 3D Many-Core Systems," "The 21st International Conference on Parallel Architectures and Compilation Techniques (PACT) September 2012

153. Suyoung Bang, David Blaauw, Dennis Sylvester, Massimo Alioto, "Reconfigurable Sleep Transistor for GIDL Reduction in Ultra-Low Standby Power Systems," IEEE Custom Integrated Circuits Conference (CICC), September 2012
154. Zhiyoong Foo, David Devescery, Mohammad Ghaed, Inhee Lee, Abishek Madhavan, Youn Sung Park, Aswin Rao, Zach Renner, Nathan Roberts, Aaron Schulman, Vikas Vinay, Michael Wieckowski, Dongmin Yoon, Cliff Schmidt, Thomas Schmid, Prabal Dutta, Peter Chen, David Blaauw, "A Low-cost Audio Computer for Information Dissemination among Illiterate People Groups," IEEE Custom Integrated Circuits Conference (CICC), September 2012
155. Gyouho Kim, Yoonmyung Lee, Suyoung Bang, Inhee Lee, Yejonng Kim, Dennis Sylvester, David Blaauw, "A 695 pW Standby Power Optical Wake-up Receiver for Wireless Sensor Nodes," IEEE Custom Integrated Circuits Conference (CICC), September 2012
156. Yejoong Kim, Yoonmyung Lee, Dennis Sylvester, David Blaauw, "SLC: Split-Control Level Converter for Dense and Stable Wide-Range Voltage Conversion," IEEE European Solid-State Circuits Conference (ESSCIRC), September 2012
157. Ronald Dreslinski, David Fick, Bharan Giridhar, Gyouho Kim, Sangwon Seo, Matthew Fojtik, Sudhir Satpathy, Yoonmyung Lee, Daeyeon Kim, Nurrachman Liu, Michael Wieckowski, Gregory Chen, Trevor Mudge, Dennis Sylvester, David Blaauw, "Centip3De: A 64-Core, 3D Stacked, Near-Threshold System", HotChips-24, August 2012
158. Ronald Dreslinski, Korey Sewell, Thomas Manville, Sudhir Satpathy, Nathaniel Pinckney, Geoff Blake, Michael Cieslak, Reetuparna Das, Thomas Wenisch, Dennis Sylvester, David Blaauw, Trevor Mudge, "Swizzle Switch: A Self-Arbitrating High-Radix Crossbar for NoC Systems," HotChips-24, August 2012
159. Daeyeon Kim, Vikas Chandra, Robert Aitken, Dennis Sylvester, David Blaauw, "An Adaptive Write Word-Line Pulse Width and Voltage Modulation Architecture for Bit-Interleaved 8T SRAMS," ACM/IEEE International Symposium on Low-Power Electronics and Design (ISLPED), August 2012
160. Sudhir Satpathy, Dennis Sylvester, David Blaauw, "A Standard Cell Compatible Bidirectional Repeater with Thyristor Assist," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2012
161. Yen-Po Chen, Matt Fojtik, David Blaauw, Dennis Sylvester, "A 2.98nW Bandgap Voltage Reference Using a Self-Tuning Low Leakage Sample and Hold," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2012
162. Youn Sung Park, David Blaauw, Dennis Sylvester, Zhengya Zhano, "A 1.6mm² 38-mW 1.5-Gb/s LDPC Decoder Enabled by Refresh-Free Embedded DRAM," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2012
163. Inhee Lee, Suyoung Bang, Yoonmyung Lee, Yejoong Kim, Gyouho Kim, Dennis Sylvester, David Blaauw, "A 635pW Battery Voltage Supervisory Circuit for Miniature Sensor Nodes," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2012
164. Dongsuk Jeon, Mingoo Seok, Zhengya Zhang, David Blaauw, Dennis Sylvester, "A design methodology for voltage overscaled ultra-low power systems," ACM/IEEE Design Automation Conference (DAC), June 2012
165. Sudhir Satpathy, Reetuparna Das, Ronald Dreslinski, Trevor Mudge, Dennis Sylvester, David Blaauw, "High radix self-arbitrating switch fabric with multiple arbitration schemes and quality of service," ACM/IEEE Design Automation Conference (DAC), June 2012

166. Sangwon Seo, Ronald Dreslinski, Mark Woh, Yongjun Park, Scott Mahlke, David Blaauw, Chaitali Chakrabarti, Trevor Mudge, "Process Variation in Near-Threshold Wide SIMD Architectures," ACM/IEEE Design Automation Conference (DAC), June 2012
167. Sudhir Satpathy, Korey Sewell, Thomas Manville, Yen-Po Chen, Ronald Dreslinski, Dennis Sylvester, Trevor Mudge, David Blaauw, "A 4.5Tb/s 3.4Tb/sW 64 x 64 Switch Fabric With Self-Updating Least-Recently-Granted Priority and Quality-of-Service Arbitration in 45nm CMOS," IEEE International Solid-State Circuits Conference (ISSCC), February 2012
168. Yoonmyung Lee, Gyouho Kim, Suyoung Bang, Yejoong Kim, Inhee Lee, Prababl Dutta, Dennis Sylvester, David Blaauw, "A Modular 1mm³ Die-Stacked Sensing Platform with Optical Communication and Multi-Modal Energy Harvesting," IEEE International Solid-State Circuits Conference (ISSCC), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on ISSCC*, February 2012
169. Dongmin Yoon, Dennis Sylvester, David Blaauw, "A 5.58nW 32.768kHz DLL-Assisted XO for Real Time Clocks in Wireless Sensing Applications," IEEE International Solid-State Circuits Conference (ISSCC), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on ISSCC*, February 2012
170. Mathew Fojtik, David Fick, Yejoong Kim, Nathaniel Pinckney, David Harris, David Blaauw, Dennis Sylvester, "Bubble Razor: An Architecture-Independent Approach to Timing-Error Detection and Correction," IEEE International Solid-State Circuits Conference (ISSCC), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on ISSCC*, February 2012
171. David Fick, Ronald G. Dreslinski, Bharan Giridhar, Gyouho Kim, Sangwon Seo, Mathew Fojtik, Sudhir Satpathy, Yoonmyung Lee, Daeyeon Kim, Nurrachman Liu, Michael Wieckowski, Gregory Chen, Trevor Mudge, Dennis Sylvester, David Blaauw, "Centip3De: A 3930 DMIPS/W Configurable Near-Threshold 3D Stacked System with 64 ARM Cortex-M3 Cores," IEEE International Solid-State Circuits Conference (ISSCC), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on ISSCC*, February 2012
172. Mohammad Hassan Ghaed, Gregory Chen, David Blaauw, Dennis Sylvester, "Analysis and Measurement of the Stability of Dual-Resonator Oscillators," IEEE Custom Integrated Circuits Conference (CICC), September 2011
173. Daeyeon Kim, Vikas Chandra, Robert Aitken, David Blaauw, Dennis Sylvester, "Variation-Aware Static and Dynamic Writability Analysis for Voltage-Scaled Bit-Interleaved 8-T SRAMs," ACM/IEEE International Symposium on Low-Power Electronics and Design (ISLPED), August, 2011
174. Mohammad Hassan Ghaed, Dennis Sylvester, David Blaauw, "A Dual-Passband Filter Architecture for Dual-Band Systems," IEEE Antennas and Propagation Society (AP-S), July 2011
175. Dongsuk Jeon, Mingoo Seok, Chaitali Chakrabarti, David Blaauw, and Dennis Sylvester, "A Super-Pipelined Energy Efficient Subthreshold 240MS/s FFT Core in 65nm," Design Automation Conference (DAC), June 2011
176. Bharan Giridhar, David Fick, Matthew Fojtik, Sudhir Satpathy, David Bull, Dennis Sylvester, David Blaauw, "Adaptive Robustness Tuning for High Performance Domino Logic," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2011
177. Yejoong Kim, Dennis Sylvester, David Blaauw, "LC²: Limited Contention Level Converter for Robust Wide-Range Voltage Conversion," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2011

178. Sudhir Satpathy, Ronald Dreslinski, Tai-Chuan Ou, Dennis Sylvester, Trevor Mudge, David Blaauw, "SWIFT: A 2.1 Tb/s 32x32 Self-Arbitrating Manycore Interconnect Fabric," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2011, **Winner in the 11th Annual International VLSI-Symposium Low Power Design Contest**
179. Nurrachman Liu, Nathaniel Pinckney, Scott Hanson, Dennis Sylvester, David Blaauw, "A True Random Number Generator using Time-Dependent Dielectric Breakdown," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2011
180. Dongsuk Jeon, Mingoo Seok, Chaitali Chakrabarti, David Blaauw, Dennis Sylvester, "Energy-Optimized High Performance FFT Processor," International Conference on Acoustics, Speech and Signal Processing (ICASSP), May 2011
181. Gregory Chen, Michael Wieckowski, David Blaauw, Dennis Sylvester, "A Dense 45nm Half-differential SRAM with Lower Minimum Operating Voltage," IEEE International Symposium on Circuits and Systems (ISCAS), May 2011
182. Daeyeon Kim, Gregory Chen, Matthew Fojtik, Mingoo Seok, David Blaauw, Dennis Sylvester, "A 1.85fW/bit Ultra Low Leakage 10T SRAM with Speed Compensation Scheme," IEEE International Symposium on Circuits and Systems (ISCAS), May 2011
183. Michael Wieckowski, Gregory Chen, Daeyeon Kim, David Blaauw, Dennis Sylvester, "A 128kb High Density Portless SRAM Using Hierarchical Bitlines and Thyristor Sense Amplifiers," ACM/IEEE International Symposium on Quality Electronic Design (ISQED), March 2011
184. Mark Woh, Sudhir Satpathy, Ronald G. Dreslinski, Daniel Kershaw, Dennis Sylvester, David Blaauw, Trevor Mudge, "Low Power Interconnects for SIMD Computers," ACM/IEEE Design Automation and Test in Europe Conference (DATE), March 2011
185. Chia-Hsiang Chen, Yejoong Kim, Zhengya Zhang, David Blaauw, Dennis Sylvester, Helia Naeimi, Sumeet Sandhu "A Confidence-Driven Model for Error-Resilient Computing," ACM/IEEE Design Automation and Test in Europe Conference (DATE), March 2011
186. Gregory Chen, Hassan Ghaed, Razi-UI Haque, Michael Wieckowski, Yejoong Kim, Gyouho Kim, David Fick, Daeyeon Kim, Mingoo Seok, Kensall Wise, David Blaauw, Dennis Sylvester, "A 1 Cubic Millimeter Energy-Autonomous Wireless Intraocular Pressure Monitor," IEEE International Solid-State Circuits Conference (ISSCC), February 2011
187. Mingoo Seok, Dongsuk Jeon, Chaitali Chakrabarti, David Blaauw, Dennis Sylvester, "A 0.27V, 30MHz, 17.7nJ/transform 1024-pt complex FFT core with super-pipelining," IEEE International Solid-State Circuits Conference (ISSCC), February 2011
188. Yoonmyung Lee, Bharan Giridhar, Zhiyoong Foo, Dennis Sylvester, David Blaauw, "A 660pW Multi-Stage Temperature Compensated Timer for Ultra-Low-Power Wireless Sensor Node Synchronization," IEEE International Solid-State Circuits Conference (ISSCC), February 2011
189. Zhiyoong Foo, David Devecsery, Thomas Schmid, Nathan Clark, Mohammad Ghaed, Ye-Sheng Kuo, Inhee Lee, Yongmin Park, Nathaniel Slottow, Vikas Vinay, Micheal Wieckowski, Dongmin Yoon, Cliff Schmidt, David Blaauw, Peter Chen, Prabal Dutta, "A Case for Custom Silicon in Enabling Low-Cost Information Technology for Developing Regions," ACM Symposium on Computing for Development, December 2010
190. Yoonmyung Lee, Mao-Ter Chen, Junsun Park, Dennis Sylvester, David Blaauw, "A 5.42nW/kB Retention Power Logic-Compatible Embedded DRAM with 2T Dual-Vt Gain Cell for Low Power Sensing Applications," Asian Solid-State Circuits Conference (A-SSCC), November 2010
191. Vineeth Veetil, Dennis Sylvester, David Blaauw, "A Lower Bound Computation Method for Evaluation of Statistical Design Techniques," ICCAD 2010, November 2010

192. Vivek Joshi, Kanak Agarwal, Dennis Sylvester, David Blaauw, "Analysis and Optimization of SRAM Robustness for Double Patterning Lithography," ICCAD 2010, November 2010
193. Cheng Zhuo, Kanak Agarwal, Dennis Sylvester, David Blaauw, "Active Learning Framework for Post-Silicon Variation Extraction and Test Cost Reduction," ICCAD 2010, November 2010
194. Prashant Singh, Eric Karl, Dennis Sylvester, David Blaauw, "Dynamic NBTI Management Using a 45nm Multi-Degradation Sensor," IEEE Custom Integrated Circuits Conference (CICC), **Invited Paper** to the *Special Issue on CICC, IEEE Transactions on Circuits and Systems I: Analog and Digital Signal Processing (T-CAS)*, September 2010
195. Vivek Joshi, Michael Wieckowski, Gregory Chen, David Blaauw, Dennis Sylvester, "Analyzing the Impact of Double Patterning Lithography on SRAM Variability in 45nm CMOS," IEEE Custom Integrated Circuits Conference (CICC), September 2010
196. Mingoo Seok, Gyouho Kim, David Blaauw, Dennis Sylvester, "Variability Analysis of a Digitally Trimmable Ultra-Low Power Voltage Reference," IEEE European Solid-State Circuits Conference (ESSCIRC), September 2010
197. Greg Chen, Michael Wieckowski, David Blaauw, Dennis Sylvester, "Crosshairs SRAM - An Adaptive Memory for Mitigating Parametric Failures," IEEE European Solid-State Circuits Conference (ESSCIRC), September 2010
198. Mingoo Seok, David Blaauw, Dennis Sylvester, "Clock Network Design for Ultra-Low Power Applications," ACM/IEEE International Symposium on Low-Power Electronics and Design (ISLPED), August, 2010
199. Nurrachman Liu, Scott Hanson, Dennis Sylvester, David Blaauw, "OxID: On-Chip One-Time Random ID Generation using Oxide Breakdown," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2010
200. Sudhir Satpathy, Zhiyoong Foo, Bharan Giridhar, Dennis Sylvester, Trevor Mudge, David Blaauw, "A 1.07 Tbit/s 128x128 Swizzle Network for SIMD Processors," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2010
201. Vineeth Veetil, Yung-Hsu Chang, Dennis Sylvester, David Blaauw, "Efficient Smart Monte Carlo based SSTA on Graphics Processing Units with Improved Resource Utilization," ACM/IEEE Design Automation Conference (DAC), June 2010
202. Vivek Joshi, "Closed-Form Modeling of Layout-Dependent Mechanical Stress," ACM/IEEE Design Automation Conference (DAC), June 2010
203. Mingoo Seok, Scott Hanson, Michael Wieckowski, Gregory K. Chen, Yu-Shiang Lin, David Blaauw, Dennis Sylvester, "Circuit Design Advances to Enable Ubiquitous Sensing Environments," IEEE International Symposium on Circuits and Systems (ISCAS), May 2010
204. Cheng Zhuo, David Blaauw, Dennis Sylvester, "Process Variation and Temperature Aware Reliability Management," ACM/IEEE Design Automation and Test in Europe Conference (DATE), March 2010
205. Michael Wieckowski, Dennis Sylvester, David Blaauw, "A Black Box Method for Stability Analysis of Arbitrary SRAM Cell Structures," ACM/IEEE Design Automation and Test in Europe Conference (DATE), March 2010
206. David Bull, Shidhartha Das, Karthik Shivashankar, Ganesh Dasika, Krisztian Flautner, David Blaauw, "A Power-efficient 32bit ARM ISA Processor using Timing-error Detection and Correction for Transient-error Tolerance and Adaptation to PVT Variation," IEEE International Solid-State Circuits Conference (ISSCC), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on ISSCC*, February 2010

207. Prashant Singh, Zhiyoong Foo, Michael Wieckowski, Scott Hanson, Matt Fojtik, David Blaauw, Dennis Sylvester, "Early Detection of Oxide Breakdown Through In Situ Degradation Sensing," IEEE International Solid-State Circuits Conference (ISSCC), February 2010
208. Jae-sun Seo, Ron Ho, Jon Lexau, Michael Dayringer, Dennis Sylvester, David Blaauw, "High Bandwidth and Low Energy On-Chip Signaling with Adaptive Pre-Emphasis in 90nm CMOS," IEEE International Solid-State Circuits Conference (ISSCC), February 2010
209. Gregory Chen, Matthew Fojtik, Daeyeon Kim, David Fick, Junsun Park, Mingoo Seok, Mao-Ter Chen, Zhiyoong Foo, Dennis Sylvester, David Blaauw, "A Millimeter-Scale Nearly-Perpetual Sensor System with Stacked Battery and Solar Cells," IEEE International Solid-State Circuits Conference (ISSCC), February 2010
210. David Fick, Nurrachman Liu, Zhiyoong Foo, Matthew Fojtik, David Blaauw, Dennis Sylvester, "In Situ Delay Slack Monitor for High-Performance Processors using an All-Digital, Self-Calibrating 5ps Resolution Time-to-Digital Converter," IEEE International Solid-State Circuits Conference (ISSCC), February 2010
211. Cheng Zhuo, Yung-Hsu Chang, Dennis Sylvester, David Blaauw, "Design Time Body Bias Selection for Parametric Yield Improvement," ACM/IEEE Asia-Pacific Design Automation Conference (ASP-DAC), January 2010
212. Vivek Joshi, Kanak Agarwal, Dennis Sylvester, David Blaauw, "Analyzing Electrical Effects of RTA-driven Local Anneal Temperature Variation," ACM/IEEE Asia-Pacific Design Automation Conference (ASP-DAC), January 2010
213. Cheng Zhuo, David Blaauw, Dennis Sylvester, "Post-Fabrication Measurement-Driven Oxide Breakdown Reliability Prediction and Management," ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2009
214. Ravikishore Gandikota, David Blaauw, Dennis Sylvester, "Interconnect Performance Corners considering Crosstalk Noise," IEEE International Conference on Computer Design (ICCD), October 2009
215. Yu-Shiang Lin, Dennis Sylvester, David Blaauw, "Near-Field Communications using Phase-Locking and Pulse Signalling for Millimeter-Scale Systems," IEEE Custom Integrated Circuits Conference (CICC), September 2009
216. Mingoo Seok, Gyouho Kim, Dennis Sylvester, David Blaauw, "A 0.5V 3.6ppm/0C 2.2pW 2-Transistor Voltage Reference," IEEE Custom Integrated Circuits Conference (CICC), September 2009
217. Daeyeon Kim, Yoonmyung Lee, Jin Cai, Leland Chang, Steven J. Koester, Dennis Sylvester, David Blaauw, "Low Power Circuit Design Based on Heterojunction Tunneling Transistors (HETTs)," ACM/IEEE International Symposium on Low-Power Electronics and Design (ISLPED), August 2009, **Best Paper Award**
218. Ronald G. Dreslinski, David Fick, David Blaauw, Dennis Sylvester, Trevor Mudge, "Reconfigurable Multicore Server Processors for Low Power Operation," International Symposium on Systems, Architectures, Modeling and Simulation (SAMOS), July 2009
219. Vineeth Veetil, Dennis Sylvester, David Blaauw, Saamil Shah, Steffen Rochel, "Efficient Smart Sampling based Full-Chip Leakage Analysis for Intra-Die Variation Considering State Dependence," ACM/IEEE Design Automation Conference (DAC), July 2009
220. Ravikishore Gandikota, Li Ding, Peivand Tehrani, David Blaauw, "Worst-Case Aggressor-Victim Alignment with Current-Source Driver Models," ACM/IEEE Design Automation Conference (DAC), July 2009

221. David Fick, Andrew DeOrio, Jin Hu, David Blaauw, Dennis Sylvester, Valeria Bertacoo, "Vicis: A Reliable Network for Unreliable Silicon," ACM/IEEE Design Automation Conference (DAC), July 2009
222. Jae-Sun Seo, Dennis Sylvester, David Blaauw, "Crosstalk-Aware PWM-Based On-Chip Global Signaling in 65nm CMOS," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2009
223. Mike Wieckowski, Gregory K. Chen, Mingoo Seok, David Blaauw, Dennis Sylvester, "A hybrid DC-DC Converter for Sub-Microwatt Sub-IV Implantable Applications," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2009
224. David Fick, Andrew DeOrio, Gregory Chen, Valeria Bertacoo, Dennis Sylvester, David Blaauw, "A Highly Resilient Routing Algorithm for Fault-Tolerant NoCs," ACM/IEEE Design Automation and Test in Europe Conference (DATE), April 2009
225. Yu-Shiang Lin, Dennis Sylvester, David Blaauw, "A 150pW Program-and-Hold Timer for Ultra-Low Power Sensor Platforms," IEEE International Solid-State Circuits Conference (ISSCC), February 2009
226. Carlos Tokunaga, David Blaauw, "Secure AES engine with a local switched capacitor current equalizer," IEEE International Solid-State Circuits Conference (ISSCC), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on ISSCC*, February 2009
227. Ronald Dreslinski, Greg Chen, Trevor Mudge, David Blaauw, Dennis Sylvester, Krisztian Flautner, "Reconfigurable Energy Efficient Near Threshold Cache Architectures," ACM/IEEE International Symposium on Microarchitecture (MICRO), November 2008
228. Brian Cline, Vivek Joshi, Dennis Sylvester, David Blaauw, "Stress-Enhanced Standard Cell Library Design," ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2008
229. Jae-Sun Seo, Igor Markov, Dennis Sylvester, David Blaauw, "On the Decreasing Significance of Large Standard Cells in Technology Mapping," ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2008
230. Kaviraj Chopra, Cheng Zhuo, David Blaauw, Dennis Sylvester, Vladimir Zolotov, "A Statistical Approach for Full-Chip Gate-Oxide Reliability Analysis," ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2008
231. Yu-Shiang Lin, Dennis Sylvester, David Blaauw, "An Ultra Low Power 1V, 220nW Temperature Sensor for Passive Wireless Applications," IEEE Custom Integrated Circuits Conference (CICC), September 2008
232. Mingoo Seok, Scott Hanson, Jae-Sun Seo, Dennis Sylvester, David Blaauw, "Robust Ultra-Low Voltage ROM Design," IEEE Custom Integrated Circuits Conference (CICC), September 2008
233. Michael Wieckowski, Young Min Park, Carlos Tokunaga, Dong Woon Kim, Zhiyoong Foo, Dennis Sylvester, David Blaauw, "Timing Yield Enhancement Through Soft Edge Flip-Flop Based Design," IEEE Custom Integrated Circuits Conference (CICC), September 2008
234. Sanjay Pant, David Blaauw, "Circuit Techniques for Suppression and Measurement of On-chip Inductive Supply Noise," IEEE European Solid-State Circuits Conference (ESSCIRC), September 2008
235. Yoonmyung Lee, Mingoo Seok, Scott Hanson, David Blaauw, Dennis Sylvester, "Standby Power Reduction Techniques for Ultra-Low Power Processors," IEEE European Solid-State Circuits Conference (ESSCIRC), September 2008

236. Cheng Zhuo, David Blaauw, Dennis Sylvester, "Variation-Aware Gate Sizing and Clustering for Post-Silicon Optimized Circuits," ACM/IEEE International Symposium on Low-Power Electronics and Design (ISLPED), August 2008
237. Mingoo Seok, Dennis Sylvester, David Blaauw, "Optimal Technology Selection for Minimizing Energy and Variability in Low Voltage Applications," ACM/IEEE International Symposium on Low-Power Electronics and Design (ISLPED), August 2008
238. Yu-Shiang Lin, Dennis Sylvester, David Blaauw, "Sensor Data Retrieval Using Alignment Independent Capacitive Signaling," IEEE Symposium on VLSI Circuits (VLSI-Symp), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on VLSI Circuits*, June 2008
239. Mingoo Seok, Scott Hanson, Yu-Shiang Lin, Zhiyong Foo, Dayeon Kim, Yoonmyung Lee, Nurachman Liu, Dennis Sylvester, David Blaauw, "The Phoenix Processor: A 30pW Platform for Sensor Applications," IEEE Symposium on VLSI Circuits (VLSI-Symp), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on VLSI Circuits*, June 2008
240. Ravikishore Gandikota, David Blaauw, Dennis Sylvester, "Modeling Crosstalk in Statistical Static Timing Analysis", ACM/IEEE Design Automation Conference (DAC), June 2008
241. Vivek Joshi, Brian Cline, Dennis Sylvester, David Blaauw, Kanak Agarwal, "Leakage Power Reduction Using Stress-Enhanced Layouts," ACM/IEEE Design Automation Conference (DAC), June 2008
242. Vineeth Veetil, Dennis Sylvester, David Blaauw, "Efficient Monte Carlo based Incremental Statistical Timing Analysis," ACM/IEEE Design Automation Conference (DAC), June 2008
243. Yu-Shiang Lin, Scott Hanson, Fabio Albano, Carlos Tokunaga, Razi-UI Haque, Kensall Wise, Ann Marie Sastry, David Blaauw, Dennis Sylvester, "Low-Voltage Circuit Design for Widespread Sensing Applications," IEEE International Symposium on Circuits and Systems (ISCAS), May 2008
244. Vivek Joshi, Brian Cline, Dennis Sylvester, David Blaauw, Kanak Agarwal, "Stress Aware Layout Optimization", ACM/IEEE International Symposium on Physical Design (ISPD), April 2008
245. Eric Karl, David Blaauw, Dennis Sylvester, "Analysis of System-Level Reliability Factors and Implications on Real-time Monitoring Methods for Oxide Breakdown Device Failures," ACM/IEEE International Symposium on Quality Electronic Design (ISQED), March 2008
246. Brian Cline, Kaviraj Chopra, David Blaauw, Andres Torres, Savithri Sundareswaran, "Transistor-Specific Delay Modeling for SSTA," ACM/IEEE Design Automation and Test in Europe Conference (DATE), March 2008
247. Eric Karl, Prashant Singh, David Blaauw, Dennis Sylvester, "Compact in situ Sensors for Monitoring NBTI and Oxide Degradation," IEEE International Solid-State Circuits Conference (ISSCC), February 2008
248. David Blaauw, Sudharsen Kalaiselvan, Kevin Lai, Wei-Hsiang Ma, Sanjay Pant, Carlos Tokunaga, Shidhartha Das, David Bull, "RazorII: In-Situ Error Detection and Correction for PVT and SER tolerance," IEEE International Solid-State Circuits Conference (ISSCC), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on ISSCC*, February 2008
249. Sanjay Pant, David Blaauw, "A Charge-Injection Based Active Decoupling Technique for Inductive Supply Noise Suppression," IEEE International Solid-State Circuits Conference (ISSCC), February 2008
250. Gregory Chen, David Blaauw, Nam Sung Kim, Trevor Mudge, Dennis Sylvester, "Yield-driven Near-threshold SRAM Design," ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2007

251. Ravikishore Gandikota, Kaviraj Chopra, David Blaauw, Murat Becer, "Victim Alignment in Cross-talk Aware Timing Analysis," ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2007
252. Vivek Joshi, David Blaauw, Dennis Sylvester, "Soft-edge Flip-flops for Improved Timing Yield: Design and Optimization," ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2007
253. Ronald G. Dreslinski, Bo Zhai, Trevor Mudge, David Blaauw, Dennis Sylvester, "An Energy Efficient Parallel Architecture Using Near Threshold Operation," Parallel Architectures and Compilation Techniques (PACT), September 2007
254. Yu-Shiang Lin, Dennis Sylvester, David Blaauw, "A sub-pW timer using gate leakage for ultra low power sub-Hz monitoring systems," IEEE Custom Integrated Circuits Conference (CICC), September 2007
255. Jae-sun Seo, Dennis Sylvester, David Blaauw, Himanshu Kaul, Ram Krishnamurthy, "A Robust Edge Encoding Technique for Energy-Efficient Multi-Cycle Interconnect," ACM/IEEE International Symposium on Low-Power Electronics and Design (ISLPED), August 2007
256. Bo Zhai, Ronald G. Dreslinski, Trevor Mudge, David Blaauw, Dennis Sylvester, "Energy Efficient Near-threshold Chip Multi-processing," ACM/IEEE International Symposium on Low-Power Electronics and Design (ISLPED), August 2007, **Best Paper Nomination**
257. Scott Hanson, Bo Zhai, Mingoo Seok, Brian Cline, Kevin Zhou, Meghna Singhal, Michael Minuth, Javin Olson, Leyla Nazhandali, Todd Austin, Dennis Sylvester, David Blaauw, "Performance and variability optimization strategies in a sub-200mV, 3.5pJ/inst, 11nW subthreshold processor," IEEE Symposium on VLSI Circuits (VLSI-Symp), **Invited Paper** to the *IEEE Journal of Solid-State Circuits (JSSC), Special Issue on VLSI Circuits*, June 2007
258. Mingoo Seok, Scott Hanson, Dennis Sylvester, David Blaauw, "Analysis and Optimization of Sleep modes in Subthreshold Circuit Design," ACM/Design Automation Conference (DAC), June 2007
259. Ravikishore Gandikota, Kaviraj Chopra, David Blaauw, Dennis Sylvester, Murat Becer, "Top-k Aggressors Sets in Delay Noise Analysis," ACM/IEEE Design Automation Conference (DAC), June 2007
260. Scott Hanson, Mingoo Seok, Dennis Sylvester, David Blaauw, "Nanometer Device Scaling in Sub-threshold Circuits," ACM/Design Automation Conference (DAC), June 2007
261. Mini Nana, David Blaauw, "Investigating Crosstalk in Sub-Threshold Circuits," ACM/IEEE International Symposium on Quality Electronic Design (ISQED), March 2007
262. Jae-Sun Seo, Prashant Singh, Dennis Sylvester, David Blaauw, "Self-timed Regenerators for High-speed and Low-power Interconnect," ACM/IEEE International Symposium on Quality Electronic Design (ISQED), March 2007, **Best Paper Nomination**
263. Bo Zhai, David Blaauw, Dennis Sylvester, Scott Hanson, "A sub-200mV 6T SRAM in 130nm CMOS," IEEE International Solid-State Circuits Conference (ISSCC), **Invited Paper** to the *Special Issue on the 2008 Compound Semi-Conductor Integrated Circuit Symposium (CSICS'08)*, February 2007
264. Carlos Tokunaga, David Blaauw, Trevor Mudge, "A True Random Number Generator with a Metastability-Based Quality Control," IEEE International Solid-State Circuits Conference (ISSCC), **Invited Paper** to the *Special Issue on the 2007 IEEE International Solid-State Circuits Conference (ISSCC)*, February 2007

265. Brian Cline, Kaviraj Chopra, David Blaauw and Yu Cao, "Analysis and Modeling of CD Variation for Statistical Static Timing," ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2006
266. Sarvesh Kulkarni, Dennis Sylvester and David Blaauw "A Statistical Approach to Body Bias Clustering for Post-Silicon Tuning," ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2006
267. Rajeev Rao, David Blaauw and Dennis Sylvester, "Soft Error Reduction in Combinational Logic Using Gate Resizing and Flip-flop Selection," ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2006
268. Kaviraj Chopra, Bo Zhai, David Blaauw and Dennis Sylvester, "A New Statistical Max Operation for Propagating Skewness Statistical Timing Analysis," ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2006
269. Sanjay Pant, David Blaauw, "An Active Decoupling Capacitance Circuit for Inductive Noise Suppression in Power Supply Networks," IEEE International Conference on Computer Design (ICCD), October 2006
270. Scott Hanson, Dennis Sylvester, David Blaauw, "A New Technique for Jointly Optimization Gate Sizing and Supply Voltage in Ultra-Low Energy Circuits," ACM/IEEE International Symposium on Low-Power Electronics and Design (ISLPED), September 2006
271. Eric Karl, David Blaauw, Dennis Sylvester, Trevor Mudge, "Reliability Modeling and Management in Dynamic Microprocessor-Based Systems," ACM/IEEE Design Automation Conference (DAC), July 2006
272. Bo Zhai, Leyla Nazhandali, Javin Olson, Anna Reeves, Michael Minuth, Ryan Helfand, Sanjay Pant, David Blaauw, Todd Austin, "A 2.60pJ/Inst. Subthreshold Sensor Processor for Optimal Energy Efficiency," IEEE Symposium on VLSI Circuits (VLSI-Symp), June 2006
273. Vivek Joshi, Rajeev Rao, Dennis Sylvester, David Blaauw, "Logic SER Reduction through Flip-flop Redesign," ACM/IEEE International Symposium on Quality Electronic Design (ISQED), March 2006
274. Rajeev Rao, Kaviraj Chopra, David Blaauw, Dennis Sylvester, "An Efficient Static Algorithm for Soft Error Rate Analysis of Combinational Circuits," ACM/IEEE Design Automation and Test in Europe Conference (DATE), March 2006
275. Sanjay Pant, David Blaauw, "Timing-Aware Decoupling Capacitance Allocation in Power Distribution Networks," ACM/IEEE Asia-Pacific Design Automation Conference (ASP-DAC), January 2006
276. Saumil Shah, Ashish Srivastava, Dushyant Sharma, Dennis Sylvester, David Blaauw, Vladimir Zolotov, "Discrete Vt Assignment and Gate Sizing Using a Self-Snapping Continuous Formulation," ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2005
277. Kavi Chopra, Saumil Shah, Ashish Srivastava, David Blaauw Dennis Sylvester, "Parametric Yield Maximization using Gate Sizing based on Efficient Statistical Power and Delay Gradient Computation," ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2005
278. Amit Jain, Vladimir Zolotov, David Blaauw, "Accurate Delay Computation for Noisy Waveform Shapes," ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2005
279. Sanjay Pant, David Blaauw, "Static Timing Analysis Considering Power Supply Variations," ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2005

280. Leyla Nazhandali, Michael Minuth, Bo Zhai, Javin Olson, Scott Hanson, Todd Austin, David Blaauw, "A Second-Generation Sensor Network Processor with Application-Driven Memory Optimizations and Out-of-Order Execution," ACM/IEEE International Conference on Compilers, Architecture, and Synthesis for Embedded Systems (CASES), September 2005.
281. Bo Zhai, Scott Hanson, David Blaauw, Dennis Sylvester, "Analysis and Mitigation of Variability in Subthreshold Design," ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED), August 2005
282. Shidhartha Das, Sanjay Pant, David Roberts, Seokwoo Lee, David Blaauw, Todd Austin, Trevor Mudge, Krisztián Flautner, "A Self-Tuning DVS Processor Using Delay-Error Detection and Correction," IEEE Symposium on VLSI Circuits (VLSI-Symp), **Invited Paper** to the *Special Issue on the 2005 Symposium on VLSI Circuits*, June 2005
283. Leyla Nazhandali, Anna Reeves, Michael Minuth, Ryan Helfand, Javin Olson, Bo Zhai, Sanjay Pant, Todd Austin, David Blaauw, "Energy Optimization of Subthreshold Voltage Sensor Processors," International Symposium on Computer Architecture (ISCA), June 2005
284. Ashish Agarwal, Saulim Shah, Dennis Sylvester, David Blaauw, "Accurate and Efficient Gate-Level Parametric Yield Estimation Considering Power/Performance Correlation", ACM/IEEE Design Automation Conference (DAC), June 2005
285. Aseem Agarwal, Kaviraj Chopra, Vladimir Zolotov, David Blaauw, "Circuit Optimization using Statistical Static Timing Analysis," ACM/IEEE Design Automation Conference (DAC), June 2005
286. David Blaauw, Kaviraj Chopra, "CAD Tools for Variation Tolerance," ACM/IEEE Design Automation Conference (DAC), June 2005
287. Eric Karl, Dennis Sylvester, David Blaauw, "Timing Error Correction Techniques for Voltage-Scalable On-Chip Memories," IEEE International Symposium on Circuits and Systems (ISCAS), May 2005
288. Amit Jain, David Blaauw, "Slack Borrowing in Flip-Flop Based Sequential Circuits," ACM/IEEE Great Lakes Symposium on VLSI (GLSVLSI), April 2005
289. Rajeev Rao, David Blaauw, Dennis Sylvester, Charles Alpert, Sani Nassif, "An Efficient Surface-Based Low-Power Buffer Insertion Algorithm," ACM/IEEE International Symposium on Physical Design (ISPD), April 2005
290. Aseem Agarwal, Kaviraj Chopra, Vladimir Zolotov, David Blaauw, "Statistical Timing Based Optimization Using Gate Sizing," ACM/IEEE Design Automation and Test in Europe Conference (DATE), March 2005
291. Himanshu Kaul, Dennis Sylvester, David Blaauw, Trevor Mudge, Todd Austin, "DVS for On-Chip Designs Based on Timing Error Correction," ACM/IEEE Design Automation and Test in Europe Conference (DATE), March 2005
292. Harmander Deogun, Dennis Sylvester, David Blaauw, "Gate-Level Mitigation Techniques for Neutron-Induced Soft Error Rate," ACM/IEEE International Symposium on Quality Electronic Design (ISQED), March 2005
293. David Roberts, Todd Austin, David Blaauw, Krisztián Flautner, Trevor Mudge, "Error Analysis for the Support of Robust Voltage Scaling," International Symposium on Quality Electronic Design (ISQED) March 2005
294. Mini Nanua, David Blaauw, Chanhee Oh, "Leakage Current Modeling in PD SOI Circuits," ACM/IEEE International Symposium on Quality Electronic Design (ISQED), March 2005

295. Dongwoo Lee, David Blaauw, Dennis Sylvester, "Runtime Leakage Minimization through Probability-Aware Dual-Vt or Dual-Tox Assignment," ACM/IEEE Asia-Pacific Design Automation Conference (ASP-DAC), January 2005, pg. 399-404
296. Kanak Agarwal, Dennis Sylvester, David Blaauw, Anirudh Devgan, "Achieving Continuous Vt Performance in a Dual Vt Process," ACM/IEEE Asia-Pacific Design Automation Conference (ASP-DAC), January 2005, pg. 393-398
297. Mridul Agarwal, Kanak Agarwal, Dennis Sylvester, David Blaauw, "Statistical Modeling of Cross-Coupling Effects in VLSI Interconnects," ACM/IEEE Asia-Pacific Design Automation Conference (ASP-DAC), January 2005, pg 503-506
298. Seokwoo Lee, Todd Austin, Trevor Mudge, David Blaauw, "Reducing Pipeline Energy Demands with Local DVS and Dynamic Retiming," ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED), August 2004, pg. 319-324
299. Nam Sung Kim, Krisztián Flautner, David Blaauw, Trevor Mudge, "Single-Vdd and Single-Vt Super-Drowsy Techniques for low-leakage high-performance instruction caches," ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED), August 2004, pg. 54-57
300. Richard Brown, Dennis Sylvester, David Blaauw, Michael Flynn, Gordon Carichner, Catharine June, "VLSI Design Curriculum," ASEE Annual Conference & Exposition, June 2004
301. Aseem Agarwal, Florin Dartu, David Blaauw, "Statistical Gate Delay Model Considering Multiple Input Switching," ACM/IEEE Design Automation Conference (DAC), June 2004, pg. 658-663
302. Seokwoo Lee, Shiddartha Des, Valeria Bertacco, Todd Austin, David Blaauw, Trevor Mudge, "Circuit-Aware Architectural Simulation," ACM/IEEE Design Automation Conference (DAC), June 2004, pg. 305-310
303. Rajeev Rao, Anirudh Devgan, David Blaauw, Dennis Sylvester, "Parametric Yield Estimation Considering Leakage Variability," ACM/IEEE Design Automation Conference (DAC), June 2004, pg. 442-447, **Best Paper Nomination**
304. Harmander Deogun, Rajeev Rao, Dennis Sylvester, David Blaauw, "Crosstalk- and Leakage-Aware Bus Encoding for Total Power Reduction," ACM/IEEE Design Automation Conference (DAC), June 2004, pg. 779-782
305. Ashish Srivastava, Dennis Sylvester, David Blaauw, "Power Minimization Using Simultaneous Gate Sizing, Dual-Vdd, and Dual-Vth Assignment," ACM/IEEE Design Automation Conference (DAC), June 2004, pg 783-787
306. Ashish Srivastava, Dennis Sylvester, David Blaauw, Aseem Agarwal, "Statistical optimization of leakage power considering process variations using dual-Vth and sizing," ACM/IEEE Design Automation Conference (DAC), June 2004, pg. 773-778
307. Bo Zhai, David Blaauw, Dennis Sylvester, Krisztián Flautner, "Theoretical and Practical Limits of Dynamic Voltage Scaling," ACM/IEEE Design Automation Conference (DAC), June 2004, pg. 868-873
308. Dongwoo Lee, Vladimir Zolotov, David Blaauw, "Static Timing Analysis using Backward Signal Propagation," ACM/IEEE Design Automation Conference (DAC), June 2004, pg. 664-669
309. Kanak Agarwal, Dennis Sylvester, David Blaauw, Frank Liu, and Sarma Vrudhula, "Variational Delay Metrics for Interconnect Timing Analysis," ACM/IEEE Design Automation Conference (DAC), June 2004, pg. 381-384
310. Sanjay Pant, David Blaauw, Vladimir Zolotov, Savithri Sundareswaran, "A Stochastic Approach to Power Grid Analysis," ACM/IEEE Design Automation Conference (DAC), June 2004, pg. 171-176

311. Woo Hyung Lee, Sanjay Pant, David Blaauw, "Analysis and reduction of on-chip inductance effects in power supply grids," ACM/IEEE International Symposium on Quality Electronic Design (ISQED), March 2004, pg. 131-136
312. Ashish Srivastava, Dennis Sylvester, David Blaauw, "Concurrent Sizing, Vdd and Vth Assignment for Low-Power Design," ACM/IEEE Design Automation and Test in Europe Conference (DATE), Vol. 1, February 2004, pg. 718-719
313. Dongwoo Lee, Harmander Deogun, David Blaauw, Dennis Sylvester, "Simultaneous State, Vt and Tox Assignment for Total Standby Power Minimization," ACM/IEEE Design Automation and Test in Europe Conference (DATE), Vol. 1, February 2004, pg. 494-499
314. Kanak Agarwal, Dennis Sylvester, David Blaauw, "A Simplified Transmission-Line Based Crosstalk Noise Model for On-Chip RLC Wiring," ACM/IEEE Asia-Pacific Design Automation Conference (ASP-DAC), January 2004, pg. 859-865
315. Dan Ernst, Nam Sung Kim, Shidhartha Das, Sanjay Pant, Toan Pham, Rajeev Rao, Conrad Ziesler, David Blaauw, Todd Austin, Trevor Mudge, "Razor: A Low-Power Pipeline Based on Circuit-Level Timing Speculation," ACM/IEEE International Symposium on Microarchitecture (MICRO), December 2003, pg. 7-18, **Best Paper Award**
316. Kanak Agarwal, Dennis Sylvester, David Blaauw, "Dynamic Clamping: On-Chip Dynamic Shielding and Termination for High-Speed RLC Buses," IEEE International Symposium on System-on-Chip, November 2003, pg. 97-100
317. Aseem Agarwal, David Blaauw, Vladimir Zolotov, "Statistical Clock Skew Analysis Considering Intra-Die Process Variations," ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2003, pg. 914-921
318. Aseem Agarwal, David Blaauw, Vladimir Zolotov, "Statistical Timing Analysis for Intra-Die Process Variations with Spatial Correlations," ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2003, pg. 900-907
319. Sanjay Pant, David Blaauw, Vladimir Zolotov, Savithri Sundareswaran, Rajendran Panda, "Vectorless Analysis of Supply Noise Induced Delay Variation," ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2003, pg. 184-191
320. Dmitry Nadezhin, Sergey Gavrilov, Alexey Glebov, Yury Egorov, Vladimir Zolotov, David Blaauw, Rajendran Panda, Murat Becer, Alexandre Ardelea, Ajay Patel, "SOI Transistor Model for Fast Transient Simulation," ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2003, pg. 120-127
321. Sarvesh Bhardwaj, Sarma Vrudhula, David Blaauw, "□AU: Timing Analysis Under Uncertainty," ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2003, pg. 615-620
322. Nam Sung Kim, David Blaauw, Trevor Mudge, "Leakage Power Optimization Techniques for Ultra Deep Sub-Micron Multi-Level Caches," ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2003, pg. 627-632
323. Shidhartha Das, Kanak Agarwal, David Blaauw, Dennis Sylvester, "Optimal Inductance for On-chip RLC Interconnections," IEEE International Conference on Computer Design (ICCD), October 2003, pg. 264-267
324. Mini Nana, David Blaauw, "Noise Analysis Methodology for Partially Depleted SOI Circuits," IEEE Custom Integrated Circuits Conference (CICC), pg. 719-722, **Best Paper Award, Invited Paper** to the *Special Issue on the 2003 Custom Integrated Circuits Conference (CICC 2003)*, September 2003

325. Himanshu Kaul, Dennis Sylvester, David Blaauw, "Clock Net Optimization Using Active Shielding," IEEE European Solid-State Circuits Conference (ESSCIRC), September 2003, pg. 265-268
326. Rajeev Roa, Ashish Srivastava, David Blaauw, Dennis Sylvester, "Statistical Estimation of Leakage Current Considering Inter- and Intra-Die Process Variation," ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED), August 2003, pg. 84-89
327. Dongwoo Lee, David Blaauw, "Static Leakage Reduction through Simultaneous Threshold Voltage and State Assignment," ACM/IEEE Design Automation Conference (DAC), June 2003, pg. 191-194
328. Dongwoo Lee, Wesley Kwong, David Blaauw, Dennis Sylvester, "Analysis and Minimization Techniques for Total Leakage Considering Gate Oxide Leakage," ACM/IEEE Design Automation Conference (DAC), June 2003, pg. 175-180
329. Murat R. Becer, David Blaauw, Ilan Algor, Rajendran Panda, Chanhee Oh, Vladimir Zolotov, Ibrahim Hajj, "Post-Route Gate Sizing for Crosstalk Noise Reduction," ACM/IEEE Design Automation Conference (DAC), June 2003, pg. 954-957
330. Kanak Agarwal, Dennis Sylvester, David Blaauw, "Simple Metrics for Slew Rate of RC Circuits Based on Two Circuit Moments," ACM/IEEE Design Automation Conference (DAC), June 2003, pg. 950-953
331. Kanak Agarwal, Dennis Sylvester, David Blaauw, "An Effective Capacitance Based Driver Output Model for On-Chip RLC Interconnects," ACM/IEEE Design Automation Conference (DAC), June 2003, pg. 376-381
332. Aseem Agarwal, David Blaauw, Vladimir Zolotov, "Computation and Refinement of Statistical Bounds on Circuit Delay," ACM/IEEE Design Automation Conference (DAC), June 2003, pg. 348-353
333. Bhavana Thudi, David Blaauw, "Non-Iterative Timing Window Computation for Delay Noise," ACM/IEEE Design Automation Conference (DAC), June 2003, pg. 390-395
334. Haitian Hu, Vladimir Zolotov, Min Zhao, Rajendran Panda, David Blaauw, Sachin Sapatnekar, "Table Look-up Based Compact Modeling for On-Chip Interconnect Timing and Noise Analysis," IEEE International Symposium on Circuits and Systems (ISCAS), May 2003, pg. 668-671
335. Aseem Agarwal, Vladimir Zolotov, David Blaauw, "Statistical Timing Analysis Using Bounds," ACM/IEEE Design Automation and Test in Europe Conference (DATE), March 2003, pg. 62-67
336. Dongwoo Lee, Wesley Kwong, David Blaauw, Dennis Sylvester, "Simultaneous Subthreshold and Gate-Oxide Tunneling Leakage Current in Nanometer CMOS Design," ACM/IEEE International Symposium on Quality Electronic Design (ISQED), March 2003, pg. 287-292
337. David Blaauw, Vladimir Zolotov, Chanhee Oh, Murat Becer, Rajendran Panda, "Static Electromigration Analysis for Signal Interconnects," ACM/IEEE International Symposium on Quality Electronic Design (ISQED), March 2003, pg. 377-382
338. Murat R. Becer, David Blaauw, Ilan Algor, Rajendran Panda, Chanhee Oh, Vladimir Zolotov, Ibrahim Hajj, "Post-Route Gate Sizing for Crosstalk Noise Reduction," ACM/IEEE International Symposium on Quality Electronic Design (ISQED), March 2003, pg. 171-176
339. Robert Bai, Sarvesh Kulkarni, Wesley Kwong, Ashish Srivastava, Dennis Sylvester, David Blaauw, "An Implementation of a 32-bit ARM Processor Using Dual Power Supplies and Dual Threshold Voltages," IEEE Computer Society Annual Symposium on VLSI, February 2003, pg. 149-154
340. Aseem Agarwal, David Blaauw, Vladimir Zolotov, Savithri Sundareswaran, Min Zhou, Kaushik Gala, Rajendran Panda, "Statistical Delay Computation Considering Spatial Correlations,"

ACM/IEEE Asia-Pacific Design Automation Conference (ASP-DAC), January 2003, pg. 271-276,
Best Paper Award

341. Nam Sung Kim, Krisztián Flautner, David Blaauw, Trevor Mudge, “Drowsy Instruction Caches: Leakage Power Reduction Using Dynamic Voltage Scaling and Cache Sub-bank Prediction”, ACM/IEEE International Symposium on Microarchitecture (MICRO), November 2002, pg. 219-230
342. Steve Martin, Krisztián Flautner, Trevor Mudge, David Blaauw, “Combined Dynamic Voltage Scaling and Adaptive Body Biasing for Lower Power Microprocessors under Dynamic Workloads,” ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2002, pg. 721-725
343. Li Ding, David Blaauw, Pinaki Mazumder, “Efficient Crosstalk Noise Estimation Using Aggressor and Tree Reductions,” ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2002, pg. 595-600
344. Haitian Hu, David Blaauw, Vladimir Zolotov, Min Zhao, Rajendran Panda, Sachin Sapatnekar, “A Precorrected-FFT Method for Simulating On-Chip Inductance,” ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2002, pg. 221-227
345. David Blaauw, Vladimir Zolotov, Supamas Sirichotiyakul, Murat Becer, Chanhee Oh, Rajendran Panda, “Noise Propagation and Failure Criteria for VLSI Designs,” ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2002, pg. 587-594
346. Sarvesh Bhardwaj, Sarma Vrudhula, David Blaauw, “Estimation of Signal Arrival Times in the Presence of Delay Noise,” ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 2002, pg. 410-422
347. Ashish Srivastava, Robert Bai, David Blaauw, Dennis Sylvester, “Modeling and Analysis of Leakage Power Considering within Die Process Variation,” ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED), August 2002, pg. 64-67
348. Sarma Vrudhula, David Blaauw, Supamas Sirichotiyakul, “Estimation of the Likelihood of Capacitive Coupling Noise,” ACM/IEEE Design Automation Conference (DAC), June 2002, pg. 653-658
349. Li Ding, Pinaki Mazumder, David Blaauw, “Crosstalk Noise Estimation Using Effective Coupling Capacitance,” IEEE International Symposium on Circuits and Systems (ISCAS), May 2002, pg. 645-648
350. Krisztián Flautner, Nam Sung Kim, Steve Martin, David Blaauw, Trevor Mudge, “Drowsy Caches: Simple Techniques for Reducing Leakage Power,” ACM/IEEE International Symposium on Computer Architecture (ISCA), May 2002, pg. 148-157
351. Himanshu Kaul, Dennis Sylvester, David Blaauw, “Active Shields: A New Approach to Shielding Global Wires,” ACM/IEEE Great Lakes Symposium on VLSI (GLSVLSI), April 2002, pg. 112-117
352. Murat Becer, David Blaauw, Vladimir Zolotov, Rajendran Panda, Ibrahim Hajj, “Analysis of Noise Avoidance Techniques in Deep-Submicron Interconnects Using a Complete Crosstalk Noise Model,” IEEE/ACM Design Automation and Test in Europe Conference (DATE), March 2002, pg. 456-463
353. Vladimir Zolotov, David Blaauw, Rajendran Panda, Chanhee Oh, “Noise Injection and Propagation in High Performance Designs,” ACM/IEEE International Symposium on Quality Electronic Design (ISQED), March 2002, pg. 425 - 430

354. Alexey Glebov, Sergey Gavrilov, David Blaauw, Vladimir Zolotov, Rajendran Panda, Chanhee Oh, "False-Noise Analysis Using Resolution Method," ACM/IEEE International Symposium on Quality Electronic Design (ISQED), March 2002, pg. 437-442
355. Murat Becer, David Blaauw, Rajendran Panda, Ibrahim Hajj, "Pre-route Noise Estimation in Deep Submicron Integrated Circuits," ACM/IEEE International Symposium on Quality Electronic Design (ISQED), March 2002, pg. 413-418, **Best Paper Nomination**
356. David Blaauw, Kaushik Gala, "Inductance: Implications and Solutions for High-Speed Digital Circuits - Inductance Extraction and Modeling," IEEE International Solid-State Circuits Conference (ISSCC), February 2002, pg. 548-553.
357. Alexey Glebov, Sergey Gavrilov, David Blaauw, Supamas Sirichotiyakul, Chanhee Oh, Vladimir Zolotov, "False-Noise Analysis Using Logic Implications," IEEE/ACM International Conference on Computer Aided Design (ICCAD), November 2001, pg. 515-521
358. Rajendran Panda, Savithri Sundareswaran, David Blaauw, "On the Interaction of Power Distribution network with Substrate," ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED), August 2001, pg. 388-393
359. Supamas Sirichotiyakul, David Blaauw, Chanhee Oh, Rafi Levy, Vladimir Zolotov, Jingyan Zuo, "Driver Modeling and Alignment for Worst-Case Delay Noise," ACM/IEEE Design Automation Conference (DAC), June 2001, pg. 720-725, **Best Paper Nomination**
360. Kaushik Gala, David Blaauw, Junfeng Wang, Vladimir Zolotov, Min Zhao, "Inductance 101: Analysis and Design Issues," ACM/IEEE Design Automation Conference (DAC), June 2001, pg. 329-334
361. Murat Becer, David Blaauw, Supamas Sirichotiyakul, Rafi Levy, Chanhee Oh, Vladimir Zolotov, Jingyan Zuo, Ibrahim Hajj, "A Global Driver Sizing Tool for Functional Crosstalk Noise Avoidance," ACM/IEEE International Symposium on Quality Electronic Design (ISQED), March 2001, pg. 158-163
362. David Blaauw, Vladimir Zolotov, Savithri Sundareswaran, Chanhee Oh, Rajendran Panda, "Slope Propagation in Static Timing Analysis," IEEE International Conference on Computer Aided Design (ICCAD), November 2000, pg. 338-343
363. Rajendran Panda, David Blaauw, Rajat Chaudhry, Vladimir Zolotov, Brian Young, Ravi Ramaraju, "Model and Analysis for Combined Package and On-Chip Power Grid Simulation," ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED), July 2000, pg. 179-184
364. Kaushik Gala, Vladimir Zolotov, Rajendran Panda, Brian Young, Junfeng Wang, David Blaauw, "On-Chip Inductance Modeling and Analysis," ACM/IEEE Design Automation Conference (DAC), June 2000, pg. 63-68, **Best Paper Award**
365. Min Zhao, Rajendran Panda, Sachin Sapatnekar, Tim Edwards, Rajat Chaudhry, David Blaauw, "Hierarchical Analysis of Power Distribution Networks," ACM/IEEE Design Automation Conference (DAC), June 2000, pg. 150-155
366. David Blaauw, Rajendran Panda, Abhijit Das, "Removing User-Specified False Paths from Timing Graphs," ACM/IEEE Design Automation Conference (DAC), June 2000, pg. 270-273
367. Rafi Levy, David Blaauw, Gabi Braca, Amir Grinshpon, Chanhee Oh, Boaz Orshav, Vladimir Zolotov, "ClariNet: A Noise Analysis Tool and Methodology for Deep-Submicron Design," ACM/IEEE Design Automation Conference (DAC), June 2000, pg. 233-238
368. Rajat Chaudhry, David Blaauw, Rajendran Panda, Tim Edwards, "Current Signature Compression for IR-Drop Analysis," ACM/IEEE Design Automation Conference (DAC), June 2000, pg. 162-167

369. David Blaauw, Kaushik Gala, Vladimir Zolotov, Rajendran Panda, Junfeng Wang, "On-Chip Inductance Modeling," ACM/IEEE Great Lakes Symposium on VLSI Design (GVLIS-SI), March 2000, pg. 75-80
370. Rajat Chaudhry, Rajendran Panda, Tim Edwards, David Blaauw, "Design and Analysis of Power Distribution Networks with Accurate RLC Models," ACM/IEEE International Conference on VLSI Design (VLSI-India), January 2000, pg. 151-155
371. Supamas Sirichotiyakul, Tim Edwards, Chanhee Oh, Jingyan Zuo, Abhijit Dharchoudhury, Rajendran Panda, and David Blaauw, "Stand-by Power Minimization through Simultaneous Threshold Voltage Selection and Circuit Sizing," ACM/IEEE Design Automation Conference (DAC), June 1999, pg. 436-441
372. Savithri Sundareswaran, David Blaauw, Abhijit Dharchoudhury, "A Three Tier Assertion Technique for Spice Verification of Transistor Level Timing Analysis," ACM/IEEE International Conference on VLSI Design (VLSI-India), January 1999, pg. 175-180
373. David Blaauw, Abhijit Dharchoudhury, Rajendran Panda, Supamas Sirichotiyakul, Chanhee Oh, Tim Edwards, "Industrial Perspectives on Emerging CAD Tools for Low Power Processor Design," ACM/IEEE International Symposium on Low-Power Electronics and Design (ISLPED), August 1998, pg. 143-14
374. Abhijit Dharchoudhury, Rajendran Panda, David Blaauw, Ravi Vaidyanathan, Bogdan Tutianu, David Bearden, "Methodology for the Design and Analysis of Power Distribution Networks on the PowerPC Microprocessor," ACM/IEEE Design Automation Conference (DAC), June 1998, pg. 738-743
375. Rajendran Panda, Abhijit Dharchoudhury, Tim Edwards, Joe Norton, David Blaauw, "Migration: A New Technique to Improve Synthesized Designs through Incremental Customization," ACM/IEEE Design Automation Conference (DAC), June 1998, pg. 388-391
376. Satya Pullela, Rajendran Panda, Abhijit Dharchoudhury, Gopal Vijayan, David Blaauw, "CMOS Combinational Circuit Sizing by Stage-Wise Tapering," IEEE/ACM Design Automation and Test in Europe Conference (DATE), February 1998, pg. 985-986
377. Sergey Gavrilov, Alexey Glebov, Satya Pullela, Steve Moore, Abhijit Dharchoudhury, Rajendran Panda, Gopal Vijayan, David Blaauw, "Library-Less Synthesis for CMOS Combinational Logic Circuits," ACM/IEEE International Conference on Computer-Aided Design (ICCAD), November 1997, pg. 658-662
378. Abhijit Dharchoudhury, David Blaauw, Joe Norton, Satya Pullela, Jim Dunning, "Transistor-Level Sizing and Timing Verification of Domino Circuits in the PowerPC Microprocessor," IEEE International Conference on Computer Design (ICCD), October 1997, pg. 143-148
379. Sergey Gavrilov, Alexey Glebov, Sergey Rusakov, David Blaauw, Larry Jones, Gopal Vijayan, "Fast Power Loss Calculation for Digital Static CMOS Circuits," ACM/IEEE European Design and Test Conference (ED&T), March 1997, 411-415
380. Alexey Glebov, David Blaauw, Larry Jones, "Transistor Reordering for Low Power CMOS Gates Using an SP-BDD Representation," ACM/IEEE International Symposium on Low Power Design (ISLPD), April 1995, pg. 161-166
381. David Blaauw, Larry Jones, "Reducing the Scheduling Cost in Event-Driven Simulation through Component Clustering," ACM/IEEE European Conference on Design Automation (EDAC), February 1993, pg. 18-22

382. David Blaauw, Daniel Saab, Prith Banerjee, Jacob Abraham, "Functional Abstraction of Logic Gates for Switch-Level Simulation," ACM/IEEE European Conference on Design Automation (EDAC), February 1991, pg. 329-333
383. David Blaauw, Robert Mueller-Thuns, Daniel Saab, Prith Banerjee, Jacob Abraham, "SNEL: A Switch-level Simulator Using Multiple Functional Abstraction," ACM/IEEE International Conference on Computer Aided Design (ICCAD), November 1990, pg. 66-69
384. David Blaauw, Prith Banerjee, Jacob Abraham, "Automatic Classification of Node Types in Switch-Level Descriptions," IEEE International Conference on Computer Design (ICCD), September 1990, pg. 175-178
385. Daniel Saab, Robert Mueller-Thuns, David Blaauw, Joe Rahmeh, Jacob Abraham, "Fault Grading of Large Digital Systems," IEEE International Conference on Computer Design (ICCD), September 1990, pg. 290-293
386. David Blaauw, Daniel Saab, Junsheng Long, and Jacob Abraham, "Derivation of Signal Flow for Switch-Level Simulation," ACM/IEEE European Conference on Design Automation (EDAC), March 1990, pg. 301-305
387. David Blaauw, Daniel Saab, Robert Mueller-Thuns, Jacob Abraham, Joe Rahmeh, "Automatic Generation of Behavioral Models," ACM/IEEE Design Automation Conference (DAC), June 1989, pg. 179-184
388. Daniel Saab, Robert Mueller-Thuns, David Blaauw, Jacob Abraham, Joe Rahmeh, "CHAMP: Concurrent and Multilevel Program for Simulation of VLSI Circuit," ACM/IEEE International Conference on Computer Aided Design (ICCAD), November 1988, pg. 246-249

F. Workshop Papers

1. Evgeny Katz, Paolo Bollella, Inhee Lee, David Blaauw, "Extracting Power from Biological Sources for Activating Sensors/Biosensors," *ECS Meeting Abstracts*, March 2020
2. Fabio Frustaci, David Blaauw, Dennis Sylvester, Massimo Alioto, "Better-than-Voltage Scaling Energy Reduction in Approximate SRAMs via Bit Dropping and Bit Reuse," Workshop on Power And Timing Modeling, Optimization and Simulation (PATMOS), September 2015
3. Pat Pannuto, Yoonmyung Lee, Zhiyoong Foo, David Blaauw and Prabal Dutta, "M3: A mm-scale Wireless Energy Harvesting Sensor Platform," The First International Workshop on Energy Neutral Sensing Systems (ENSSys), November 2013
4. Yoonmyung Lee, Ye-Sheng Kuo, Pat Pannuto, Ron Dreslinski, Prabal Dutta, David Blaauw, "Architectural Challenges for MM-scale Sensor Nodes," The First International Workshop on the Swarm at the Edge of the Cloud (SEC'13) September 2013
5. Ronald Dreslinski, Bharan Giridhar, Nathan Pinckney, David Blaauw, Trevor Mudge, "Reevaluating Fast Dual-Voltage Power Rail Switching Circuitry," 10th Annual Workshop on Duplicating, Deconstructing and Debunking (WDDD12) June 2012
6. Pat Pannuto, Yoonmyung Lee, Ben Kempke, Dennis Sylvester, David Blaauw, Prabal Dutta, "Demo: Ultra-Constrained Sensor Platform Interfacing," Information Processing in Sensor Networks (IPSN), April 2012
7. David Fick, Ronald G. Dreslinski, Bharan Giridhar, Gyouho Kim, Sangwon Seo, Matthew Fojtik, Sudhir Satpathy, Yoonmyung Lee, Daeyeon Kim, Nurrachman Liu, Michael Wiekowski, Gregory Chen, Trevor Mudge, Dennis Sylvester, David Blaauw, "Centip3De: A 7-Layer 3D System With 128 ARM Cortex-M3 Cores and 256MB of DRAM," 3D Integration Workshop, ACM/IEEE Design Automation and Test in Europe Conference (DATE), March 2011

8. Vivek Joshi, Valeriy Sukharev, Andres Torres, Dennis Sylvester, David Blaauw, "Closed-Form Modeling of Layout-Dependent Mechanical Stress," *Design for Manufacturability and Yield (DFM&Y)*, July 2009
9. Ronald Dreslinski, Michael Wieckowski, David Blaauw, Dennis Sylvester, Trevor Mudge, "Near Threshold Computing: Overcoming Performance Degradation from Aggressive Voltage Scaling," Workshop on Energy-Efficient Design (WEED), June 2009
10. Ravikishore Gandikota, David Blaauw, Li Ding, Peivand Tehrani, "Worst-Case Aggressor-Victim Alignment with Current-Source Driver Models," ACM/IEEE International Workshop on Timing in Synthesis and Specification (TAU), February 2009
11. David Blaauw, James Kitchener, Braden Phillips, "Optimizing addition for sub-threshold logic," Forty-Second Asilomar Conference on Signals, Systems and Computers, October 2008
12. Jae-Sun Seo, Igor Markov, Dennis Sylvester, David Blaauw, "On the Decreasing Significance of Large Standard Cells in Technology Mapping," International Workshop on Logic & Synthesis (IWLS), June 2008
13. Ravikishore Gandikota, David Blaauw, Dennis Sylvester, "Modeling Crosstalk in Statistical Static Timing Analysis," ACM/IEEE International Workshop on Timing in Synthesis and Specification (TAU), February 2008
14. Vineeth Veetil, Dennis Sylvester, David Blaauw, "Efficient Monte Carlo based Incremental Statistical Timing Analysis," ACM/IEEE International Workshop on Timing in Synthesis and Specification (TAU), February 2008
15. David Roberts, Ronald G. Dreslinski, Eric Karl, Trevor Mudge, Dennis Sylvester, David Blaauw, "When Homogeneous becomes Heterogeneous," Parallel Architectures and Compilation Techniques (PACT) workshop on Operating Systems support for Heterogeneous Multicore Architectures, September 2007
16. Mini Nanua, "Crosstalk Waveform Modeling Using Wave Fitting," IEEE International Workshop on Power and Timing Modeling, Optimization and Simulation (Patmos) September 2007
17. Ravikishore Gandikota, Kaviraj Chopra, David Blaauw, Dennis Sylvester, Murat Becer, "Top-k aggressors set in Delay Noise Analysis," ACM/IEEE International Workshop on Timing in Synthesis and Specification (TAU), February 2007
18. Vineeth Veetil, Dennis Sylvester, David Blaauw, "Fast and Accurate Waveform Analysis with Current Source Models," ACM/IEEE International Workshop on Timing in Synthesis and Specification (TAU), February 2007
19. Vineeth Veetil, Dennis Sylvester, David Blaauw, "Criticality Aware Latin Hypercube Sampling for Efficient Statistical Timing Analysis," ACM/IEEE International Workshop on Timing in Synthesis and Specification (TAU), February 2007
20. Kaviraj Chopra, Narendra Shenoy, David Blaauw, "Variogram Based Robust Extraction of Process Variation," ACM/IEEE International Workshop on Timing Issues, February 2007
21. Fabio Albano, David Blaauw and Dennis Sylvester, Ann Mary Sastry, "Design and Optimization of Hybrid Power Systems for Fully Implantable Medical Devices," Joint International Meeting Symposium on Bioelectronics, Biointerfaces, and Biomedical Applications 2, November, 2006
22. Mini Nanua and David Blaauw, "Receiver Modeling for Static Functional Crosstalk Analysis," IEEE International Workshop on Power and Timing Modeling, Optimization and Simulation (Patmos), September 2006

23. Sanjay Pant, David Blaauw, "Timing-aware Decoupling Capacitance Allocation in Power Distribution Networks," in ACM/IEEE International Workshop on Timing in Synthesis and Specification (TAU), February 2006
24. Kavi Chopra, Bo Zhai, David Blaauw, Dennis Sylvester "A New Statistical Max Operation for Propagating Skewness in Statistical Timing Analysis", ACM/IEEE International Workshop on Timing in Synthesis and Specification (TAU), February 2006
25. Kavi Chopra, Chandramouli Kashyap, Haihua Su, David Blaauw "Current Source Driver Model Synthesis and Worst-case Alignment for Accurate Timing and Noise Analysis", ACM/IEEE International Workshop on Timing in Synthesis and Specification (TAU), February 2006
26. Smitha Shyam, Sujay Phadke, Benjamin Lui, Hitesh Gupta, Valeria Bertacco, David Blaauw, "VOLTaiRE: Low-cost Fault Detection Solutions for VLIW Microprocessors," Workshop on Intropective Architecture (WISA), February 2006.
27. Amir Borna, Christopher Progler, David Blaauw, "Correlation Analysis of CD-Variation and Circuit Performance Under Multiple Sources of Variability," SPIE Design and Process Integration for Microelectronic Manufacturing II, Lars W. Liebmann, May 2005
28. Aseem Agarwal, Kaviraj Chopra, Vladimir Zolotov, David Blaauw, "Statistical Timing Based Optimization Using Gate Sizing," ACM/IEEE Workshop on Timing in Synthesis and Specification (TAU), February 2005
29. Amit Jain, David Blaauw, Vladimir Zolotov, "Accurate Gate Delay Model for Arbitrary Waveform Shapes," ACM/IEEE Workshop on Timing in Synthesis and Specification (TAU), February 2005
30. Christopher Progler, Amir Borna, David Blaauw, Pierre Sixt, "Impact of lithography variability on statistical timing behavior," SPIE Design and Process Integration for Microelectronic Manufacturing II, Lars W. Liebmann, Ed., Vol. 5379, May 2004, pg. 101-110
31. Amit Jain, David Blaauw, "Modeling Flip-Flop Delay Dependencies in Timing Analysis," ACM/IEEE Workshop on Timing in Synthesis and Specification (TAU), February 2004
32. Aseem Agarwal, David Blaauw, Vladimir Zolotov, Sarma Vrudhula, "Statistical Timing Analysis Using Bounds and Selective Enumeration," ACM/IEEE Workshop on Timing in Synthesis and Specification (TAU), December 2002, pg. 29-36
33. Aseem Agarwal, David Blaauw, Savithri Sundareswaran, Vladimir Zolotov, Min Zhou, Kaushik Gala, Rajendran Panda, "Path-Based Statistical Timing Analysis Considering Inter- and Intra-Die Correlations," ACM/IEEE Workshop on Timing in Synthesis and Specification (TAU), December 2002, pg. 16-21
34. Himanshu Kaul, Dennis Sylvester, David Blaauw, "Active Shielding of RLC Global Interconnects," ACM/IEEE Workshop on Timing in Synthesis and Specification (TAU), December 2002, pg. 98-104
35. Kanak Agarwal, Dennis Sylvester, David Blaauw, "A Library Compatible Driving Point Model for On-Chip RLC Interconnects," ACM/IEEE Workshop on Timing in Synthesis and Specification (TAU), December 2002, pg. 63-69
36. Bhavana Thudi, David Blaauw, "Efficient Switching Window Computation For Cross-Talk Noise," ACM/IEEE Workshop on Timing in Synthesis and Specification (TAU), December 2002, pg. 84-91
37. Fadi Aloul, Soha Hassoun, Karem Sakallah, David Blaauw, "Robust SAT-Based Search Algorithm for Leakage Power Reduction," IEEE International Workshop-Power And Timing Modeling, Optimization and Simulation (Patmos), September 2002, pg. 167-177

38. Murat Becer, David Blaauw, Ibrahim Hajj, Rajendran Panda, "Early Probabilistic Noise Estimation for Capacitively Coupled Interconnects," ACM/IEEE International Workshop on System-Level Interconnect Prediction (SLIP), April 2002, pg. 77-83
39. David Blaauw, "Signal Integrity Issues in High Performance Design," IEEE International Workshop - Power and Timing Modeling, Optimization and Simulation (Patmos), September 2001, pg. 5.1.1-5.1.4
40. Vladimir Zolotov, David Blaauw, Rajendran Panda, Chanhee Oh, Savithri Sundareswaran, "Slope Propagation in Static Timing Analysis," ACM/IEEE Workshop on Timing in Synthesis and Specification (TAU), December 2000, pg. 91-96
41. Supamas Sirichotiyakul, David Blaauw, Chanhee Oh, Rafi Levy, Vladimir Zolotov, "Driver Modeling and Alignment for Worst-Case Delay Noise," ACM/IEEE Workshop on Timing in Synthesis and Specification (TAU), December 2000, pg. 1-7
42. David Blaauw, Tim Edwards, "Generating False Path Free Timing Graphs Using Node Splitting," ACM/IEEE Workshop on Timing in Synthesis and Specification (TAU), March 1999, pg. 112-117
43. David Blaauw, "Power Management Issues in High Performance Processor Design," IEEE Alessandro Volta Workshop on Low-Power Design (VOLTA), March 1999, pg. 2
44. Daksh Lenther, Satya Pallela, David Blaauw, Shantanu Ganguly, "Hierarchical Clock-network Optimization," ACM Physical Design Workshop, April 1996, pg. 49-54
45. John Willis, Rob Newshutz, Lance Thompson, Jeff Graves, Tom Dillinger, Jeff Snyder, Nimish Radia, Joe Skovira, David Blaauw, Sidhartha Mohanty, Zhiyuan Li, Sandra Samelson, Matt Lin, "MinSim: Optimized, Compiled VHDL Simulation Using Networked & Parallel Computers," IEEE VHDL International User Forum, October 1993, pg. 137-144

G. Patents Issued

1. "Millimeter-Scale Bluetooth Low Energy transmitter with dual purpose loop antenna," Patent number 10,911,078, issued February 2, 2021
2. "Low-Power, Long-Range RF Localization System and Method," Patent number 10,746,844, issued August 18, 2020
3. "Analog-To-Digital Conversion Circuit and Image Sensor Including the Same," Patent Number 10,594,333, issued March 17, 2020
4. "Variation-tolerant voltage reference," Patent number 10310537, issued June 4, 2019
5. "Intraocular pressure sensor with improved voltage reference circuit," Patent number 10,285,590, issued May 14, 2019
6. "Self-oscillating switched-capacitor DC-DC converter," Patent number 9,979,284, issued May 22, 2018
7. "Floating-gate transistor array for performing weighted sum computation," Patent number 9,760,533, issued September 12, 2017
8. "Electrostatic discharge clamp circuit for ultra-low power applications," Patent number 9,716,381, issued July 25, 2017
9. "Measurement circuitry and method for measuring a clock node to output node delay of a flip-flop," Patent number 9,638,752, issued May 2, 2017
10. "Ultra Low Power Temperature Insensitive Current Source With Line and Load Regulation," Patent Number 9,639,107, issued May 2, 2017

11. "Protocol for an electronic device to receive a data packet from an external device," Patent number 9,635,147, issued April 25, 2017
12. "Integrated circuit using topology configurations," Patent Number 9,589,601 issued March 7, 2017
13. "Single Cycle Arbitration Within an Interconnect," Patent Number 9,514,074 B2 issued December 6, 2016
14. "Error recovery within integrated circuit," Patent Number 9,448,875, issued September 20, 2016
15. "Storage Device Supporting Logical Operations, Methods and Storage Medium," Patent Number 9,396,795, issued July 19, 2016.
16. "Low Power Oscillator with Charge Subtraction Scheme," Patent Number 9,385,692, July 5, 2016
17. "True random number generator," Patent Number 9,335,972, May 10, 2016
18. "Memory Circuit Including Read Voltage Boost," Patent Number 9,275,702 issued March 1, 2016
19. "Error Recovery Within Integrated Circuit," Patent Number 9,164,842 issued October 20, 2015
20. "Low Power Reference Current Generator with Tunable Temperature," Patent Number 9147443 issued September 29, 2015
21. "Randomized Value Generation," Patent Number 8,930,427 issued January 6, 2015
22. "Crossbar circuitry for applying an adaptive priority scheme," Patent Number 8,868,817 issued October 21, 2014
23. "Apparatus and Method for Transferring a Data Signal Propagated Along a Bidirectional Communication Path Within a Data Processing Apparatus," Patent Number 8,713,232 issued April 29, 2014
24. "Error Recovery Within Integrated Circuit" Patent Number 8,650,470 issued February 11, 2014
25. "Reference voltage generator having a two transistor design," Patent Number 8,564,275 issued October 22, 2013
26. "Crossbar circuitry for applying an adaptive priority scheme and method of operation of such crossbar circuitry," Patent Number 8,549,207 issued October 1, 2013
27. "Integrated circuit memory power supply," Patent Number 8,526,261 issued September 3, 2013
28. "Vertical interconnect patterns in multi-layer integrated circuits," Patent Number 8,381,155 issued February 19, 2013
29. "Random Number Generator," Patent Number 8,346,832 issued January 1, 2013
30. "Cache memory system for a data processing apparatus," Patent Number 8,335,122 issued December 18, 2012
31. "Stalling synchronization circuits in response to a late data signal," Patent Number 8,276,014 issued September 25, 2012
32. "Crossbar circuitry for applying a pre-selection prior to arbitration between transmission requests and method of operation of such crossbar circuitry," Patent Number 8,255,610, issued August 28, 2012
33. "Crossbar circuitry and method of operation of such crossbar," Patent Number 8,230,152, issued July 24, 2012
34. "Single Event Upset Error Detection Within an Integrated Circuit," Patent Number 8,185,812, issued May 22, 2012
35. "Error Recovery Within Processing Stages of an Integrated Circuit," Patent Number 8,185,786, issued May 22, 2012

36. "Memory Cell Structure, a Memory Device Employing Such a Memo," Patent Number 8,107,290, issued January 31, 2012
37. "Crossbar Circuitry and Method of Operation of Such Crossbar" Patent Number 8,108,585, issued on January 31, 2012
38. "Error Detection in Precharged Logic," Patent Number 8,103,922, issued on January 24, 2012
39. "Error Detection in Precharged Logic," Patent Number 8,006,147, issued on August 23, 2011
40. "Isolation Circuitry and Method for Hiding a Power Consumption Characteristic of an Associated Processing Circuit," Patent Number 7,880,339, issued on February 1, 2011
41. "Integrated Circuit Memory Access Mechanisms," Patent Number 7,864,562, issued on January 4, 2011
42. "On-chip Power Supply Voltage Regulation," Patent Number 7,839,129, issued on November 23, 2010
43. "Integrated Circuit with Error Correction Mechanisms to Offset Narrow Tolerancing," Patent Number 7,701,204, issued on April 20, 2010
44. "Error Detection and Recovery Within Processing Stages of an Integrated Circuit," Patent Number 7,650,551, issued on January 19, 2010
45. "Data Processor Memory Circuit," Patent Number 7,533, 226, issued on May 12, 2009
46. "Systematic and Random Error Detection and Recovery Within Processing Stages of An Integrated Circuit," Patent Number 7,337,356, issued on February 26, 2008
47. "Error Recovery Within Processing Stages of an Integrated Circuit," Patent Number 7,320,091, issued on January 15, 2008
48. "Data Retention Latch Provision Within Integrated Circuits," Patent Number 7,310,755, issued on December 18, 2007
49. "Error detection and recovery within processing stages of an integrated circuit," Patent Number 7,278,080, issued on October 2, 2007
50. "Address Decoding," Patent Number 7,263,015, issued on August 28, 2007
51. "Systematic and random error detection and recovery within processing stages of an integrated circuit," Patent Number 7,162,661, issued on January 9, 2007
52. "Methods for analyzing integrated circuits and apparatus therefor," Patent Number 7,149,674, issued on December 12, 2006
53. "Noise analysis for an integrated circuit model," Patent Number 7,093,223, issued on August 15, 2006
54. "Memory System having Fast and Slow Data Reading Mechanisms," Patent Number 7,072,229, issued on July 4, 2006
55. "Data Processor Memory Circuit," Patent Number 7,055,007, issued on May 30, 2006
56. "Memory System Having Fast and Slow Data Reading Mechanisms," Patent Number 6,944,067, issued on September 13, 2005
57. "Actively-Shielded Signal Wires," Patent Number 6,919,619, issued on July 19, 2005
58. "Method and Apparatus for Controlling Current Demand in an Integrated Circuit", Patent Number 6,819,538, issued on November 16, 2004
59. "Cross Coupling Delay Characterization for Integrated Circuits," Patent Number 6,799,153, issued on September 28, 2004

60. "Iterative, Noise-Sensitive Method of Routing Semiconductor Nets," Patent Number 6,480,998, issued on November 12, 2002
61. "Waveform Manipulation in Time Warp Simulation," Patent Number 6,195,628, issued on February 27, 2001
62. "Optimizing Combinational Circuit Layout through Iterative Restructuring," Patent Number 6,074,429, issued on June 13, 2000
63. "In-Transit Message Detection for Global Virtual Time Calculation in Parallel Time Warp Simulation," Patent Number 5,956,261, issued on September 21, 1999
64. "Method for Optimizing Element Sizes in a Semiconductor Device," Patent Number 5,903,471, issued on May 11, 1999
65. "Updating Hierarchical DAG Representations through a Bottom up Method," Patent Number 5,790,416, issued on August 4, 1998
66. "Complementary Network Reduction for Load Modeling," Patent Number 5,790,415, issued on August 4, 1998
67. "Simulation Corrected Sensitivity," Patent Number 5,787,008, issued on July 28, 1998
68. "Accurate Delay Prediction Based on Multi-Model Analysis," Patent Number 5,751,593, issued on May 12, 1998
69. "Apparatus and Method for the Automatic Determination of a Standard Library Height within an Integrated Circuit Design," Patent Number 5,737,236, issued April 7, 1998
70. "Integrated Circuit Design and Manufacturing Method and an Apparatus for Designing an Integrated Circuit in Accordance with the Method," Patent Number 5,689,432, issued on November 18, 1997
71. "Method and Apparatus for Designing an Integrated Circuit," Patent Number 5,666,288, issued on September 9, 1997
72. "Logic Gate Size Optimization Process for an Integrated Circuit Whereby Circuit Speed is Improved While Circuit Areas is Optimized," Patent Number 5,619,418, issued on April 8, 1997
73. "Message Sequence Number Control in a Virtual Time System," Patent Number 5,617,561, issued on April 1, 1997

VI Scholarly Addresses

A. Conference Keynote Addresses and Invited Presentations

1. Invited presentation, “The Internet of Tiny Things - IoT²: Challenges and Opportunities in mm-Scale Computing,” ECE Distinguished Lecture Series, George Washington University, December 2018
2. Plenary Keynote Address, “Unlocking New IoT Application Domains Through Ultra-Low Power mm-Scale Sensor Node Design,” ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED), July 2018
3. Invited presentation, “Low-Power Circuit Techniques for IoT Energy Harvesting,” ACM/IEEE International Symposium on Quality Electronic Design (ISQED), March 2016
4. Plenary Keynote Address, “From Digital Processors to Analog Building Blocks: Enabling New Applications through Ultra-Low Voltage Design,” IEEE Subthreshold Microelectronics Conference (SubVt), October 2012
5. Invited presentation, “Adaptive Sensing and Design for Reliability,” IEEE International Reliability Physics Symposium, May 2010
6. Invited presentation, “Architectural Techniques for Self-Adaptive Computing,” IEEE International Solid-State Circuits Conference (ISSCC), February 2007
7. Invited presentation, “Energy Optimality and Variability in Subthreshold Design,” ACM/IEEE International Symposium on Low-Power Electronics and Design (ISLPED), September 2006
8. Invited presentation, “Energy Efficient Design for Subthreshold Supply Voltage Operation,” IEEE International Symposium on Circuits and Systems (ISCAS), May 2006
9. Invited presentation, “Extended Dynamic Voltage Scaling for Low Power Design,” IEEE International SOC Conference, September 2004
10. Invited presentation, “Signal Integrity Issues in High Performance Design,” IEEE International Workshop-Power And Timing Modeling, Optimization and Simulation (Patmos), Switzerland, September 2001
11. Invited presentation, “Inductance 101: Analysis and Design,” ACM/IEEE Design Automation Conference, June 2001
12. Invited presentation, “Inductance Extraction and Modeling,” ACM/IEEE Great Lakes Symposium on VLSI Design (GLSVLSI), March 2000
13. Keynote address, “Power Management Issues in High Performance Processor Design,” IEEE Alessandro Volta Workshop on Low-Power Design (VOLTA), Italy, March 1999
14. Keynote address, “Industrial Perspectives on Emerging CAD Tools for Low Power Processor Design,” ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED), August 1998

VII Professional Activities

A. Professional Societies

- Fellow of the Institute of Electrical and Electronics Engineers (IEEE).
- Member of the Association of Computing Machinery (ACM).

B. Editor, Co-Editor, and Associate Editor Positions

- Associate editor, *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, December 2003 - January 2006
- Co-guest editor, *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, special issue on the Design Automation Conference, 2002
- Co-guest editor, *IEEE Design and Test of Computers*, special issue on the Design Automation Conference, 2002
- Co-guest editor, *IEEE Transactions on Very Large Scale Integration Systems (T-VLSI)*, special issue on Low Power Electronics, 1999

C. Conference and Workshop Organization

- Member, technical program committee, IEEE International Solid-State Circuits Conference (ISSCC), 2018 - current
- Member, technical program committee, IEEE International Solid-State Circuits Conference (ISSCC), 2006 – 2009
- Member, technical program committee, ACM/IEEE Workshop on Timing in Synthesis and Specification (TAU), 2004 - 2007
- Member, executive committee, ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED), 1999 - 2006
- Member, technical program committee, ACM/IEEE Design Automation Conference (DAC), 1997, 2005 – 2006
- Member, technical program committee, ACM/IEEE International Conference on Computer-Aided Design (ICCAD), 2002 - 2004
- Member, executive committee, ACM/IEEE Design Automation Conference (DAC), 2001 - 2003
- Panel Chair, ACM/IEEE Design Automation Conference (DAC), 2003
- Co-Chair, technical program committee, ACM/IEEE Design Automation Conference (DAC), 2001 - 2002
- General Co-Chair, ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED), 2000
- Tutorial Chair, ACM/IEEE Design Automation Conference (DAC), 2000
- Co-Chair, technical program committee, ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED), 1999

D. Consulting & Advisory Boards

- **Technical Consulting and Advisory boards**
 - Member of University of Illinois at Urbana – Champaign Advisory Panel 2013 – current

- Gear Inc. 2013 – 2015
- Apache Design Automation – member of advisory board
- Nascentric, Technical Consulting, 2008
- CLK Design Automation (CLK-DA), Technical Consulting, 2005 – 2008
- **Legal Consulting**
 - Parkins Coie LLP, 2014 – 2015
 - WilmerHale, 2012 – 2013
 - Alston & Bird, 2010 – 2011
 - Weil, Gotshal & Manges, 2008 – 2010
 - WilmerHale, 2007
- F. Refereeing and Reviewing**
 - NSF, SRC, Natural Science and Engineering Research Council of Canada (NSERC)
 - IEEE , IEEE T-VLSI, ACM TODAES, IEEE D&T
 - DAC, ICCAD, ISLPED, ICCD, ISPD, TAU, DATE, ISCAS, ISQED, PACS