

Thomas Nicholas II  
CURRICULUM VITAE

**EDUCATION**

- Ph.D., Infrastructure and Environmental Systems – Civil Engineering, University of North Carolina at Charlotte, 2010

*Dissertation area: Mode I Fracture and Fatigue of the FRP to Concrete Bonded Interface*

- M.S.C.E, Master of Science in Civil Engineering (Structural Emphasis), West Virginia University, 2002

*Thesis area: Strut and Tie Modeling of Bridge Foundational Components*

- B.S.C.E, Bachelor of Science in Civil Engineering, West Virginia University, 1998

*Concentration areas: Structural Engineering*

- B.S.E.T, Bachelor of Science in Engineering Technology, Fairmont State University, 1996

*Concentration areas: Civil Engineering Technology*

**Certificates and Licenses**

- Professional Engineer, NC #038685

**EXPERIENCE**

*University of North Carolina Charlotte, William States Lee College of Engineering, Department of Engineering Technology and Construction Management, 2006-Present*

- Associate Professor and Associate Chair, Department of Engineering Technology and Construction Management, July 2019 to Present
  - Duties of the Associate Chair include the direction of staff, departmental accreditation processes, semester course schedules, mentoring faculty, faculty performance evaluation, staff performance evaluation, student recruitment, faculty/staff hiring, student advising, curriculum management and development, research proposal review and approval, and facility management (space and labs) for the Smith Building.
- Associate Professor and Program Director for Civil Engineering Technology and Construction Management, August 2014-2019
  - Duties of Director include the direction of staff, departmental ABET accreditation processes, semester course schedules, mentoring new faculty, student recruitment, faculty recruitment, student advising, curriculum management and development.
- Assistant Professor, August 2011-2016
- Faculty Associate, August 2006 - 2011

**Courses Taught**

- ETCE 4073 – Advanced Construction Surveying
- ETGR 2101 - Applied Mechanics I
- ETCE 3242 - Hydraulics and Hydrology
- ETCE 3242L - Hydraulics and Hydrology lab
- ETCE 1211 – Introduction to Surveying w/ lab
- ETCE 2112 – Construction Surveying
- ETCE 2112L – Construction Surveying Lab
- ETCE 3163 – Structural Analysis and Design I
- ETCE 2410 – Introduction to Environmental Engineering Technology I

- ETGR 3222 - Engineering Economy
- ETCE 4266 – Reinforced Concrete Design and Construction
- CMET 3680 – Temporary Structures Seminar
- CMET 6290 – Temporary Structures
- CMET 4272 – Construction Management Capstone
- ETCE 4272 – Civil Engineering Technology Capstone

***Selected Courses Developed (title, number)***

- CMET 3680 – Temporary Structures Seminar
- CMET 5290 – Temporary Structures
- ETCE 4073 – Advanced Construction Surveying
- CMET 6000 – Masonry Design and Construction

**GRADUATE STUDENTS ADVISED**

<b>Graduate Student</b>	<b>Role</b>	<b>Program</b>	<b>Degree</b>	<b>Status</b>
Blake Dulin	Comm. Member	Construction Management	MSCFM	Graduated
Richard Cobb	Comm. Chair	Construction Management	MSCFM	Graduated
Juan Sanchez	Comm. Member	Civil Engineering	MSCE	Graduated
Yangguang Liu	Comm. Member	INES	PHD	Graduated
Morgan Laney	Comm. Chair	Construction Management	MSCFM	Graduated
Paul Radford	Comm. Chair	Energy and ElectroMech Systems	MSEEM	Graduated
Michael Dye	Comm. Member	Construction Management	MSCFM	Graduated
Michael Hoff	Comm. Member	Civil Engineering	MSCE	Graduated
Rohit Reddy	Comm. Member	Construction Management	MSCFM	Graduated
Peng Wang	Comm. Member	INES	PHD	Graduated
Thomas Sands	Comm. Chair	Construction Management	MSCFM	Graduated
Salman Khan	Comm. Chair	Construction Management	MSCFM	Graduated
Sherri Fang	Comm. Member	INES	PHD	Graduated
Jacob Leach	Comm. Member	Construction Management	MSCFM	Graduated
Monica Craig	Comm. Chair	Construction Management	MSCFM	Graduated
Kelsey Lane	Comm. Member	Construction Management	MSCFM	Graduated
Jason Weiger	Comm. Chair	Construction Management	MSCFM	Graduated
David Scott	Comm. Member	INES	PHD	Graduated
Tamim Adnan	Comm. Chair	INES	PHD	In-Progress
Taraneh Kamyab	Comm. Member	INES	PHD	In-Progress

***University Service***

University Committee Assignments

- University Curriculum Committee, 2019 to Present

*Thomas Nicholas II, PhD, PE*

- Adjunct Faculty Committee –Chair, 2013-2015
- Faculty Advisory Library Committee – Alternate Member, 2012
- Committee of Chairs, 2013-1016

College Committee Assignments

- College Review Committee, 2017 to present
- College Graduate Council, 2019 to present
- College Executive Faculty Committee, Parliamentarian, 2012-2013
- College Executive Faculty Committee, Secretary, 2013-2014
- College of Engineering Bylaws Committee, Chair, 2012-Present
- College of Engineering Excellence in Undergraduate Teaching Selection Committee, Chair, 2015

Department Committee Assignments

- Department Review Committee, 2016
- CM/CEIT FAIT – Member, 2006 to 2015; Chair, 2015 to 2019
- CM/CIET FAIT Structures Subcommittee – Chair, 2008 to 2019
- CM/CIET FAIT Surveying/highways Subcommittee – Chair, 2006-2011, Member, 2011 to Present
- ETGR FAIT – Member, 2009 to 2012
- CEIT Faculty Search Committee – Member, 2006-present, Chair, 2015 - Present
- CM Faculty Search Committee – Member, 2007, 2008, 2009, 2011-Present, Chair, 2015-Present
- CEIT/CM Faculty Associate Search Committee – Member, 2008 – Present

*Fairmont State University, Department of Engineering Technology, 2000-2006*

- Director / Program Coordinator, CET and TTE, 2006
- Assistant Professor, School of Engineering Technology, 2002 – 2005
- Instructor, Department of Engineering Technology, 2000-2002

*Transportation Technician Certification and Training Center, Fairmont State University*

- Director of the Transportation Technician Education and Training Program, 2003-2006
- Assistant Director of the Transportation Technician Program, 2003-2006
- Assistant Director of the Transportation Technician Certification Program, 2003-2006
  - Duties of Director included the supervision of faculty and staff, budget management, accreditation, proposal creation, proposal review for training contracts, training course development and curriculum delivery to multiple sites
  - The training and education program consisted of delivery of over 200 training courses to 3000 highway engineers, technicians and maintenance workers nationwide and an online two year associate's degree in Highway technology that served an additional 200 technicians. Training courses included (but not limited to) creation of project plans using MicroStation, Project scheduling, roadside hydraulic maintenance, highway surveying, bridge construction and inspection and highway construction and inspection.
  - Duties of assistant director included staff management, budget management and proposal creation for the Transportation Certification program (started as WVDOH program and launched nationwide in 2005)
  - Performed preliminary review of new technician certification applications each year for the Certification Board
  - Performed preliminary review of existing technicians for Professional Development Hours (PDH) for yearly maintenance reviews

**University Service**

- Fairmont State University Faculty Evaluation Development Committee
- School of Technology Student Affairs Committee
- Faculty Advisor for the ASCE Steel Bridge Competition
- Civil Engineering Technology Industrial Advisory Committee
- Fairmont State University Athletic Committee
- Fairmont State University Communications Advisory Committee
- Chair, School of Technology Merit and Promotions Committee
- Fairmont State University Legislative Advocacy Committee
- Community College Senate Member (non-voting, 4-year faculty Rep.)

## Senior Consulting Engineer, 2001 -Present

- Structural Engineering
  - Serves as expert witness, advanced materials testing, advanced structural modeling
- Mining/geotechnical Engineering
  - Mining Hydraulics and Temporary Structures Design and Forensic Analysis
  - Surface modeling and GIS

## West Virginia Department of Highways, Bridge Design Group

- Bridge Engineer/Project Manager, 1998-2000
  - Daily responsibilities included structural analysis and design, geotechnical analysis and design, hydrology, hydraulics, structural detailing (Micro Station), design calculation and structural detail reviews for group projects, cost estimates, code interpretation, project management, community, and contractor relations
  - Developed Prestressed Spread Box Beam Standards for WVDOT
  - Designed bridges using LFD and LRFD design standards, with the Length of bridges ranging from 30 feet to 350 feet (including two and three-span bridges). Bridge material used in the design included: timber, prestressed concrete, and steel (HPS – Hybrid girder)
  - Project Manager for the bridges previously referred to, plus an additional six bridges
  - West Virginia State Representative for FEMA disaster damage assessments for infrastructure
  - WVDOH Representative for the Construction Trade Sub-Committee

## Fairmont State University, Research Associate, 1994-1996, Research Scientist, 1997-98

- Geotechnical Research Scientist on Levee Design and Failure Project for an Army Corps of Engineers
  - Developed Levee Geometry for Maximum Slope Failure Resistance
  - Lead all laboratory experiments for Risk Model development such as grain size distribution, flexible wall permeability, direct shear, Triaxial Shear Tests, and modified proctor.

## US Army (1992-1993) and Army Reserve (1994-1998)

**RESEARCH ACCOMPLISHMENTS***Selected Journal Publications*

Carlos E. Orozco, Thomas Nicholas, Jason Weiger, (2020) “Automatic generation of truck configurations for bridge load ratings in the state of North Carolina,” *Results in Engineering*, Volume 6, 2020, 100115, ISSN 2590-1230,

Nicholas, T, Cavalline, T, Laney, M and Johnson, D., (2016) “Thermal Performance of a Recycled Aggregate Utilizing Building Energy Simulation Programs,” *International Journal of Thomas Nicholas II, PhD, PE*

*Engineering Research and Innovation (IJERI)*. (Accepted).

- Nicholas, T, Radford, P, and Byars, N., (2015) "Thermal Performance of Recycled Aggregate Mortar," *International Journal of Sustainable Design*, Volume 2, pp. 315-26.
- Nicholas, T, Brizendine, A and Radford, P, (2014) "Evaluation of Compressive Capacity of Recycled Aggregates in Masonry Mortar," *International Journal of Engineering Research and Innovation (IJERI)*, Volume 6, Number 2, pp 49-54.
- Nicholas, T., Chen, S., Zhou, A. and Boyajian, D. (2013) "Finite Element Modeling of the Mode I Failure of the Single Contoured Cantilever CFRP-Reinforced Concrete Beams", *Journal of Structures*, Volume 2013, pp 1-8.
- Nicholas, T., Chen, S., and Boyajian, D. (2012) "Mode I Fatigue of the CFRP-Concrete Interface Bond", *Journal of Experimental Techniques*, Volume 36, pp 67-73.
- Nicholas, T., Barth, K, and Boyajian, D. (2011) "A Simplified Approach to Designing Bridge Substructures", *International Journal of Geotechnical and Environmental Engineering*, Volume 29, Number 1, pp 27-35.
- Stilgenbauer, Nicholas, Brizendine, (2001) "Scheduling Transportation Projects Using Primavera Project Planner As Part of the Software Series in Civil Engineering Technology Independent Learning Experiment at Fairmont State College", *Journal of Engineering Technology*, Volume 18, Part 1, pp 24-31.

*Selected Guest Speaker/Conference Papers:*

- Nicholas, T (2017) "Value of Transportation Research," NCDOT PEER Conference, Invited Guest Speaker, September, 26, Raleigh, NC.
- Nicholas, T, Cavalline, T, Laney, M and Johnson, D., (2016) "Thermal Performance of a Recycled Aggregate Utilizing Building Energy Simulation Programs," *International Journal of Engineering Research and Innovation (IJERI)*, Nov. 9, Orlando, FL.
- Chen, D., Mastin, N., and Nicholas, T. (2015). Development of Pavement Performance Models for the NCDOT PMS, proceedings of the 9th International Conference on Managing Pavement Assets (ICMPA9), May 18-21, 2015, Washington D.C.
- Nicholas, T, Brizendine, A and Radford, P, "Evaluation of Compressive Capacity of Recycled Aggregates in Masonry Mortar," IJAC Conference, Orlando, FL, September 25-27, 2014
- Nicholas, T, Chen, D, and Brizendine, T, "Development of a Multicourse Undergraduate Learning Community," ASEE Annual Conference & Exposition, Indianapolis, IN, June 13-17, 2014
- Nicholas, T. and Brizendine, T., "Community Service Projects as Integrated Undergraduate Learning Experiences" ASEE Annual Conference & Exposition, Honolulu, Hawaii, June 24-27, 2007
- Invited Key Note Speaker, West Virginia Geomatics Conference, "Towards a Consistent Approach to Surveying Record Keeping," (2004)
- Nicholas, Stilgenbauer, Brizendine, "MicroStation® Applications for Highway and Transportation Structures Design as Part of the Software Series in Civil Engineering Technology Independent Learning Program at Fairmont State College", Proceedings ASEE Annual Conference & Exposition, Nashville, Tennessee, 2003
- Invited Guest Speaker, WVDOH Training Seminar, "Strut-and-Tie Modeling Applications for Bridge Engineers" West Virginia Department of Transportation, Charleston, West Virginia, September 27, 2002
- Nicholas, T. Brizendine, A. and Stilgenbauer, T., "Mentoring, The Junior Faculty Perspective" ASEE Annual Conference & Exposition, Albuquerque, New Mexico, June 24-27, 2001

Russell, Gene, and Nicholas, Thomas, (2001) “Trials and Tribulations of Teaching an On-line, Live, Interactive Internet Course,” American Society for Engineering Education, National 2001 ASEE Annual Conference, Albuquerque, NM.

Selected Other Publications, Technical Reports:

Chen, D., Hildreth, J., Nicholas, T, and Dye, M. (2014). Development and Validation of Pavement Deterioration Models and Analysis Weight Factors for the NCDOT Pavement Management System. Part II: Automated Data. Final Report. Report No. FHWA/NC/2011-TBD.

Chen, D., Hildreth, J., Nicholas, T, and Fang, X. (2014). Development of IRI Limits and Targets for Network Management and Construction Approval Purposes. Final Report. Report No. FHWA/NC/2012-TBD.

Stilgenbauer, Nicholas, Vassil, WVDOH, TR, Introduction to Engineering Technology Training Manual, (2003), Fairmont State College.

Nicholas, Stilgenbauer, Vassil, WVDOH, TR, Highway Construction Training Manual, (2003), Fairmont State College.

Nicholas, Stilgenbauer, Vassil, WVDOH, TR, Bridge Construction Training Manual, (2003), Fairmont State College.

Nicholas, Stilgenbauer, Vassil, WVDOH, TR, Construction Estimating Training Manual, (2003), Fairmont State College.

Nicholas and Stilgenbauer, WVDOH, TR, Hydraulics and Hydrology Training Manual, (2002), Fairmont State College.

Stilgenbauer and Nicholas, WVDOH, TR, Primavera for Highway Engineers Training Manual, (2001), Fairmont State College.

Nicholas and Stilgenbauer, WVDOH, TR, MicroStation for Highway and Bridge Engineers Training Manual, (2001), Fairmont State College.

Development/Fundraising

- Construction Industry Career Fair
  - 2019 – \$65,000
  - 2018 - \$72,000
  - 2017 - \$62,000
- ETCM Industrial Awards – Senior Dinner
  - 2019 - \$42,000
  - 2018 - \$38,000
- ETCM Scholarship/Excellence fund
  - 2019 – \$12,450
  - 2018 - \$10,100
  - 2016 - \$4,500
- 2019 Bill Belichick Foundation Grant Award (community grant, \$10,000)

Grants and Contracts Awarded:

- CO-PI, “Development of Pavement Performance Models using New Breakpoints and Pretreatment Conditions,” North Carolina Department of Transportation, \$323,960.00, 2019-2021
- PI, “NCDOT Capturing and Communicating the Value of NCDOT Research,” North Carolina Department of Transportation, \$106,000.00. 2016-2017
- PI, “NCDOT Load Rating of NCDOT Legal Vehicles,” North Carolina Department of Transportation, \$83,000.00. 2016-2017
- PI, “Determination of GFRP Tensile Strength,” Boyle Engineering, \$1000.00 per testing round,

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Continuous (2015 start)

- PI, “Determination of Tensile Capacity of the Concrete-Latex Overlay Bond.” Mallard Creek Polymers, INC. \$2000.00 per testing round, Continuous (2014 start)
- CO-PI, “NCDOT PMS Composite Pavements,” North Carolina Department of Transportation, \$267,000.00, 2015-2017
- CO-PI, “NCDOT PMS Phase III,” North Carolina Department of Transportation, \$167,000.00, 2013-2015
- CO-PI, “NCDOT PMS Phase II,” North Carolina Department of Transportation, \$98,130.00, 2013
- CO-PI, “Infra BIM,” Korea Institute of Construction Technology (KICT), \$29,099.00, 2013
- PI, “Development of a Masonry Design and Construction Course,” National Concrete Masonry Association (NCMA), \$8,511.00 (\$10,000 w cost share), 2013
- Co-PI and Assistant Director, “WVDOH Technician Certification Program,” (\$2.2 million, approximately \$550,000 per year from 2003-2006). WVDOH
- PI and Director, “WVDOH Continuing Education/Training Program,” (\$625,000, approximately \$125,000 per year from 2003-2006). WVDOH.

### ***Professional Service***

#### Professional and Scholarly Organizations

- Kiewit, Diversity in Construction Board Member, 2015 to 2018
- ASEE– Member, 2002 to Present
- Conduct of Research Committee Member, TRB
- Co-Chair, CRC – Policy, Identity and Focus, TRB
- Transportation Research Board – Member, 20011 to Present
- NIOSH Construction Division – Corresponding Board Member, 2013 to Present
- ACI – Member, 2012 to Present
- HKIE Journal – Reviewer
- AISC – Member, 2011 to Present
- American Society of Engineering Education Annual Conference – Reviewer
- American Society of Engineering Education Annual Conference – Session Moderator
- ETLI Conference Executive Committee
- IJAC Conference Executive Committee

#### Outreach and Community Service

- 2014 STEM Day in conjunction with Piedmont High School
- 2011 Cabarrus County Schools Construction Camp
- 2011, 2012 North Carolina Construction Career Days
- 2011, 2012, 2013 Union County Schools Career Day
- Discover Engineering Open House
- Explore UNCC Open House – Every year
- National Association for College Admission Counseling

#### Non-academic Community Service

- Piedmont Middle School Head Varsity Football Coach
- Mint Hill Athletic Association
  - Coach – Baseball
  - Coach –Football (Pop Warner Certified)
  - Assessment Coach
- Weddington and Westley Chapel Athletic Association
  - Coach – Football (Pop Warner Certified)
- On-Deck Baseball Academy

- Coach – Baseball
- Make-a-Wish Volunteer

#### PROFESSIONAL DEVELOPMENT

- NSF/NIH Grant Writing Workshop
- Design and Treatment Methodology for Concrete Bridge Components
- Assessment of Physical Condition of Concrete Bridge Components
- WVDOT Project Management Program
- MicroStation Training Workshop
- Primevara Training Workshop
- ExCEED Teaching Workshop
- ABET Evaluator's Training Seminar Y2K

#### HONORS AND AWARDS

- 2015 COE Excellence in Undergraduate Education
- 2014, 2016 Service and Appreciation Award - IAJC
- Who's Who in Science and Engineering
- Military Honors/Awards upon request