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# Curriculum Vitae

**Nii Attoh-Okine PhD., PE., F.ASCE**  
**Department of Civil and Environmental Engineering**  
**Department of Electrical and Computer Engineering**  
**Interim Academic Director, UD Cybersecurity Initiative**  
**University of Delaware, Newark, DE**  
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## EDUCATION

Ph.D. 1990-92 Department of Civil and Environmental Engineering  
University of Kansas  
Dip. Ing 1980-1986 Rostov Institute of Civil Engineering, Rostov-on-Don  
Russia - 6-years Program-Diploma with Distinction

## AREAS OF TEACHING AND RESEARCH

Civil Infrastructure Systems	Resilience Engineering	Information Geometry
Big Data/Data Science	Hilbert-Huang Transform	Railway Tracks Analysis
Image and Signal Processing	CyberModels and Risk	Topological Data Analysis
Graphical Models/Belief Functions	Blockchain	Theory of Pavement Design

**ACADEMIC POSITION**

Interim Academic Director	2018-Present	UD Cybersecurity Initiative
Full Professor	2018-Present	Department of Electrical and Computer Engineering
Full Professor	2011-Present	Department of Civil and Environmental Engineering UNIVERSITY OF DELAWARE, Newark, DE
Associate Professor	2003-2010	Department of Civil and Environmental Engineering UNIVERSITY OF DELAWARE, Newark, DE
Visiting Associate Professor	2007-2008	Department of Civil and Environmental Engineering PRINCETON UNIVERSITY, Princeton, NJ
Assistant Professor	1999-2003	Department of Civil and Environmental Engineering UNIVERSITY OF DELAWARE, Newark, DE
Assistant Professor	1995-1999	Department of Civil and Environmental Engineering FLORIDA INTERNATIONAL UNIVERSITY Miami, FL

**OTHER ACADEMIC APPOINTMENTS**

Adjunct Professor and Senior Research Associate	1995	Department of Civil and Environmental Engineering FLORIDA INTERNATIONAL UNIVERSITY Miami, FL
Senior Research Associate	1994	Department of Civil and Environmental Engineering FLORIDA INTERNATIONAL UNIVERSITY Miami, FL
Research Associate	1993	Department of Civil and Environmental Engineering FLORIDA INTERNATIONAL UNIVERSITY Miami, FL
Lecturer	1987-89	Department of Civil Engineering KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, Kumasi, Ghana

**OTHER IMPORTANT APPOINTMENTS**

Maintenance Engineer 1986 Tema Food Complex, Tema, Ghana

**PROFESSIONAL CERTIFICATION**

Professional Engineer - License # 14591- State of Kansas

## EDITORSHIP

Associate Editor	2013- Present	ASCE/ASME Journal of Risk and Uncertainty Management in Engineering Systems
Associate Editor	2016 Present	Advances in Data Science and Adaptive
Associate Editor	2010 Present	ASCE Journal of Pipeline Systems Engineering and Practice
Associate Editor	2003- 2012	IEEE Transactions on Systems, Man and Cybernetics, Part C
Associate Editor	2006- Present	ASCE Journal of Bridge Engineering
Editorial Board Member	2006- 2010	ASCE Journal of Infrastructure Systems
Associate Editor	2008- Present	ASCE Journal of Computing in Civil Engineering
Editorial Board Member	2009- 2018	Journal of Construction and Building Materials
Editor	2018 Present	Journal of Construction and Building Materials
Special Issue Editor	2008	IEEE Systems Journal - <i>Resilience Engineering</i>
Special Issue Editor	2007	EURASIP - Journal on Advances of Signal Processing <i>Hilbert-Huang Transform</i>
Special Issue Editor	2005	IEEE Systems, Man and Cybernetics- Part C <i>Civil Infrastructure Interdependencies -</i>
Special Issue Editor	2002	ASCE Journal of Bridge Engineering <i>Bridge Management</i>

## HONORS AND AWARDS

2018	Fellow	ASCE
2012	Trabant Award for Women's Equity	University of Delaware
2009	Outstanding Reviewer ASCE Journal of Bridge Eng	American Society of Civil Engineers
2007	Dean's Merit	University of Delaware
2002	Dean's Merit	University of Delaware
1998	Excellence in Research	Florida International University
1986	Gold Medal-Academic Achievement Award	Ministry of Higher Education Russia

## WHO'S WHO CITATIONS

Who's Who in Science and Engineering	Marquis
Who's Who in the World	Marquis
Who's Who in the South and Southwest	Marquis
Phi Beta Delta International Scholar Dictionary of International Biography	

## CONSULTING

- 2003 Pennoni Associates, Wilmington, DE
- 2001 Karins Associates, Newark, DE
- 1993 Wingeter Laboratories, Miami, FL
- 1993 PAWA Engineering, Miami, FL

## CONFERENCE ORGANIZED

- 2017 Organizer and Co-Chair 2017 Symposium on Smart Cities & Sustainable Energy
- 2017 Co-Chair IEEE Resilience 2017, Wilmington, DE
- 2017 Co-Chair Co-Organizer, IEEE Big Data Workshop on Transportation
- 2017 Organizer and Co-Chairman Track Maintenance and Big Data, Newark, DE
- 2016 Organizer and Co-Chairman Track Maintenance and Big Data, Newark, DE
- 2015 Organizer and Co-Chairman Track Maintenance and Big Data, Newark, DE
- 2015 Organizer and Co-Chairman Big Data Analytic for Health Care-Differential Privacy Newark, DE
- 2014 Organizer and Co-Chairman IEEE Big Data Workshop on Transportation and Railway Engineering, Washington, DC
- 2013 Organizer and Chairman ASCE Symposium on Resilience Engineering
- 2011 Organizer and Co-Chairman International Symposium on Uncertainty Modeling and Analysis, University of Maryland, College Park, MD
- 2004 Organizer and Co-Chairman ASCE Joint Symposium on Information Technology in Civil Engineering, Baltimore, Maryland
- 2003 Organizer and Co-Chairman 1st Symposium on Hilbert-Huang Transform, Newark, DE (with Norden Huang)
- 2003 Organizer and Co-Chairman International Symposium on Uncertainty Modeling and Analysis, University of Maryland, College Park
- 2000 Organizer Computational Intelligence and Mathematical Methods in Pavement and Geomechanical Systems, Miami, FL
- 1998 Organizer International Workshop on Artificial Intelligence and Mathematical Methods in Pavements and Geomechanical Systems, Miami, FL
- 1995 Co-Chairman Special Session on Uncertainty Modeling and Analysis in Transportation Engineering and Planning
- 1995 Organizer and Chairman Neural Network and Artificial Intelligence-IEEE Southcon

## PROFESSIONAL SOCIETY MEMBERSHIPS

- Fellow*, ASCE
- Chair*, ASCE Committee on Risk and Vulnerability (2011-Present)
- Vice Chair*, ASCE Committee on Risk and Vulnerability (2008-2011)
- Senior Member*, IEEE Institute of Electrical and Electronic Engineers
- Member*, TRB Committee of Artificial Intelligence (A5008) (195-2003)
- Member*, TRB Committee on Application of Emerging Technology (A2F09) (1999-2004)
- Member*, ASCE Committee on Technical Council Computing
- Member*, American Society of Civil Engineers
- Member*, American Society of Engineering Education

Member, American Society of Highway Engineers

#### KEYNOTE LECTURES

2018 *Resilience and Cybersecurity in Achieving Society 5.0* 6th International Cybersecurity Symposium, Tokyo, Japan

2018 *Achieving Society 5.0 - Some Data Analysis Perspectives*, Digital Innovation Workshop, University of Tsukuba, Tokyo Campus, Japan

2017 *Data Science and Society 5.0* CYBER 3 Conference, Tokyo, Japan

2017 *Big Data and Off Grid Energy Decision* Global Green Growth Conference, Addis Ababa, Ethiopia

2016 3rd International Conference on Transportation in Africa, Accra, Ghana

2015 Big Data Analytics for Health Data Analytics Care-Differential Privacy, Newark, Delaware

2015 *The Marriage Between Big Data and Railway Engineering*, University of Birmingham UK, Distinguished Lecture (2015)

2015 *Railway Track Engineering and Big Data: Early Successes and Future Perspectives*, DELFT University of Technology, Holland,

Distinguished Lecture (2015)

2011 Brazilian Transportation Infrastructure Conference, Sao Paulo, Brazil

2015 Track Maintenance Planning in the Era of Big Data, Newark, Delaware

#### PRESENTATIONS

1. *Quantum Blockchain and Society 5.0 –CyberResilience of the Future*, Vanderbilt University, (Civil and Electrical Engineering Dept) Invited Seminar (2018)
2. *Quantum Blockchain and Society 5.0 [Connected Vehicle Models] –CyberResilience of the Future*, University of Missouri, Columbia, MO, Invited Seminar (2018)
3. *Quantum Blockchain and Society 5.0 [Health Data] –CyberResilience of the Future*, Johns Hopkins University, Invited Seminar (2018)
4. *Differential Geometry in Some Data Science Problems*, University of Delaware, (Electrical Engineering Dept) Invited Seminar (2017)
5. *Optimal Transport (Wasserstein Metric) Between Copulas for Clustering Pavement Roughness*, University of Pittsburgh, PA (2017)
6. *Topological Data Analysis for Resilience Engineering Applications- Multidimensional Persistence Homology Approach*, University of Virginia, Invited Seminar (2016)
7. *Railway Track Engineering and Big Data: Early Successes and Future Perspectives*, DELFT University of Technology, Holland, Distinguished Lecture (2015)
8. *The Marriage Between Big Data and Railway Engineering*, University of Birmingham UK, Distinguished Lecture (2015)
9. *Differential Privacy in the Era of Big Data*, University of Delaware, Electrical Engineering Department (2014)

10. *Empirical Mode Decomposition and Tensor and Pavement Image Analysis*, Rutgers University, (2013).
11. *Perspective on the Empirical Mode Decomposition and the Hilbert Huang Transform (HHT)*, University of Virginia, (2012).
12. *Computational Intelligence and Pavement Engineering*. Aeronautics Technological Institute, Sao Paulo, Brazil (2011)
13. *Belief Functions and Civil Infrastructure Systems Decision Making*. Purdue University (2009).
14. *Sustainability Science and Resilience Engineering: A new Paradigm for Complex System Performance*. Princeton University (2008).
15. *Resilience Engineering and Urban Infrastructure*. Temple University (2008)
16. *Resilience Engineering A new Paradigm for Complex Systems Performance and Maintenance*. Columbia University (2008)
17. *Resilience Engineering and Civil Infrastructure Systems*. Rutgers University (2008)
18. *Resilience Engineering and Complex Systems*. Airforce Institute of Technology (2008)
19. *Bidimensional Hilbert Huang Transform in Infrastructure Condition Assessment*. Rice University (2006).
20. *Potential Application of MEMS in Civil Infrastructure Monitoring*. MIT 2002.
21. *Roadway Design, Construction and Failure*. Invited Seminar at NASA Goddard Center, 2001.
22. *Potential Application of Markov Chain Monte Carlo Techniques in Pavement Performance*. Transportation Research Board Data Analysis Working Group, 2001.
23. *Neural Networks Applications in Pavement and Geomechanical Systems- Future Direction*. Invited Presentation at Transportation Research Board Meeting, 2000.
24. *Pavement Deterioration Modeling with Fault Trees and Belief Functions* Transportation Research Board Data Analysis Working Group, 1998.
25. *Artificial Immune Systems Applications in Pavement Management Decision Making*. Rostov Institute of Civil Engineering, Rostov-on-Don, Russia, 1998.
26. Invited Speaker, University of Delaware's Operations Research Seminar Series (Title: Interpretation and Application of Dempster-Shafer Theory) 1994.
27. Invited Speaker, University of Delaware's Operation Research Seminar (Title: Belief Functions and Qualitative Markov Tree) 1993.
28. A Belief-function Framework Approach to the Evidential Problem of Evil. (With Leke Adefe) 9th Annual Computers and Philosophy Conference at Occidental College, 1994.

29. Study of the Combined Use of Ground Penetrating Radar and Deflection Testing in Pavement Rehabilitation. 7th PanAmerican Congress of Traffic and Transportation Engineering, Caracas, Venezuela, 1992.
30. Implementing Effective Transportation Technology Transfer Center in Ghana. Seminar on Adaptability of Technology Transfer in Developing Countries, Spain, 1991.
31. Geotechnical Problems of Highway Maintenance in a Less Developed Country. Young Geotechnical Engineers Conference, Lagos, Nigeria, 1989.

#### **SCIENTIFIC/PROFESSIONAL ACTIVITIES**

- Panel Member The World Bank African Centers of Excellence, November 2015
- ASCE Earthquake Investigation Team to L'Aquila, May 19-21, 2009
- NSF Panel review on Information Technology and Infrastructure Systems (CMS), April 2001; 2006; Cyber Infrastructure, 2007; 2010
- Member, FDOT Pavement Research Advisory Board, September 1994-August 1999
- External Examiner, University of Miami, University (Australia); ITA Brazil
- Dade County Brownfield Task Force (Sept 1996-Sept 1999)
- Reviewer for over 20 different Journals.

#### **PUBLICATIONS**

##### **Books**

- Nii Attoh-Okine Resilience Engineering: Models and Analysis. Cambridge Press, ISBN 9780521193498, 2016.
- Nii Attoh-Okine. Big Data and Differential Privacy: Analysis Strategies for Railway Track Engineering. John Wiley Publishers, ISBN 978-1-119-22904-9.
- Nii Attoh-Okine. Data Science in Smart Cities Applications. Book Proposal Submitted to Oxford Press, 2018

##### **BOOKS EDITED**

1. Gopalakrishnan, K., Birgisson, B., Taylor, P. and Attoh-Okine, N.(Editors). *Nanotechnology and Micromechanics in Civil Infrastructure Applications: A Paradigm Shift*. Publishers, Springer-Verlag, New York, 2010, ISBN 3642166563, 284 p.
2. Gopalakrishnan, K. and Attoh-Okine, N. (Editors). *Intelligent and Soft Computing In Infrastructure Engineering: Recent Advances*, Springer Verlag, 2009, ISBN 978-3-642-04585-1, New York.

3. Norden, Huang and Attoh-Okine, N. O. (Editors). *Hilbert-Huang Transform Applications in Engineering*. Publishers: Marcel Dekker, 2005, ISBN 0-8493-3422-5, 315 p.
4. Attoh-Okine, N. O. and Ayyub, Bilal. (Editors). *Applied Research in Uncertainty Analysis and Modeling*. Kluwer Publishers, 2005, ISBN 0-387-23535-3, 545p.
5. Attoh-Okine, N. (Editor). *Computational Intelligence Applications in Pavement and Geomechanical Systems*. Publishers A. A. Balkema, Rotterdam, Netherlands 2000, ISBN 90 5809 156 2, 219p.
6. Attoh-Okine, N. (Editor). *Artificial Intelligence and Mathematical Methods in Pavement and Geomechanical Systems*. Publishers A. A. Balkema, Rotterdam, Netherlands 1998, ISBN 90 5809 028 0, 195p.

#### **BOOKS-EDITED CONFERENCE PROCEEDINGS**

1. Attoh-Okine, N. O. and Roddis, W. K.M. (Editors) *ASCE Information Technology Symposium*, 2004, ISBN 0-7844-0760-6, 112p.
2. Ayyub, Bilal and Attoh-Okine, N. O. (Editors). *Proceedings, International Symposium on Uncertainty and Analysis*. Publishers IEEE Computer Society, ISBN 0-7695-1997-0, 450p.
3. Attoh-Okine, N. O. and Shen, D. (Editors). *Proceedings on Emerging Fare Collection Techniques in Mass Transit*. National Urban Transit Institute, US Department of Transportation, 1997, 124 p, Washington DC.

#### **CD ROM EDITED**

1. Ayyub, B. and Attoh-Okine, N. O. (Editors). *Proceedings, International Symposium on Uncertainty and Analysis*. Publishers IEEE Computer Society, 2003, ISBN 0-7695-1997-0.

#### **JOURNALS SPECIAL ISSUE EDITED**

1. Special Issue Editor - *Bridge Management Systems*-ASCE Journal of Bridge Engineering, 2002.
2. Special Issue Co-Editor - *Interdependencies in Civil Infrastructure Systems* - IEEE Transactions on System, Man and Cybernetics, Part C-2006.
3. Special Issue Co-Editor - *Resilience Engineering*-IEEE Systems Journal - 2008.
4. Special Issue Big Data and Infrastructure Systems, ASCE/ASME Journal of Risk and Uncertainty Analysis in Engineering Systems

#### **ARTICLE IN ENCYCLOPEDIA**

1. Attoh-Okine, N. O. "Value Engineering," in *IEEE Encyclopedia of Electrical and Electronics Engineering* (IEEE), 1997, 71-75.



## **CHAPTERS IN EDITED BOOK**

1. Ayenu-Prah, A., Attoh-Okine, N. O. and Huang, Norden. *Empirical Mode Decomposition and the Hilbert Transform*. In *Transforms and Applications Handbook*, Poularikas, Alexander (Editor), Taylor and Francis Publishers, Chapter 20, 2010.
2. Attoh-Okine, N. and Aderinlewo, Fikayo. *Bayesian Networks in Pavement and Bridge Engineering*. In *Bayesian Network: A Practical Guide to Applications*. (Editors), Pourret, O., Naim, P and Marcot, B. (Chapter 17) Wiley Publishers, 2008.
3. Attoh-Okine, N. O. *Perspective on the Theory and Practice of Hilbert-Huang Transform*. In *Hilbert-Huang Transform in Engineering*. (Editors) Huang, N. and Attoh-Okine, N. Chapter 13, Marcell Dekker P:Publishers, 2005.
4. Attoh-Okine, N. O. *The Combined Use of Belief-Functions and Adaptive Neural Networks in Pavement Management Decision-Making*. In *Artificial Neural Networks for Civil Engineers: Advanced Features and Application*. (Editors), Flood, I. and Kartam, N, pp 223-246, American Society of Civil Engineers, 1998.
5. Attoh-Okine, N. O. *Valuation-Based Systems for Pavement Management Systems Decision Making*. In *Uncertainty Analysis in Engineering and Sciences: Fuzzy Logic, Statistics, and Neural Network Approach*. (Editors), Ayyub, B. and Gupta, M. pp 157-177, Kluwer Academic Publishers, 1997.

## **JOURNAL PAPERS**

1. Martey, E., and Attoh-Okine, N. “*Bivariate Severity Analysis of Train Derailments using Copula-based Regression Models*,” ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering (2017)
2. Lasisi, A., Attoh-Okine, N. O “*Track Quality Index Revisited: A Machine Learning Approach for Track Section Classification*,” Transportation Research Part C (2017)
3. Martey, E., and Attoh-Okine, N. “*Modelling Tamping Recovery of Track Geometry using Copula-based Approach*,” Journal of Rail and Rapid Transit (2017)
4. Atique, F., and Attoh-Okine, Nii. “*Copula Parameter Estimation Using Bayesian Inference for Pipe Data Analysis*,” Canadian Journal of Civil Engineering (2017)
5. Zarembski, A., Boyce, T., and Attoh-Okine. “*Risk-Based Scheduling Methodology for Audit Inspections of Curves in High Speed Main Line Track*,” Journal of Rail Rapid Transit (2017)
6. Zarembski, A. M., Einbinder, D., and Attoh-Okine, N.O. “*Using Multiple Adaptive Regression to address the Impact of Track Geometry on Development of Rail defects*,” Journal of Construction and Building Materials, Vol 127, pp 546-555, 2016
7. Adarkwa, O; Attoh-Okine, N., Schumacher, T. “*Using Tensor Factorization to Predict Network-Level Performance of Bridges*,” ASCE Journal of Infrastructure Systems [http://dx.doi.org/10.1061/\(ASCE\)1097-4701\(2017\)13:4\(04017001\)](http://dx.doi.org/10.1061/(ASCE)1097-4701(2017)13:4(04017001))

8. Atique, F. and Attoh-Okine, Nii. "Using Copula Method for Pipe Data Analysis," Journal of Construction and Building Materials, Vol 106, 140-148, March 2016.
9. Adarkwa, O, and Attoh-Okine, N. O. "Prediction of Structural Deficiency Ratio of Bridges Based on Multiway Data Factorization," ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering <http://dx.doi.org/10.1061/AJRUA6>, 2016.
10. Nunez, S. G. and Attoh-Okine, N. O. "Hybrid Particle Swarm Optimization and K-Means Analysis for Purposes of Bridge Clustering Based on National Bridge Inventory," ASCE/ASME Journal of Risk and Uncertainty Analysis in Engineering Systems <http://dx.doi.org/10.1061/AJRUA6>, 2016.
11. Adu-Gyamfi Y.O. and Attoh-Okine, N.O. "Traffic Sign Recognition using Sparse Representations and Active Contour Models," Transportation Research Record: Journal of the Transportation Research Board, No. 2463, pp. 35-45, 2014.
12. Attoh-Okine, N. O., "*Pair-Copulas in Infrastructure Multivariate Dependence Modeling*," Journal of Construction and Building Materials, Vol. 49, December 2013, Pages 903-911.
13. Adu-Gyamfi, Y., Carillo, R., Attoh-Okine, N. O. and Gonzales, A. "*A Multi-Resolution Information Mining for Pavement Crack Image Analysis*," ASCE Journal of Computing in Civil Engineering, Vol 26, No.6, pp 741-749, 2012.
14. Bedeley, R., Attoh-Okine, N. O. and Lee, E. "*Modeling Pedestrian Crossing Behavior using Bayesian Network*," Institute of Civil of Engineers, Transport Journal, Vol. 166 Issue 5, October 2013, pp. 282-288.
15. Mills L., Attoh-Okine N. and McNeil S. "*Hierarchical Markov Chain Monte Carlo Simulation for Modeling Transverse Cracks in Highway Pavements*" ASCE Journal of Transportation Engineering, Vol. 138. No. 6, pp, 2012.
16. Li, Q., Wang, K and Attoh-Okine, N. O. "*Bayesian Based Linear Models for Pavement Smoothness Prediction*," International Journal Pavement, Vol. 9, No. 1-2-3, pp 100-109, 2010.
17. Mills L., Attoh-Okine N. and McNeil S. "*Developing Pavement Performance Models for Delaware*" Transportation Research Board Journal, No. 2304, pp 97-103, 2012.
18. Opila, M. C. and Attoh-Okine, N. O. "*Novel Approach in Pipe Condition Scoring*," ASCE Journal of Pipeline Systems and Engineering Practice, Vol 2, No. 3, pp 82-90, 2011.
19. Adu-Gyamfi, Y., and Attoh-Okine, N. O. "*Critical Analysis of Different Hilbert-Huang Algorithms for Pavement Profile Evaluation*," ASCE Journal of Computing in Civil Engineering, Vol 24, No.6, pp 514-524, 2010.
20. Attoh-Okine, N. O., Adu-Gyamfi, Y. and Mensah, S. "*Potential Application of Hybrid Belief Functions and Hilbert Huang Transform in Layered Sensing*," IEEE Journal of Sensors, Vol 11, No. 3, pp 530-535, 2011.

21. Ayenu-Prah, A. and Atttoh-Okine, N. O. “*Criterion for Selecting Relevant Intrinsic Mode Functions in Empirical Mode Decomposition,*” Journal Advances in Adaptive Data Analysis: Theory and Applications, Vol 2, No. 1, pp 1-24, 2010.
22. Adu-Gyamfi, Y. and Atttoh-Okine, N. O. and Ayenu-Prah, A. “*Pavement Profile Analysis Using Ensemble Empirical Mode Decomposition,*” International Journal of Vehicle Systems Modeling and Testing, Vol 4, No. 4, pp 277-287, 2009.
23. Atttoh-Okine, N. and Mensah. “*Sensor Fusion and Civil Infrastructure Systems Monitoring- A Valuation Algebras Analysis of Output Data,*” IEEE Sensors Journal, Vol 9, No. 11, pp 1518-1526, 2009.
24. Atttoh-Okine, N. O., Cooper, A., and Mensah, S. “*Formulating of Resilience Index of Urban Infrastructure using Belief Functions,*” IEEE Systems Journal, Vol 3, No. 2, pp 147-153, 2009.
25. Atttoh-Okine, N., Cooger, K. and Mensah, S. “*Multivariate Adaptive Regression Splines (MARS) and Hinged Hyperplanes (HHP) for Doweled Pavement Performance Modeling,*” Journal of Construction and Building Materials, Vol 23, pp 3020-3023, 2009.
26. Aderinlewo, O. O . and Atttoh-Okine, N. O., “*Effect of Transportation Network Size on its Performance During Disruptions,*” International Journal of Critical Infrastructures, Vol 5, No. 3, pp 285-298, 2009.
27. Bhuiyan, S., Atttoh-Okine, N. O., Barner, K. E. and Ayenu-Prah., A., “*Bidimensional Empirical Mode Decomposition Using Various Interpolation Techniques,*” Journal Advances in Adaptive Data Analysis: Theory and Applications, Vol 2, No. 2, pp 309-338, 2009.
28. Aderinlewo, O. O. and Atttoh-Okine, N. O., “*Sensitivity Analysis of Scrap Tire Embankment using Bayesian Influence Diagrams,*” Journal of Construction and Building Materials, Vol 23, No. 3, pp 1446-1455, 2009.
29. Ayenu-Prah, A. and Atttoh-Okine, N. O., “*Comparative Analysis of Hilbert-Huang Transform, Fourier Transform and Wavelets in Profiles Analysis,*” Journal of Vehicle Systems Dynamics, Vol 47, No. 4, pp 437-456, 2009.
30. Ayenu-Prah, A. and Atttoh-Okine, N. O., “*Evaluating Pavement Cracks with Bidimensional Empirical Mode Decomposition,*” EURASIP Journal of Advances in Signal Processing, Vol 28, doi: 10.1155/2008/861701, 7 pages , 2008.
31. Duncan-Williams, E. and Atttoh-Okine, N. O., “*Effect of Geogrid in Granular Base-Strength- An Experimental Investigation,*” Journal of Construction and Building Materials, Vol 22, pp 2180-2184, 2008.
32. Atttoh-Okine, N. O., “*Uncertainty Modeling and Analysis of Natural Resonant Frequency and Transconductance Parameters in Microresonators Design,*” IEEE Transactions on SMC Part C , Vol 37, No. 4, pp 719-723, July 2007.

33. Attoh-Okine, N. O. and Paris, D., “*A Graphical Chain Model for Pavement Roughness from Condition Assessment Data,*” Proc. of Institution of Civil Engineers-Transport Journal, Vol 158, pp 213-218, 2006.
34. Attoh-Okine, N. O. and Bowers, S ., “*A Bayesian Network Model of Bridge Deterioration,*” Proc. Institution of Civil Engineers - Bridge Journal, Vol 159, BE2, pp 69-76, 2006.
35. Ewuakye-Odum, B. and Attoh-Okine, N. O., “*Sealant Application in Concrete Pavements - A Review,*” Journal of Construction and Building Materials, Vol 20, pp 591-602, 2006.
36. Attoh-Okine, N. O., “*Modeling Incremental Pavement Roughness Using Functional Network,*” Canadian Journal of Civil Engineering Vol 32, pp 899-905, 2005.
37. Attoh-Okine, N. O., “*Application of Genetic-Based Neural Network to Lateritic Soil Strength Modeling,*” Journal of Construction and Building Materials, Vol 18, No. 8, pp 619-623, 2004.
38. Attoh-Okine, N. O., “*Uncertainty Analysis in Surface Micromachined Force Gauges: A Convex Model Approach,*” ASCE Journal of Aerospace Engineering, Vol 17, No. 1, pp 40-44, 2004.
39. Attoh-Okine, N. O., “*The Future of MEMS in Transportation Infrastructure Monitoring,*” Transportation Research Board Circular E-C056, 2003.
40. Attoh-Okine, N. O., “*Characterizing Pavement profile Using Wavelets,*” American Society for Testing Material Special Technical Publications 1433, Constructing Smooth Hot Mix Asphalts Pavements , pp 142-153, 2003.
41. Attoh-Okine, N. O., “*Rule Induction in Productivity Analysis,*” Journal of Engineering, Construction and Architectural Management, Volume 10, No. 6, pp 413-417, 2003.
42. Attoh-Okine, N. O., “*The Probabilistic Analysis of Factors Affecting Highway Construction Costs: A Belief Network Approach,*” Canadian Journal of Civil Engineering, Vol 29, No. 3, pp 356-374, 2002.
43. Attoh-Okine, N. O., Mensah, S., and Nawaiseh, M., “*Using Multivariate Adaptive Regression Splines (MARS) in Pavement Roughness Prediction,*” Journal of the Institution of Civil Engineers (Transport),.Vol 156, pp 51-55, 2002.
44. Attoh-Okine, N. O., “*Aggregating Evidence in Pavement Management Decision-Making Using Belief Functions and Qualitative Markov Tree,*” IEEE Transactions on System, Man and Cybernetics, Application and Reviews, Vol 32, No. 3, pp 243-251, 2002.
45. Attoh-Okine, N. O., “*Combining Use of Rough Set Theory and Artificial Neural Networks in Doweled-Pavement- Performance Modeling: A Hybrid Approach,*” ASCE Journal of Transportation Engineering, Vol 128, No. 3, pp 270-275, 2002.
46. Attoh-Okine, N. O., “*Uncertainty Analysis in Structural Number Determination in Flexible Pavement Design - A Convex Model Approach,*” Journal Construction and Building Materials, Vol 16, pp 67-71, 2002.

47. Attoh-Okine, N. O. and Gibbons, J., "*Use of Belief Function in Brownfields Infrastructure Redevelopment Decision Making*," ASCE Journal of Planning and Urban Development, Vol 127 No 3 pp 126-143, 2001.
48. Attoh-Okine, N. O., "*Grouping Pavement Condition Variables for Performance Modeling Using Self Organizing Maps*," Journal of Computer-Aided Civil and Infrastructure Engineering, Vol 16, No. 2, pp 112-125, 2001.
49. Attoh-Okine, N. O., "*Flexible Pavement Roughness Prediction Using Adaptive Logic Networks*," Journal of Smart Engineering System Design, Vol 2, pp 257-271, 2000.
50. Attoh-Okine, N. O. and Appea, A., "*Comparative Analysis of Artificial Neural Networks and Evolutionary Programming in Roof Deterioration Modeling*," Journal of Construction and Building Materials, Vol 13, pp 311-320, 1999.
51. Attoh-Okine, N. O., "*Potential Application of Wavelets in Pavement Profile Evaluation and Assessment*," Journal of the Estonian Academy of Science. Vol 5, No.1, pp 53-63, 1999.
52. Attoh-Okine, N. O., "*Analysis of Learning Rate and Momentum Term in Backpropagation Neural Network Trained to Predict Pavement Performance*," Journal of Advances in Engineering Software, Vol 30, pp 291-302, 1999.
53. Gibbons, J. and Attoh-Okine, N. O., "*Brownfield Redevelopment Issues - Revisited*," Journal of Environment Pollution and Policy, Vol. 10, No. 1, pp 151-162, 1998.
54. Attoh-Okine N. O. and W.M.K.Roddis., "*Uncertainties of Asphalt Layer Thickness Determination in Flexible Pavements - Influence Diagram Approach*," Journal of Civil Engineering and Environmental Systems, Vol 15, pp 107-124, 1998.
55. Attoh-Okine, N. O., "*Potential Application of Influence Diagrams as a Risk Assessment Tool in Brownfield Redevelopment*," American Society for Testing Materials Special Technical Publication No.1338, pp 148-159, 1998.
56. Roberts, C. and Attoh-Okine, N. O., "*A Comparative Analysis of Two Artificial Neural Networks Using Pavement Performance Prediction*," Journal of Computer-Aided Civil and Infrastructure Engineering, Vol 13, pp 339-348, 1998.
57. Attoh-Okine, N.O., "*Predicting Roughness Progression Models in Flexible Pavements - An Evolutionary Algorithm Approach*," Intelligent Engineering Systems Through Neural Network, Vol 8, pp 845-853, 1998.
58. Attoh-Okine, N.O., "*A Rough Set Application to Data Mining Principles in Pavement Management Database*," ASCE Journal of Computing in Civil Engineering, Vol 11, No. 4 pp 231-237, 1997.
59. Amekudzi, A. and Attoh-Okine, N.O. "*Conceptual Framework for Understanding Brownfield Redevelopments Issues*," Infrastructure, Vol 2, No. 2, pp 45-59, 1997.

60. Attoh-Okine, N. O., “*Modeling Soil Correlations Using Neural Networks,*” Discussion ASCE Journal of Computing in Civil Engineering, pp 79, 1997.
61. Amekudzi, A., Attoh-Okine, N.O. and Laha, S., “*Brownfield Redevelopment Issues at Federal, State and Local Levels,*” Journal of Environmental Systems, Vol 25, No 2 pp 97-121, 1996.
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1. Nunez, S. G., and Attoh-Okine, N. O. “Hybrid Markov Chain Monte Carlo and Wiener Process in Railway Track Geometry Degradation Analysis,” IEEE Reliability Transactions (2017)

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1. Attoh-Okine, N. O., “*Bridge Management-Editorial*.” ASCE Journal of Bridge Engineering Vol 8, No. 6, pp 343-344, 2003.
2. Attoh-Okine, N. O., RFID: *A Guide to Radio Frequency Identification*, by Daniel Hunt., A Puglia and M. Puglia. John Wiley and Sons, Inc., 2007, 214 pages ISBN 978-0-470-10764-5, Vol 50, No. 4, pp 146-147, August 2008.
3. Attoh-Okine, N. O., “*The Empirical Mode Decomposition and the Hilbert Huang Transform*,” Attoh-Okine, N. O., Barner, K., Bentil, D., Zhang, Ray. EURASIP Journal of Signal Processing, Vol 2008, doi: 10.1155/2008/251518, 2008.
4. 5. Attoh-Okine, N. O., “*Resilience Engineering*,” IEEE Systems Journal , Vol 3, No. 2, pp146, 2009.
5. Adarkwa, O., and Attoh-Okine, N., “*Deep Learning Applications in Railroads: Predicting Carload*,” Railway Age, Feb 8, 2018.

#### **CONFERENCE PAPERS-PROCEEDINGS**

1. Martey, E and Attoh-Okine, N. “Bayesian Network Approach to Conditional Probability of Release of Hazardous Materials from Railroad Tank Cars” TRB 2017.
2. Galvan-Nunez, S., and Attoh-Okine, N., “Assessing Uncertainty of Track Geometry Degradation Based on Evolutionary Markov Chain Monte Carlo,” Transportation Research Board Annual Meeting, 2017.
3. Galvan-Nunez, S., and Attoh-Okine, N., “Markov Chain Monte Carlo in Rail Track Defect,” Transportation Research Board Annual Meeting, 2016.
4. Martey, E and Attoh-Okine, N. “Probability Analysis of the Severity of Train Derailments Using Copula Models” INFORMS 2016
5. Attoh-Okine, Nii. “Valuation Based Models and Networks to Determine Conditional Probability of Release of Hazardous Materials from Railroad Tank Cars During Accidents,” Transportation Research Board Annual Meeting 2015.

6. Attoh-Okine, Nii "Big Data and Railway Track Engineering-Some Observations. Big Data and Railway Maintenance Conference, Newark, Delaware 2015.
7. Mills, L., and Attoh-Okine, N. O. "Sustainability of Civil Infrastructure Systems: The Past, the Present, and the Way Forward" Sustainable Development of Critical Infrastructure: pp. 79-90. ASCE Conference' 2014.
8. Adarkwa, O., and Attoh-Okine, Nii., "Multiway Analysis of Bridge Structural Types in the National Bridge Inventory (NBI)," IEEE Big Data Conference, Washington, DC, 2014, 7 p.
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10. Silvia Galvan and Attoh-Okine, Nii. "Metaheuristics in Big Data: An Approach to Railway Engineering," IEEE Big Data Conference, Washington, DC, 2014, 7 p.
11. Adu-Gyamfi Y.O., N.O. Attoh-Okine, (2014), "Traffic Sign Recognition Using Sparse Representations and Active Contour Models", Transportation Research Board, Washington DC, January 13-17, 2014.
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16. Y.O. Adu-Gyamfi, Chandra Kambhamettu, and Nii Attoh Okine (2013), "Performance Assessment of Flexible Pavements Using Active Contour Models", Airfield & Highway Pavement Conference, Los Angeles, California, June 9-12, 2013
17. Attoh-Okine, Nii., "Some Data Analytic Issues in Sensor-Based Geosynthetics Applications," International Symposium on Design and Practice of Geosynthetic-Reinforced Soil Structures, Bologna, Italy, 2013.
18. Sampson Asare., Adu-Gyamfi Y.O., Attoh-Okine, N. (2013), "*Freeway Incident Detection Using Hilbert Huang Transform,*" \_Transportation Research Board Meeting, 2012, Washington DC



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20. Mills L. and Attoh-Okine N., "Statistical Analysis of the Sufficiency Ratings of the I-35 W Bridge" International Bridge Conference, June 2012
21. Opila, M.C. and Attoh-Okine, N., "A New Approach in Pipe Structural Condition Scoring," North American Society of Trenchless Technology -No Dig Show, paper No.F-4-05. (2012).
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23. Mills, L. and Attoh-Okine, N. O., "Statistical Analysis of the Sufficiency ratings of the I-35 W Bridge," International Bridge Conference, Pittsburgh, PA (2012).
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25. Bhuiyan, S. and Attoh-Okine, N.O., "Study of Bidimensional EMD method for various Radial Basis Functions Surface Interpolators," 7th International Conference on Machine Learning and Application (2009).
26. Attoh-Okine, N. O., "Higher Order Neural Network for Doweled Pavement Performance Modeling," Annual TRB Meeting (2008).
27. Aderinlewo, O. O. and Attoh-Okine, N. O., "Transportation Infrastructure Interactions Using Graph Theory-Preliminary Analysis," Annual TRB Meeting (2008).
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#### **TECHNICAL RESEARCH REPORTS**

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2. Attoh-Okine, N. O. and Aderinlewo, F. "Scrap Tire Embankment," A Research Report Sponsored by DELDOT, 80p, 2008.
3. Attoh-Okine, N.O. and Akkinepaly, R. "Quality Control and Quality Assurance of Hot Mix Asphalt," A Research Sponsored by DELDOT, 120p , 2006.
4. Attoh-Okine, N. O. and Nkansah, E. "Resilient Modulus of Construction Materials," A Report on Research Sponsored by DELDOT, 110p 2004.
5. Attoh-Okine, N. O. and Odum-Ewuakye, B. "Overview of Sealants in Pavement Applications," A Report on Research Sponsored by DELDOT, 80 p 2004.
6. Attoh-Okine, N. O. And Farzana, A. "ASR Mitigation in Concrete Pavements," A Report on Research Sponsored by DELDOT, 40p 2003.

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11. Attoh-Okine, N. O., "Determining Organization and Operating Strategies," Task 6, Report Federal Transit Administration, 1995.
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13. Attoh-Okine, N. O., "Case Study for Guideway Transit and Intermodalism: Philadelphia.," Federal Transit Administration, 1995.
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**UNIVERSITY OF DELAWARE**

**UNIVERSITY SERVICE**

Provost Commission on P and T [College of Engineering Representative], Member 2017-Present  
**Member, UD Data Science Institute Executive Committee, 2017- Present**  
 ADVANCE - Internal Advisory Board , Member 2014- Present  
 President Diversity Initiative, Member (2011-2015)  
 Member of Equity and Inclusion Committee (2012-2015)  
 Co-Chair - African and African-American Heritage Faculty (2012-Present)  
 Faculty Senate (Engineering Representative) (1999-2000)  
 Member, University Honors Thesis Committee (2004-Present)  
 Member, Nanotechnology Council (2006-2008)  
 Panel Member, Provost Panel on How to be a Successful Faculty (2006)

## **COLLEGE SERVICE**

Dean Diversity Initiative - In Charge of Graduate Students (2011- Present)  
ADVANCE - Member ( 2012- Present)  
Curriculum and ABET Committee (2008-Present)  
Secretary, College Faculty Meetings (2001-2007)  
Chair, College Election Committee (2005-2007)  
Member of the RISE Advisory Committee (2000-Present)  
Election Committee (2001-2007)  
Advisor National Society of Black Engineers (2000-Present)

## **DEPARTMENT**

Graduate Committee (2001-2007)  
Undergraduate Curriculum Committee (1999-2000), (2008-Present)  
Recruitment and Scholarship Committee (2000-2001)  
Public and Alumni Relations (2001-2008)

## **FLORIDA INTERNATIONAL UNIVERSITY**

### **UNIVERSITY SERVICE**

Faculty Council Alternate (1997-1998)  
Gateway Administrator (1997-1998)

## **COLLEGE SERVICE**

College of Engineering , Research Council Representative September 1998 to August 1999

## **DEPARTMENT SERVICE**

Department Library Committee July 1996 to August 1999  
Department Search and Screen Committee July 1997 to August 1999

## **UNIVERSITY OF DELAWARE**

### **COURSES TAUGHT**

#### **Undergraduate**

CIEG 126 Introduction to CAD and Surveying  
EGG367 Data Science I  
CIEG 467 Introduction to Science of Big Data  
CIEG 467-13 Civil Infrastructure Systems  
CIEG 315 Probability and Statistics  
CIEG 467-13 Construction Methods and Management  
CIEG 467-12 Pavement Design and Analysis  
CIEG 466 Undergraduate Research

#### **Graduate**

CIEG 667 -13 Applied Statistics for Engineers  
 CIEG 667 Adv. Data Analysis  
 CIEG 667-11 Boundary Element Methods  
 CIEG 667-25 Sensing in Civil Engineering  
 CIEG 667-13 Construction Methods and Management  
 CIEG 667-12 Pavement Analysis and Design  
 CIEG 667-13 Civil Infrastructure Systems  
 CIEG 667-13 Resilience Engineering  
 CIEG 667-10 Random Field Models

**PRINCETON UNIVERSITY**

CEE 466 Resilience Engineering

**DOCTORAL THESIS SUPERVISED**

Ahmed Lasisi	2019[exp]	Ensemble Methods in Rail Track Engineering
Emmanuel Martey	2018	Copula-Based Models in Railway Maintenance and Safety Analysis
Hisham Sherif	2018	A Novel Hybrid Model for Clinical Decision Making: Corbin-Straus Model and Resilience Engineering
Silvia Galvan	2017	Hybrid Bayesian-Wiener Process in Track Geometry Degradation Analysis
Farzana Atique	2016	Copula Models and Pipe Condition Data
Offei Adarkwa	2015	Tensor Decomposition and Infrastructure Data
Yaw Adu-Gyamfi	2013	Adaptive Multiscale Data Analysis in Infrastructure Systems: Theory Formulation and Application
Leslie Mills	2013	Computational Sustainability for Pavement and Bridge Systems
Mary Cate Opila	2011	Pipe Condition Scoring
Olufikayo Aderinlewo	2008	Assessment of Transportation Infrastructure Systems and Its Component Interactions
Albert Ayenu-Prah	2007	Bidimensional Hilbert-Huang Transform and Civil Infrastructure Systems
Stephen Mensah	2006	Sensor Fusion and Civil Infrastructure Systems
Moh'd Nawaiseh	2002	Application of Adaptive Logic Networks in Pavement Performance Modeling



**MASTER THESIS SUPERVISED**

Emmanuel Martey	2015	Conditional Probability of Release of Hazardous Materials from Railroad Tank Cars using Bayesian Networks
Offei Adarkwa	2012	Pavement Crack Classification Based on Tensor Factorization
Leslie Mills	2010	Pavement Performance Using Markov Chain Monte Carlo Simulation
Yaw Adu Gyamfi	2010	Critical Analysis of Different Hilbert-Huang Algorithms
Pranatha Banerji	2007	Influence Diagrams Application in Mechanistic Pavement Design
Olufikayo Aderinlewo	2007	Risk Analysis of A Scrap Tire Embankment Using Influence Diagrams
Hong Park	2006	Thin Overlay Maintenance in Delaware
Radha Akkineppaly	2005	Quality Control and Quality Assurance of Hot Mix Asphalt
Farzana Atique	2003	Spectral Analysis of Sensor Data in Bridge Structures
Brigitte Odum-Ewuakye	2003	Sealant System Selection for Jointed Concrete Pavements
Eric Duncan-Williams	2003	Geosynthetics Applications in Low Volume Road Design
Edward Wiredu	2002	Resilient Modulus of Construction Materials
Stephen Mensah	2002	MEMS Applications in Microcracking Monitoring
Atasi Das	2001	Hierarchical Bayesian Modeling of Long Term Pavement Performance Data- A Case Study for Pavement Roughness
Juel Gibbons	1998	The Use of Belief Functions as a Decision-Analytic Tool in Brownfield Redevelopment.
Elyrosa Esteves	1998	The Effect of Salinity and Fill Material on Pavement Performance: A Case Study for Florida Keys
Aamir Ghori	1997	Kohonen Maps Application in Pavement Engineering
Adzo Amekudzi	1996	Developing Decision Analytic Models to Rank Brownfields
Xiaomei Xu	1997	Rough Sets Application in Pavement Rehabilitation and Maintenance
Edgardo Diaz	1997	Automated Survey Form for Miami-Dade Pavement Management Systems
Octavio Marin	1997	Analysis of Miami-Dade County and Florida Department of Transportation Pavement Design

## DOCTORAL THESIS COMMITTEE

<i>Student</i>	<i>Year</i>	<i>Advisor</i>	<i>Department</i>
Lassad Mhamdi	2015	Schumacher, T	Civil and Environmental Engineering, UD
Ewing Cardozo	2014	Ryan Zurakowski	Biomedical Engineering
Kang Beongjon	2013	Dov Leshchinsky	Civil and Environmental Engineering, UD
Wang Chouran	2012	Earl Lee	Civil and Environmental Engineering, UD
Mosi London	2014	Sue McNeil	Civil and Environmental Engineering, UD
Yukon Dong	2008	Sue McNeil	Civil and Environmental Engineering, UD
Mike Markowski	2008	Arde Faghri	Civil and Environmental Engineering, UD
Shy Bassan	2008	Arde Faghri	Civil and Environmental Engineering, UD
Joy Das	2003	John Madsen	Geology, UD
Ahmad Khalid	2003	Arde Faghri	Civil and Environmental Engineering, UD
Adzo Amekudzi	1997	Sue McNeil	Civil and Environmental Engineering, Carnegie Mellon University

## VISITING SCHOLARS

Kangsuk Suh	Professor, Department of Civil and Environmental Engineering, Honam University, South Korea (2007)
Hyun-Bong Chang	Professor, Urban Engineering, Mokwon University, South Korea (2008)
Michael Okine	Principal Bridge Engineer, Ghana Highway Authority (2009)
Silvio Rodrigues	Aeronautic Institute, Jose DE Campinas, Sao Paulo, Brazil

## UNDERGRADUATE RESEARCH

Stacie Wallace	2013	Large Data Analytics
Nick Kirby	2011	Fractional Calculus
Erin Cannon	2000	Information Systems in Construction Management
Joseph Vigilante	2000	Resilient Modulus of Pavement Materials
Ama Addai	2002	Hilbert Huang Transform
Daniel Wagner	2003	Resilient Modulus
Susan Bowers	2003	Graphical Models Application in Bridge Deterioration Modeling

## CONTRACTS AND GRANTS

1. Sponsor: Federal Highway Administration  
Title: University Transportation Center on Improving Rail Transportation Infrastructure Sustainability and Durability  
Amount: \$ 380,000 per year (Co-PI)  
Duration: December 2016-December 2021
2. Sponsor: Federal Highway Administration/University of Virginia  
Title: Multimodal Transportation Facility Resilience Index  
Amount: \$ 277,215.00 (PI)  
Duration: January 2015-January 2017

3. Sponsor: Federal Railroad Administration  
Title: Integration of Multiple Inspection System Data to Identify Potentially Unsafe Track Rail Conditions  
Amount: \$ 460,699.00 (Co-PI)  
Duration: August 2014- August 2016
4. Sponsor: Delaware Department of Transportation  
Title: Travel Time, Delay and Speed Data Comparative Analysis Amount: \$ 26,000 (PI)  
Duration: October 2015- October 2016
5. Sponsor: Federal Highway Administration/RUTGERS University  
Title: Biodeterioration Modeling  
Amount: \$ 20,000.00  
Duration: March 2013- March 2014
6. Sponsor: Federal Highway Administration/RUTGERS University  
Title: Multi-Resolution Information Mining and a Computer Vision Approach to Pavement Distress  
Amount: \$ 102,412.00 (PI)  
Duration: August 2012-August 2014
7. Sponsor: Federal Highway Administration/RUTGERS University  
Title: Mathematical and Experimental Investigation of Models and Simulation to Life Cycle of Polymer Modified Asphalt  
Amount: \$ 103,514.00 (Co-PI)  
Duration: August 2012-August 2014
8. Sponsor: Delaware Department of Transportation  
Title: Review of Existing Pavement Condition Rating System  
Amount: \$ 40,451.00 (PI)  
Duration: August 2012-August 2014
9. Sponsor: Delaware Department of Transportation  
Title: Use of Reclaimed Asphalt Pavement  
Amount: \$ 56,000 (CO-PI)  
Duration: August 2011-September 2012

10. NSF and RPI  
Title: Data Mining Applications  
Amount: \$ 19,900.00 ( PI)  
Duration: November 2008-July 2009
11. Sponsor: Delaware Department of Transportation/FHWA  
Title: Scrap Tire Performance  
Amount: \$ 89, 499.00  
Duration: September 2009-July 2010
12. Sponsor: University Transportation Center/FHWA  
Title: Time Varying Queuing Networks  
Amount: \$ 20,000.00  
Duration: September 2008-July 2009
13. Sponsor: Princeton University  
Title: Resilience Engineering  
Amount: \$ 22,000.00 ( PI)  
Duration: September 2007
14. Sponsor: Delaware Department of Transportation  
Title: Pavement Performance Modeling  
Amount: \$ 52,000 ( CO-PI-UD)  
Duration: July 2006-July 2008
15. Sponsor: Delaware Department of Transportation  
Title: Hot Mix Asphalt Specifications Part II  
Amount: \$ 28,000 (PI-UD)  
Duration: July 2006-July 2007
16. Sponsor: Delaware Department of Transportation  
Title: Resilient Modulus Testing  
Amount: \$ 46,000( PI-UD)  
Duration: July 2005-July 2008
17. Sponsor: Delaware Department of Transportation  
Title: Scrap Tire Research  
Amount: \$ 49,000 (PI UD)  
Duration: July 2005-July 2006

18. Sponsor: Delaware Department of Transportation  
Title: Hotmix Asphalt-Skid Evaluation  
Amount: \$ 55,000 (PI-UD)  
Duration: July 2004-July 2005
19. Sponsor: Delaware Department of Transportation  
Title: Durability of Thin Overlays  
Amount: \$ 56,000 (PI-UD)  
Duration: July 2004-July 2005
20. Sponsor: PRIMAVERA SYSTEMS Inc.  
Title: Software for Research and Teaching in Civil Infrastructure  
Amount: \$ 272,000 (PI-UD)  
Duration: September 2002- September 2003
21. Sponsor: National Science Foundation  
Title: Fourth International Symposium on Uncertainty Modeling and Analysis  
Amount: \$ 6,900 (PI-UD)  
Duration: September 2003
22. Sponsor: Delaware Department of Transportation  
Title: QA/QC of Hotmix Asphalt  
Amount: \$ 56,000 (PI-UD)  
Duration: July 2003-July 2004
23. Sponsor: Delaware Department of Transportation  
Title: Service Life Assessment of Concrete with ASR and Possible Mitigation  
Amount: \$ 45,000 (PI-UD)  
Duration: July 2002-July 2003
24. Sponsor: World Bank/Ghana Government  
Title: Civil Infrastructure Systems  
Amount: \$ 71,000 (PI-UD)  
Duration: September 2002- December 2003
25. Sponsor: Delaware Department of Transportation  
Title: Sealing Materials - Add Survey  
Amount: \$ 35,000 (PI-UD)  
Duration: July 2001-July 2002

26. Sponsor: Delaware Department of Transportation  
Title: Resilient Modulus of Construction Materials  
Amount: \$ 40,000 (PI-UD)  
Duration: July 2001-July 2002
27. Sponsor: ASHE (American Society of Highway Engineers)  
Title: Training in Transportation Engineering  
Amount: \$ 13,000 (PI-UD)  
Duration: July 2000 -July 2002
28. Sponsor: DAPA (Delaware Asphalt Paving Association)  
Title: Training in Asphalt Technology  
Amount: \$ 18,000 (PI-UD)  
Duration: July 2000 -July 2002
29. Sponsor: Delaware Department of Transportation  
Title: Strategic Review of Portland Cement Pavement Performance in Delaware  
Amount: \$ 35,000 (PI-UD)  
Duration: December 2000-June 2001
30. Sponsor: Hardcore Composites, Inc  
Title: Bond between Composite Deck and Asphaltic Material  
Amount: \$ 7,999 (PI; Michael Chajes, Co-PI, UD)  
Duration: September 2000-June 2001
31. Sponsor: University of Delaware Research Foundation  
Title: Modeling Dependence and Risk Analysis in Construction Project Management  
Amount: \$ 29,000 (PI-UD)  
Duration: April 2000-April 2001
32. Sponsor: US Department of Transportation  
Title: Eisenhower Faculty Fellowship  
Amount: \$ 1,500 (PI-UD)  
Duration: April 2000-April 2001

33. Sponsor: Delaware Department of Transportation  
Title: Application of Load Resistance Factor Rating Using Site Specific Data  
Amount: \$ 47,000 (Co-PI; Dennis Mertz PI; Michael Chajes Co-PI, UD)  
Duration: April 2000-June 2002
34. Sponsor: US Department of Transportation  
Title: Eisenhower Fellowships (students)  
Amount: \$ 92,000 (Co-PI; Sylvan Jolibois, PI, FIU)  
Duration: June 1998-June 1999
35. Sponsor: US Department of Transportation  
Title: Superpave Mix Design Systems in the University Civil Engineering Curriculum  
Amount: \$ 125,000 (PI-FIU)  
Duration: March 1998-March 1999
36. Sponsor: Florida Department of Transportation  
Title: Generalized Method for Analysis of Pavement Management Database  
Amount: \$ 35,000 (PI-FIU)  
Duration: January 1998-January 1999
37. Sponsor: American Society of Civil Engineers  
Title: Institute for Youth in Transportation and Pavement Engineering  
Amount: \$ 3,000 (PI-FIU)  
Duration: March 1998-August 1998
38. Sponsor: US Department of Energy  
Title: Improved Roof Stabilization Technologies.  
Amount: \$ 150,000 (PI-FIU)  
Duration: November 1997-November 1998
39. Sponsor: US Department of Transportation  
Title: Eisenhower Fellowship Program (students)  
Amount: \$ 39,000 (Co-PI; Sylvan Jolibois, PI, FIU)  
Duration: August 1997-August 1998
40. Sponsor: Gateway Central/National Science Foundation  
Title: Gateway Administration (Minorities in Science and Engineering Program)  
Amount: \$ 20,000 (PI-FIU)  
Duration: April 1997-June 1997

41. Sponsor: American Society of Civil Engineers  
Title: Institute for Youth in Transportation and Pavement Engineering  
Amount: \$ 2,500 (PI-FIU)  
Duration: November 1996-November 1997
42. Sponsor: Gateway Central/National Science Foundation  
Title: NACME (National Action for Minorities in Engineering) Diversity Workshop  
Amount: \$ 15,000 (PI-FIU)  
Duration: September 1996-December 1996
43. Sponsor: US Department of Transportation  
Title: Eisenhower Fellowship Program  
Amount: \$ 37,000 (Co-PI; Sylvan Jolibois, PI, FIU)  
Duration: September 1996-September 1997
44. Sponsor: National Science Foundation/Carnegie Mellon University  
Title: Brownfield Redevelopment: The Implications for Urban Infrastructure  
Amount: \$ 96,000 (PI-FIU)  
Duration: January 1996-January 1999
45. Sponsor: American Society of Civil Engineers  
Title: Institute for Youth in Transportation and Pavement Engineering  
Amount: \$ 4,6000 (PI-FIU)  
Duration: November 1995-November 1996
46. Sponsor: US Department of Transportation  
Title: Eisenhower Fellowship Program  
Amount: \$ 65,000 (Co-PI; Sylvan Jolibois, PI, FIU)  
Duration: September 1995-September 1996
47. Sponsor: US Department of Transportation  
Title: Workshop on Emerging Fare Collection Technologies  
Amount: \$ 146,000 (Co-PI; David Shen, PI, FIU)  
Duration: June 1995-June 1996
48. Sponsor: Metro-Dade County (Miami)  
Title: 1994 FIU Summit of the Americas Conference on Transportation  
Amount: \$ 10,000 (Co-PI; Sylvan Jolibois, PI, FIU)  
Duration: June 1994-June 1995



49. Sponsor: US Department of Transportation  
Title: Eisenhower Faculty Fellowship  
Amount: \$ 3,000 (PI-FIU)  
Duration: June 1994-September 1994
50. Sponsor: US Department of Transportation  
Title: Eisenhower Fellowship Program  
Amount: \$ 75,000 (Co-PI; Sylvan Jolibois, PI, FIU)  
Duration: April 1994-April 1995
51. Sponsor: US Department of Transportation  
Title: Examination of Factors Influencing Successful Implementation of Intermodal Guideway  
Public Transit Systems for the Twenty-First Century  
Amount: \$ 3,000,000 (Co-PI; David Shen, PI, FIU)  
Duration: September 1993-September 1996