RUBY EBISUZAKI KRISHNAMURTI
J. Stewart Turner Professor of Oceanography
Date of Birth: October 23, 1934

Education

B. Sc.	(Honors Mathematics and Physics) University of Western Ontario	1957
M. S.	(Physics) University of Chicago	1960
Ph. D.	(Physics) University of California, Los Angeles	1967

Positions

Board of Governors Scholar, University of Western Ontario (1953–1957)

University of Chicago Fellow, Department of Astronomy, University of Chicago (1957–1958)

National Research Council of Canada Fellow, Department of Physics, University of Chicago (1958–1960)

Ford Foundation Fellow, University of California, Los Angeles (1963–1964)

Fellow in Geophysical Fluid Dynamics Summer Study Program, Woods Hole Oceanographic Institute (1964)

Research Assistant, Institute of Geophysics and Planetary Physics, University of California, Los Angeles (1965–1966)

Research Associate, Department of Chemical Engineering, Stanford University (1967)

Senior Research Associate, Geophysical Fluid Dynamics Institute, Florida State University (1967–1968)

Assistant Professor, Department of Oceanography, Florida State University (1968–1971)

Associate, Geophysical Fluid Dynamics Institute, Florida State University (1968–pres.)

Visiting Scientist, Advanced Study Program, National Center for Atmospheric Research, Boulder, Colorado (1970, 1971)

Associate Professor, Department of Oceanography, Florida State University (1971–1975)

Associate Editor, *Journal of Atmospheric Sciences* (1974–1979)

Professor, Department of Oceanography, Florida State University (1975–present)

Visiting Scientist, Max Planck Institute of Meteorology, Hamburg, Germany (June–July 1976)

Visiting Scholar, Massachusetts Institute of Technology, Department of Mathematics (January–March 1977)

Guest Investigator, GFD Summer Program, Woods Hole Oceanographic Institute (Summer1979)

Acting Professor, Oceanographic Institute, University of Gothenburg, Sweden (Summer 1980)

Guest Investigator, GFD Summer Program, Woods Hole Oceanographic Institute (June–July 1981)

Professional Societies and Honors

J. Stewart Turner Professor of Oceanography (named 2004)

Fellow of the American Physical Society (elected 1988)

Fellow of the American Meteorological Society (elected1980)

University of Chicago Fellow, Department of Astronomy, University of Chicago (1957–1958)

Ford Foundation Fellow, University of California, L. A. (1963–1964)

Fellow in Geophysical Fluid Dynamics Summer Study Program, Woods Hole Oceanographic Institution, (1964)

Visiting Scientist, Max Planck Institute of Meteorology, Hamburg, Germany (1976)

Visiting Scholar, Massachusetts Institute of Technology, Department of Mathematics, (1977)

Acting Professor, Oceanographic Institute, University of Gothenburg, Sweden, (1980)

Crawford Foundation Visiting Professor, Department of Oceanography, Gothenburg University, Gothenburg, Sweden, (1984)

Publications

Ebisuzaki, R., W. R. Jarmain, and R. W. Nicholls, 1960: Franck-Condon Factors and r-centroids for some bands of the CO fourth positive (AII-X) band system, *Canadian J. Physics*, **38**(3), 510–513.

Krishnamurti, R., 1968a: Finite amplitude convection with changing mean temperature: Part I: Theory, *J. Fluid Mech.*, **33**(3), 445–455.

Krishnamurti, R., 1968b: Finite amplitude convection with changing mean temperature: Part II: An experimental test of the theory, *J. Fluid Mech.,***33**(3), 457–463.

Krishnamurti, R., 1968: On the transition from steady to time-dependent convective flow, *Bull. Amer. Phys. Soc.*, Series 11, **13**(11), 1582.

Krishnamurti, R., 1969: On the transition from steady to time-dependent Convective flow. Abstracts of papers given at the conference on 'Fluid Mechanics in Relation to Natural Phenomena,' School of Mathematics and Physics, Institute of Physics, and the Physical Society, University of Newcastle upon Tyne, England.

Krishnamurti, R., 1970: On the transition to turbulent convection, Part I: The transition from two- to three-dimensional flow, *J. Fluid Mech.*, **42**(2), 295–307.

Krishnamurti, R., 1970: On the transition to turbulent convection, Part II: The transition to time-dependent flow, *J. Fluid Mech.*, **42**(2), 309–320.

Krishnamurti, R., 1970:On the transition to turbulent convection, *Proc. Eighth Symposium on Naval Hydronomics*, Milton Plesset, ed., National Academy of Sciences, National Research Council Publication #ARC-179.

Krishnamurti, R., 1971: Time-dependent convective flows, *Bull. Amer. Phys. Soc.*, Series 11, **16**(11), 1310. (abstract)

Krishnamurti, R., 1972: Some further studies on the transition to turbulent convection, *J. Fluid Mech.*, **60**(2), 285–304.

Krishnamurti, R., 1972: A survey of laboratory and theoretical studies of convection in dynamics of the tropical atmosphere. NCAR Summer Colloquium, 435–456.

Krishnamurti, R., 1972: Review of 'Hydrodynamic fluctuations near the convection threshold,'V. M. Zaitzev and M. I. Shiomis, *Soviet Physics JETP*, **32**(5), 866, in *Applied Mechanics Reviews*.

Krishnamurti, R., 1973: On cellular cloud patterns, *Bull. Amer. Phys. Soc.*, Series 11, **18**(11), 1472. (abstract)

Krishnamurti, R., 1975: A review of 'Physical Fluid Dynamics' by McCormack and Crane, *Bull. Amer. Met. Soc.*, **56**(7), 695.

Krishnamurti, R., 1975: On cellular cloud patterns, Part 1: Mathematical model, *J. Atmos. Sci.,* **32**(7), 1353–1363.

Krishnamurti, R., 1975: On cellular cloud patterns, Part 2: Laboratory model, *J. Atmos. Sci.,* **32**(7), 1364–1372.

Krishnamurti, R., 1975: On cellular cloud patterns, Part 3: Applicability of the mathematical and laboratory models, *J. Atmos. Sci.,* **32**(7), 1373–1383.

Krishnamurti, R., 1977: Experiments in ocean circulation modeling, *EOS Transactions of the American Geophysical Union*, **58**(6). (abstract)

Krishnamurti, R., and J. Y. Na, 1978: Experiments in ocean circulation modeling, *Geophysical and Astrophysical Fluid Dynamics*, **11**, 13–21.

Krishnamurti, R., and T. N. Krishnamurti, 1979: Surface meteorology during one hundred days of GATE, *J. Deep-Sea Res.*, Supplement II, **26**, 29–62.

Krishnamurti, R., and T. N. Krishnamurti, 1980:Wind stresses and wind stress curl over the GATE A-scale oceans, *GATE International Ocean Atlas*, W. M. O., Geneva, Switzerland.

Krishnamurti, R., et al., 1980: Heat fluxes over the GATE A-scale oceans, *GATE International Ocean Atlas*, W. M. O., Geneva, Switzerland.

Krishnamurti, R., and T. N. Krishnamurti, 1980: Ocean heat balance over the GATE A-scale oceans, *GATE International Ocean Atlas*, W. M. O., Geneva, Switzerland.

Krishnamurti, R., 1981: Oceanic response to monsoonal winds, in *Monsoon Dynamics*, Sir James Lighthill and R. P. Pierce, eds., 557–576.

Krishnamurti, R. , and L. N. Howard, 1981: Large scale flow generation in turbulent convection, *Proc. Nat. Acad. Sci. USA*, **78**(4), 1981–1985.

Krishnamurti, R., 1981: Generation of large scale circulation in turbulent convection, *Proc. Indian Acad. Sci.*, **4**(3), 277–293.

Krishnamurti, R., L.N. Howard, 1984: Large-scale flow in turbulent convection, in *Turbulence and Chaotic Phenomena in Fluids*, T. Tatsumi, ed., Elsevier Science.

Krishnamurti, R., and L.N. Howard, 1986: Large-scale circulation in turbulent convection: a mathematical model, *J. Fluid Mech*., **170**, 384–410.

Krishnamurti, R., and Y. Zhu, 1990: Double diffusive convection with imposed vertical mass flux, *J. Marine Res.*, **48**, 1–21.

Krishnamurti, R., and T. N. Krishnamurti, and H. S. Bedi, 1989: Reduction of systematic errors in a global model from parameterization of momentum flux by shallow cumulus clouds, *J. Met. Soc. Japan*, **67**, 1035–1045.

Krishnamurti, T. N., M. C. Sinha, R. Krishnamurti, D. Oosterhof and J. Comeaux, 1992: Angular momentum, length of day and monsoonal low frequency mode, *J. Met. Soc. Japan*, **70**, 131–166.

Krishnamurti, R., 1995: Low frequency oscillations in turbulent Rayleigh-Benard convection: Laboratory experiments, *J. Fluid Dyn. Res.*, **16**, 87–108.

Krishnamurti, R., and Y. Zhu, 1996: Heat and momentum transport in sheared Rayleigh-Benard convection, *Physica D*, **97**, 126-132.

Krishnamurti, R., 1997: Convection induced by selective absorption of radiation: a laboratory model of conditional instability*, Dynamics of Atmospheres and Oceans*, **27**, 367-382.

Krishnamurti, R., 1999: Low frequency oscillations in turbulent convection, *Proceedings of the Indian Academy of Sciences*, **23**, 605**–**613.

Krishnamurti, R., and H. Yang, 1999: A boundary layer formation for porous medium convection with imposed shear, *Studies in Applied Mathematics*, **103**, 1**–**24.

Krishnamurti, R., 2000: Low frequency oscillations in turbulent convection in astrophysical turbulence and convection (Buchler and Kandrup, editors) *Annals of the New York Academy of Sciences,* **898**, 122-126.

Yang, H. and R. Krishnamurti, 2000: Oscillatory flow in porous medium convection with imposed shear, submitted, *Studies in Applied Mathematics.*

Krishnamurti, R. and Y. H. Jo and A. Stocchino, 2002: Salt fingers at low Rayleigh numbers, *J. Fluid Mech*, **452**, 25**–**37.

Krishnamurti, R., 2003: Double diffusive transports in laboratory thermohaline staircases, *J. Fluid Mech*. **483**, 287–314.

Stocchino, A., and R. Krishnamurti, PIV measurements of double diffusive interleaving, *J. Fluid Mech.*, submitted to Elsevier Science.

Krishnamurti, R., 2005: Momentum Transport in laboratory thermohaline staircases, *J. Fluid Mech.*, to be submitted.

Krishnamurti, R., 2005: Double-diffusive interleaving on horizontal gradients, *J. Fluid Mech.*, **558**, 113-311.

Krishnamurti, T.N., A. Chakraborty, R. Krishnamurti, W.K. Dewar and C.A. Clayson, 2006: Seasonal prediction of sea surface temperature anomalies using a suite of 13 coupled ocean-atmosphere models, *J. Climate*, **19**(23), 6069–6088.

Krishnamurti, R. and C. Werner, 2006: Disruption of salt fingers in porous media by lateral dispersion. In preparation for J. Fluid Mech.

Fernandes, A., and R. Krishnamurti, 2006: Salt finger fluxes in a laminar shear flow. In preparation for J. Fluid Mech.

Krishnamurti, R., 2006: High Prandtl-number convection: A model of convection driven by brine rejection. In preparation for J. Fluid Mech.

Krishnamurti, T.N., A. Chackraborty, R. Krishnamurti, W.K. Dewar and C.A. Clayson, 2006: Passage of intraseasonal waves in the sub-surface oceans. To be submitted to *Science*.

Invited Papers/Presentations

Krishnamurti, R., 1968: On the transition from steady to time-dependent convective flow. Presented at the 20th Annual Conference of the American Physical Society, Division of Fluid Dynamics.

Krishnamurti, R., 1969: On the transition from steady to time-dependent convective flow. Abstracts of papers given at the Conference on Fluid Mechanics in Relation to Natural Phenomena. Scholl of Mathematics and Physics, Institute of Physics, and Physical Society, University of Newcastle upon Tyne, England.

Krishnamurti, R., 1969: Thermal convection and transition to turbulence. Presented at the Institute of Tropical Meteorology, Poona, India. Invited paper.

Krishnamurti, R., 1970: On the transition to turbulent convection. Presented at the Eighth Symposium on Naval Hydrodynamics, California Institute of Technology. Invited paper.

Krishnamurti, R., 1971: Nonlinear aspects of Bernard convection. Presented at the Regional Conference on Nonlinear and Partial Differential Equations and Applications, University of California at Los Angeles. Invited paper.

Krishnamurti, R., 1971: Time-dependent convective flows. Presented at the 23rd Annual Conference of the American Physical Society, Division of Fluid Dynamics.

Krishnamurti, R., 1972: Guest Lecturer at NCAR Summer Colloquium. Lecture appears in "Dynamics of the Tropical Atmosphere, Notes from a Colloquium: Summer 1972."

Krishnamurti, R., 1972: Guest Lecturer at the Institute of Tropical Meteorology, Poona, India.

Krishnamurti, R., 1972: Guest Lecturer at the Geophysical Fluid Dynamics Seminar, University of Miami, NOAA, and Nova University, November 28.

Krishnamurti, R., 1975: On cellular cloud patterns. Presented at the Tropical Meteorology Conference of the American Meteorological Society, Miami, May 23.

Krishnamurti, R., 1975: Mathematical and laboratory modeling of atmospheric convection. Indian Meteorological Office, New Delhi, December15. Invited lecture.

Krishnamurti, R., 1976: Cellular convection. Presented at the Geophysical Fluid Dynamics Laboratory, Princeton University, January 22. Invited lecture.

Krishnamurti, R., 1977: Experiments in cellular convection. University of Chicago, February. Invited lecture.

Krishnamurti, R., 1977: Experiments in ocean circulation modeling. Spring meeting of the American Geophysical Union, May. Invited lecture.

Krishnamurti, R., 1977: Experiments in ocean circulation modeling. Fourth European Geophysical Society Meeting, Munich, September. Invited lectures.

Krishnamurti, R., 1977: Experiments in ocean circulation modeling. Meteorological Office, Brachnel, England. Invited lectures.

Krishnamurti, R., 1977: On cellular convection. Presented to school of Physics, University of Newcastle upon Tyne, September. Invited lecture.

Krishnamurti, R., 1977: Oceanic response to monsoonal winds. IUTAM-IUGG Symposium on Monsoon Dynamics, New Delhi, India, December. Invited lecture.

Krishnamurti, R., 1978: Laboratory modeling of ocean circulation. National Center for Atmospheric Research, Boulder, CO, April. Invited lecture.

Krishnamurti, R., 1978: A review of convective instability with examples from atmospheric and biological convection. Opening address at the 106th European Mechanics Colloquium, Grenoble, September.

Krishnamurti, R., 1979: Theory and experiment in cellular convection. NATO Advanced Study Institute on Continental Drift and the Mechanism of Plate Tectonics, University of Newcastl upon Tyne, England, April.

Krishnamurti, R., 1979: Experiments in ocean circulation modeling. GFD Summer Program, WHOI, July.

Krishnamurti, R., 1979: Theory and experiment in cellular convection, Geophysics Seminar, WHOI, August.

Krishnamurti, R., 1980: Generation of large-scale circulation in turbulent convection. NCAR, Boulder, CO, April.

Krishnamurti, R., 1980: Gothenburg University Oceanographic Institute Lecture Series, August–September.

Krishnamurti, R., 1980: Applied Mathematics Seminar, Massachusetts Institute of Technology, September.

Krishnamurti, R., 1980: American Physical Society, Fluid Dynamics Division, Annual Meeting, Cornell University, November.

Krishnamurti, R., 1980: First Asian Congress of Fluid Mechanics, Bangalore, India, December.

Krishnamurti, R., 1981: American Physical Society, Annual Meeting, Baltimore, MD, April.

Krishnamurti, R., 1981: GFD Summer Program, WHOI, June. Invited lecture.

Krishnamurti, R., 1982: International Workshop on Monsoon Dynamics, Daca, Bangladesh, January. Lecture Series.

Krishnamurti, R., 6/2003: “Wide Open Parameter Spaces” at the Symposium honoring C. Hunter and D. Loper, FSU.

Krishnamurti, R., 10/2003: "Scale Interaction: Lessons from Laboratory Experiments" at the International Conference SIVOM held in Munnar, India.

Krishnamurti, R., 2005: Five lectures presented at the inauguration of the Center for Earth and space Sciences, University of Hyderabad.

Krishnamurti, R., 4/1/2005: Mathematics Honors Society, Invited Lecture, FSU

Krishnamurti, R., 7/2005: Research Experience for Undergraduates, Invited Lecture, FSU

Graduate/Postgraduate advisees

C. Werner, GFD, Ph. D. anticipated 2006

A. Fernandes, Oceanography, Ph.D. Nov. 2006

Alessandro Stocchino, (Co-advisor w/ University of Genoa) Ph.D. 2003

Y.H. Jo, Oceanography, M.S. 1999

R. Venkataraman, Oceanography, M.S. 1995

H. Yang, Geophysical Fluid Dynamics, Ph.D. 1991

Y. Zhu, Oceanography, Ph.D. 1991

Y. Zhu, Oceanography, M.S. 1988

C.W. Horton, Oceanography, Ph.D. 1986

R. Weir, Oceanography, M.S. 1978

J.Y. Na, Oceanography, Ph.D. 1976

J. Fornshell, Oceanography, Ph.D. 1975

A. Combs, Meteorology, M.S. 1974

External Funding

NSF Grant: "Laboratory measurement of heat and salt fluxes in double-diffusive interleaving," $178,399 April 1, 2003-March 31, 2007.

NSF Grant: "Laboratory measurement of salt finger fluxes of salt, heat, and momentum." $194,000 August 1998–August 2002.

ONR Contract: “Turbulent Convection” continuous funding for 30 years, approximate total funding $1,500,000 1968--1998.