


SCHOOL OF
ENGINEERING 
& APPLIED SCIENCE

DEPARTMENT OF NUCLEAR ENGINEERING
& ENGINEERING PHYSICS

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June 19, 1990

U.S. Nuclear Regulatory Commission
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Subject: Notification of Personnel Change
License R-66 (Docket 50-62)
License R-123 (Docket 50-396)

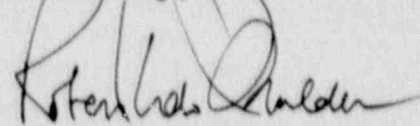
Gentlemen:

This is to inform you that Dr. Paul E. Allaire will be replacing Dr. Thomas G. Williamson as Chairman of the Department of Nuclear Engineering and Engineering Physics, University of Virginia, effective July 1, 1990. Dr. Williamson is retiring from the University after 30 years of distinguished service to our department. Please find Dr. Allaire's curriculum vitae in attachment.

This notification is provided to the NRC in accordance with the Technical Specifications for both licenses, R-66 and R-123, Dockets 50-62 and 50-396, respectively.

Sworn to and subscribed before me this 20th
day of June, 1990
Witness my hand and official seal.
Robert E. Van Notary Public
My Commission Expires 2/28/93

Sincerely,


Robert U. Mulder, Director
U. VA. Reactor Facility

attach: CV for Dr. Paul E. Allaire

cc: U.Va. Reactor Safety Committee
NRC Region II
Mr. Al Adams, Project Manager for U.Va., US NRC, Wash. D.C.

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Paul Eugene Allaire

Born:

Bristol, Connecticut, 1941

Education:

B.E. (mechanical engineering) Yale University, 1963

M.E. (mechanical engineering) Yale University, 1964

Ph.D. (mechanical engineering) Northwestern University, 1972

Experience:

United States Peace Corps, Haile Selassie University, Addis Ababa, Ethiopia

Lecturer in Mathematics, 1964-1966

Structural Dynamics Research Corporation, Cincinnati, OH

Project Engineer (Dynamic Response of Structures), June-August, 1970

Engineering Department, Memorial University of Newfoundland, St. John's, Newfoundland, Canada

Assistant Professor, 1971-1972

Department of Mechanical and Aerospace Engineering, School of Engineering and Applied Science, University of Virginia, Charlottesville, VA

Assistant Professor, 1972-1977

Associate Professor, 1977-1983

Professor, 1983--

Research Funding:

Research Laboratories for the Engineering Sciences, School of Engineering and Applied Science, University of Virginia, Charlottesville, VA

Co-Principal Investigator with E. J. Gunter, "Dynamic Characteristics of Rigid and Flexible Rotors," NASA, \$60,000, 1972-1975.

Paul Eugene Allaire

Research Funding (continued):

Co-Director with E. J. Gunter, "Industry Supported Program on Dynamic Analysis of Turbomachinery," \$640,000, 1972-1980.

Participating companies:

1. Allis Chalmers (Turbomachinery Manufacturers)
2. Babcock and Wilcox (Energy Systems)
3. Bently Nevada Corporation (Vibration Instrumentation)
4. Byron Jackson Pump (Pump Manufacturers)
5. Centritech Company (Bearing Manufacturers)
6. Delaval (Turbomachinery Manufacturers)
7. Dresser Industries (Turbomachinery Manufacturers)
8. Ingersoll-Rand Company (Turbomachinery Manufacturers)
9. Joy Manufacturing Corporation (Turbomachinery Manufacturers)
10. Monsanto Company (Chemicals and Processing)
11. Ontario Hydro (Utility)
12. Pratt and Whitney Aircraft (Jet Engine Manufacturers)
13. Rocketdyne (Turbomachinery Manufacturers)
14. Schwitzer (Turbomachinery Manufacturers)
15. Shell Oil Company (Petroleum and Energy)
16. Solar Turbines International (Turbomachinery Manufacturers)
17. Southwest Research Institute (Engineering Consulting)
18. Spectral Dynamics, Inc. (Vibration Instrumentation)
19. Standard Oil-Indiana (Petrochemicals)
20. Structural Dynamics Research Corp. (Engineering Consulting)
21. Turbodyne Corporation (Turbomachinery Manufacturers)
22. Union Carbide Co. (Petrochemicals)
23. Union Oil Company (Petroleum and Energy)

Principal Investigator, "Measurement of Directional Properties of Human Skin In Vivo," NIH, \$5,000, 1973-1974.

Co-Principal Investigator with E. J. Gunter and L. E. Barrett, "Feasibility Study for Squeeze Film Damper on Steam Turbine," Union Carbide Corporation, \$5,000, 1975.

Co-Principal Investigator with E. J. Gunter and L. E. Barrett, "Dynamic Unbalance Response and Stability Analysis of Airco Air and NOx Compressors," Monsanto Chemical Company, \$4,000, 1975.

Paul Eugene Allaire**Research Funding (continued):**

- Co-Principal Investigator with J. A. Allaire and L. K. Vogtle, "Projector Illuminated Communication Board," NIH, \$2,080, 1975.
- Principal Investigator, "Dynamic Coefficients for Tilting Pad Bearings," Centritech Corporation, Houston, Texas, \$2,800, 1975-1976.
- Co-Principal Investigator with E. J. Gunter and L. E. Barrett, "Dynamic Analysis of the Space Shuttle Main Engine--High Pressure Fuel Turbopump," NASA, \$50,000, 1976.
- Co-Principal Investigator with D. W. Lewis and E. J. Gunter, "Stabilization of Turbomachinery for the Fossil Fuel Industry," ERDA, \$320,000, 1976-1978.
- Co-Principal Investigator with E. J. Gunter and L. E. Barrett, "A Research Proposal for the Investigation of Rotor Transient Analysis by the Modal Method," NASA, \$63,000, 1976-1978.
- Co-Principal Investigator with E. J. Gunter and L. E. Barrett, "Continuation - Dynamic Analysis of the Space Shuttle Main Engine - High Pressure Fuel Turbopump," NASA, \$120,000, 1976-1978.
- Co-Principal Investigator with E. J. Gunter and L. E. Barrett, "Nonlinear Analysis of Squeeze Film Dampers Applied to Gas Turbine Helicopter Engines," U. S. Army Research Office, \$96,662, 1977-1980.
- Co-Principal Investigator with L. E. Barrett and E. J. Gunter, "Workshop on Stability and Dynamic Response of Rotors With Squeeze Film Bearings," U.S. Army Research Office, \$10,000, 1979.
- Co-Principal Investigator with E. J. Gunter and R. D. Flack, "Dynamic Analysis of the Space Shuttle Main Engine-Oxygen Turbopump," NASA, \$80,000, 1979-80.

Paul Eugene Allaire**Research Funding (continued):**

Founder and Director (1980-1983) with L. E. Barrett, F. W. Barton, R. D. Flack, D. W. Lewis, J. W. Moore, and J. G. Rice, "Rotating Machinery and Controls Industrial Research Program," \$2,100,000, 1980-present.

Participating companies:

1. A-C Compressor Corp. (Turbomachinery Manufacturer)
2. Amoco Corp. (Turbomachinery User)
3. Babcock and Wilcox (Engineering Consulting)
4. Bently Nevada (Instrumentation Manufacturer)
5. Bingham Willamette (Pump Manufacturer)
6. Byron Jackson (Pump Manufacturer)
7. Carolina Power & Light (Utility)
8. Centritech Corporation (Bearing Manufacturer)
9. Dow Chemical Company (Turbomachinery User)
10. Dresser Clark Company (Turbomachinery Manufacturer)
11. Duke Power (Utility)
12. E. I. du Pont de Nemours & Co., Inc. (Turbomachinery User)
13. Exxon Research and Engineering Co. (Turbomachinery User)
14. General Electric (Turbomachinery Manufacturer)
15. General Motors (Turbomachinery Manufacturer)
16. Glacier Metal Co. (Bearing Manufacturer)
17. Goulds Pumps, Inc. (Pump Manufacturer)
18. Ingersoll-Rand Company (Turbomachinery Manufacturer)
19. Institute CERAC (Turbomachinery Manufacturer)
20. Joy Manufacturing Company (Compressor Manufacturer)
21. Kingsbury Inc. (Bearing Manufacturer)
22. Kongsberg Vapenfabrikk (Turbomachinery Manufacturer)
23. NOVA Alberta Corporation (Utility)
24. Ontario Hydro (Utility)
25. Pacific Gas and Electric (Utility)
26. Phillips Petroleum (Turbomachinery User)
27. Pratt and Whitney Aircraft (Turbomachinery Manufacturer)
28. Radian Corporation (Engineering Consultant)
29. Rolls-Royce and Associates Limited (Engineering Consulting)
30. Salamone Turbo Engineering, Inc. (Engineering Consulting)
31. Schwitzer (Turbocharger Manufacturer)
32. Shell Development Co. (Turbomachinery User)
33. Societe Europeene de Propulsion (Rocket Manufacturer)
34. Solar Turbines International (Turbomachinery Manufacturer)
35. Southwest Research Institute (Engineering Consulting)
36. Texaco (Turbomachinery User)

Paul Eugene Allaire**Research Funding (continued):**

"Rotating Machinery and Controls Industrial Research Program,"
\$2,100,000, 1980-present (continued).

Participating companies (continued):

37. Transamerica Delaval (Turbomachinery Manufacturer)
38. Turbodyne (Turbomachinery Manufacturer)
39. Union Carbide Corp. (Turbomachinery User)
40. United Technologies-Elliott (Turbomachinery Manufacturer)
41. Vibrakon (Consultant)
42. Virginia Electric and Power Company (Utility)
43. Weir Pumps (Pump Manufacturer)
44. Westinghouse Electric (Turbomachinery Manufacturer)
45. Worthington Group (Turbomachinery Manufacturer)

Principal Investigator with L. E. Barrett, D. W. Lewis, F. W. Barton, "Project Work Plan for Improved Nuclear Main Coolant Pump Reliability," EPRI, \$240,000, 1981-1983.

Principal Investigator with R. D. Flack, "Aerodynamic Cross-Coupling Forces on Centrifugal Turbomachinery," NASA \$186,000, 1981-1984.

Co-Principal Investigator with L. E. Barrett, D. W. Lewis, and R. D. Flack, "Computer Aided Design of Magnetic Bearings," Center for Innovative Technology, State of Virginia, \$300,000, 1985-88.

Principal Investigator with D. W. Lewis, "Magnetic Bearing Design For Radial and Thrust Loads in Canned Pumps," Kingsbury Inc., \$148,000, 1986-1989.

Principal Investigator, "Magnetic Bearing Research," Exxon Education Foundation, \$28,000, 1986-1988.

Principal Investigator with R. R. Humphris, L. E. Barrett, and D. W. Lewis, "Magnetic Bearings For Aviation Applications," Sundstrand Aviation Operations, \$250,000, 1987-1989.

Principal Investigator with L. E. Barrett, D. W. Lewis, R. R. Humphris, and R. D. Williams, "Magnetic Bearings For Rotating and Reciprocating Machinery," U.S. Army Research Office, \$270,000, 1988-1990.

Co-Principal Investigator with D. W. Lewis, et al., "Shock Loading of Magnetic Bearing System," David Taylor Ship R&D, U.S. Navy, \$10,000, 1987.

Paul Eugene Allaire**Research Funding (continued):**

Principal Investigator with D. W. Lewis, R. D. Williams, L. E. Barrett, and R. R. Humphris, "Magnetic Bearings and Suspension For Rotating Machinery and Space Vibration Control," NASA Lewis Research Center, \$196,000, 1988-1990.

Consulting:

Waterhammer in Railroad Tank Cars, ACF Industries, St. Charles, MO, 1972.
 Design of Squeeze Film Damper for Compressor Stabilization, Great Canadian Oil Sands Company, Ft. McMurray, Alberta, Canada, 1975.
 Design of High Speed Turborotor, Rockwell International, Los Angeles, CA, 1976.
 Analysis of Rotor-Bearing Systems, Babcock and Wilcox Co., Alliance, OH, 1976.
 Design of Pressure Dam Bearings, Centritch Co., Houston, TX, 1977-1978.
 Journal Bearing Design and Optimization, Allis-Chalmers Co., Milwaukee, WI, 1978-1979.
 Fluid Film Bearing Coefficients, Shaker Research Co., Ballston Lake, NY, 1977-1979.
 Thrust Bearing Design, Western Gear Co., Los Angeles, CA, 1978-1979.
 Compressor Vibrations, Standard Oil of Indiana, Chicago, IL, 1979.
 Bearing Analysis, Waukeshau Bearing Co., Waukeshau, WI, 1979-1980.
 Finite Element Stress Analysis, Reynolds Metals Co., Richmond, VA, 1979-1980.
 Nuclear Main Coolant Pump Analysis, Electric Power Research Institute, Palo Alto, CA, 1979-1981.
 Bearing Characteristics, Turbodyne Co., Wellsville, NY, 1979-1980.
 Finite Elements, Bearings, Westinghouse Electric Co., Staunton, VA, 1980-1982.
 Rotor Dynamics, Union Carbide, Tonawanda, NY, 1981
 Large Pumps, Atomic Energy of Canada, Ltd., Toronto, Ontario, Canada, 1982-1984.
 Analysis of Main Coolant Pumps, Electric Power Research Institute, Palo Alto, CA, 1982-1984.
 Gas Turbine Vibrations, Kongsberg Vapenfabrikk, Kongsberg, Norway, 1981-1985.
 Engine Vibrations, Caterpillar Tractor Co., Mossville, IL, 1982-1983.

Paul Eugene Allaire**Consulting (continued):**

- Compressor Vibrations, Columbia Nitrogen Co., Augusta, GA, 1983-1984.
- Gas Turbine Vibration Software, Tech Development Co., Dayton, OH, 1983-1986.
- Turbocharger Vibrations, Brown Boveri, Baden, Switzerland, 1984.
- Compressor Vibrations, E. I. duPont, Wilmington, DE, 1984-1986.
- High Pressure Pump Vibrations, Main Coolant Pump Vibrations, Duke Power Co., Charlotte, NC, 1984-1986.
- Power Recovery Turbine, Air Products and Chemicals, PA, 1985.
- Main Coolant Pump Vibrations, Washington Public Power Supply System, WA, 1986-1987.
- Magnetic Bearings, Kingsbury, Inc., PA, 1986.
- Pump Vibrations, E. I. duPont, Wilmington, DE, 1987-1988.
- Pump Vibrations, Duke Power Co., Charlotte, NE, 1986-1988.
- Torsional Vibrations, Reynolds Metals Co., Richmond, VA, 1986-1987.
- Shaft Vibrations, EG&G Sealol, Kingston, RI, 1987-1988.
- Pump Vibrations, Baltimore Gas and Electric, Calvert Cliffs, MD, 1986-1987.
- Steam Turbine Vibrations, Exxon Research & Engineering, Baytown, NJ, 1987.
- Rotordynamics, Petrobras Rio de Janeiro, Brazil, 1986-1988.
- Compressor Vibrations, Kemira B.V., Netherlands, 1987-1988.
- Gear Pump Bearings, Sundstrand Aviation, Rockford, IL, 1987-1988.

Professional Societies:

- Acoustical Society of America
- American Society of Mechanical Engineering
- American Society of Engineering Education
- Society of Sigma Xi
- Virginia Academy of Science
- Tau Beta Pi
- American Society of Lubrication Engineers

Paul Eugene Allaire

Publications:

- Allaire, P. E., Raynor, S., and Billone, M., "Extremely Small Motions of the Basilar Membrane in the Inner Ear," Nature, Vol. 228 (November 14, 1970), pp. 28-29.
- Allaire, P. E., "Stability of Simply Shaped Icebergs," Journal of Canadian Petroleum Technology, Vol. 11, No. 4 (October, December 1972), pp. 21-26.
- Allaire, P. E., Raynor, S., and Billone, M., "Cochlear Partition Stiffness--A Composite Beam Model," Journal of Acoustical Society of America, Vol. 55, No. 6 (June 1974), pp. 1252-258.
- Allaire, P. E., and Carmack, J., "Computer Aided Stability Analysis of North Atlantic Icebergs." Presented at Virginia Academy of Science, June 1974, Norfolk, Virginia.
- Gunter, E. J., Allaire, P. E., and Barrett, L. E., "Dynamic Response and Balancing of Rotor-Bearing Systems," Short course notes presented at University of Virginia, August 1974 and June 1975, Charlottesville, Virginia.
- Conlon, J., Allaire, P. E., and Blanton, J., "Natural Convection Between Two Permeable Infinitely Long Vertical Plates." Presented at Southeastern Seminar on Thermal Sciences, University of Tennessee, April 1975, Knoxville, Tennessee.
- Eierman, R. G., Gunter, E. J., and Allaire, P. E., "Determination of Journal Bearing Equilibrium Position." Presented at American Society of Lubrication Engineers, May 1975, Atlanta, Georgia.
- Thacker, J. G., Iachetta, F. A., Allaire, P. E., Rodeheaver, G. T., Edlich, R. F., and Edgerton, M. T., "An In Vivo Skin Extensometer," Proceedings of 28th Annual Conference on Engineering in Medicine and Biology (September 1975.)
- Gunter, E. J., Barrett, L. E., and Allaire, P. E., "Design and Application of Squeeze Film Dampers for Turbomachinery Stabilization." Presented at Gas Turbine Laboratories, Texas A & M University, October 1975, College Station, Texas. Also published in Proceedings of Fourth Turbomachinery Symposium, pp. 89-118.

Paul Eugene Allaire

Publications:

- Allaire, J. A., Vogtle, L. K., and Allaire, P. E., "Projector-Illuminated Communication (PIC) Board," Inter-Clinical Information Bulletin, Vol. 15, Nos. 1 and 2 (January/February, 1976), pp. 7-13.
- Allaire, P. E., Thacker, J. G., Edlich, R. F., Edgerton, M. T., Rodeheaver, G. T., and Inchetta, F. A., "Pre- and Post-Operative Variation of In Vivo Extension Properties in Human Skin." Presented at Symposium on Methods for the Measurement of the Physical Properties of the Skin, sponsored by Johnson & Johnson Co., University of Miami, March 1976, Miami, Florida.
- Nicholas, J. C., Gunter, E. J., and Allaire, P. E., "Effect of Residual Shaft Bow on Unbalance Response and Balancing of a Single Mass Flexible Rotor: Part I--Unbalance Response," Journal of Engineering for Power, Transactions of the ASME, Series A, Vol. 98, No. 2 (April 1976), pp. 171-181.
- Nicholas, J. C., Gunter, E. J., and Allaire, P. E., "Effect of Residual Shaft Bow on Unbalance Response and Balancing of a Single Mass Rotor: Part II--Balancing," Journal of Engineering for Power, Trans. ASME, Series A, Vol. 98, No. 2 (April 1976), pp. 182-189.
- Peeler, J., Thacker, J. G., and Allaire, P. E., "Static and Dynamic Tensions in Human Skin." Presented at the Virginia Academy of Sciences, May 1976, Fairfax, Virginia.
- Sanderson, A., Allaire, P. E., and Wickers, F., "Warning System for Wheel-Chair Bound Paraplegic Patients to Prevent Decubitus Ulcers." Presented at the Virginia Academy of Sciences, May 1976, Fairfax, Virginia.
- Allaire, J. A., Vogtle, L. K., and Allaire, P. E., "A Projector Illuminated Communication Board." Presented at Virginia Academy of Sciences, May 1976, Fairfax, Virginia.
- Allaire, P. E., Conlon, J., and Blanton, J., "Analytical Solution for Natural Convection Between Vertical Permeable Walls," Proceedings of the Twelfth Southeastern Seminar on Thermal Sciences (Charlottesville, Virginia, June 6-8, 1976), pp. 39-43.

Paul Eugene Allaire

Publications:

- Gunter, E. J., Barrett, L. E., and Allaire, P. E., "Stabilization of Turbomachinery with Squeeze Film Dampers - Theory and Applications," Vibrations in Rotating Machinery, Institute of Mechanical Engineers, C233/76 (September 1976), pp. 1-10.
- Gunter, E. J., Barrett, L. E., and Allaire, P. E., "Theory of Balancing of Multimass Flexible Rotors." Presented at Gas Turbine Laboratories, Texas A & M University, October 1976, College Station, Texas. Also published in Proceedings of Fifth Turbomachinery Symposium, pp. 133-147.
- Thacker, J. G., Iachetta, F. A., Allaire, P. E., Edgerton, M. T., Rodeheaver, G. T., and Edlich, R. F., "Biomechanical Properties of Human Skin--Their Influence on Planning Surgical Excisions," Basic Sciences in Plastic Surgery, Vol. 15 (October 1976), pp. 72-79.
- Allaire, P. E., Barrett, L. E., and Gunter, E. J., "Variational Method for Finite Length Squeeze Film Dampers with Applications," Wear, Vol. 42 (January 1977), pp. 9-22.
- Gunter, E. J., Barrett, L. E., and Allaire, P. E., "Design of Nonlinear Squeeze Film Dampers for Aircraft Engines," Journal of Lubrication Technology, Transactions of the ASME, Series F, Vol. 99, No. 1 (January 1977), pp. 57-64.
- Thacker, J. G., Iachetta, F. A., Allaire, P. E., Edgerton, M. T., Rodeheaver, G. T., and Edlich, R. F., "An In Vivo Extensometer for Measurement of the Biomechanical Properties of Human Skin," The Review of Scientific Instruments, Vol. 48, No. 2 (February 1977), pp. 181-185.
- Allaire, P. E., Nicholas, J. C., and Gunter, E. J., "Systems of Finite Elements for Finite Bearings," Journal of Lubrication Technology, Transactions of the ASME, Vol. 99, Series F, No. 2 (April 1977), pp. 187-197.
- Barrett, L. E., Gunter, E. J., and Allaire, P. E., "Stability and Dynamic Response of Journal Bearings with Nuclear Water Pump Applications," Annals of Nuclear Energy, Vol. 4, No. 2 (April 1977), pp. 115-126.
- Thacker, J. G., Stalneck, M. C., Allaire, P. E., Edgerton, M. T., Rodeheaver, G. J., and Edlich, R. F., "Practical Applications of Wound Healing," Clinics in Plastic Surgery Quarterly, Vol. 4, No. 2 (April 1977), pp. 167-173.

Paul Eugene Allaire

Publications:

- Allaire, P. E., Thacker, J. G., Edlich, R. F., Rodeheaver, G. J., and Edgerton, M. T., "Finite Deformation Theory for In Vivo Human Skin," Journal of Bioengineering, Vol. 1, No. 3 (August 1977), pp. 239-247.
- Allaire, P. E., Allison, S. W., and Gooray, A. M., "Tear Film Dynamics and Oxygen Tension Under a Circular Contact Lens," American Journal of Optometry and Physiological Optics, Vol. 54, No. 9 (September 1977), pp. 617-626.
- Allaire, P. E., and Barrett, L. E., "Review of Basic Lubrication Theory, 2nd Edition, by A. Cameron," Lubrication Engineering (October 1977), pp. 554-556.
- Barrett, L. E., Gunter, E. J., and Allaire, P. E., "Optimum Bearing and Support Damping for Unbalance Response and Stability of Rotating Machinery," Journal of Engineering for Power, Transactions of the ASME, Vol. 100, No. 1 (January 1978), pp. 89-94.
- Barrett, L. E., and Allaire, P. E., "A Further Note on the Theory of the Short Journal Bearing," International Journal of Mechanical Engineering Education, Vol. 6, No. 1 (January 1978).
- Gunter, E. J., Choy, K. C., and Allaire, P. E., "Modal Analysis of Turborotors Using Planar Mode Theory," Journal of the Franklin Institute, Vol. 305, No. 4 (April 1978), pp. 221-243.
- Barrett, L. E., Allaire, P. E., and Gunter, E. J., "The Dynamic Analysis of Journal Bearings Using a Finite Length Correction for Short Bearing Theory," Topics in Fluid Film Bearing and Rotor Bearing System Design and Optimization, Fluid Film Bearings Committee of Lubrication Division (ASME, 1978), pp. 29-42.
- Choy, K. C., Gunter, E. J., and Allaire, P. E., "Fast Fourier Transform Analysis of Rotor-Bearing Systems," Topics in Fluid Film Bearings and Rotor Bearing System Design and Optimization, Fluid Film Bearings Committee of Lubrication Division (ASME, 1978), pp. 245-272.
- Lee, C. C., Allaire, P. E., and Simpson, M. A., "Dynamic Analysis of a Short Journal Bearing," International Journal of Mechanical Engineering Education, Vol. 6, No. 4 (December 1978), pp. 175-179.

Paul Eugene Allaire

Publications:

- Allaire, P. E., Lee, C. C., and Gunter, E. J., "Dynamics of Short Eccentric Plain Seals with High Axial Reynolds Number," Journal of Spacecraft and Rockets, AIAA, Vol. 15, No. 6 (November-December 1978), pp. 341-347.
- Rohde, S. M., Allaire, P. E., and Maday, C. J., eds., Topics in Fluid Film Bearing and Rotor Bearing System Design and Optimization, Publication of the Fluid Film Bearings Committee of the Lubrication Division (New York: ASME, 1978).
- Nicholas, J. C., Gunter, E. J., and Allaire, P. E., "Stiffness and Damping Coefficients for the Five-Pad Tilting-Pad Bearing," Transactions of the American Society of Lubrication Engineers, Vol. 22, No. 2 (April 1979), pp. 113-124.
- Li, D. F., Allaire, P. E., and Barrett, L. E., "Analytical Dynamics of Partial Journal Bearings with Applications," Transactions of the American Society of Lubrication Engineers, Vol. 22, No. 2 (April 1979), pp. 99-112.
- Allaire, P. E., "Design of Journal Bearings For High Speed Rotating Machinery," Fundamentals of the Design of Fluid Film Bearings, (ASME, 1979), pp. 45-84.
- Allaire, P. E., Nicholas, J. C., and Barrett, L. E., "Analysis of Step Journal Bearings - Infinite Length, Inertia Effects," Transactions of the American Society of Lubrication Engineers, Vol. 22, No. 4 (October 1979), pp. 333-341.
- Rohde, S. M., Maday, C. J., and Allaire, P. E., eds., Fundamentals of the Design of Fluid Film Bearings, Publication of the Fluid Bearings Committee of the Lubrication Division (New York: ASME, 1979).
- Barrett, L. E., Allaire, P. E., Gunter, E. J., eds., Proceedings of the Conference on the Stability and Dynamic Response of Rotors with Squeeze Film Bearings, U.S. Army Research and Technology Laboratories (1980).
- Nicholas, J. C., and Allaire, P. E., "Analysis of Step Journal Bearings - Finite Length, Stability," Transactions of the American Society of Lubrication Engineers, Vol. 23, No. 2 (April 1980), pp. 197-207.

Paul Eugene Allaire

Publications:

- Allaire, P. E., and Flack, R. D., "Squeeze Forces in Contact Lenses with a Steep Base Curve Radius," American Journal of Optometry and Physiological Optics, Vol. 57, No. 4 (April 1980), pp. 219-227.
- Allaire, P. E., and Flack, R. D., "Journal Bearing Design for High Speed Turbonachinery," Bearing Design -- Historical Aspects, Present Technology, and Future Problems (ASME, 1980), pp. 111-160.
- Allaire, P. E., and Flack, R. D., "Instability Thresholds for Flexible Rotors in Hydrodynamic Bearings," in Rotor Dynamic Instability Problems in High Performance Turbomachines, Texas A & M University (May 12-14, 1980), College Station, Texas, NASA Conference Publication 2133, pp. 403-427.
- Flack, R. D., Leader, M. E., and Allaire, "An Experimental and Theoretical Investigation of Pressures in Four-Lobe Bearings," Wear, Vol. 61, No. 2 (June 16, 1980), pp. 233-242.
- Li, D. F., Choy, K. C., and Allaire P. E., "Stability and Transient Characteristics of Four Multiple Journal Bearings Configurations," Journal of Lubrication Technology, Transactions of the ASME, Vol. 102, No. 3 (July 1980), pp. 291-299.
- Allaire, P. E., Li, D. F., and Choy, K. C., "Transient Response of Four Multilobe Journal Bearings," Journal of Lubrication Technology, Tran. ASME, Vol. 102, No. 3 (July 1980), pp. 300-307.
- Barrett, L. E., Li, D. F., and Allaire, P. E., "Analytical Non-linear Bearing Calculations Using A Variational Approach, Vibration in Rotating Machinery," Institute of Mechanical Engineers, C 287/80 (September 1980), pp. 247-252.
- Leader, M. E., Flack, R. D., and Allaire, P. E., "Experimental Study of Three Journal Bearings with a Flexible Rotor," Transactions of the American Society of Lubrication Engineers, Vol. 23, No. 4 (October 1980), pp. 363.

Paul Eugene Allaire

Publications:

- Nicholas, J. C., Allaire, P. E., and Lewis, D. W., "Stiffness and Damping Coefficients for Finite Length Step Journal Bearings," Transactions of the American Society of Lubrication Engineers, Vol. 23, No. 4 (October 1980), pp. 353-362.
- Carter, D. B., Allaire, P. E., and Flack, R. D., "Analysis for Minimum Power Loss in Tapered Land Thrust Bearings," International Journal of Mechanical Engineering Education, Vol. 9, No. 2 (April 1981), pp. 135-144.
- Black, H. F., Allaire, P. E., and Barrett, L. E., "Inlet Flow Swirl in Short Turbulent Annular Seal Dynamics," Ninth International Conference on Fluid Sealing, BHRA Fluid Engineering (April 1981), pp. 141-152.
- Flack, R. D., Leader, M. E., and Allaire, P. E., "Experimental and Theoretical Pressures in Step Journal Bearings," Transactions of American Society of Lubrication Engineers, Vol. 24, No. 3 (July 1981), pp. 316-322.
- Allaire, P. E., Lewis, D. W., and Jain, V. K., "Feedback Control of a Single Mass Rotor on Rigid Supports," Journal of the Franklin Institute, Vol. 312, No. 1 (July 1981), pp. 1-11.
- Allaire, P. E., Parsell, J. K., and Barrett, L. E., "A Pad Perturbation Method for Tilting Pad Journal Bearing Dynamic Coefficients," Wear, Vol. 72, No. 1 (October 1981), pp. 29-44.
- Allaire, P. E., and Flack, R. D., "Design of Journal Bearings for Rotating Machinery," presented at the Tenth Turbomachinery Symposium, Texas A & M University, December 1-3, 1981, College Station, TX. Also published in Proceedings, pp. 25-45.
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- Flack, R. D., and Allaire, P. E., "Effects of Geometries of Three Lobe and Pressure Dam Bearings on Operating Characteristics," invited paper, Eighth Design Automation Conference, September 12-15, 1982, Washington, DC.
- Flack, R. D., and Allaire, P. E., "Operating Characteristics of Three Lobe and Pressure Dam Bearings," accepted for presentation at the IFToMM Conference on Rotor Dynamics, September 28 - October 3, 1982, Rome, Italy. Also published in Proceedings.
- Allaire, P. E., Lewis, D. W., and Knight, J. D., "Active Control of a Single Mass Rotor on Flexible Supports," Journal of the Franklin Institute, Vol. 315, No. 3 (March 1983), pp. 211-222.
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- Allaire, P. E., Barrett, L. E., Flack, R. D., Barton, F. W., and Knight, J. D., "Rotor Dynamic Analysis of a Nuclear Heat Transport Pump Under Normal and Past Void Conditions," Third International Conference, Vibrations in Rotating Machinery, Institute of Mechanical Engineers, C314/81 (September 1984), pp. 23-30.
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- Lewis, D. W., and Allaire, P. E., "Rotor to Base Control of Rotating Machinery to Minimize Transmitted Force," Second International Symposium on Structural Control, Waterloo, Ontario, Canada, July 15-17, 1985.
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- Allaire, P. E., Humphris, R. R., and Barrett, L. E., "Critical Speeds and Unbalance Response of a Flexible Rotor in Magnetic Bearings," Proceedings of European Turbomachinery Symposium, October 27-28, 1986.
- Humphris, R. R., Kelm, R. D., Lewis, D. W., and Allaire, P. E., "Effect of Control Algorithms on Magnetic Journal Bearing Properties," Journal of Engineering For Gas Turbines and Power, Trans. ASME, Vol. 108, October 1986, pp. 624-632.
- Lewis, D. W., and Allaire, P. E., "Control of Oscillating Transmitted Forces in Axial Thrust Bearings with a Secondary Magnetic Bearing," ASLE Transactions, Vol. 30, No. 1, January 1987, pp. 1-10.
- Allaire, P. E., Humphris, R. R., and Imlach, J., "Vibration Control of Flexible Rotors With Magnetic Bearing Supports," AFOSR/ARO Conference, Nonlinear Vibrations, Stability, and Dynamics of Structures and Mechanisms, Virginia Tech, Blacksburg, VA, March 23-25, 1987.
- Allaire, P. E., Humphris, R. R., Kasarda, M. E. F., and Koolman, M. I., "Magnetic Bearing/Damper Effects on Unbalance Response of Flexible Rotors," Proceedings AIAA Conference, Philadelphia, PA, August 10-14, 1987.

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- Allaire, P. E., and Benson, R. C., "A Rapid Solution Method for the Compressible Reynolds Equation in Magnetic Recording Applications," Proceedings of Symposium on Tribology and Mechanics of Magnetic and Optical Storage Systems, ASME/ASLE Tribology Conference, San Antonio, TX, October 5-7, 1987.
- Allaire, P. E., "Introduction to Journal Bearing Design for Turbomachinery," Tutorial, 16th Turbomachinery Symposium, Sponsored by Texas A & M University, Dallas, TX, October 26-29, 1987.
- Allaire, P. E., "Subsynchronous Vibration Problem and Solution in Multistage Centrifugal Compressor," Proceedings of 16th Turbomachinery Symposium, Sponsored by Texas A & M University, Dallas, TX, October 26-29, 1987.
- Keith, F. J., Williams, R. D., Allaire, P. E., and Schafer, R. M., "Digital Control of Magnetic Bearings Supporting a Multimass Flexible Rotor," Presented at the NASA Conference on Magnetic Suspension Technology, NASA Langley Research Center, February 2-4, 1988.
- Allaire, P. E., Mikula, A., Banerjee, B., Lewis, D. W., and Imlach, J., "Design and Test of a Magnetic Thrust Bearing," Presented at the NASA Conference on Magnetic Suspension Technology, NASA Langley, February 2-4, 1988.
- Kasarda, M. E. F., Allaire, P. E., Humphris, R. R., and Barrett, L. E., "A Magnetic Damper for First Mode Vibration Reduction in Multimass Flexible Rotors," Presented at the Rotordynamic Instability Conference in High-Performance Machinery - ARO, NASA, USAF Workshop - Texas A & M University, May 1988.
- Allaire, P. E., Kasarda, M. E. F., Humphris, R. R., and Lewis, R. D., "Vibration Reduction in a Multimass Flexible Rotor Using a Midspan Magnetic Damper," Presented at the First International Symposium on Magnetic Bearings, ETH Zurich, Switzerland, June 6-8, 1988.
- Maslen, E. J., Allaire, P. E., and Scott, M. A., "Magnetic Bearing Design for a High Speed Rotor," Presented at the First International Symposium on Magnetic Bearings, ETH Zurich, Switzerland, June 6-8, 1988.

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Barrett, L. E., Wilson, B. W., and Allaire, P. E., "The Eigenvalue Dependence of Reduced Tilting Pad Bearing Stiffness and Damping Coefficients," ASLE Transactions, to appear in 1988.

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ADDENDUM

Use only when specified.

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Ph.D. Students (Advisor or Co-Advisor)

<u>Name</u>	<u>Topic</u>	<u>Year</u>
T. K. Liang	Radiation and Combustion	1974
J. G. Thacker	Biomechanics of Human Skin	1975
J. C. Nicholas	Pressure Dam and Tilting Pad Bearings	1977
K. C. Choy	Modal Analysis of Rotor Systems	1977
L. E. Barrett	Stability of Rotor Systems	1978
D. F. Li	Multi-Level Rotor Systems	1978
D. Cooperson	Lubrication of Human Joints	1981
M. C. Rosen	Finite Element Fluid Flow Analysis	1985

M.S. Students (Advisor or Co-Advisor)

<u>Name</u>	<u>Topic</u>	<u>Year</u>
L. E. Barrett	Pressure Effects in Bearings	1975
R. G. Eierman	Axial Groove Bearings	1976
J. Peeler	Elastic Properties of Human Skin	1977
D. Salamone	Unbalance Response of Rotors	1977
M. Leader	Rotor-Bearing Stability	1978
M. Simpson	Squeeze Film Dampers	1978
Y. J. Lin	Seal Analysis	1979
J. Cargill	Properties of Human Skin	1979
K. Parsell	Tilting Pad Bearings	1979
M. O'Brien	Hydrostatic Bearings	1981
R. Farris	Flow in Vaneless Diffusers	1981
D. Carter	Flow in Pump Volute	1981
L. Branagan	Aerodynamic Forces on Impeller	1982
J. Kocur	Pressure Parameter for Bearings	1982
C. Sato	Forces on Impellers	1982
M. Willett	Flows in Impellers	1984
T. Okita	Pressure Dam Bearings	1985
J. Imlach	Analysis of Seals	1985