

Daniela Viviana Vladutescu

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OBJECTIVE: To advance the world of Science and become an expert in Optics, UltraFast High Power Lasers, and Remote Sensing Technology

EDUCATION: **Zicklin School of Business, Baruch College of the City University of New York**
 MBA, Decision Sciences expected year 2020
The Graduate Center of The City University of New York
 Doctor of Philosophy in Electrical Engineering, Photonics and Remote Sensing 2008
The Graduate Center of The City University of New York
 MPh in Electrical Engineering, Optics and Remote Sensing 2007
City College of City University of New York
 M.S. in Electrical Engineering, 2006
Faculty of Electrotechnics, Polytechnic University of Bucharest
 B.S. in Electrical Engineering, Major: Metrology, 1999

CERTIFICATES & AWARDS:

US Fulbright Fellowship Award 2017-2018
 Extreme Light Infrastructure Nuclear Physics (ELI-NP)/ Horia Hulubei National Institute of Physics and Nuclear Engineering (IFIN-HH) and Polytechnic University of Bucharest, Faculty of Electrical Engineering
Certificate of Recognition 2016, 2017
 National Aeronautic Space Administration Glenn Research Center (NASA GRC)
Certificate of Recognition for securing major institutional grant funds, 2012, 2016
 City University of New York
Certificate of Recognition
 National Aeronautic Space Administration Goddard Space Flight Center (NASA GSFC) 2012
Certificate of Appreciation for Student Mentoring, 2012
 Louis Stokes Alliance for Minority Participation
Certificate of Appreciation for Student Mentoring, 2012
 Honors and Emerging Scholars
Graduate Assistant Fellowship awarded by The Graduate School and University Center of The City University of New York 2006-2008
Robert E. Gilleece Fellowship awarded by The Graduate School and University Center of The City University of New York, 2002-2006
Graduation Teaching Certificate, Department of Electrical Engineering Polytechnic University of Bucharest, 1999
Science Scholarship, Polytechnic University of Bucharest, 1993

TECHNICAL EXPERIENCE**Scientist / Optics Laboratory Team Leader**

Extreme Light Infrastructure-Nuclear Physics (ELI-NP)/ Horia Hulubei National Institute of Physics and Nuclear Engineering (IFIN HH), Magurele, Romania, 2018- Present

The HPLS (High Power Laser System) at ELI-NP consists of 2 10 PW, 2 1 PW and 2 100TW laser beams. As the Optics Lab Leader/ Scientist and US Fulbright fellow I have been trained to work with Ultrafast High Power Lasers in the Near Infrared range at ELI-NP and coordinated the Optics Lab activity and research. In this process I also observed the Thales team in the building, testing and installation process of the lasers at ELI NP.

Doctoral Research / Research Collaborator**Photonics/ Remote Sensing Laboratory, City College of The City University of New York,**

2002- Present

As a PhD candidate I have been fortunate to work under the supervision of world renowned scientists such as Dr. Fred Moshary, Dr. Barry Gross and Dr. Samir Ahmed. My thesis research work focused on atmospheric monitoring using a LIDAR (light detection and ranging) system. The system used 5 wavelengths for measuring the aerosol properties using Mie (355nm, 532nm, 1064nm emitted by a Quanta Ray Nd:YAG Laser) and Raman channels for the nitrogen and water vapor as excited by 355nm ((387nm, 407nm)). This work involved development of the optical system required for LIDAR outdoor measurement of the backscattering and extinction coefficients, conducting analysis to evaluate aerosol properties in the atmosphere, and system calibration for the validation of the measurements. The hygroscopic properties of aerosols have been investigated and a hygroscopic model returning the optical properties of hygroscopic aerosols has been developed. Current work involves atmospheric model development that allows for the retrieval of the atmospheric aerosol optical parameters based on data fusion from various environmental monitoring instruments (MFRSR, Cimel sunphotometer, TEOM, SMPS, SP2, AMS, O₃, SO₂, NO_x, NO_y detectors and others). Comparisons and validations are performed against the CMAQ model and LIDAR instrument located at CCNY. All the LIDAR data analyses are made using MATLAB and data collection is done with LabVIEW. In addition to this my research also involved operating, maintaining and coordinating measurements of a Fourier Transform Interferometer (FTIR) for monitoring greenhouse gases present in the atmosphere. The FTIR system uses an AutoQuant Pro Interface in conjunction with GRAMS AI. The FTIR measurements were performed at both CCNY and Princeton University. For validations of the measurements we used several instruments among which I would list the Eddy covariance station (for carbon dioxide) installed at the Princeton campus, meteorological station measurements (for water vapor in the atmosphere) and various other hand held instruments (for ozone and carbon dioxide). In the data analysis process we used Hitran database to determine atmospheric concentrations of trace gases. A summary of some of the instruments used in the research are:

- LIDAR(Light Detection And Ranging) system for measuring of the aerosol distribution using Mie and Raman channels(uses MATLAB and LabVIEW)
- Analyzed and simulated mid-infrared Quantum Cascade Laser systems for simultaneous atmospheric ozone and ammonia measurements using DOAS (Differential optical absorption spectroscopy) spectroscopy
- a mid-infrared MIDAC spectrometer (Fourier Transform Interferometer) to determine the concentration of different ambient greenhouse gases, temperature, water vapor retrieval using AutoQuant Pro, GRAMS AI, MATLAB and Fortran software(Genspec);
- MFRSR (Multi-Filter Rotating Shadowband Radiometer) to measure the aerosol optical depth, size distribution and single scattering albedo using Yesdas and MATLAB software packages.
- Cimel Sunphotometer CE318 for solar radiation measurements in different bands.
- MWR (Microwave radiometer) for Liquid Water Path.

Additionally, the exposure I had in the Earth Remote Sensing and Space Surveillance System under the guidance of Mr. Anthony Dinardo, Chief Scientist at Northrop Grumman, was extremely valuable. This work deepened my knowledge in Radiative Transfer, Earth Views And Top-Level Sensor Design, Resolvable And Irresolvable Sources And Targets, Energy on Detector (EOD) And Phasing, Sensor Spectral Selection, Noise, Signal Processing as Limited by Space Environments, Statistical Approach to systems understanding, Sensor Forms: Scanner And Starer, Pixel Formation, Resolution And Line- Of-Sight Determination and Space Surveillance System Engineering. In addition to this I have also been involved in the design of compact hyperspectral Planar Fabry Perot (PFP) land and ocean imager in conjunction with filters, CCD detectors, and the system of lenses to accomplish spatial-spectral filtering over the visible /near infrared (VIS/NIR) band important for satellite imaging applications and measurements of the atmosphere.

Visiting Scientist**Brookhaven National Laboratory/DOE, Upton, NY
Atmospheric Science Division & Accelerator Test Facility**

2010-Present

My work at BNL initially focused on the design and alignment of the optical system of a photothermal interferometer used for measuring the light absorption cross section of BC (black carbon) in the atmosphere. All sensitivity analysis were performed in lab. As part of a FaST (Faculty and Student Teams) Program at BNL, myself and my students also participated in the 2011 Aerosol Life Cycle IOP (intensive observational period) of physical, chemical and optical properties of aerosols at Brookhaven National Laboratory. These parameters were measured over a period of 10 weeks. During this campaign 4 sea-tainers loaded with more than 20 environmental instruments performed measurements of the above mentioned aerosol properties. Our team's responsibility was to install, configure and perform data reduction (AOD, spectral distribution by fine and coarse particles and single scattering albedo) with and from an MFRSR (Multifilter Rotating Shadowband Radiometer) instrument and further

perform inter-comparisons between the aerosol optical depth collected with this instrument and a Cimel sunphotometer and respectively MICROTOPS II Ozone and Sunphotometers. Based on the elevated fine particle events retrieved from MFRSR indicating smoke or plume events, chemical investigations were further conducted to determine the composition and source of aerosol. These investigations in conjunction with HYSPLIT backward trajectories confirmed that the sources of the biomass burning organic aerosols were the extreme Canadian fires occurring in west Canada during the month of July 2011. Currently I am working on a closure studies on aerosol optical properties as modeled and measured during the IOP campaign and assessment against existing climate models. Additional efforts are spent in cloud fraction and cloud radiance calculations and its impact on cloud radiative effect (CRE).

The work at ATF is oriented to outreach activity for the NYCCT students and course development in the field of Electron Beam Acceleration and MIR CO₂ Ultrafast High Power Lasers. Image processing of laser beam profiles is under development.

NASA Goddard Space Flight Center,

Instrument Systems and Technology Division, Optics Branch (GSFC 5510)

2012-2013

As a collaborator of the NASA GSFC Instrumentation System and Technology division, Optics Branch (NASA GSFC 5510) I was involved in the development of optical metrological procedures for optical integration, alignment, and test of the James Webb Space Telescope's (JWST) Integrated Science Instrument Module (ISIM). In this process I utilized opto-mechanical metrology tools, such as laser radars (LADAR), and optical interferometers (Michelson-LUPI-laser unequal path interferometer) to develop a new method to measure the alignment between a large-format, science-grade detector and external metrology features on the focal plane assembly in a technique to accurately determine the position of a laser beam with respect to a frame of reference. The procedure has been developed for each pixel on CCD to be mapped into a relative coordinate system. The analyses of LADAR returned signal were conducted using Spatial Analyzer to confirm reliable optical alignment fiducially. Additionally, I worked in the characterization of the uncertainty associated with using an off-the-shelf laser radar metrology system to measure thermal blanket material surrounding flight instruments.

NASA Glenn Research Center,

Communications and Intelligent Systems Division, Information and Signal Processing Branch (LCIO) 2016-Present

The research supports the Integrated Radio Optical Communication (iROC) project with the objective to combine the paramount features of select deep space iROC elements into an integrated system, scalable from deep space to near earth. The project is an integrated hybrid Ka-band RF and 1550 nanometer optical capability communications system within the MRO payload envelope. Specific technology has been proposed and performance of key components have been investigated to increase to TRL5, an Autonomous Precision Attitude Determination & Pointing Prototype. The work involves the evaluation of the current design and modification as necessary to improve system performance by maintaining alignment and overall system stability. In addition, the system has been modified to allow the manufacturing of the optical bench with a minimal number of adjustable optical component mounts. A method and testing procedure for establishing the alignment of the optical system has been developed.

NAVAIR Naval Air Systems Command,

Fall 2016

Naval Air Warfare Center Aircraft Division

4.11.6.2 Rapid Capability Engineering and Integration, Advanced Concepts Division

Consultant on LiDAR systems and applications. Developed lidar systems modules and experiment for NAVY workforce development. Miniature scanning LiDAR systems explored for UAV applications and fixed platforms. A result of this collaboration is the US Patent "Lidar System for detection of small flying objects", US 16/365,203, March 26, 2019

ELI-NP/IFIN HH and UPB as US Fulbright Fellow ,

2017-2018

Extreme Light Infrastructure-Nuclear Physics (ELI-NP) & Polytechnic University of Bucharest (UPB), Electrical Engineering Department, Bucharest, Romania,

The HPLS (High Power Laser System) at ELI-NP consists of 2 10 PW, 2 1 PW and 2 100TW laser beams. As a fellow I have been trained to work with Ultrafast High Power Lasers in the Near Infrared range at ELI-NP and coordinated the Optics Lab activity and research. In this process I also observed the Thales team in the building, testing and installation process of the lasers at ELI NP. As part of my activity at Polytechnic University of Bucharest, I taught and prepared the slides and tests for the Digital Signal Processing course and organized outreach activities for the UPB students by inviting companies, such as Microchip in Romania, to expose the students to jobs and internships available, as well as the real life applications of the EE field in industry.

Electrical Engineer / Technical Advisor

1995-2001

Testing Laboratory for Type and Reliability, MILTON IMPEX SRL, Bucharest, Romania;

- Perform and Coordinate the measuring and testing process,
- Issued certified bulletins on electro-security standards for different devices and apparatus produced and imported in Romania by Kenwood, General Electrics, Panasonic and other Romanian and abroad manufacturers.

ACADEMIC EXPERIENCE:**Associate Professor**

2014-Present

Assistant Professor

2008- 2014

**New York City College of Technology of the City University of New York,
Electrical and Telecommunication Engineering Technology Department**

As a full time professor I have been exposed to a wide variety of responsibilities including teaching, courses and laboratories development (**Capstone, Remote Sensing, Remote Sensing (Special Topics), Sensors and Instrumentation**), leadership and active member participation in different departmental and college wide committees (i.e. Chair of the College Council Curriculum Committee, Dean Search Committee, ABET Accreditation Coordinator, EET-Electrical Engineering Technology Committee, General Education Assessment Liaison etc), updating existing courses (Electronics, Technical Drafting, MATLAB, Telecommunications), participation in college wide seminars and workshops and be an active member of the academic community. Some of the classes taught at NYCCT are

Capstone/Senior Design, Sensors and Instruments, Remote Sensing, Digital Electronics, Advanced Circuit Analysis, Transmission Systems, Circuit Analysis, Electronics, Electronics laboratory, Electronics for Communications, Techniques for Electrical Engineering (MATLAB, Multisim), Computer Management Systems, Electrical Drafting (AutoCAD, OrCAD), Introduction to Telecommunications, Telecommunication Network Management, Emerging Telecommunications Technology.

Adjunct Professor**City College of The City University of New York, Electrical Engineering Department**

2002-2014

The teaching involves lecturing and preparing the material for

Electromagnetics, Introduction to Antenna and Fiber Optics, Electronics Laboratory I, Electronics Laboratory II, Computer aided analyses tools for engineers (MATLAB), Teaching assisted Photonic Engineering, Probability & Stochastic Processes and Linear Systems, etc

La Guardia Community College (LAGCC/CUNY), Mathematics Department,

2003-2008

Courses I have been teaching

Linear Algebra, Statistics I, Statistics II, Pre-Calculus, Mathematics and the Modern World, Mathematics for Health Science, Mathematics in Action and College Algebra and Trigonometry. Being an active participant in the Center for Teaching and Learning seminars that offered a wide range of classroom-focused professional development programs I had the chance to give my students the opportunity to understand mathematics through the SENCER (Science Education for New Civic Engagements and Responsibilities) approach. The SENCER project is promoting mathematical and statistical reasoning in compelling contexts under the umbrella of environmental sciences. Another important teaching tool used in the mathematics classes was the implementation of e-Portfolio as a new technique that offered the students to collect, select and reflect on their work over the years as students at LAGCC and not only.

Comments from Students

-“Definitely one of the best professors. She explains things very well, she is clear, she knows the material and what’s most important she cares about her students. She is always available to answer your questions and she is understanding in case you have any problems. Her exams are reasonable, she gives credit if you show that you know what you’re doing.”

-“This professor is into her work and thus makes the course very interesting. EE330 (Electromagnetics) is a very involved: your Physics, Calc, Chem. and "imagination" have to be in tip-top shape if you want to be challenged and receive a good grade. 1-semester is definitely not enough for any professor to cover this course. IT WAS A WONDERFUL SEMESTER PROF.THANKS AND GOOD LUCK!!”

PUBLISHED PAPERS IN PEER REVIEWED JOURNALS

- “Analyses of Raman lidar calibration techniques based on water vapor mixing ratio measurements” **Daniela Viviana Vladutescu**, Yonghua Wu, Leona Charles, Barry Gross, Fred Moshary, Samir Ahmed, *WSEAS Transactions on Systems*, Issue 4, Volume 6, April 2007
- “Remote Sensing Instruments used for Measurement and Model Validation of Optical Parameters of Atmospheric Aerosols”, **Viviana Vladutescu**, Yonghua Wu, Barry Gross, Fred Moshary, Samir Ahmed, Reginald Blake, Mohammad Razani, *IEEE Transactions on Instrumentation and Measurements*, vol. 61, Issue 6, doi: 10.1109/TIM.2011.2178664, 2012
- “Optical properties of aerosols and their sensitivity to relative humidity and size distribution in the New York City Urban-Coastal area” , **Viviana Vladutescu**, Yonghua Wu, Barry Gross, Fred Moshary, Samir Ahmed, *EARSeL eProceedings*, vol. 11, No. 1, pp. 52-63, 2012. Available at http://www.e proceedings.org/static/vol11_1/11_1_vladutescu1.html
- “Aerosol transport and source apportionment using sunphotometers, models and in situ chemical composition measurements”, **Daniela Viviana Vladutescu**, Bomidi L. Madhvan, Barry Gross, Qi Zhang, Shan Zhou, *IEEE Transactions on Geoscience and Remote Sensing*, vol. 51, No. 7, 2013
- “Assessment of Langley and NASA GISS calibration techniques for MFRSR aerosol retrieval”, **Daniela Viviana Vladutescu**, Bomidi Madhvan, Barry Gross, Antonio Aguirre, Fred Moshary, Samir Ahmed, Mohammad Razani and Reginald Blake, *IEEE Geoscience and Remote Sensing*, vol. 52, Issue 9, DOI: 10.1109/TGRS.2013.2293633, 2014.
- "Bridging Non-Geoscience STEM Majors to the Geoscience Workforce through a Skills Training and Enrichment Program" Reginald Blake; Janet Liou-Mark; Hamidreza Norouzi; **Viviana Vladutescu**; Laura Yuen-Lau; Malika Ikramova, *Bulletin of the American Meteorological Society*, May 2017
- “High Resolution Photography of Clouds from the Surface: Retrieval of Optical Depth of Thin Clouds down to Centimeter Scale.”; Stephen E. Schwartz, Dong Huang, **Daniela Viviana Vladutescu**, *Journal of Geophysical Research: Atmospheres*, DOI: 10.1002/2016JD025384, March 8, 2017
- “IROC Proposed Optical Alignment Metrology”, **Viviana Vladutescu**, Aaron Swank, Dzu K.Le, Calvin R. Robinson, Felix Miranda, Victor Pena, to be submitted to *IEEE Transactions on Instrumentation and Measurements*, November, 2019

PUBLISHED PAPERS IN CONFERENCE PROCEEDINGS:

- “High Spatial Spectral Resolution VIS-NIR Scanning Fabry Perot Imager for Geostationary spaceborne applications”, **Viviana Vladutescu**, Mustapha Abdulfattah, Fred Moshary, Barry Gross, Photon 04 Conference , Glasgow Caledonian University, Glasgow , UK, September 6– 9, 2004
- “Analysis of a Dual Etalon Fabry Perot Cavity for application in a Geostationary Coastal Water Imager”, Daniela **Viviana Vladutescu**, Fred Moshary, Barry Gross, Samir Ahmed, 12th International Symposium, Remote Sensing Conference, SPIE Europe, Bruges, Belgium, September 19-22, 2005
- “System Design of a Multiple Cavity Fabry Perot Interferometer for Visible, NIR Applications”, **Viviana Vladutescu**, Fred Moshary, Barry Gross, Samir Ahmed , Einstein Conference, City College of City University of New York, New York, USA, April 11-12, 2005
- “DOAS Spectroscopy using a tunable MIR QCL for simultaneous Ozone and Ammonia detection” **Viviana Vladutescu**, Barry Gross, Fred Moshary, Samir Ahmed, Mirth, Annual Midterm Review, Princeton, NJ, USA, November 14th ,2006
- ”Water vapor mixing ratio used in lidar calibration technique” **Daniela Viviana Vladutescu**, Yonghua Wu, Leona Charles, Barry Gross, Fred Moshary, Samir Ahmed, The 2nd WSEAS International Conference on Remote Sensing (Remote’06), December 16-18, 2006
- “Application of CCNY LIDAR and ceilometers to the study of aerosol transport and PM2.5 monitoring”, Leona A. Charles, Shuki Chaw, **Viviana Vladutescu**, Yonghua Wu, Fred Moshary, Barry Gross, Stanley D. Gedzelman, Samir Ahmed, The 87th AMS Annual Meeting, Third Symposium on Lidar Atmospheric Applications, San Antonio, TX, USA January 13-18 ,2007
- “Raman lidar calibration techniques based on daytime-nighttime measurements” **Daniela Viviana Vladutescu**, Yonghua Wu, Leona Charles, Barry Gross, Fred Moshary, Samir Ahmed, 2007 CUNY Conference in Science and Engineering, New York, NY, USA, February 23-24, 2007
- “Application of CCNY LIDAR to the study of aerosol transport”, Leona Charles, Shuki Chaw, **Viviana Vladutescu**, Yonghua Wu, Fred Moshary, Barry Gross, and Samir Ahmed, ESS/GEO Session, 2007 Joint Annual Conference of the National Society of Black Physicists and the National Society of Hispanic Physicists, February 21-25,2007,Boston, MA.

- “Lower troposphere water vapor measurements using a Raman lidar, GPS and radiosondes data fusion ” Daniela **Viviana Vladutescu**, , Barry Gross, Yonghua Wu, Fred Moshary, Samir Ahmed PRISM/PCCM/MIRTHE University – Industry Research Symposium, Princeton, NJ, USA, March 19-20,2007
- “Examination of hygroscopic properties of aerosols using a combined multiwavelength Elastic –Raman lidar” Daniela **Viviana Vladutescu**, Yonghua Wu, Leona Charles, Barry Gross, Fred Moshary, Samir Ahmed IGARSS, Barcelona, Spain, July 23-27, 2007
- “Properties of aerosol hygroscopicity using a combined elastic-Raman lidar, GPS and nephelometer” **Daniela Viviana Vladutescu**, Yonghua Wu, Leona Charles, Barry Gross, Fred Moshary, Samir Ahmed SPIE Optics and Photonics, San Diego, Ca, USA, August 26-30, 2007
- “GPS calibrated multiwavelength water vapor Raman lidar measurements to assess urban aerosol hygroscopicity”, Daniela Viviana Vladutescu; Barry Gross; Yonghua Wu; Alex Gilerson; Fred Moshary; Samir Ahmed, SPIE 6750, Lidar Technologies, Techniques, and Measurements for Atmospheric Remote Sensing III, 67500R (8 October 2007); doi: 10.1117/12.738040
- “Assessment of a QCL Laser approach for the simultaneous measurement of ambient ammonia and ozone.” Barry Gross, **Viviana Vladutescu**, Fred Moshary, Sam Ahmed., Infrared, Mid-IR, and THz Technologies for Health and the Environment II, SPIE Optics East, Boston, MA, Sept. 2007
- “Raman-Mie lidar measurements of low and optically thin cloud” Yonghua Wu, Chaw Shuki, Barry Gross, **Viviana Vladutescu**, Charles Leona, Cao Nianwen, Fred Moshary, Samir Ahmed, SPIE Optics and Photonics, San Diego, CA, USA, August 26-30, 2007
- “Aerosol layer properties and their effect on optical depth relations to PM2.5 concentrations” **Viviana Vladutescu**, J. Diaz, L. Charles, B. Gross, F. Moshary, S. Ahmed. IGARSS 2008, Boston, MA, July 6-10, 2008
- "Urban aerosol backscatter properties based on Raman lidar and parametric coefficient models", **Viviana Vladutescu**, Barry Gross, Fred Moshary, Samir Ahmed, 89th AMS Meeting, Phoenix, AZ, January 11-16, 2009
- “CMAQ validation of optical parameters and PM2.5 based on lidar and sky radiometers. A sensitivity study of optical parameters to hygroscopic aerosols” **Daniela Viviana Vladutescu**, Erica Garafolo, Barry Gross, Fred Moshary, Samir Ahmed, SPIE Optics and Photonics, San Diego, CA, USA, 2-6 August 2009
- “Atmospheric trace gases concentrations measurements using open path FTIR ”, **Daniela Viviana Vladutescu**, Maung Lwin, Barry Gross, Fred Moshary, Samir Ahmed, CLEO-IQEC, Baltimore, Maryland, May 31-June 5, 2009
- “Lidar, TEOM and sunphotometer measurements and model reconstructed atmospheric aerosol optical properties” **Viviana Vladutescu**, Yonghua Wu, Barry Gross, Fred Moshary, Samir Ahmed SPIE Defense, Security, and Sensing, Orlando, Florida, USA April 5-9, 2010
- “Optical properties of aerosols in NYC coastal area”, **Viviana Vladutescu**, Yonghua Wu, Barry Gross, Mohammed Razani, Fred Moshary, Samir Ahmed, EARSel 5th Workshop on Remote Sensing of the Coastal Zone, Prague, Czech Republic, June 1-3, 2011
- “Aerosol optical and physical properties measured during the IOP campaign at BNL in the summer of 2011”, **Viviana Vladutescu**, Antonio Aguirre, Bomidi Mahdvan, Barry Gross, Ernie Lewis, Fred Moshary, Samir Ahmed, Mohammad Razani, Reginald Blake, 92nd Annual Meeting of the AMS, New Orleans, January 22-26, 2012
- “Optical metrology of space instruments”, **Viviana Vladutescu**, Phillip Coulter, Raymond Ohl, Edwin Olaya, Agossa Segla, 2012 Summer Research Symposium, NASA GSFC, Greenbelt, Maryland, USA, August 2012
- “Optical Metrology of James Webb Space Telescope Integrated Science Instrumented Module”, Edwin Olaya, Agossa Segla, **Viviana Vladutescu**, Phillip Coulter, Theo Hadjimichael , Raymond Ohl, 2012 Summer Research Symposium, NASA GSFC, Greenbelt, Maryland, USA, August 8, 2012
- “Modern Optical Metrology Techniques used in James Webb Space Telescope Segment Optics and Space Instruments” Agossa Segla, Edwin Olaya, **Viviana Vladutescu**, Phillip Coulter, Theo Hadjimichael, Raymond Ohl, 2012 Summer Research Symposium, NASA GSFC, Greenbelt, Maryland, USA, August 8, 2012
- “Validation of two algorithms used in retrievals of optical and size parameters of aerosols utilizing a Multi Filter Rotating Shadowband Radiometer and inter-comparison with a CIMEL sunphotometer ”, Antonio Aguirre, Agossa Segla, **Viviana Vladutescu**, Ernie Lewis and Arthur Sedlacek III, ERN Conference, February 23-25, 2012, Atlanta, GA
- “Remote Sensing and Climate Change Studies: A course implementation for engineering students”, **Viviana Vladutescu** and Reginald Blake, 22nd Symposium on Education, 93rd Annual Meeting of the American Meteorological Society, Austin, TX, USA, January 5-10, 2013
- “MFRSR instrument calibration and applications to source attribution of aerosols during the 2011 BNL IOP”, **Viviana Vladutescu**, Stephen E. Schwartz, Bomidi L. Madhavan, Barry Gross, Qi Zhang, 93rd Annual Meeting of the American Meteorological Society, Austin, TX, USA, January 5-10, 2013
- “Climate Studies and Earth Environmental Engineering” , **Viviana Vladutescu** and Reginald Blake, 33rd EARSel Symposium, '4th Workshop on Education and Training', held in Matera, Italy , June 4, 2013

- “Calibration techniques and applications of sunphotometers to remote sensing of atmospheric aerosols” , **Viviana Vladutescu**, Stephen E. Schwartz, Bomidi L. Madhavan, Barry Gross, Qi Zhang, 33rd EARSeL Symposium, held in Matera, Italy , June 3-6, 2013
- “What can we Learn From High Resolution Digital Photography of Clouds?”, Stephen E. Schwartz, **Viviana Vladutescu**, Antonio Aguirre, Clement Li, AGU Fall Meeting, San Francisco, CA, USA, December 15-19, 2014
- “Characterization of cloud fraction and cloud radiative effects”, Clement Li, Stephen E. Schwartz, **Viviana Vladutescu**, Antonio Aguirre, 95th Annual Meeting of American Meteorological Society, Phoenix, Arizona, USA, January 4-8, 2015
- "High Resolution Photography of Clouds from the Surface and Cloud Radiative Effects". Stephen E. Schwartz, **Daniela Vladutescu**, Clement Li, Antonio Aguirre, 2015 Atmospheric Radiation Measurement (ARM)/Atmospheric System Research (ASR) Joint User Facility and Principal Investigator meeting, Vienna, VA, USA, March 16-20, 2015.
- “Impact of high resolution cloud structure on radiative effects obtained from ground based remote sensing systems”, **Viviana Vladutescu**, Zaw Thet Han, Yonghua Wu, Barry Gross, AS3.16 European Geoscience Union General Assembly 2015, Vienna, Austria, April 12-17, 2015.
- “Short-range structure of clouds studied by high resolution photography from the surface”, Stephen E. Schwartz, Dong Huang, **Daniela Viviana Vladutescu**, 2015 AGU Fall meeting, San Francisco, USA, Dec 14-Dec 18, 2015.
- “GP-EXTRA: Recruiting and Retaining Non-geoscience Minority STEM Majors for the Geoscience Workforce” Blake, R.A., Liou-Mark, J., Norouzi, H, **Vladutescu, Viviana** (AAAS and NSF symposium on Envisioning the Future of Undergraduate STEM Education: Research and Practice, Washington, D.C, USA, April 27-29, 2016.
- “Assessment Techniques of Students’ Softskills in Engineering”, **Viviana Vladutescu**, Mohammed Kouar, Zory Marantz, 2016 ABET Symposium, Interactive Workshops, Hollywood, Florida, USA, April 13-16, 2016.
- “Short-Range Structure of Cloud Optical Depth in North Central Oklahoma Determined by High Resolution Photography From the Surface” Stephen E. Schwartz, Dong Huang, **Daniela Viviana Vladutescu**, 2016 Atmospheric Radiation Measurement (ARM)/Atmospheric System Research (ASR) Joint User Facility and Principal Investigator meeting, Tysons Corner, Vienna, Virginia, USA, May 2- 5, 2016.
- “Characterization of Clouds at Sub-Meter Scales by High Resolution Photography from the Surface” Stephen E. Schwartz, Dong Huang, and **Viviana Vladutescu**. ECS Department, BNL, June 16, 2016 and Yoram Kaufman Memorial Symposium, NASA Goddard Space Flight Center, Greenbelt, Maryland, June 21-23, 2016.
- “Bridging the geoscience workforce gap: a training program for non-traditional STEM students”, Reginald Blake, Janet Liou Mark, Laura Yuen-Laura, Hamidreza Norouzi, **Viviana Vladutescu**, GSA 2016, Denver, Colorado, September 25-28, 2016
- “Optical depth and structure of thin clouds at centimeter scales”, Stephen E. Schwartz, Dong Huang, **Daniela Vladutescu**, ARM/ASR PI Meeting, March 13-16, 2017
- “Optical Instrument synergy in determination of optical depth of thin clouds, **Daniela Viviana Vladutescu**, Stephen E. Schwartz, Dong Huang, 28th International Laser Radar Conference, Bucharest, Romania, June 25-30, 2017
- “High Resolution Lidar Monitoring of Boundary Layer Aerosols”, Adrian Diaz, Victor Dominguez, Mark Campmier, Selma Dobryansky, Yonghua Wu, Mark Arend, Daniela Viviana Vladutescu, Barry Gross, Fred Moshary, NYSERDA, NY, USA, May 25th, 2017.
- “Lidar retrieved optical depth of low altitude subvisible clouds”, Nigel Franklyn, Adrian Diaz, Daniela Viviana Vladutescu, Tom Legbandt, Barry Gross, Yonghua Wu, Fred Moshary, Reginald Blake, ILRC 28, Bucharest, Romania, June 25th-30th, 2017
- “Scanning elastic lidar observations of aerosol transport in New York City”, Adrian Diaz*, Victor Dominguez, Selma Dobryansky, Yonghua Wu, Mark Arend, Daniela Viviana Vladutescu, Fred Moshary, ILRC 28, Bucharest, Romania, June 25th-30th, 2017
- “Broadening Participation of Minorities in the Geoscience Workforce in the Absence of a Geoscience Department”, Janet Liou Mark, Reginald Blake, Hamidreza Norouzi, Viviana Vladutescu, Laura Yuen-Laura, Earth Educators' Rendezvous, Albuquerque, NM July 17-21, 2017
- "Applications of synergistic combination of remote sensing and in-situ measurements on urban monitoring of air quality", Adrian Diaz, Victor Dominguez, Mark Campmier, Yonghua Wu, Mark Arend, Daniela Viviana Vladutescu, Barry Gross, Fred Moshary, Proc. SPIE 10406, Lidar Remote Sensing for Environmental Monitoring 2017, 104060N (30 August 2017); doi: 10.1117/12.2281294
- “Transmission Telescope Optical Metrology” Viviana Vladutescu, Aaron Swank, Dzu K.Le, Calvin R. Robinson, Felix Miranda, Victor Pena, Katherine Chun, SPIE Optical Metrology, Munich, Germany, June 24-28, 2019

PATENTS

- “Lidar System for detection of small flying objects”, US 16/365,203, March 26, 2019

GUEST LECTURES

- “Remote Sensing. Part I Land based Instruments” , Invited guest lecture at the CEU meeting of The IEEE Consultants Network of Long Island, Briarcliffe College - The Great Room Bethpage, NY October 2nd, 2013
- “Remote Sensing Instruments used for aerosol and cloud detection” invited guest lecture at the 2014 Brookhaven National Laboratory Colloquium, BNL, OED Bldg, (July 22nd, 2014)
- “Remote Sensing. Part II Space based sensing” , Invited guest lecture at the CEU meeting of The IEEE Consultants Network of Long Island, Briarcliffe College - The Great Room Bethpage, NY November 5th, 2014
- “Systems Engineering for Space Based Applications”, Invited guest lecture at the CEU meeting of The IEEE Consultants Network of Long Island and CAS IEEE Long Island, Telephonics Corporation, 815 Broad Hollow Road, Farmingdale, NY 11735 May 27th, 2015
- “LiDAR in Counter UAS” , Technology Transfer Days, CUNY/TCO, One on One meetings, NY, NY, USA, April 26th, 2016
- “Lidar Systems and Working Principles: Applications in Atmospheric Monitoring, Surveillance, and Metrology”, Communications and Intelligent Systems Division, Distinguished Technical Lecture Series, Bldg 54, Room 101, NASA Glenn Research Center, Lewis Center, Cleveland, OH 44135, July 27th, 2017

GRANTS Awarded

- PSC_CUNY grant (PSC-CUNY 40) PI (Granted)
Title: Urban aerosol backscatter properties based on Raman lidar and parametric coefficient models
Funding Agency: PSC CUNY Budget: \$2,392. June 2009-June 2010
Start date: 07/01/ 2009, Funding Period: 12 months
- PSC_CUNY grant (PSCREG-41-128) PI (Granted)
Title: CMAQ validation of optical Parameters and PM2.5 based on lidar and sky radiometers (Granted)
Funding Agency: PSC CUNY Budget: \$2,562. June 2010-June 2011
Start date (if funded):07/01/ 2011, Funding Period: 12 months
- GRTI CUNY Co PI (Granted)
Title : Urban aerosol optical properties based on measurements and climate models
Funding: \$44,892; Funding Period: June 2010-June 2011;
- OEDG NSF Grant# 40B68-0001 Co PI (Granted)
Title : Creating and Sustaining Diversity in the Geo-Sciences among Students and Teachers in the Urban Coastal Environment of New York City Funding: \$186,194; Funding Period: August 2011-August 2013;
- PSC-CUNY Award # 65578-00 43, PI (Granted)
Title: Impact of Optical, Physical and Chemical Properties of Aerosol on Radiative Forcing
Funding: \$5,995.84. Funding period: June 2012-June 2013.
- GP-EXTRA NSF IUSE , Co-PI (Granted)
Title: Recruiting and Retaining Non-geoscience Minority STEM Majors for the Geoscience Workforce, Funding: \$496,786, Funding Period: August 2015-August 2018

FUTURE WORK

- Ultra Fast High Power Lasers and Optical Metrology
- Explore, design, develop and work with optical sensors and components for target testing in interaction with high power laser beams, environmental applications and target detection
- Space Mission Analyses and Design – Systems Engineering, IR instrumentation used in Surveillance and Target Detection
- Operating and Simulation Software of different applications for space and land based instruments
- Optical remote sensing instrumentation

SKILLS

- **Leadership:** Innovative and creative in research. A very good team player as well as a team leader (native and accumulated through my MBA studies).
- **Optics:** very good understanding and conducting experiments involving various optical components and instruments
- **Programming Languages:** MATLAB, LabVIEW, Arena, My SQL, SAS, R, RapidMiner
- **Operating Programs:** ZEMAX, Optikwerks, AutoQuant Pro, GRAMS AI, SPSS, HYDRA, ArcGIS, LeoWORKS, AutoCAD, OrCAD PCB Design, Spatial Analyzer, Maxim DL 4, Image J, Minitab, Tableau, Crystal Ball.

- **Data Acquisition:** using Parallel and Serial Interfaces - HP IB, GB IB and RS232, Hyperterminal, LabVIEW cards, YESDAS, Envidas, etc
- **Languages:** Romanian (native), English (fluent)

INTERESTS AND ACTIVITIES

- Co-editor EARSeL eProceedings Journal of European Remote Sensing Laboratories
- Reviewer of IEEE-Transactions on Instrumentation and Measurements, IEEE-Transactions on Geoscience and Remote Sensing, IEEE Journal of Selected Topics in Applied Observations and Remote Sensing, AMS Journal of Atmospheric Oceanic Technology
- Program Committee Member ILRC (International Laser and RADAR Conference)
- Senior Member of the Institute of Electrical and Electronics Engineers, (IEEE)
- Member, Society of Photo-Optical Instrumentation Engineers(SPIE)

References: Available upon request (Dr. Aaron Swank, Researcher at NASA GRC, Dr. Dzu K. Le, Senior Researcher at NASA GRC, Dr. Stephen E. Schwartz, Senior Researcher at Brookhaven National Laboratory, Anthony DiNardo, Chief Scientist, Northrop Grumman; Dr. Raymond Ohl, Optics Branch, NASA GSFC 5510; Dr. Bonne August, Provost, NYCCT/CUNY, Dr. Fred Moshary, Professor of Electrical Engineering, CCNY/CUNY; Dr. Barry Gross, Professor of Electrical Engineering, CCNY/CUNY)