

# Line M. C. van Nieuwstadt

linevn@umich.edu, U.S. Citizen

## EXPERIENCE

**University of Michigan, College of Engineering and Computer Science** Dearborn, MI  
*Associate Professor of Engineering Practice* November 2014 – present

**University of Michigan, College of Engineering** Ann Arbor, MI  
*Adjunct Research Scientist, Climate and Space Sciences and Engineering* Oct 2012 – present

- Development of receiver front end for radar system and wideband radiometers
- System engineer and project manager for Dept. of Energy's Wind Ice Sensing Network project

*Faculty mentor and lecturer, Multidisciplinary Project program, Tauber Institute for Global Operations*

*Senior Engineer/Adjunct Lecturer, Space Physics Research Lab* Feb 1999 – Nov 2009

- Designed initial system for Correlated Noise Calibration Source system for radiometers
- Served as assistant lecturer for Spacecraft System Design graduate course (Fall 2002/2003), ENG450 Senior Multidisciplinary Design course (Winter 2004)
- Designed, fabricated and tested 1.4GHz STAR (Synthetically Thinned Array Radiometer) radiometer front end
- Managed student satellite project for NASA Marshall Space Flight Center

**Michigan Tech Research Institute** Ann Arbor, MI  
*Senior Research Scientist* April 2011 – present

- Satellite radar data image processing, automotive radar statistical study

**Libertel B.V., Maastricht** The Netherlands  
*Technical Staff* January 1998 - September 1998

- Developed new business areas and implemented studies of new technologies into a wireless phone network operator's infrastructure

**TNO-FEL, The Hague** The Netherlands  
*Engineer in Radar Group* January 1997 - November 1997

- Designed MMIC (Monolithic Microwave Integrated Circuits) for radar applications

**Jet Propulsion Laboratory** Pasadena, CA  
*Member of Technical Staff* January 1990 – July 1997

- Led team telecommunications subsystem for the Mars Pathfinder MicroRover project, responsible for the UHF communication link between Lander spacecraft and Sojourner rover during Martian surface operations
- Designed projects: MMIC-based L-band receiver for radar application, microwave test circuits as part of a high frequency FDTD modeling research project, 22GHz MMIC Phase Shifter, 20GHz active receive array for the Advanced Telecommunications Technology Satellite (ACTS) Mobile Terminal, 31GHz MMIC water vapor radiometer
- Served as technical program co-chairperson for the Monolithic Microwave Integrated Circuit Space & Ground Appls. (JPL 1992)

*Summer Intern* Summer 1989  
• Initial design effort on the 31GHz MMIC Water Vapor Radiometer

**Watkins-Johnson Company** Palo Alto, CA  
*Research and Development Engineer* July 1987 - July 1988  
• Designed and developed FET amplifiers and GaAs MMIC linearized attenuator

## EDUCATION

**University of Michigan** Ann Arbor, MI  
*Ph.D., Electrical Engineering* Jan 2011

- Thesis: Microwave Measurement System for Breast Cancer Imaging: An Experimental Prototype Towards Time-Domain Inverse Scattering

**Cornell University** Ithaca, NY  
*MEng, Electrical Engineering* May 1989  
• Master of Engineering Project: Planar Gunn Diode Array

**California State Polytechnic University** Pomona, CA  
*B.S., Electrical & Computer Engineering* June 1987  
• Senior Project: Automated Laser Diode Test System (sponsored by JPL)

## SELECT PUBLICATIONS

Nejati, H., S.Y.E. Wong, R.D. DeRoo, L. van Nieuwstadt, K. Sarabandi, G.A. Meadows, and A.W. England, Design, Modeling, and Implementation of Wideband Autocorrelation Radiometry for Snowpack/Lake Ice Thickness Detection, *submitted to IEEE Trans. Geoscience Remote Sensing*, May 2013.

Nejati, H., S.Y.E. Wong, R. DeRoo, L. van Nieuwstadt, and A.W. England, "Design, Optimal Operation, and In-situ Verification of Wideband Autocorrelation Radiometer (WiBAR)," MicroRad Conference, March 24-27, 2014, Pasadena, CA; archived in J. Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS).

Nejati, H., R.D. DeRoo, L. Van Nieuwstadt, K. Sarabandi, and A.W. England, "Design and modeling of a Wideband Autocorrelation Radiometer (WiBAR) as Snowpack Thickness Sensor," *submitted to IGARSS'14, Quebec City, Canada, July 13-18, 2014.*

R. Deroo, A. England, H. Nejati, L. van Nieuwstadt, E. Wong, "Wideband Microwave Radiometric Technique to Measure Accumulations of Snow Packs and Freshwater Ice," 70<sup>th</sup> Eastern Snow Conference, Canada 2013.

L. van Nieuwstadt, "Microwave measurement system for breast cancer imaging: an experimental prototype towards time-domain inverse scattering," Ph.D. dissertation, Dept. of Elec. Eng., University of Michigan, Ann Arbor, MI, Jan 2011.

M. Moghaddam, Y. Rahmat-Samii, P. Partridge, L. van Nieuwstadt, J. Vitaz, M. Haynes, J. Huang, V. Cable, "Dual Polarized UHF/VHF Honeycomb Stacked-Patch Feed Array for a Large-Aperture Space-borne Radar Antenna," Aerospace Conference, IEEE, 3-10 March 2000, pp. 1 – 10.

L. van Nieuwstadt, R. De Roo, *et.al.*, "A Compact Direct Detection Receiver for L-band STAR Radiometry," IEEE Microwave Theory & Techniques Symposium, June 2003.

H. Pham, R. De Roo, A. W. England, L. van Nieuwstadt, J. Glettler, "A C-and radiometer based on STAR-Light receivers: Design approach, implementation and performance evaluation," in Proceedings, IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2003), Toulouse, France, 21-25 July 2003.

A.W. England, H. Pham, R. De Roo, L. van Nieuwstadt, L. Yam, "Performance of STAR-Light Receivers During CLPX," IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2003), Toulouse, France, 21-25 July 2003.

L. van Nieuwstadt, S. Stride, S. Asmar, "Microrover Flight Experiment (MFEX) Telecom Subsystem," 1997 International Conference on Mobile Planetary Robots & Rover Roundup, January 29 - February 1, 1997, Santa Monica, CA.

A. Tulintseff, K.A. Lee, L.M. Sukamto, W. Chew, "An Active K-Band Receive Slot Array for Mobile Satellite Communications," Progress in Electromagnetic Symposium, Noordwijk, The Netherlands, July 1994.

D. Antsos, R. Crist, L. Sukamto, "A Novel Wilkinson Power Divider with Predictable Performance at K and Ka-Band," IEEE Microwave Theory & Techniques Symposium, San Diego, CA, May 1994, vol.2, pp. 907-910.

## **HONORS**

- NASA Harriett Jenkins Pre-Doctoral Fellowship Program September 2005-August 2008
- Patent Number 5,218,357: "Miniature Modular Microwave End-To-End Receiver" 1993.
- President's Fund research award from California Institute of Technology and NASA, 1993, research title: "Novel Beam-Scanning and Pulse Generating Methods using Nonlinear Oscillator Array Dynamics"

## **PROFESSIONAL AFFILIATION AND SKILLS**

- Society of Women Engineers, IEEE, HKN
- Languages: working knowledge of Dutch and Indonesian
- Software: Agilent's simulation tools (ADS, HFSS), AutoCAD
- Circuit assembly: MMIC handling/assembly, wire-bonding
- Basic machine shop training

## **COMMUNITY SERVICE**

- Girls Scout Troop Leader, local food banks volunteer, Boys Scout Pack Leader, scholarship reader for UM Center for the Education of Women.