BIOGRAPHICAL SKETCH – FOLUSO LADEINDE

Research Interests

Reacting Flow Turbulence, Aerospace Propulsion, Energy; Supersonic Combustion; CFD, Applied Mathematics

Professional Preparation

Institution	Location	Major Field	Degree	Year Awarded
Cornell University	Ithaca, New York	Mechanical Engineering	Ph.D.	1988
Cornell University	Ithaca, New York	Mechanical Engineering	M. Eng.	1986
Cornell University	Ithaca, New York	Engineering/Technology	M.S.	1984

Appointments

Dates	Employer/Affiliation	Noteworthy Positions or Roles
2015.1–2019.2	Stony Brook University & SUNY Korea	Founding Chairman/Head of Department, Mechanical Engineering, State University of New York (SUNY), Song-Do, Incheon, South Korea
1996.1–2014.12	Brookhaven National Labs	Visiting Scientist (Fluid Dynamics). Muon Collider Particle Generation System
2012.5-2012.8	Tsinghua University, Beijing, China	Visiting Scholar (Mechanical/Aerospace Engineering)
1991.1-Present	Stony Brook University	Assistant/Associate/Tenured Professor
2001.5-2010.8	Wright-Patterson Air Force Base, Dayton, Ohio	11-Time Summer 3-Month Faculty Fellow (Air Force/National Research Council); Fluid Dynamics
1988.1 – 1991.1	Technalysis, Inc., Indianapolis, Indiana	Fluid Dynamics
1987.5-1988.1	Cornell University, Ithaca, NY	Post-Doctoral Associate: Fluid Dynamics

Publications - Recent

1 Ladeinde, F., Muley, A., Stoia, M., Ek, G., Alabi, K., and Li, W., "Experimental Measurements and Mathematical Modeling of Cold Plate for Aviation Thermal Management," *International Journal of Heat and Mass Transfer* **191**, 122810 (2022); https://doi.org/10.1016/j.ijheatmasstransfer.2022.122810

2 Ladeinde, F. and Oh, H., "Stochastic and spectra contents of detonation initiated by compressible turbulence thermodynamic fluctuation," *Physics of Fluids* **33**, 045111 (2021); https://doi.org/10.1063/5.0045293

3 Ladeinde, F., Givi, P. and Dopazo, C. "Preface to Special Issue: In Memory of Edward E. (Ted) O'Brien," *Physics of Fluids* 33, 080402 (2021); https://doi:10.1063/5.0062936

4 Dopazo, C., Givi, P. and Ladeinde, F., "Edward E. O'Brien Contributions to Reactive-Flow Turbulence," *Physics of Fluids* 33, 080403 (2021); https://doi:10.1063/5.0062933

5 Ladeinde, F. and Oh, H. "Stochastic and Spectral Contents of Detonation Initiated by Compressible Turbulence Thermodynamic Fluctuations," *Phys. Fluids* **33**, 045111 (2021); https://doi.org/10.1063/5.0045293 (2021)

6 Ladeinde, F., "Reduced-Order Computational-Fluid-Dynamics-Based Analysis of Aviation Heat Exchangers," *AIAA Journal of Thermophysics and Heat Transfer*, **34** (4), October, https://doi.org/10.2514/1.T5903 (2020)

7 Ladeinde, F., Alabi, K., and Li, W., "Optimization and Database Management in Smart Modeling of Aviation Heat Exchangers," *AIAA Journal of Thermophysics and Heat Transfer*, Vol. **33** (4), October 2019, https://doi.org/10.2514/1.T5733 (2019)

8 Ladeinde, F., Lou, Z., and Li, W., "The Effects of Pressure Treatment on the Flamelet Modeling of Supersonic Combustion," *Combustion and Flame*, **204**, pp. 414-429, https://doi.org/10.1016/j.combustflame.2019.03.030 (2019)

9 Ladeinde, F. and Li, W. "Differential Turbulent Supersonic Combustion of Hydrogen, Methane, and Ethylene, without Assisted Ignition," *AIAA Journal*, **56**(12) pp. 4870-4883, https://doi.org/10.2514/1.J057124 (2018)

10 Ladeinde, F., Cai, X., Agarwal, R., "A Methodology for Hybrid Simulation of Rarefied and Continuum Flow Regimes," *Aerospace Science and Technology (Journal)*, Vol. **75**, pp. 115-127, https://doi.org/10.1016/j.ast.2017.12.036 (2018)

11 Ladeinde, F., Alabi, K., Li, W., "Optimization of Heat Exchange in Manifold-Microchannel Grooves," *ASME Journal of Heat Transfer*. Sep 2018, Vol. **140** (9): 092403 (9 pages https://doi.org/10.1115/1.4040141 (2018)
12 Ladeinde, F. & Lou, Zhipeng, "Improved Flamelet Modeling of Supersonic Combustion," *AIAA Journal of Propulsion and Power*, Vol. **34**, No. 3, 2018, pp. 750-762, https://doi.org/10.2514/1.B36779. (2018)
13 Ha, J.-H, Das, R., Ladeinde, F. , Kim, T.-H., Kim, H.-D., "Numerical Study on Mode Transition in a Scramjet Engine, *Journal of the Korean Society of Propulsion Engineers*," Vol. **21**, No. 6, pp. 21-31, https://doi.org/10.6108/kspe.2017.21.6.021 (2017)
14 Ladeinde, F. 2010, "Advanced Computational-Fluid-Dynamic Techniques for Scramjet Combustion Simulation," *AIAA Journal*, Vol. **48**, No. 3, March 2010, pp. 513, https://doi.org/10.2514/1.48989 (2010)

Publications – Significant

1 Ladeinde, F. & Gaitonde, D.V. 2004, "Magnetic Reynolds Number Effects on MHD Turbulence," *Physics of Fluids* Vol. **16** (6), pp. 1997-2021, https://doi.org/10.1063/1.1736674 (2004)
2 Ladeinde, F. & Wu, J. 2002. Second Order Nonlinear Spatial Stability of Compressible Mixing Layers. *Physics of Fluids*, Vol. **14** (9), pp. 2968-2986, https://doi.org/10.1063/1.1492284 (2002)
3 Ladeinde, F., Cai, X., Visbal, M.R., & Gaitonde, D. 2001. Turbulence Spectra Characteristics of High Order Schemes for Direct and Large Eddy Simulation. *J. Applied Numerical Mathematics* Vol. **36** (2001), pp. 447-474, https://doi:10.1016/S0168-9274(00)00019-2 (2001)
4 Ladeinde, F., O'Brien, E. E., Cai, X., & Liu, W. 1995. Advection by Polytropic Compressible Turbulence. *Physics of Fluids*, Vol. **48** (11), pp. 2848-2857, https://doi.org/10.1063/1.868661 (1995)
5 Ladeinde, F. & Torrance, K.E. 1991. Convection in Rotating, Horizontal Cylinders with Radial and Normal Gravity Forces. *Journal of Fluid Mechanics*, Vol. **228**, pp. 361-385, https://doi.org/10.1017/S0022112091002744 (1991)

Synergistic Activities

Journal Editorship/ Professional Society Contributions	Guest Editor, *Physics of Fluids* (2020 – 2021), Associate Editor, *AIAA Journal* (2008-2013); Associate Editor, *ASCE Journal of Aerospace Engineering* (2014-Present); Keynote Speaker: Korean Society of Combustion (2015); Korean Society of Propulsion Engineers (2016); Judge for AIAA Undergraduate Student Competitions for Many Years; Fellow of ASME; Associate Fellow of AIAA; Life Member APS, Member, SIAM. AIAA Paper on Scramjet Combustion Won AIAA Best Paper Award.
Broadening of Minority Participation in the STEM Fields	Served Two Terms as the Chairman of the Board of NASA Center for Aerospace Research (NASACAR), NC A&T, Greensboro, NC (HBCU). Previously Served as Member of the Board of Directors of Brooklyn Technical High School (for Talented Students) in Brooklyn, New York City. Participated in Numerous National STEM-Awareness Workshops for Blacks and Hispanics, Co-PI on a Few Previous STEM-Related Grants.
Developed CAD Course/Software in Fluids - Thermal Science	Designed and taught a non-traditional computer-aided design (CAD) course which emphasizes fluid, thermal, and energy systems, against the traditional CAD courses that address problems in mechanical design, structural mechanics. Original course content was presented with the title "The Design of a Senior-Level CAD Course with Emphasis on Fluid/Aerodynamics" at Aerospace Engineering Session at the 1993 AIAA Aerospace Sciences Conference, Reno, Nevada, (AIAA Paper 93-0426). This course underwent many improvements since it was first taught.
Curriculum Development	As Graduate Program Director, Presided Over One of the Most Comprehensive Graduate Curriculum Changes in the Mechanical Engineering Department at Stony Brook University, Introducing 9 Graduate Courses in The Process. Individually Introduced 5 Graduate Courses and 5 Undergraduate Courses into the Curriculum in the Department of Mechanical Engineering at Stony Brook University. Three of the Undergraduate Courses are Now ABET-Required Courses.

Education Software Development

An Education version of the highly successful commercial INSTED Thermal Analysis Software package developed by the PI's company (TTC technologies) has been released to tertiary institutions. INSTED is used by commercial companies such as Boeing, Raytheon United Technologies, General Electric, Aavid Niagara, Alfa Laval (Champ Products), Advanced Cooling Solutions, Alfa Laval, and so on.