

Yvonne Marie Traynham, P. E., Ph.D.

EDUCATION:

1996 – 2000

University of New Orleans, New Orleans, LA

DOCTOR OF PHILOSOPHY (ENGINEERING AND APPLIED SCIENCE)

Dissertation:

Stress Analysis with Combined Thermal and Mechanical Effects for Pipe Tees Using the Finite Element Method

1988 – 1989

University of New Orleans, New Orleans, LA

MASTER OF SCIENCE IN ENGINEERING (MECHANICAL)

Thesis:

The Buckling Behavior of Unidirectional Graphite Fiber Epoxy Composite Plates at Low Temperatures

1981– 1985

University of Florida, Gainesville, FL

BACHELOR OF SCIENCE IN ENGINEERING (NUCLEAR)

PROFESSIONAL LICENSE:

Louisiana State Board Registered Professional Mechanical Engineer # 25906

Mississippi State Board Registered Professional Engineer #12732

EXPERIENCE:

August 2019-present

Florida State University-Panama City

FAMU-FSU Department of Mechanical Engineering

Panama City, FL

TEACHING PROFESSOR

Teaching Professor in the ABET accredited Department of Mechanical Engineering at the FSU Panama City campus. Primary duty is to teaching undergraduate engineering courses. As a new program in Panama City, additional responsibilities include outreach for student recruitment, as well as program development to incorporate all new laboratory equipment into the curriculum.

2000 – 2019

*U. S. Merchant Marine Academy (USMMA)-Department of Engineering
Kings Point, NY*

PROFESSOR (2012 to 2019)

ASSOCIATE PROFESSOR (7/06-2012)

ASSISTANT PROFESSOR (7/00-7/06)

Tenured Professor in the ABET accredited USMMA Department of Engineering with the primary duty of teaching undergraduate Engineering Science and Mechanical Engineering courses. Core courses taught includes Materials Engineering, Strength of Materials, and Machine Design.

A major responsibility was the development of the Mechanical / Materials Engineering Laboratory for undergraduate and graduate students, as well as to conduct research in applied marine materials engineering applications. Research topics include analysis of the mechanical properties of Additive Manufacturing (AM), corrosion and failure analysis

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While teaching engineering topics, approved consulting work is encouraged to remain current with industry as well as for professional academic development. This experience includes:

2000-present

ENGINEERING CONSULTANT (Part Time)

Provide Consulting Engineering Services on an occasional project basis. This work is in the area of maritime materials engineering primarily in the areas of failure analysis and corrosion.

Consulting activities include:

- 1) Develop and teach a short course (half day) for ASNE (American Society of Naval Engineers) on Corrosion in Shipboard Systems. Initial presentation at ASNE joint conference with NACE (National Association of Corrosion Engineers) MEGARUST 2015
- 2) Propose and author a major SNAME (Society of Naval Architects and Marine Engineer) Technical & Research Bulletin (T&R 2-34 "Guide to Materials Engineering for the Maritime Industry"), 2011-2015
- 3) Perform engineering analysis and reporting on an accelerated corrosion of shipboard saltwater cooling system piping for a MSC (Military Sealift Command) vessel in Drydock at Bayonne ship repair facility (2012)
- 4) Co-author a SSC (Ship Structure Committee) Report- Prepared the section on welding and corrosion concerns for doubler plate repairs in SSC Report 443 (2004-2005)

2009-2011

*Manhattan College- Department of Mechanical Engineering
Riverdale, NY*

ADJUNCT PROFESSOR (Part Time)

Position as an Adjunct Professor teaching a course one evening per week in Mechanical Engineering. The course was a senior /graduate level Mechanical Vibrations MECH427-61 taught two in the fall semesters 2009 and 2010. Additionally, a Machine Design II was taught for the spring semester of 2011.

2003 – 2004

*Webb Institute of Naval Architecture and Marine Engineering
Glen Cove, NY*

ADJUNCT PROFESSOR (Part Time)

Position as an Adjunct Professor teaching a Materials Science lecture and laboratory one day per week. Duties included an evaluation of the existing materials engineering laboratory equipment, recommendations for upgrades and to develop laboratory exercises for the application in materials science and engineering appropriate for the marine engineering and naval architecture curriculum.

2002 –2006, 2018

*Society of Naval Architects and Marine Engineers (SNAME)
Jersey City, NJ*

INSTRUCTOR (Part Time) – Professional Engineer Review Course

Instructor for the PERC (Professional Engineer Review Course) in Marine Engineering for the Shipbuilding Materials and Corrosion topics, taught each February as an evening on-line course. As an original instructor, developed the on-line content for Materials Engineering and Corrosion.

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09/96 – 7/00 *University of New Orleans- Department of Mechanical Engineering
New Orleans, LA*

NASA GRADUATE STUDENT RESEARCHER (8/98-7/00)

Two year NASA Fellowship through Stennis Space Center to conduct research in the area of combined stress analysis including thermal loading for piping components using Finite Element Analysis (ANSYS). Research was performed using computational resources of the Gulf Coast Maritime Research Institute at Avondale Shipyard in New Orleans.

GRADUATE TEACHING ASSISTANT (1/97-5/98)

Graduate teaching assistant for Structures and Properties of Materials laboratory

09/96 – 7/00 **MECHANICAL ENGINEER CONSULTANT (part time)**
New Orleans, LA

Established a consulting practice (part- time) while completing Ph.D. to provide consulting mechanical engineering services for design and construction management. As the Principal of the Firm: responsible for obtaining project work, hiring/supervision of designers as well as an administrative assistant, performing design calculations, and application of PE stamp to drawings. Projects as Professional Mechanical Engineer of Record include:

Chalmette Middle School Classroom Building	Chalmette, La
Crossgates Health Club	Slidell, La
ATT Phone Center Building	Kenner, LA
Catholic Church (multiple)	MS & LA
Central City Mental Health Clinic -HVAC Upgrades	New Orleans, La
DePaul Hospital - Mechanical /HVAC Upgrades	New Orleans, La
Rite Aid Pharmacy (total of 3)	Louisiana

012/94 to 09/96 *Burk-Kleinpeter, Inc.*
New Orleans, LA

PROJECT (MECHANICAL) ENGINEER

Provide consulting mechanical engineering services for design and construction management. Projects as Professional Mechanical Engineer of Record include:

Treasure Chest Riverboat Casino Terminal	Kenner, LA
Main Post Office - Remote Encoding Center	Baton Rouge, LA
Manchac Seafood Processing Plant	Manchac, LA
Krystal Restaurant on Bourbon Street	New Orleans, LA
Ingalls Shipyard: Hazardous Waste Tank Venting	Pascagoula, MS
Port of St. Bernard Combustible Storage Warehouses	Chalmette, LA
Canal St. Bus Maintenance Facility (Construction only)	New Orleans, LA

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01/90 to 12/94

Johnson Controls World Services Inc. (formally PanAm)

Stennis Space Center- SSC, MS

SENIOR MECHANICAL ENGINEER (9/94-12/94)

MECHANICAL ENGINEER (1/90-9/94)

Project Management as well as Design Engineering for the Facilities Engineering Contractor at SSC, a NASA facility that primarily performed the main propulsion testing of the SSME (Space Shuttle Main Engines).

Design Engineering & Construction Management:

Produce engineering studies, designs, construction specifications, estimates and management of projects. Major projects as lead engineer include:

Major engineering study, design, and project construction management for the restoration of high pressure and cryogenic system distribution piping modifications in the SSME test complex, high pressure gas facility, and cryogenic supply barges.

Design and construction management of natural gas heating system for the Industrial Water Plant.

Design of a system to collect blowdown effluent from three 850 SCFM air compressors for compliance with EPA regulations. Specification and project management for installation of a new lubrication system for each compressor in high pressure gas facility.

Engineering investigations to include a compressor failure / fire, piping component failure, and hydrogen line impact incident, with reporting to include analysis of failure and recommended action.

Replacement of HVAC system air handling units, ductwork and piping in various buildings including upgrades to DDC (Direct Digital Controls).

Project Management/Budget Analysis:

Prepared \$ 12 million budget for fiscal year 1994 for maintenance and construction projects for the SSME test support including manpower and sub-contract requirements.

09/89 - 12/89

University of New Orleans -Department of Mechanical Engineering

New Orleans, LA

GRADUATE TEACHING ASSISTANT

Graduate assistant for Structures and Properties of Materials laboratory while completing final semester for master's degree in engineering.

06/89 - 09/89

U.S. Corps of Engineers Cold Regions Research & Engineering Laboratory

Hanover, NH

MECHANICAL ENGINEER GS-7

Summer assignment as Mechanical Engineer with primary duties associated with the mechanical testing of graphite epoxy composites at low temperatures. The research results were used in support of Master's Thesis.

11/87 - 06/89

LSUSD Department of Biomaterials,

New Orleans, LA

RESEARCH ASSOCIATE

Research Associate at Louisiana State University School of Dentistry in the Department of Biomaterials, responsible for mechanical engineering testing of various composite biomaterials, as well as corrosion testing of amalgams used in dental applications. Position was concurrent with completing evening Master's Degree program in Engineering at UNO.

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PUBLICATIONS & PRESENTATIONS:

Traynham, Y. M., USMMA Materials Engineering Laboratory Manual, (Revision 6); 2019

Traynham, Y. and Dix, R., “*Additive Manufacturing (3D Printing) for Maritime Applications – Materials Engineering Considerations*”, SHIPTECH 2018 Conference, Charleston, SC, March 27-28, 2018

Traynham, Y., “Shipboard Corrosion: Characterization and Prevention Strategies,” presented as an ASNE Professional Continuing Education Course at *American Society of Naval Engineers (ASNE) MEGARUST 2015 Conference*, Newport News, VA, June 23, 2015

Traynham, Y., SNAME T&R Bulletin 2-34, A Guide to Materials Engineering for the Maritime Industry, Society of Naval Architects and Marine Engineers, Jersey City, NJ, 2015
<https://www.sname.org/sname/viewdocument/a-guide-to-materials-engineering-fo>

Traynham, Y., “Shipboard Corrosion: Classification and Characterization of Corrosion with Strategies for Prevention,” *Society of Naval Architects and Marine Engineers Maritime Convention SNAME -SPS (Ship Production Symposium)*, Houston TX, October 22, 2014

Traynham, Y., Evaluation of Localized Corrosion of SW Piping for the CFW system on USNS Watson, Private Consulting Engineering Report to Ocean Shipholdings, Inc., June 2012

Traynham, Y., “*Project Learning in the Undergraduate Materials Engineering Laboratory*”, Materials Engineering Education Symposium at WPI (Worcester Polytechnic Institute), March 23-24, 2011

Traynham, Y., “Materials Engineering in the Maritime Industry”, presented to the SNAME (Society of Naval Architects and Marine Engineers) New York Metropolitan Section, September 18, 2008

Sensharma, P.K., Dinovitzer, A. and Traynham, Y., Design Guidelines for Doubler Plate Repairs for Ship Structures, Ship Structure Committee Report SSC-443, August 2005, <http://www.shipstructure.org/pdf/443.pdf>

Traynham, Y., “Taking Advantage of Technology in Education: Incorporating Data Acquisition Systems into a Laboratory Curriculum”, USMA Conference on Teaching and Learning Effectively Using New Technologies (TALENT), West Point, NY, April 9, 2005.

Traynham, Y., “Section News – New York Met.”, Marine Technology and SNAME (Society of Naval Architects and Marine Engineers) News, Vol. 39, No. 4, October 2002: 26-27

Traynham, Y. and Henthorne, C., “Section News – New York Met.”, Marine Technology and SNAME (Society of Naval Architects and Marine Engineers) News, Vol. 39, No. 2, April 2002

Russo, E. P. and Traynham, Y.M., *Using Finite Element Analyses to Compute Stress Intensification Factors for Pipe Tees*, Proceedings of the 5th Biennial Conference on Engineering Systems Design and Analysis, ed. Wolfe, G.K. and Arnax, O., Montreux, Switzerland, July 2000

Russo, E.P. and Traynham, Y., *Stress Intensification Factors for Piping Tees using Finite Element Analysis*, Proceedings of the 10th (2000) International Offshore and Polar Engineering Conference, Seattle WA, May 2000: 41-44

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PUBLICATIONS & PRESENTATIONS (continued):

Traynham, Yvonne Marie, Stress Analysis with Combined Mechanical and Thermal Effects for Pipe Tees using Finite Element Method, Dissertation, University of New Orleans, 2000

Traynham, Y., "Buckling of Unidirectional Composites at Low Temperatures", presentation to: Cold Regions Composites Workshop, U.S. Army Corps of Engineers Cold Regions Research and Engineering Laboratory (CREEL), March 12-15, 1998
<http://www.dtic.mil/dtic/tr/fulltext/u2/a246602.pdf>

Traynham, Y., Ventilation Study and Recommended Modifications for B-1100 Equipment, SSC NASA Report #3910-94-011, August 1994

Traynham, Y., Field Investigation 95NMAZ: Replacement of Components in Test Complex Area, SSC NASA Report #3919-93-027, July 1993

Traynham, Y. and Jordan, A., Final Report on Overhaul of C-6-HA Air Compressor, SSC NASA Report #3919-92-030, August 1992

Dutta, P., Hui, D. and Traynham, Y., Buckling of Unidirectional Graphite Epoxy Composite Plates at Low Temperatures, U. S. Army Corps of Engineers Cold Regions Research and Engineering Laboratory (CRREL) Report 91-20, November 1991

Sarkar, N.K ; Thorjusen, P.; El Mallakh, B.; & Traynham, Y. (1989): Improved Abrasion Resistance in a New Alloy-Reinforced Glass-Ionomer, *J Dent Res* 68(*Sp Iss*):273

Traynham, Yvonne Marie, The Buckling Behavior of Unidirectional Graphite Fiber Composite Plates at Low Temperatures, Thesis, University of New Orleans, 1989

SPECIALTY SKILLS:

Mechanical / Material Test Equipment Experience including:

MTS & Instron Universal Testers (tension, compression, torsion, bending)

Hardness Testing: Rockwell, Brinell

Charpy Impact

Rotating-Bending Fatigue Testing

NDT/E (Non-Destructive Testing and Evaluation) methods

SEM /EDAX (Scanning Electron Microscopy/Energy Dispersive Analysis)

Strain Gauging with Data Acquisition

Corrosion Testing

Computer Experience including:

Additive Manufacturing - 3D Printing (Fusion360-Luzbot Cura)

AutoCad

Various HVAC software (e.g. Trace Load 700)

Various Piping software (e.g. Pipeplus)

Microsoft Office (Word, Excel, PowerPoint)

Finite Element Analysis (e.g. ANSYS)

On-Line Course Development /Instruction including:

Blackboard

Moodle

Go To Meeting

Spanish Speaking Ability

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AFFILIATIONS:

Member, Society of Naval Architects and Marine Engineers (SNAME): 2000- present
Chair (2006-7), SNAME New York Metropolitan Section
Vice-Chair (2005-6), SNAME New York Metropolitan Section
Secretary (2004-5), SNAME New York Metropolitan Section
Treasurer (2002-3, 2003-2004), SNAME New York Metropolitan Section
Board Member (2009)– Historic Significant Structures (Execution Rock Lighthouse Restoration)
Advisor, USMMA 3D Printing Club
Advisor, USMMA Society of Women Engineers
President (2005-6), USMMA Faculty Forum
Vice-President (2004-5), USMMA Faculty Forum
Secretary (2002-2004), USMMA Faculty Forum

WEB DATA:

FAMU-FSU Faculty Information:

<https://pc.fsu.edu/person/yvonne-traynham-phd>

<https://www.eng.famu.fsu.edu/me/people/Traynham>

USMMA Faculty Information:

<https://www.usmma.edu/academics/faculty/dr-yvonne-m-traynham>

Linked In:

<https://lk.linkedin.com/in/yvonne-traynham-37bb5150>

PERSONAL DATA:

Widowed (Married to Michael C. Karkowski for 25 years)
Mother of two (Nicole and Jake)
Foster Parent certified in Nassau County, NY (2002-2010)
Practitioner of Shotokan Karate (current rank of yondan) for > 30 years
Certified 200 hour yoga teacher
Hobbies include most water sports to include kayaking, surfing and sailing
Former volunteer at the New Orleans Ronald McDonald House (6 years)
Science Fair Judge (NY, MS, LA) & Engineer's Week in MS & LA (>10 years)
Midshipman Sponsor

CONTACT DATA:

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Mailing Address:

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Panama City, Florida 32405