Curriculum vitae
Albert H. Titus

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Buffalo, NY 14216

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I. Research Interests

Analog integrated circuit design, bio-inspired visual systems on a chip, focal-plane arrays, integrated sensors, biomedical electronic devices and systems, optoelectronics, nanoelectronics, neural networks.

II. Education

1997 Ph.D. Electrical and Computer Engineering, Minor in Mathematics
Georgia Institute of Technology, Atlanta, GA
Thesis: "Biologically Inspired Models of Stereopsis: Theories and VLSI Implementation"
Advisor: Timothy J. Drabik

1991 M. S. Electrical and Computer Engineering
State University of New York at Buffalo, Buffalo, NY
Thesis: "Optical Pulse Compression"
Advisor: Pao-Lo Liu

1989 B. S. Electrical and Computer Engineering, Minor in Mathematics
(*summa cum laude*)
State University of New York at Buffalo, Buffalo, NY

III. Employment

A. Faculty Appointments:

August 2012-Present — Professor
Department of Biomedical Engineering
University at Buffalo (UB)

August 2007-August 2012 — Associate Professor
Department of Electrical Engineering
University at Buffalo

July1 2001-August 2007 — Assistant Professor
Department of Electrical Engineering

University at Buffalo

December 1996- June 2001 — Assistant Professor
Department of Electrical Engineering
Rochester Institute of Technology

B. University at Buffalo Administrative Positions:

July 2012-Present: Chair, Department of Biomedical Engineering

June 2010- July 2012: Co-Chair, Department of Biomedical Engineering

June 2009 - June 2010: Associate Chair, Department of Biomedical Engineering

May 2008- June 2009: Associate Dean for Program Development, School of Engineering and Applied Sciences

Aug 2008- June 2009: Associate Chair, Department of Electrical Engineering

C. Teaching/Research Assistantships and Other Work Experience

Spring 1996: Teaching Assistant, School of Electrical and Computer Engineering
Georgia Institute of Technology

Summer-Fall 1995: Research Assistant, School of Electrical and Computer Engineering
Packaging Research Center
Georgia Institute of Technology

1991-1996: Research Assistant, School of Electrical and Computer Engineering
Microelectronics Research Center
Georgia Institute of Technology

1989-1991: Research Assistant, Dept. of Electrical and Computer Engineering
State University of New York at Buffalo

1989-1990: Teaching Assistant, Dept. of Electrical and Computer Engineering
State University of New York at Buffalo

1990-1991: Research Engineer
Wilson Greatbatch Ltd. Clarence, NY

Summer 1988: Student Engineer
General Electric, Co. Utica, NY

IV. Honors and Awards

- NSF CAREER Award (2000)
- 2011 Popular Science Top Ten Inventions Award – "Dynamically Glare-Blocking Glasses" (contribution through U.S. Patent Number 7,586,079)
- Elevated to Senior Member status in IEEE (2011)
- Exceptional Scholar Program: Young Investigator Award, University at Buffalo (2006)
- Teaching Innovation Award, University at Buffalo (2010)
- Western NY Inventor of the Year Award: First Place in the Physical Sciences, Niagara Frontier Intellectual Property Law Association (NFIPLA) (2010)
- Rieffler Award (2002)
- Selected as First Scientists Helping America Conference sponsored by US Special Operations Command (USSCOM), DARPA and the Naval Research Lab (2002)
- Selected as a participant in the Upstate Alliance for Innovation funded by the National Science Foundation (2001)
- Presidential Graduate Fellowship, Georgia Institute of Technology (1991-95)
- Presidential Graduate Fellowship, SUNY at Buffalo (1989-1991)
- Presidential Honors Student, SUNY at Buffalo (1985-1989)

V. Sponsored Research

A. Externally Funded Research Grants (Total Value: >$6.4M)

1. (co-PI), Garwood Medical Devices, "Therapeutic Electrical Stimulation Technology and Device Development," (PI: E. Furlani, other Co-PIs: A. Campagnari, M. Ehrensberger, T. Furlani, and J. Jornet), October 2016-October 2021.
2. (co-PI), US Navy Office of Naval Research, "An Electrochemical Sense and Respond Osseointegrated Prosthesis," (PI: M. Ehrensberger, other Co-PIs: A. Campagnari), July 2016-June 2017.
3. (PI), PEEVA LLC, "Universal RFID Scanner Project - Phase 2," July 2016-December 2016.
4. (PI), UB Center for Advanced Biomedical and Bioengineering Technology (UB CAT with Heads Up Display, Inc.), "UB CAT: Heads Up Safe Platform Extension," August 2016-June 2017.
5. (PI), PEEVA LLC, "Universal RFID Scanner Project - Phase 1," December 2015-March 2016.
6. (PI), UB Center for Advanced Biomedical and Bioengineering Technology (UB CAT with NE Innovations), "Comprehensive Real-time BioSensing Headwear," August 2015-June 2016.
7. (PI), UB Center for Advanced Biomedical and Bioengineering Technology (UB CAT with Heads Up Display, Inc.), "Heads Up Phase 2: Software Interface Optimization, Commercialization, and Platform Extension," August 2015-June 2016.
8. (PI), UB Center for Advanced Biomedical and Bioengineering Technology (UB CAT with Sentient, Inc.), "BioFuSenS development," March 2015-June 2015.
9. (PI), Sentient, Inc., "BioFuSenS Integrated Circuit Design and Fabrication," December 2014-March 2015.
10. (PI), UB Center for Advanced Biomedical and Bioengineering Technology (UB CAT with New Era), "Biosensing Systems," August 2014-June 2015.

11. (PI), Sentient, Inc (Navy SBIR/STTR Subcontract), "STTR: Development of a Sensor Chip for the BioFuSenS: Bioelectronic Fusion Sensor System," August 2014-June 2015.
12. (PI), Dylix, Inc., "Sensor Electronics Redesign and Digital Control Development," February 2014-August 2014.
13. (PI), Rover Collars, "Prototype Development of Rover Collar Phase 2," January 2014-July 2014.
14. (PI) Bird Technology Group, "Development of a Micro-fabricated, DC-substitution RF Calorimeter: Phase 3," August 2012-August 2014.
15. (PI) Bird Technology Group, "Development of a Micro-fabricated, DC-substitution RF Calorimeter: Phase 2," August 2011-August 2012.
16. (PI) Bird Technology Group, "Development of a Micro-fabricated, DC-substitution RF Calorimeter," August 2010-August 2011.
17. (PI), National Science Foundation, "NUE: Nanophotonics Modules for Diverse Curricular Incorporation," (A. Cartwright and V. Mitin are co-PIs), September 2009-August 2012.
18. (PI), Siemens AG, "Stand-Alone System for Fully-Integrated Monitoring of Gas-Insulated Power Transmission and Distribution Components," (J. Bird and J. Zirnheld are co-PIs), Jan 1, 2009-July 2010.
19. (co-PI), National Institutes of Health (NIH/NIBIB), "Solid State X-ray Image Intensifier Development," (PI: S. Rudin, CoPIs: D. Bednarek, A.N. Cartwright, D. Dashkoff, A. DelBalso, K. Hoffmann, L.N. Hopkins, C. Ionita, E. Levy, A. Siddiqui), April 1, 2008 – December 31, 2013.
20. (PI), DynamicEye, Inc, through TCIE, "Improved Glare Sensor Chip," Jan 1 2007- Dec 31, 2007.
21. (PI), Sterbutzel Research Fund, "Development of a Modular Multi-Analyte Sensor System," (F. Bright is co-PI (10%)), June 1, 2006-May 31, 2007.
22. (Co-PI), John R. Oishei Foundation, "Unobtrusive Disease Detection by Odor Typing," (F. Bright is PI, A. Cartwright, V. Govindaraju, and W.L. Hicks are co-PIs), May 2006-May 2008.
23. (PI), Dynamic Eye (TCIE-SPIR), "Toward an Improved Glare Sensor Array," July 2004-March 2005.
24. (PI), Johnson & Johnson Inc. Focused Giving Program, "A Biologically Inspired Smart Sensor System (BIS3) for Health Monitoring," (A. Cartwright is co-PI), June 2004-June 2007.
25. (PI), Michael Swiader-Knowna, "Novel Mouse Design," August 2004-October 2004.
26. (PI), UB Biomedical and Bioengineering CAT, "Unobtrusive Biometric Sense, Transmit, Assess and Respond System (UB-STARS)," (F. Bright, V. Govindaraju, A. Cartwright are co-PIs), Oct 2003-June 2004.
27. (PI), National Science Foundation, "SENSORS: Solid-State Imprinted Xerogel Arrays Integrated with Smart CMOS Detectors for Biological Agents," (F. Bright and A. Cartwright are co-PIs), September 15, 2003 - August 31, 2006.
28. (PI), Intel Corp., "Continuation of the Routing/Packaging Study," (A. Cartwright is co-PI), Sept 1, 2003-August 31, 2004.
29. (PI), Ultrascan, Inc., "Toward a Single-Chip, Digitally Controlled High Gain and Peak-Detector Circuit," May 2003-Aug 2003.
30. (PI), UB-IRCAF, "Integration of Xerogels and CMOS Smart Pixel Arrays for Biosensor Systems" (F. Bright Co-PI), November 1, 2002 – October 31, 2003.

31. (Co-PI), NSF-MRI, "Acquisition of a Nanostructure Fabrication and Characterization System for Research and Education," (PI is B. McCombe, P. Prasad, A. Cartwright and H. Luo are co-PIs), August 2002 – August 2005.
32. (PI), National Science Foundation, REU supplement, Supplement to CAREER award, supporting an undergraduate student as a research assistant, July 2002-June 2003.
33. (PI), Intel through the Electronics Packaging Laboratory, "Analysis of Electronic Packaging Problems," (A. Cartwright co-PI), January 2002-December 2002.
34. (PI), National Science Foundation, CAREER Award, "Modularized Silicon-based Neuromorphic Visual Processing Systems Implemented in Analog VLSI," Sept 2000-Aug 2005.

B. Institutional Grants - University at Buffalo (Total Value: $470K)

1. (co-PI), UB Innovative Micro-Programs Accelerating Collaboration in Themes (IMPACT), "Developing the methodology to measure food reward in young infants," (PI: L. Epstein, other Co-PI is K.-L. Kong), March 2016-March 2017.
2. (co-PI), UB HomeBASE, "Asthma Medical Device for Decision-Support and Symptom Control," (J. Castner co-PI), August 2013-June 2017.
3. (co-PI) UB IRDF, "Development of a Small Animal Single Photon Emission Computed Tomography (SPECT) and Computed Tomography (CT) Dual Function Imager with an X-ray Detector," (R. Yao is PI, S. Rudin, M. Sajjad, R. Miletich, and J. Balthasar are co-PIs), March 2010-March 2011.
4. (Co-PI) UB-IRCAF, "Equipment: Optical Mask Aligner for Nanotechnology Research" (J. Bird is PI; A. Markelz is co-PI), November 1, 2004 – October 31, 2005.
5. (Co-PI), UB-IRCAF, "Highly Selective Solid State Multianalyte Biosensors" (T. Connell is PI; F. Bright and A. Cartwright are co-PIs), November 1, 2004 – October 31, 2005.
6. (PI), UB Start-up funds, August 2001 – August 2003).

C. Institutional Grants - Rochester Institute of Technology (Total Value: $1,128,214)

1. (Co-PI), Rochester Institute of Technology, Kate Gleason College of Engineering, Laboratory for Autonomous Collaborative Microsystems (LACOMS), (1 of 9 co-PIs), Start date: Nov. 2000.
2. (PI), Rochester Institute of Technology, Kate Gleason College of Engineering Research Development Program, "Telepresence for Real Time Remote Control of a Specialized Integrated Circuit Test Facility," (E.C. Chung co-PI), Award received Sept. 1, 1999, completed Aug. 31, 2000.
3. (PI), Rochester Institute of Technology, Provosts Productivity Grant, "A Problem Based Learning Approach to EE 352, Circuit Analysis II," Funding for salary recovery, Award received June 1999, Completed Aug. 2000.
4. (PI), Rochester Institute of Technology Faculty Enhancement and Development Award. $10595 (direct costs) Development of a Research Program in Analog Integrated Circuit Design. (P.R. Mukund co-PI), Funding for equipment purchases and IC fabrication. Award received April 1999.
5. (PI), Rochester Institute of Technology Faculty Enhancement and Development Award, "Development of an Integrated Circuit Component Library for Use in an Analog/Mixed Signal Integrated Circuit Design Course." Funding for IC design software purchase, Award received April 1998, completed Sept. 1998.

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