

Jean Le Mee

Contact

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Education

- 1963
Ph.D. (M.E.)
Carnegie-Mellon University, Pittsburgh, PA
- 1959
M.S. (E.E.)
Carnegie-Mellon University, Pittsburgh, PA
- 1955
Officer-Mécanicien de Première Classe
Ecole Nationale de la Marine Marchande (Nantes, France)
- 1952
Ingénieur Mécanicien
Marine Nationale (France)
- 1951
Lieutenant Mécanicien
Ecole Nationale de la Marine Marchande (Nantes, France)Academic

Rank

- 1981
Professor of Mechanical Engineering
The Cooper Union School of Engineering
- 1970
Associate Professor of Mechanical Engineering
The Cooper Union School of Engineering
- 1964
Assistant Professor of Mechanical Engineering
The Cooper Union School of Engineering

Professional Activities

- 2002
Project Director of the “End of Year Exhibition” at The Cooper Union School of Engineering.
- 2001
Organizer of “Fictional Engineering,” an exhibition of drawings and sculptures by Stephen Talasnik at the Brooks Design Center at The Cooper Union, October 26 - December 10, 2001.
- 2000
Co-Organizer of “Art and Mathematics 2000,” an exhibition at The Cooper Union, in collaboration with the International Society of Art, Mathematics and Architecture (ISAMA), November 7 - December 15, 2000.
- 1998-present
Member Board of Advisors Electromechanical and Computer Technology,
N.Y.C. Technical College, City University of New York.
- 1997
Curator of “On the Motive Power of Fire,” an exhibition at the Electrokinetics Gallery, New York,

- November 17, 1997 - January 8, 1998.
- 1995-present
Director of Curriculum Development and Innovation, The Cooper Union
- 1992-present
Governing Board Member and Institutional Activities Leader, Gateway NSF Engineering Education Coalition.
- 1991
Curator of “A Better Mousetrap – Patents and the Process of Invention,” an exhibition at The Cooper Union, January 17 - February 15, 1991.
- 1989-91
Chair, Mechanical Engineering Department Heads Committee. ASME Region II.
- 1987-present
Chairman, Department of Mechanical Engineering, The Cooper Union School of Engineering.
- 1984-1987
Curriculum Coordinator, The Cooper Union School of Engineering.
- 1979-1982
Project Coordinator of “Professional Competence Development in the Undergraduate Engineering Curriculum,” a three-year project supported by the NSF.
- 1976-1977
Project Director of the SHAPE Project (Synthesis of a Holistic Approach to Professional Education), a twenty-month study of a new approach to the education of engineers.
- 1964-1980
Director and Consultant, High Duty Valves, Ltd. and Masheder Design Studies, London, England.
- 1962-1964
Research Engineer, Westinghouse Research Labs, Pittsburgh, PA.
- 1958-1962
Graduate Studies, Carnegie Institute of Technology, Pittsburgh, PA.
- 1955-1958
Design Engineer, James Gordon & Co., Ltd., London, England.
- 1951-1955
Engineering Officer, French Merchant Marine and French Navy.

Prizes, Awards, and Other Achievements

- 2001
Canon Edward N. West lecturer, Cathedral of St. John the Divine, New York.
- 2000
“The Millennium Sphere,” an exhibition at the Cathedral of Saint John the Divine, New York, December 19, 2000 - present.
- 2000
“The Millennium Sphere or Ariadne’s Clew” (with Architect Manuel Báez and students), participating entry in the Art and Mathematics Exhibition, The Cooper Union, New York, November 7 - December 15, 2000.
- 1999
Finalist for “Ad Quadratum” (with M. Báez and students), The New York Times Time Capsule Competition Exhibition at the Museum of Natural History, New York, December 5, 1999 - March 27, 2000.
- 1994
Invited Participant, Academy for Consciousness Studies, Princeton University, Princeton, NJ.
- 1992-1995
Member, Board of Advisors, “Harmony by Design – The Golden Mean.” Exhibitions and symposia sponsored by Interior and Architecture magazines: Chicago, IL (Merchandising Mart Center, June 16 - July 31, 1993); Washington, DC (Federal Center, November 1993); Grand Rapids, MI (Kendall College of Art & Design, March 22 - April 19, 1995); New York, NY

- (Parsons School of Design, November 1 – December 1, 1995).
- 1991
Invited Lecturer, Leningrad State Technical University, Leningrad, Russia.
- 1989-1990
Faculty Fellow, Institute for the Humanities, New York University.
- 1983-1984
Fellow, American Institute of Indian Studies, University of Delhi, India.
- 1978-1979
Visiting Senior Fellow, South Asia Regional Studies, University of Pennsylvania, Philadelphia, PA.
- 1973
Elected member, New York Academy of Sciences.
- 1972
Chef de Mission to Gabon (West Africa), UNDP/UNESCO.
- 1972
National Science Foundation Institute on Technology and Society, Ohio State University.
- 1968
Rossi Prize for Faculty Writing, The Cooper Union.
- 1966
National Science Foundation Institute of Control Theory, University of Utah, Logan, UT.
- 1963
Elected member, Society of the Sigma Xi, Scientific Research Honorary.
- 1961-1962
West-Penn Fellowship in Mechanical Engineering, Carnegie-Mellon University, Pittsburgh, PA.
- 1959-1961
Teaching Assistantship in Mechanical Engineering, Carnegie-Mellon University, Pittsburgh, PA.

Ongoing Research and Studies

- Research of the design process
- Development of methodology for teaching design
- Sanskrit grammar
- Technology and architecture of medieval Europe and India
- Translation of Sanskrit texts into English and French

Educational Research

- Development of project courses involving Engineering, Art, and Architecture
- Integration of professional competence development with subject matter
- Assessment of student competencies
- Psychological types and curriculum design

Academic Service

Served on numerous Cooper Union committees, including the Curriculum Committee (Chairman), the Administrative Committee, the Calendar and Schedule Committee and Library Committee, the Committee on Academic Freedom and Tenure, the Financial Aid Committee, and ad hoc committees on proposal development, promotion and tenure, freshman engineering, etc.

Professional Societies

- ASME
- ASEE

- IEEE
- New York Academy of Sciences.

Engineering Papers (Published)

- *Influence of Carriers Mobility and Design Parameters on FET Transistor Characteristics*. IEEE Transactions on Electronic Devices – February, 1968.
- *Ultrasonics in the Pulp and Paper Industry*. Proceedings of the 10th Annual Conference on Electrical Engineering in the Pulp and Paper Industry, Cincinnati, OH, May 1964.
- *Théorie Élémentaire de L'Alcatron*. "L'Onde Electrique," T. XLV no. 442, January 1964.
- *Field-Effect Transistor Characteristics* (with A.V.J. Martin). Proceedings of the IEEE, March 1964. [pp. 314-315]
- *Mobilité des Electrons dans les Champs Electriques Intenses* (with A.V.J. Martin). J. Phys. Rad., January 23, 1962. [pp. 7-11]
- *Analyse Approchée du Fonctionnement des Dispositifs à Effet de Champ en Région Hypercritique* (with A.V.J. Martin). J. Phys. Rad., December 23, 1962. [Sup. 12, pp. 117A-183A]
- *First Order Analysis of Hypercritical Field Operation and Compared Performances of Field Devices* (with A.V.J. Martin). Colloque International sur les Dispositifs à Semi-Conducteurs, UNESCO, Paris, Actes Vol. 1, 516-543, Ed. Chiron, Paris, 1961.
- *Analyse Approchée du Fonctionnement du Tecnetron, 2ème partie* (Etude Comparative des diverses approximations) (with A.V.J. Martin). J. Phys. Rad., June 22, 1961. [Sup. 6, pp. 83A-90A]

Engineering Research Reports (Unpublished)

- *Studies in Sea-Water Conversion – Problems of Scale Formation and Dynamics of Evaporators*. Ph.D. Thesis, Carnegie-Mellon University, Pittsburgh, PA, 1963.
- *The Determination of Noise in Fluid-handling Valves* (1976). High Duty Company Technical Report. London, 1976.
- *Dropwise Condensation of Steam*. Westinghouse Research Report 64-167-461-R1, June 1964.
- *Power and Water for Coastal Town in the Middle East: A New Approach to the Developing Country Market* (with K. Chen and D. Roellke). Westinghouse Research Report.
- *Conceptual Formulation of the Development of Administration Game* (with K. Chen and D. Roellke). Westinghouse Technical Note, June 1963.
- *Study of the Glass Industry in View of Digital Computer Application for Control*. Westinghouse Research Memo 63-163-347 MI.
- *Gas Turbine Applications to Catalytic Crackers*, Westinghouse Research Memo 63-163-374 M4, October 1963.
- *Mathematical Model of a Coal Mill*. Westinghouse Research Report 63-763-293-RI, March 1963.
- *Bubble Chamber Window Failure*. Eng. Note 4313-03M49. Lawrence Radiation Laboratory, University of California, Berkeley, CA, 1960.
- *Study of the Rupture of Disks*. Eng. Note 4310-19-11. Lawrence Radiation Laboratory, University of California, Berkeley, CA, 1960.

In addition to these reports, contribution to the study of:

- Pipeline automation
- Boiler dynamics and controls and computer simulation
- Gas turbine recuperator dynamics and computer simulation
- Gas turbine water distillation systems (thin films and flash evaporators)

- Valve design

Engineering Education and Design Papers, Reports, and Presentations

- *Design Principles for Freshman/Sophomore Engineering and Technology Students* (with J. Razukas). ASEE Annual Conference, St. Louis, MO, June 2000.
- *Engineering Design in Context*. ASEE Annual Conference, St. Louis, MO, June 2000.
- *For a New Type of Engineering Program*. ASEE Annual Conference, St. Louis, MO, June 2000.
- *The GlobeTech International Simulation: A Practical Tool to Train Engineers – Leaders for the Global Economy* (with R. Jacoby). ASEE Annual Conference, St. Louis, MO, June 2000.
- *Comprehensive Design Education at Cooper Union. A Brief Historical Review*. Series A, Number 1. The Louis and Jeanette Brooks Engineering Design Center, The Cooper Union, 1999.
- *The Louis and Jeanette Brooks Engineering Design Center: Purpose, Physical Layout, Mission, and Program*. The Cooper Union Department of Mechanical Engineering, 1998.
- *Interactive Axiomatic Approach to Design*. Studies in the Design Process and Design Education, Series A, Number 7. The Louis and Jeanette Brooks Engineering Design Center, The Cooper Union, 2000.
- *Leonardo and His Flying Machine – The Importance of Clear Concepts and Analysis* (with J. Razukas). CD-Rom produced by the Cooper Union Department of Mechanical Engineering, 1998.
- *Engineering Studies in the United States*. Seminar at the Albi School of Mines (France), November 22, 1999.
- *Design*. Presentation to the Cooper Union/Polytechnic University Bridge Project Seminar, Fall 1998.
- *For a Common Language in the House of Poetry*. The Paolo Lionni Seminar, February 29, 1995.
- *Engineering and Poetics – Construction of a Machine*. The Paolo Lionni Seminar, March 19, 1996.
- *Metaphysics of Design*. The Paolo Lionni Seminar, March 26, 1996.
- *Elements of Creation and Design*. Presentation to the Hindu Cultural Society, Bridgewater, NJ. September 22, 1994.
- *Innovation: Designs for a Better World*. Presentation to the Northern Valley Schools, NJ, Spring 1993.
- A series of lectures and slide presentations at The School of Sacred Art, New York, 1993:
 - *The Nature of Space and the Sacred*
 - *The Making of Sacred Space*
 - *Some Examples of Sacred Space*
 - *On the Architecture of Russian Churches*
 - *Building Numbers into Buildings: On the Use of Numbers in the Design of Buildings*
 - *Notions of Sacred Arithmetics*
- *Models and the Process of Invention*. Presentation to the CRAFTS of New Jersey (Collectors of Rare and Familiar Tools Society), June 2, 1991.
- *Engineering Education in the US and Europe*. Series of invited seminars to the faculty of the Leningrad Polytechnic Institute, Russia. Summer 1991.
- *Conceiving and Making: Design and Invention*. A presentation to the seminar on Knowledge and Work in the Renaissance. New York University, New York, November 1990.
- Series of lectures and slide presentations at The Cooper Union and The School of Sacred Art, New York, 1983-1992.
 - The Age of Light (1130-1250) – Geographical, Historical, and Cultural Background
 - The Birth of the Gothic Era (1130-1190)
 - From Early to High Gothic (1190-1250) – Chartres
 - Stained Glass in the Age of Light
- *Design and Problem Solving – The Engineering Profession*. Presentation to the Junior Academy of the New York Academy of Sciences, December 18, 1989.
- *Sacred Proportions in Architecture and Music*. Invited Presentation at the 14th International Congress on Creative Intelligence and Profound Living, The Himalayan Institute, Honesdale, PA,

- June 15-18, 1989.
- *Technology and the Shastras*. Presentation at “Perspectives on Shastras and Science,” a symposium at Rutgers University, NJ, April 15, 1989.
 - *Design, Illusion and Reality – A Course Designed to Explore the Hidden Side of Design*. Published in Report on the Undergraduate Engineering Curriculum, The Engineering Foundation, 1990.
 - *Engineering Design in an Urban Environment for Freshmen at The Cooper Union*. Conference Proceedings of the FIE and ASEE, St. Lawrence Section Meeting, SUNY Binghamton, October 1989.
 - *Number, Numbers and Sheer Numbers*. Article in catalogue for Numbers, an exhibition at The Cooper Union, October 1989.
 - *By Design*. President’s Seminar, The Cooper Union, December 7, 1989.
 - *Design, Product and Success*. Address to the seminar Designing for Product Success at the TRIAD Design Exhibition, New York, January 7, 1990.
 - *Expert System for Guided Design* (with D. Shetty and M. Elsayed). Third IASYED International Conference: Expert Systems; Theory and Applications, Los Angeles, CA, December 12-14, 1988.
 - “Engineers and Paniniyas.” In *Studies in Indology*. Shree Publishing House, Delhi, India, December 1988. [pp. 188-193]
 - *Grammatical Approach to Design*. International Conference on Engineering Design, ICED 87, Boston, MA, August 17-20, 1987.
 - *Vedic Perspective on the Process of Design*. Bulletin of the Atmagnana Jyoti Shabda, Bombay, India, 1985.
 - *On the Concept of Hierarchy*. Commencement Address, Baiswara Degree College, Lalganj (Rae Bareli), India, April 13, 1984.
 - *Point of Sense*. Invited design lecture to the Chanin School of Architecture, New York, 1983.
 - *Professional Competence Development in Engineering Education* (with C.W. Tan). Paper presented at the World Conference on Education in Applied Engineering and Engineering Technology, Cologne, West Germany, April 16-20, 1984. Published in *The International Journal of Applied Engineering Education*, Vol. I, 1985. [pp. 253-258]
 - *Professional Competence Development at The Cooper Union School of Engineering*. A report to the NSF with the collaboration of Ellen Bussard, 1982.
 - *Problem Solving Heuristic with Corresponding Development in Communication and Value Clarification in a Competency-based Program*. Proceedings of the 1981 Frontiers in Education Conference, South Dakota School of Mines.
 - *Some Innovative Engineering Programmes in the United States*. Proceedings of the 1981 Conference on Future Trends and Needs organized by the Institution of Civil Engineers, London, England, University of Birmingham, UK.
 - *Psychological Functions as a Basis for a Taxonomy of Educational Objectives in Competence Programs – Towards a Systematic Approach*. Proceedings of the 1980 ASEE Annual Conference.
 - *Integrative Liberal Professional Education – SHAPE at The Cooper Union*. 1978 ASEE Conference, University of British Columbia, Vancouver.
 - *Competence Definitions and Assessment Plan in a Competence Oriented Program* (with A. Rakow). Proceedings of the 1978 Frontiers in Education Conference, University of Florida.
 - *A Curriculum Format for the Systematic Development of Competence in Professional Education* (with C.W. Tan and C. Huckaba). 1978 ASEE Conference, University of British Columbia, Vancouver.
 - *A Plan for a Holistic Approach to Professional Education*. Report to the Andrew W. Mellon Foundation, October 1977.
 - *Liberal Professional Education: A Proposal for a Holistic Approach to the Engineering Curriculum* (with M. Stecher and T. Shannon). Proceedings of the 1977 Frontiers in Education Conference, University of Illinois.
 - “Educating the Professional.” *Main Currents in Modern Thought*, January 1975.
 - “Some Thoughts on the Education of Engineers.” *At Cooper Union*, April 1973.
 - *Goal, Professionalism and the Place of the Humanities in Engineering*. Paper presented at the

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Education

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Ph.D. (M.E.)
Carnegie-Mellon University, Pittsburgh, PA
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M.S. (E.E.)
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Officer-Mécanicien de Première Classe
Ecole Nationale de la Marine Marchande (Nantes, France)
- 1952
Ingénieur Mécanicien
Marine Nationale (France)
- 1951
Lieutenant Mécanicien
Ecole Nationale de la Marine Marchande (Nantes, France)Academic

Rank