

# Nikisa S. Jordan



## EDUCATION

- Ph.D.,** University of Maryland Baltimore County **2004 - expected 2009**  
Marine Estuarine Environmental Sciences  
Major: Environmental Sciences  
Current status: Ph.D. Candidate
- M.S.,** University of Maryland Baltimore County **2004 - 2006**  
Marine Estuarine Environmental Sciences  
Major: Environmental Sciences
- B.S.,** Bowie State University **1998 - 2003**  
Department of Computer Science  
14000 Jericho Park Road  
Bowie, Maryland 20715  
Major: Computer Science concentration Biology  
Overall GPA: 3.57/4.0; In CS: 3.8/4.0

## AREAS OF COMPUTER EXPERIENCE

**Languages:** C/C++, JAVA, JavaScript, Perl, HTML, Lingo

**Applications:** MATLAB, SAS, HDFLook, IDL, VTK, Microsoft Office, Excel, Macromedia  
Fireworks, Director 8.5, Macromedia Dreamweaver, Macromedia Flash, PhotoShop

**Operating Systems:** UNIX, LINUX, MAL/SAL, Windows XP,  
Integration and Tests Operating Systems (ITOS).

## PROFESSIONAL EXPERIENCE

**RESEARCH ASSISTANT** September 2003 - present  
**Physics Department**  
**University of Maryland Baltimore County**  
Physics Building  
1000 Hilltop Circle  
Baltimore, MD 21250  
Principle Investigators: Dr. R. Hoff, Dr. J. Engel-Cox, & Dr. K. McCann

*LIDAR Spaceborne Observations*

Using Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observation (CALIPSO) for a new air quality (comparison) study.

### ***Modeling Fires Using Spaceborne Measurements***

Using MODerate Resolution Imaging Spectroradiometer (MODIS) aerosol and fire radiative power measurements to model smoke emissions in the United States.

### ***Visibility Field Studies***

Using several satellite products and *In Situ* ground based measurements to determine the transport and effect of pollutants (PM 2.5 only) in Class I areas. Focus is aimed at developing an integrated empirical product that addresses air pollutant transport to the East coast.

### ***REALM***

Webmaster for the Regional Atmospheric Lidar Mesonet (REALM) website (<http://alg.umbc.edu/REALM>). Efforts are focused on making the site more dynamic and easily accessible for all users. REALM is lidar mesonet designed to monitor air quality in the vertical from multiple locations. It can provide a better understanding about regional air pollution events and transport than individual lidar systems.

### ***USAQ Weblog***

Since the summer of 2003, the University of Maryland Baltimore County (UMBC) Atmospheric Lidar group has been operating a weblog called U.S. Air Quality (<http://alg.umbc.edu/usaq>). The weblog or blog, for short, enables multiple users to post daily images and text of the U.S air quality. Data from multiple sources, such as satellite sensors, ground-based air quality monitors, and UMBC lidar systems are used to evaluate daily air quality events.

## **RESEARCH ASSISTANT**

Summer 2003

### **Computer Science Department Bowie State University**

Computer Science Building

14000 Jericho Park Road

Bowie, Maryland 20715

Principle Investigator: Dr. Sherri Braxton-Leiber

“JavaPtr” ([http://alg.umbc.edu/Ultimate\\_Javaptr\\_website/home/javaptr\\_home.HTML](http://alg.umbc.edu/Ultimate_Javaptr_website/home/javaptr_home.HTML)) is a web-based application I developed with several computer science students. It is a user-friendly application that teaches the concept of “pointers” in C++. The tutorial interface was built mainly using Macromedia Director 8.5 and JAVA applets, thus making it easily accessible over the Internet.

## **INTERN**

Summer 2002

### **Design and Process Group/Manufacturing Systems Integration Division**

**National Institutes of Standards and Technology (NIST)**

100 Bureau Drive, MS8260

Gaithersburg, MD 20899-8260

Principle Investigator: Dr. Ram D. Sriram

Health data interchange standards are important to allow data to be sent about a patient from the sending system to the receiving system. Existence of ambiguities and discrepancies in the standard will result in incorrect data transferal. The objective was to research the Health Level 7 standard used in medical informatics and offer suggestions for the discrepancies in data transfer.

**SATELLITE OPERATIONS INTERN**

Summer 2001

**Bowie State Satellite Operations and Control Center (BSOCC)**

**Bowie State University**

Computer Science Building

14000 Jericho Park Road

Bowie, Maryland 20715

Principle Investigator: Todd Watson

Certified NASA Command Controller and Mission Planner for the Solar Magnetospheric Particle Explorer (SAMPEX) Satellite. Configured the ITOS ground system, initiated set-up of NASA ground stations, performed real-time commanding, and post-pass processing of spacecraft telemetry data. Also built the command loads that would be up-linked to the satellite.

**INTERN**

Summer 2000

**Center for Bio/Molecular Science and Engineering**

**Naval Research Laboratory**

SW Washington D.C 20375

Principle Investigator: Dr. Mehran Pazirandeh

Thioesterase I (TE) from *Escherichia Coli* was cloned and expressed using the pMal-p and pMal-c expression vectors. The expressed enzyme was affinity purified from cultures and was studied for its potential to catalyze various reactions. Thioesterase I was expressed both as a cytoplasmic and periplasmic protein although in nature the E. coli TE is periplasmic. The cloned gene was about 600 base pairs and codes for 182 amino acids. The expression of the gene resulted in the production of a recombinant protein of MW 66kDa, which is of the expected size. The recombinant protein is larger than the expected molecular weight of the TE, which is 22 kDa because it is expressed as a fusion protein with the maltose binding protein, which is 45 kDa. Variants of the TE I enzyme was attempted by incorporating various amino acids, such as the His patch and Asp-Glu patch. The results of these studies suggests that the expression levels of the enzyme are adequate for initial studies but expression systems will need to be investigated to increase the amount of enzyme that can be produced.

**VOLUNTEER**

1999 - 2000

**Deciduous Canopy Lab**

## **Smithsonian Environmental Research Center**

P.O. Box 28

647 Contees Wharf Road

Edgewater, Maryland 21037

Principle Investigators: Mr. Rasberry and Mr. Paker

For eleven years Mr. James Lynch was conducting a research project at the Smithsonian Environmental Research Center. His research dealt with the production of seeds in the deciduous canopy lab. It is believed that Lynch's objective was to investigate the relationship between viable and potential seed crop and percent viability. Unfortunately Mr. Lynch died and my assignment was to analyze and summarize his findings.

## **RESEARCH ASSISTANT**

1997 - 1998

### **Center for Superconductivity Research**

### **University of Maryland College Park**

John S. Toll Physics Building

University of Maryland,

College Park, MD 20742-4111

Principle Investigator: Dr. Vitaly Talyansky

Superconductivity is a phenomenon that demonstrates no resistance to the flow of an electrical current. The assignment was to create superconducting Yttrium Barium Carbon Oxide  $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$  (YBCO) thin films with Pulsed Laser Deposition (PLD). To characterize the fabricated YBCO thin film two common measurement techniques were applied. The first was the Applied Current (AC) measurement of a superconductor's  $T_c$ , which is based on the Meissner effect. The second was Direct Current (DC) measurement, which determines the  $T_c$  of a superconductor by finding the highest temperature at which the resistivity of the superconductor is zero.

## **JOURNAL PUBLICATIONS**

Jordan, N. S. and R.M. Hoff (2008), A Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observation (CALIPSO) Validation and Comparison Study, *Journal of Geophysical Research Atmospheres* (in preparation).

Jordan, N. S., C. Ichoku and R. M. Hoff, 2008. Estimating smoke emissions over the US Southern Great Plains using MODIS fire radiative power and aerosol observations. *Atmos. Environ.*, **42**, 2007-2022, doi:10.1016/j.atmosenv.2007.12.023.

## **REVIEWED CONFERENCE PUBLICATIONS & PRESENTATIONS**

Jordan, N.S., C. Ichoku, and R.M Hoff, **Observations of Fire and Smoke from Space**, in the Proceedings of the NOAA CREST Annual Symposium, Mayaguez Puerto Rico, Feb 20-22, 2008.

Jordan, N.S., C. Ichoku, and R.M Hoff, **MODIS and CALIPSO Observations of Smoke**

**Pollution Episodes**, in the Proceedings of the 88th American Meteorological Society (AMS) Conference, Eighth Conference on Atmospheric Chemistry, New Orleans, Louisiana, January 21-24, 2008.

Jordan, N. S. and R. M. Hoff. **Employing A-Train Sensors for Assessing Biomass Burning**, Proceedings of the A-Train Symposium, Lille, France, Oct. 22-25, 2007.

Delgado, R., R.R. Rogers, Z. Li, N.S. Jordan, K. Mubenga, K. McCann, and R.M. Hoff **Active and Passive Remote Sensing of Atmospheric Aerosols: UMBC Atmospheric Lidar Group**, Proceedings of IV Workshop on Lidar Measurements in Latin America, São Paulo, Brazil, June 17-23, 2007.

Jordan, N. S., C. Ichoku, and R. M. Hoff. **Smoke Emissions Over the U.S. Southern Great Plains Using Satellite Fire Radiative Energy (FRE)**, Proceedings of the American Geophysical Union (AGU) Fall Meeting, San Francisco, CA, Dec. 11-15, 2006.

Jordan, N, J. Engel-Cox, R. Hoff, and K. McCann, **Analysis Air Pollutant Transport To Class I Areas Using Multiple Satellite Products and In Situ Ground Based Measurements**, in the Proceedings of the 86th American Meteorological Society (AMS) Conference, Eighth Conference on Atmospheric Chemistry, P1.9, Atlanta Georgia, January 29-February 2, 2006.

Jordan, N.S. J. Engel-Cox, R. Hoff, K. McCann, and K. Mubenga, **Visibility Analysis of Class I Areas Using Multiple Satellite Products & In Situ Ground Based Measurements**, in the Proceedings of the 98<sup>th</sup> Annual Air & Waste Management Association (A&WMA) Conference, #1197. Minneapolis Minnesota. June 21-24, 2005

Hoff, R., E. Eloranta, J. Engel-Cox, N. Jordan, K. McCann, K. Mubenga, S. Palm and R. Rogers, 2005. **Multisensor Observations of the Long-Range Transport of Three Large Forest Fires Plumes to the Northeastern U.S.**, Paper #416, *Proc.* 98th Annual Meeting, Air and Waste Management Association, Minneapolis, MN, June 2005

Rogers, R, J. E Cox, R. Hoff, N. Jordan, S. Kondragunta, K. McCann, K. Mubenga, and A. Prados, **On First GASP**, in the Proceedings of the NOAA Educational Partnership Program, Education and Science Forum. City College of New York. October 21-23, 2004.

Jordan, N, J. E Cox, R. Hoff, S. Kondragunta, K. McCann, K. Mubenga, A. Prados, and R. Rogers, **One Year of Blogging: Success of the USAIRQuality Weblog.**, in the Proceedings of the NOAA Educational Partnership Program, Education and Science Forum. City College of New York. October 21-23, 2004.

Hoff, R., J. Engel-Cox, N. Krotkov, S. Palm, R. Rogers, K. McCann, L. Sparling, N. Jordan, O. Torres, and J. Spinhirne, **Long-range transport observation of two large forest fire plumes to the northeastern U.S.**, in the Proceedings of the 22nd International Laser Radar Conference, July 2004.

Jordan, N.S, B. Cofield, U. Ebilah, and F. Olumoko. **JAVAPtr**. in the Proceedings of the NASA/NSF/TSU Symposium, Nashville, TN April 2003.

Jordan, N. S. and Pazirandeh M. (2001) **Thioesterase 1 of *Escherichia Coli***. Southeastern Biology, 48(2), 102.

Jordan, N. S., **Seed fall Research**. Presented at the 4<sup>th</sup> Model Institutions for Excellence/Science, Engineering, and Mathematics Showcase. Bowie, MD, 1999.

Jordan, N. S. and Vitaly Talyansky, **Automotive Detecting Device (ADD)**. Presented at the 50<sup>th</sup> Annual Prince George's Science Fair, Largo, MD, 1998.

Jordan, N. S. and Vitaly Talyansky, **High Temperature Superconductivity**. Presented at the 49<sup>th</sup> Annual Prince George's Science Fair, Largo, MD, 1997.

### MEMBERSHIPS

- Alpha Kappa Mu Honor Society, Mu Gamma Chapter
- National Honor Society at Bowie State University
- American Geophysical Union (AGU)

### HONORS & SPECIAL RECOGNITIONS

- Jessica Soto-Pérez Memorial Award (Mentorship) **2008**
- 1<sup>st</sup> Place AMS 10<sup>th</sup> Conference on Atmospheric Chemistry **2008**
- 1<sup>st</sup> Place NOAA CREST Annual Symposium **2008**
- 2<sup>nd</sup> Place PROMISE Research Symposium **2007**
- MS PHDs Fellow **2006**
- UMBC PROMISE Peer Mentor **2005**
- 3<sup>rd</sup> Place UMBC Graduate Research Conference **2004**
- Inducted into Alpha Kappa Mu Society, Mu Gamma Chapter (BSU) **2002**
- Dean's List Bowie State University **1999-2003**
- Model Institution for Excellence Fellowship (BSU) **1998-2003**
- Full Scholarship for Bowie State University (BSU) **1998**
- 1<sup>st</sup> Place in Physics (Electronics) NAACP ACT-SO **1998**
- 1<sup>st</sup> Place Prince George's Annual Science Fair **1998**
- Patent and Trademark Office Society **1997**
- 3<sup>rd</sup> Place Prince George's Annual Science Fair **1997**
- Certificate of Excellence from the American Nuclear Society **1997**