

VITA

of

M. HANIF CHAUDHRY

**Mr. & Mrs. Irwin B. Kahn Professor and
Assoc. Dean (International Programs and Continuing Education),
College of Engineering and Computing
University of South Carolina
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I. PERSONAL INFORMATION

PERSONAL

Citizenship: U.S.A.

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EDUCATION

<i>Institution</i>	<i>Degree</i>	<i>Year</i>
University of British Columbia, Vancouver, B.C., Canada	Ph.D. M.A.Sc.	1970 1968
University of Engineering and Technology, Lahore, Pakistan	B.Sc. (Honors) (Civil)	1965

EMPLOYMENT HISTORY

Mr. and Mrs. Irwin B. Kahn Professor (1998 to present), Assoc. Dean (International Programs and Continuing Education), (Aug. 2007 to present), College of Engineering and Computing, and Chairman (Aug. 1997 to Aug. 2008), Department of Civil and Environmental Engineering, University of South Carolina, Columbia, SC.

Professor (1988-97), Director, International Development Projects, College of Engineering and Architecture (1990-94), and Associate Professor (1983-88), Department of Civil and Environmental Engineering, Washington State University, Pullman, WA.

Associate Professor, Department of Civil Engineering, Old Dominion University, Norfolk, VA (September 1979-August 1983).

Senior Engineer (1972-79), Engineer (1970-72), B.C. Hydro and Power Authority and its subsidiary, International Power and Engineering Consult, Vancouver, Canada (July 1970-September 1979).

Research Hydraulic Engineer, H.A. Simons (International) Ltd., Vancouver, Canada (February 1970-July 1970).

Graduate Student, University of British Columbia, Vancouver, Canada (September 1966-January 1970).

Assistant Design Engineer, West Pakistan Water and Power Development Authority, Lahore, Pakistan (July 1965-September 1966).

HONORS AND AWARDS

Russell Award for Research (and \$3,000 honorarium), University of South Carolina (Highest University award for research), 2009.

Hunter Rouse Hydraulic Engineering Award (and \$2,000 honorarium), American Society of Civil Engineers (Most prestigious ASCE award in water resources), 2008.

Bert Storey Innovative Research Award (and \$7000 honorarium), Dept. of Civil and Environmental Engineering, University of South Carolina (Highest departmental award for research), 2008.

Research Achievement Award (and \$1000 honorarium), College of Engineering and Information Technology, University of South Carolina (Highest College award for research), 2003.

Doctor Honoris Causa and campus street named Hanif Chaudhry, Universidad Politecnica de Valencia, Spain (other 99 recipients: Nobel Laureates Marcus and Saramago), 1999.

Guest Professor, Chalmers University, Göteborg, Sweden, May-June, 1997.

Gastprofessor, Versuchsanstalt für Wasserbau, Swiss Federal Institute of Technology, Zurich, Switzerland, Jan.- Aug., 1991.

AT&T Foundation Award (and \$1500 honorarium) for excellence in instruction of engineering students, American Society for Engineering Education, 1990.

Leon Luck Award (and \$850 honorarium) for the Most Effective Faculty Member of the Department of Civil Engineering, 1986.

Award of Merit, National Composition Association, for excellence in design, clarity and readability for the Hydraulic Engineering book, 1988.

Research Excellence Award, Department of Civil and Environmental Engineering, 1990.

Certificate of Recognition: Awarded by the American Society of Mechanical Engineers for services in advancing the engineering profession, 1984.

Medals

One gold and two silver medals for scholastic achievements in high school and college.

Scholarships

Graduate Student Assistantship, National Research Council of Canada (1966-70); National Talent Scholarship (1961-65); National Talent Scholarship (1959-61); Government of West Pakistan Scholarship (1957-59).

MEMBERSHIP AND ASSOCIATION WITH ENGINEERING SOCIETIES

Diplomate, American Academy of Water Resources Engineers (2009 to present).

Fellow, American Society of Civil Engineers (1998 to present), Member (1969-98), Life Member (2008 to present).

Member, American Society of Mechanical Engineers (1973 to present).

Member, International Association for Hydraulic Research (1970 to present).

Associate Editor, *Journal of Hydraulic Engineering*, American Society of Civil Engineers (1985 to present).

Member, International Affairs Committee, Amer. Society of Civil Engineers (2008 to present).

Member, Task Committee on Theory and Numerical Modeling of Flow in Steep Channels (Parent Committee: Computational Hydraulics Committee), American Society of Civil Engineers, 1993 to 1996.

Chairman (1986-1987), Vice Chairman (1985-1986), Secretary (1984-1985), Computational Hydraulics Committee, American Society of Civil Engineers.

Associate Editor, *Journal of Fluids Engineering*, American Society of Mechanical Engineers (1980-1984).

Member, Honors Committee Fluids Engineering Division, American Society of Mechanical Engineers (1984-1986).

Professional Engineer, Association of Professional Engineers of British Columbia, Canada (1971 to present).

Professional Engineer, State Board of Registration for Professional Engineers, Texas (1992 to present).

CONSULTING ACTIVITIES

U.S. Agency for International Development, United Nations Development Program; U.S. Army Corps of Engineers; California Department of Water Resources; New Brunswick Power Commission, Canada; Inter-American development Bank/Instituto Ecuatoriano de Electrificación, Ecuador; Instituto Costarricense de Electricidad, Costa Rica; Institute for Computer Applications, NASA; various public utilities, consulting engineering and law firms in the U.S.A. and Canada.

II. PUBLICATIONS

BOOKS

Text and Reference Books

Chaudhry, M.H., *Open-Channel Flow*, Second Edition, Springer, New York, NY, 2008, 523 pp.

Roberson, J.A., Cassidy, J.J. and Chaudhry, M.H. *Hydraulic Engineering*, Second Edition, John Wiley & Sons, New York, NY, 1998, 653 pp.

Chaudhry, M.H. and Mays, L. (eds.), *Computer Modeling of Free-Surface and Pressurized Flows*, Kluwer Academic Publishers, Boston, MA, 1994, 741 pp.

Chaudhry, M.H., *Applied Hydraulic Transients*, second edition, Van Nostrand Reinhold Co., New York, 1987, 521 pp. (First edition, translated into Chinese, 1985).

Chaudhry, M.H. and Yevjevich, Y. (eds.), *Closed-Conduit Flow*, Water Resources Publications, Littleton, CO, 1981, 416 pp.

Conference Proceedings

Chaudhry, M.H. (ed.), “*Water and Environment*”, Proceedings, Second Carolina Symposium, Nov. 2000, 67pp.

Chisti, F.A. and Chaudhry, M.H. (eds.), *Physical and Mathematical Models in Hydraulic Engineering*, Proceedings, International Seminar, sponsored by US National Science Foundation, Lahore, Pakistan, 1987, 439 pp.

Chaudhry, M.H. and Martin, C.S. (eds.), *Multi-Dimensional Transients*, Proceedings, International Symposium, published by American Society of Mechanical Engineers, Dec. 1984, 82 pp.

Martin, C.S. and Chaudhry, M.H. (eds.), *Numerical Methods for Fluid Transients*, Proceedings, International Symposium, published by American Society of Mechanical Engineers, June 1983, 81 pp.

Koelle, E. and Chaudhry, M.H. (eds.), *Transients* (3 volumes), Proceedings, International Seminar, sponsored by US National Science Foundation, Sao Paulo, Brazil, 1982.

Book Chapters

Mohapatra, P.K., Chaudhry, M.H., Kassem, A.A., and Moloo, J. "Analysis of flow in a stenosed artery by using the transfer matrix method," in *Mathematical Biology: Recent Trends*, P. Chandra and B.V. Rathish (eds.), Anamaya Publishers, New Delhi, India, 2005.

Chaudhry, M.H., and Barber, Michael E., *Handbook of Fluid Dynamics*, "Open Channel Flow" Richard W. Johnson (ed), pp. 45-1 to 45-40, CRC Press, Boston, MA, 1998.

Chaudhry, M. H., "Principles of Flow of Water", Chapter 2 in *Handbook of Water Resources*, L. Mays (ed.), McGraw-Hill, 1996, pp. 2.1-2.43.

Chaudhry, M. H., "Modeling of Flows with Shocks and Bores", in *Computer Modeling of Free-Surface and Pressurized Flows*, " M. H. Chaudhry and L. Mays (eds.), Kluwer, 1994, pp. 63-82.

Chaudhry, M. H., "Numerical Methods for Solution of Unsteady Flow Equations", *Closed-Conduit Flow*, M. H. Chaudhry and V. Yevjevich (eds.) Water Resources Publications, 1981, pp. 160-191.

Martin, C. S. and Chaudhry, M. H., "Cooling-Water Systems", in *Closed-Conduit Flow*, M. H. Chaudhry and V. Yevjevich (eds.) Water Resources Publications, 1981, 255-278.

Chaudhry, M. H., "Pump and Power Intakes", in *Closed-Conduit Flow*, M. H. Chaudhry and V. Yevjevich (eds.) Water Resources Publications, 1981, pp. 367-390.

Chaudhry, M. H., "Resonance in Pressurized Piping Systems", in *Transient Flow and Hydraulic Machinery*, H. W. Shen (ed.).

Chaudhry, M. H., "Governing Stability of Hydroelectric Power Plants", *Transient Flow and Hydraulic Machinery*, H. W. Shen (ed.).

REFEREED JOURNALS

Under Review

El-Kholy, M. and Chaudhry, M. H., "Drag and Added Mass Coefficients of Large Sandbags," *Jour. Hydraulic Engineering*.

Silva-Araya, W. F., Reddy, P., and Chaudhry, M. H., "Estimation of Decay Coefficients for Unsteady Friction for Instantaneous, Acceleration-Based Models," *Jour. Hydraulic Engineering*.

Chaudhry, M. H., and Reddy, P. "Mathematical Modeling of Dry Lake Tap Flows," *Jour. Hydraulic Engineering* (Under revision).

Nabi, G., Latif, M., and Chaudhry, M. H., "Simulation of Sediment in an Irrigation Canal," *Journal of Irrigation and Drainage* (Under revision).

Mostafa, T. S. M., Imran, J., and Chaudhry, M. H. "Experimental Modeling of Pier Scour in Cohesive Soils," *Journal of Hydraulic Engineering* (Revision under review).

Mohapatra, P., A., and Chaudhry, M. H., "Detection of Partial Blockage in a Single Pipeline," *Jour. Hydraulic Research* (Revision under review).

Accepted

Reddy, P., Chaudhry, M. H., and Mohapatra, P. A., "Modeling of Periodic Flows by Transfer Function Method," *Journal of Hydraulic Research*.

Chaudhry, M. H., "Modeling of One-Dimensional Free-Surface and Pressurized Flow," *Jour. Hydraulic Engineering*.

Published

Sattar A., Dickerson J., and Chaudhry M. H., "Wavelet Methods for Leak and Blockage Detection, A Wavelet Galerkin Solution to the Transient Flow Equations." *Journal of Hydraulic Engineering*, vol. 135, no. 4, April 2009, pp. 283-295.

Mostafa, T. S., Imran, J., and Chaudhry, M. H., "Erosion Resistance of Cohesive Soils," *Journal of Hydraulic Research*, International Association for Hydraulic Research, vol. 46, no. 6, 2008, 764-776.

Sattar, A., Kassem, A., and Chaudhry, M. H., "Case Study: 17th Street Canal Breach Closure Procedures," *Journal of Hydraulic Engineering*, Amer. Soc. Civil Engrs., vol. 134, no. 11, Nov. 2008, pp. 1547-1558.

Mohapatra, P., Chaudhry, M. H., Kassem, A., and Moloo, J., Closure, "Detection of Partial Blockage in Single Pipeline," *Jour. of Hydraulic Engineering*, Amer. Soc. Civil Engrs., vol. 134, no. 6, June 2008, pp. 876-878.

Sattar A., and Chaudhry M. H. "Leak Detection in Pipelines by Frequency Response," *Journal of Hydraulic Research*, Inter. Assoc. for Hydraulic Research, vol. 46, no.1 (Extra issue), 2008, 138-151.

Sattar A., Chaudhry M. H., and Kassem A., "Partial Blockage Detection in Pipelines by Frequency Response." *Journal of Hydraulic Engineering*, Amer. Soc. Civil Engrs., vol. 134, no. 1, January 2008, pp. 76-89.

Mohapatra, P. K., Chaudhry, M. H., Kassem, A. A. and Moloo, J. "Detection of Partial Blockages in a Branched Piping System by Frequency Response Method," *Journal of Fluids Engineering*, Amer. Soc. Mech. Engrs., vol. 128, no. 5, September 2006, pp. 1106-1114.

Kassem, A., Sattar, A. A. and M. H. Chaudhry. "Standard Protocol for Comparing Culvert Hydraulic Modeling Software: HEC-RAS and HY-8 Application," *Transportation Research Record: Journal of the Transportation Research Board*, no. 1984, Transportation Research Board of the National Academies, Washington, D.C., 2006, pp. 123-134.

Mohapatra, P. K., Chaudhry, M. H., Kassem, A. A. and Moloo, J. "Detection of Partial Blockage in Single Pipelines," *Journal of Hydraulic Engineering*, vol. 132, no. 2, Feb. 2006, pp. 200-206.

Kassem, A. and Chaudhry, M.H. "Effects of Bed Armoring and Flow Unsteadiness of Bed Topography of Channel Bends," *Journal of Hydraulic Engineering*, vol. 131, no. 12, Dec. 2005, pp. 1136-1140.

Salaheldin, T.M., Imran, J. and Chaudhry, M.H., "Numerical Modeling of Three-Dimensional Flow Field Around Circular Piers", *Journal of Hydraulic Engineering*, vol. 130, no. 2, Feb. 2004, pp. 91-100.

Mohapatra, P. K. and Chaudhry, M. H., "Numerical Solution of the Boussinesq Equations to Simulate Dam-Break Flow," *Journal of Hydraulic Engineering*, vol. 130, no. 2, Feb. 2004, pp. 156-159.

Kassem, A. and Chaudhry, M. H., Closure, "Numerical Modeling of Bed Evolution in Channel Bends," *Journal of Hydraulic Engineering*, vol. 130, no. 1, Jan. 2004, pp. 82-83.

Kassem, A., Salaheldin, T.M., Imran, J. and Chaudhry, M.H., "Numerical Modeling of Scour in Cohesive Soils Around Artificial Rock Island of Cooper River Bridge," *Jour. of the Transportation Research Board*, no. 1851, 2003, pp. 45-50.

Al-Omari, A.S. and Chaudhry, M.H., Closure, "Unsteady State Inverse Chlorine Modeling in Pipe Networks," *Journal of Hydraulic Engineering*, vol. 129, no. 2, Feb. 2003, p. 165.

Kassem, A. and Chaudhry, M.H. "Numerical Modeling of Bed Evolution in Channel Bends", *Journal of Hydraulic Engineering*, vol. 128, no. 5, 2002, pp. 507-514.

Mpesha, W., Chaudhry, M.H. and Gassman, S. "Leak Detection in Pipes by Frequency Response Method Using a Step Excitation", *Journal of Hydraulic Research*, vol. 40, no. 1, 2002, pp. 55-62.

Al. Omari, A.S. and Chaudhry, M.H. "Unsteady-State Inverse Chlorine Modeling in Pipe Networks" *Journal of Hydraulic Engineering*, vol. 127, no.8, Aug. 2001, pp. 669-677.

Silva-Araya, W.F. and Chaudhry, M.H. "Unsteady Friction in Rough Pipes." *Journal of Hydraulic Engineering*, American Society of Civil Engineers, vol. 127, no.7, July 2001, pp. 602-618.

Mpesha, W., Gassman, S. and Chaudhry, M.H. "Leak Detection in Pipes by Frequency Response Method", *Journal of Hydraulic Engineering*, American Society of Civil Engineers, vol. 127, no. 2, Feb. 2001, pp.134-147.

Salaheldin, T.M., Imran, J. and Chaudhry, M.H. "Modeling of Open-Channel Flows with Steep Gradients", *Ingenieria del Agua*, vol. 7, no. 4, Dec. 2000, pp. 391-408.

Islam, M. Rashid and Chaudhry, M.H., *Closure* of "Modeling of Constituent Transport in Unsteady Flow in Pipe Networking", *Journal of Hydraulic Engineering*, American Society of Civil Engineers, vol. 126, no. 6, June 2000, pp. 479-480.

Salaheldin, T.M., Imran, J., Chaudhry, M.H. and Reed, C. "Role of Fines in Turbidity Current Flow Dynamics and Resulting Deposits," *Marine Geology*, vol. 171, 2000, pp. 21-38.

Islam, M. Rashid and Chaudhry, M.H., "Modeling of Constituent Transport in Unsteady Flow in Pipe Networking", *Journal of Hydraulic Engineering*, American Society of Civil Engineers, vol. 124, no. 11, pp. 1115-1124, 1998.

Kassem, Ahmed A., and Chaudhry, M.H., "Comparison of Coupled and Semi-Coupled Numerical Models for Alluvial Channels", *Journal of Hydraulic Engineering*, American Society of Civil Engineers, vol. 124, no. 8, pp. 794-802, 1998.

Rahman, R. and Chaudhry, M.H., "Simulation of Dam-Break Flows", *Advances in Water Resources*, vol. 21, no. 1, pp. 1-9, 1998.

Silva-Araya, Walter F. and Chaudhry, M.H., "Computation of Energy Dissipation in Transient Flow", *Closure*, *Journal of Hydraulic Engineering*, American Society of Civil Engineers, vol. 124, no. 5, pp. 559-560, 1998.

Islam, R., and Chaudhry, M.H., "Inverse Solution of Chlorine Concentration in Pipe Networks", Clark, R.M., *Journal of Environmental Engineering*, American Society of Civil Engineers, vol. 123, no. 10, pp. 1033-1040, 1997.

Islam, R., and Chaudhry, M.H., "Numerical Solution of Transport Equation for Applications in Environmental Hydraulics and Hydrology", *Journal of Hydrology*, vol. 191, pp. 106-121, 1997.

Rahman, R., and Chaudhry, M.H., "Computation of Flow in Open-Channel Transitions", *Journal of Hydraulic Research*, International Association for Hydraulic Research, vol. 35, no. 2, pp. 243-256, 1997.

Silva-Araya, W.F., and Chaudhry, M.H., "Computation of Energy Dissipation in Unsteady Flow in Pipes", *Journal of Hydraulic Engineering*, American Society of Civil Engineers, vol., 123, no. 2, pp. 108-115, 1997.

Islam, R., and Chaudhry, M. H., "Numerical Solution of Transport Equation for Applications in Environmental Hydraulics and Hydrology", *Journal of Hydrology*, vol. 191, 1997, pp. 106-121.

Rashid, M., and Chaudhry, M. H., "Flood Routing in Channels with Flood Plains", *Journal of Hydrology*, 171 (1995), pp. 75-91.

Molls, T., Chaudhry, M. H., and Khan, K., "Numerical Solution of Two-Dimensional Flow Near a Spur-Dike", *Advances in Water Resources*, vol. 18, no. 4, 1995, pp. 227-236.

Rahman, R., and Chaudhry, M. H., "Simulation of Hydraulic Jump With Grid Adaptation", *Journal Hydraulic Research*, International Association for Hydraulic Research, vol. 33, no. 4, 1995, pp. 555-569.

Molls, T., and Chaudhry, M. H., "A Depth-Averaged Open-Channel Flow Model", *Journal of Hydraulic Engineering*, American Society of Civil Engineers, vol. 121, no. 6, June, 1995, pp. 453-465.

Elansary, A. S., Silva, W., and Chaudhry, M. H., "Numerical and Experimental Investigation of Transient Pipe Flow", *Journal of Hydraulic Research*, International Association for Hydraulic Research, vol. 32, no. 4, 1994, pp. 689-706.

Younus, M., and Chaudhry, M. H., "A Depth-Averaged turbulence model for the Computation of Free-Surface Flow", *Journal of Hydraulic Research*, International Association for Hydraulic Research, vol. 32, no. 3, 1994, pp. 415-444.

Hager, W., Schwalt, M., Jimenez, O., and Chaudhry, M. H., "Supercritical Flow Near an Abrupt Wall Deflection", *Journal of Hydraulic Research*, International Association for Hydraulic Research, vol. 32, no. 1, 1994, pp. 103-118.

Jimenez, O.F., and Chaudhry, M.H., "Water-level Control in Hydropower Plants", *Journal of Energy Engineering*, Amer. Soc. Civil Engrs., vol. 118, Dec. 1992.

Elliot, R.C., and Chaudhry, M.H., “A Wave Propagation Model for Two Dimensional Dam-Break Flows”, *Journal of Hydraulic Research*, International Association for Hydraulic Research, vol. 30, No. 4, 1992, pp. 467-483.

Bell, S., Elliot, R.C., and Chaudhry, M.H., “Experimental Results of Two Dimensional Dam-Break Flows”, *Journal of Hydraulic Research*, International Association for Hydraulic Research, vol. 30, No. 2, 1992, pp. 225-251.

Bhallamudi, M., and Chaudhry, M.H., “Computation of Flows in Open Channel Transitions”, *Journal of Hydraulic Research*, International Assoc. for Hydraulic Research, Vol. 30, No. 1, 1992, pp. 77-93.

Gharangik, A. M., and Chaudhry, M. H., “Numerical Simulation of Hydraulic Jump”, *Journal of Hydraulic Engineering*, American Society of Civil Engineers, Vol. 117, No. 9, 1991, pp 1195-1211.

Bhallamudi, M. and Chaudhry, M.H., “Numerical Modeling of Aggradation and Degradation in Alluvial Channels”, *Journal of Hydraulic Engineering*, American Society of Civil Engineers, Vol. 117, No. 9, 1991, pp. 1145-1164.

Fennema, R.J., and Chaudhry, M.H., “Numerical Solution of 2-D Transient Free-Surface Flows: Explicit Methods”, *Journal of Hydraulic Engineering*, American Society of Civil Engineers, vol. 116, No. 8, August 1990, pp 1013-1034.

Chaudhry, M.H., Bhallamudi, S.M., Martin, C.S., and Naghash, M. “Analysis of Transient Pressures in Bubbly, Homogeneous, Gas-Liquid Mixtures”, *Journal of Fluids Engineering*, American Society of Mechanical Engineers, Vol. 112, No. 2, June 1990, pp 225-231.

Miller, S. and Chaudhry, M. H. “Dam-Break Flows in a Curved Channel”, *Journal of Hydraulic Engineering*, American Society of Civil Engineers, Vol. 115, No. 11, November 1989, pp 1465-1478.

Dammuller, D., Bhallamudi, S. and Chaudhry, M. H., “Modeling of Unsteady Flow in a Curved Channel”, *Journal of Hydraulic Engineering*, American Society of Civil Engineers, Vol. 115, No. 11, November 1989, pp 1479-1495.

Fennema, R.J., and Chaudhry, M.H., “Numerical Solution of 2-D Transient Free-Surface Flows: Implicit Methods”, *Journal of Hydraulic Research*, International Association for Hydraulic Research, Vol. 27, No. 3, 1989, pp 321-332.

Chaudhry, M. H, and Bhallamudi, S.M., “Computation of Critical Depth in Symmetrical Compound Channels”, *Journal of Hydraulic Research*, International Association for Hydraulic Research, Vol. 26, No. 4, 1988, pp 377-395.

Jimenez, O.F., and Chaudhry, M.H., "Computation of Supercritical Free-Surface Flows", *Journal of Hydraulic Engineering*, American Society of Civil Engineers, April 1988, pp 377-395.

Jimenez, O.F., and Chaudhry, M.H., "Stability Limits of Hydroelectric Power Plants", *Journal of Energy Engineering*, American Society of Civil Engineers, Vol. 113, No. 2, September 1987, pp 50-60.

Fennema, R.J., and M.H. Chaudhry, "Simulation of One-Dimensional Dam-Break Flows", *Journal of Hydraulic Research*, International Association for Hydraulic Research, No. 1, 1987, pp 41-51.

Fennema, R.J., and M.H. Chaudhry, "Second-Order Numerical Schemes for Unsteady Free-Surface Flows with Shocks", *Journal of Water Resources Research*, December 1986, pp 1923-1930.

Chaudhry, M.H., and A. Schulte, "Computation of Steady-State Gradually-Varied Flows in Parallel Channels", *Canadian Journal of Civil Engineering*, February, 1986, pp 39-45.

Chaudhry, M.H., and M.Y. Hussaini, "Second-Order Accurate Explicit Finite-Difference Schemes for Waterhammer Analysis", *Journal of Fluids Engineering*, American Society of Mechanical Engineers, Vol. 107, December 1985, pp 524-529.

Holloway, M.B., and M.H. Chaudhry, "Stability and Accuracy of Waterhammer Analysis", *Advances in Water Resources*, Vol. 8, No. 3, September, 1985, pp 121-128.

Chaudhry, M.H., M.O. Sabbah, and J.A. Fowler, "Analysis and Stability of Closed Surge Tanks", *Journal of Hydraulic Engineering*, American Society of Civil Engineers, July 1985, pp 1079-1096.

Chaudhry, M.H., A.G. Mercer, and D.E. Cass, "Modeling of Land-Slide-Generated Waves", *Journal of Hydraulic Engineering*, American Society of Civil Engineers, November 1983, pp 1505-1520.

Chaudhry, M.H., J.E. Edinger, and D.E. Cass, "Modeling of Unsteady-Flow Temperatures", *Journal of Hydraulic Engineering*, American Society of Civil Engineers, May 1983, pp 657-669.

Chaudhry, M.H., *Discussion*, "Design Charts for Air Chambers", by A.T. Fok, *Journal, Hydraulics Division*, American Society of Civil Engineers, October 1979, pp 1322-1324.

Chaudhry, M.H., *Discussion*, "Start-up Performance Hyatt-Thermalito Power Complex", by H.D. Dewey et al., *Journal, Power Division*, American Society of Civil Engineers, December 1974, pp 217-219.

Chaudhry, M.H., *Discussion*, “Conduit Representation in Closed Loop Simulation of Hydroelectric Systems”, *Journal, Basic Engineering*, American Society of Mechanical Engineers, October 1972, p 604.

Chaudhry, M.H., *Discussion*, “Integration of Pumped- Storage with Tidal Power”, *Journal, Power Division*, American Society of Civil Engineers, June 1972, pp. 155-166.

Chaudhry, M.H., “Resonance in Pipes Having Variable Characteristics”, *Journal of Hydraulic Engineering*, American Society of Civil Engineers, February 1972, pp 325-333.

Chaudhry, M.H., and E. Ruus, “Analysis of Governing Stability of Hydroelectric Power Plants”, *Transactions*, Engineering Institute of Canada, June 1971, pp 1-4.

Chaudhry, M.H., and E. Ruus, “Surge Tank Stability by Phase Plane Method”, *Journal of Hydraulic Engineering*, American Society of Civil Engineers, April 1971, pp 489-503.

Chaudhry, M.H., “Resonance in Pressurized Piping Systems”, *Journal of Hydraulic Engineering*, American Society of Civil Engineers, September 1970, pp. 1819-1839.

Chaudhry, M.H., *Discussion*, “Stability of Oscillations in Simple Surge Tank”, *Journal, Hydraulics Division*, American Society of Civil Engineers, May 1970.

Chaudhry, M.H., *Discussion*, “Surging in Laboratory Pipelines with Steady Inflow”, *Journal, Hydraulics Division*, American Society of Civil Engineers, January 1970, pp 294-296.

Ruus, E., and M.H. Chaudhry, “Boundary Conditions for Air Chambers and Surge Tanks”, *Transactions*, Engineering Institute of Canada, November 1969, pp 1-6.

Refereed Conference Proceedings

El-Kholy, M. and Chaudhry, M. H., “Tracking Sandbag Motion during Levee Breach Closure Using DPTV Technique, 33rd Congress, International Association of Hydraulic Engineering and Research, Aug. 2009.

Riahi-Nezhad, C. K. J., Imran and M. H. Chaudhry, “Flow Velocity Data in a Levee Breach,” River2008, International Assoc. for Hydraulic Research, Cesme, Turkey, Sept. 2008.

Cass, D. E., Chaudhry, M. H., and Spurr, K. J., “Transient Analysis of Outfall System of Metro-Vancouver’s Annacis Island Waste Water Treatment Plant,” Fifth International Symposium on Environmental Hydraulics, International Assoc. for Hydraulic Research and Arizona State University, Tempe, AZ, Dec. 2007.

Kassem, A., Sattar, A., and Chaudhry, M. H., “Standard Protocol for Comparing Culvert Hydraulic Modeling Software: HEC-RAS and HY8 Application,” TRB Annual Meeting, Washington, D.C., January 2006.

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Salaheldin, T.M., Imran, J., Kassem, A., and Chaudhry, M. H., "Scale Physical Modeling of Local Scour in Cohesive Soil", TRB Annual Meeting, Washington, D.C., January 2003.

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Schulte, A.M., and Chaudhry, M.H., "Gradually-Varied Flows in Open Channel Networks", *Journal of Hydraulic Research*, International Association for Hydraulic Research, No. 3, Vol. 25, July 1987, pp 357-371.

Chaudhry, M.H., M.O. Sabbah, and J.E. Fowler, "Analysis and Stability of Closed Surge Tanks", *Proceedings, Fourth International Conference on Pressure Surges*, British Hydromechanics Research Association, Bath, England, September 1983, pp 133-146.

Chaudhry, M.H., "A Nonlinear Mathematical Model for Analysis of Transients Caused by a Governed Francis Turbine", *Proceedings, Third International Conference on Pressure Surges*, Canterbury, England, British Hydromechanics Research Association, England, March 1980, pp. 301-314.

Chaudhry, M.H., Discussion of "Two-Phase Flow Hydraulic Transient Model for Storm Sewer Systems", *Proceedings, Second International Conference on Pressure Surges*, London, England, September 1976, pp X27-X28.

Chaudhry, M.H., "Mathematical Modeling of Transient Flows in Open Channels", *Proceedings, Conference on Unsteady Flow*, International Association for Hydraulic Research and British Hydromechanics Research Association, Newcastle-upon-Tyne, England, April 1976, pp C-1 to C-18.

Portfors, E.A., and Chaudhry, M.H., "Analysis and Prototype Test Result for Transients in Jordan River Hydroelectric Power Plant", *Proceedings, First International Conference on Pressure Surges*, British Hydromechanics Research Association, England, 1972, pp 57-72.

Non-Refereed Journals

Chaudhry, M.H., "Resonance in Pipe Systems", *Water Power*, London, July-August 1970, pp 242-245.

Chaudhry, M.H., "Governing Stability of a Hydroelectric Power Plant", *Water Power*, London, April 1970, pp 131-136.

Invited Presentations

Chaudhry, M. H., "Modeling of Free-Surface and Pressurized Flows," Hunter Rouse Lecture, Environmental and Water Resources Congress, Amer. Society of Civil Engrs., Honolulu, Hawaii, May 2008.

Chaudhry, M. H., "Modeling of Combined Free-Surface and Pressurized Flows," Fifth International Symposium on Environmental Hydraulics, International Assoc. for Hydraulic Research and Arizona State University, Tempe, AZ, Dec. 2007.

Chaudhry, M. H., "Modeling of Levee Breach in 17th Canal following Hurricane Katrina," Amer. Society of Civil Engrs., Midland Branch, 2006.

Chaudhry, M.H., "Modeling of Flood Flows", lecture for Doctor Honoris Causa, Universidad Politecnica de Valencia, Spain, 1999.

Chaudhry, M.H., "Mathematical Modeling in Hydraulic Engineering", Chalmers University, Göteborg, Sweden, June 1997.

Chaudhry, M.H., "Analysis of Transients Caused by Hydraulic Machinery", *Hydraulic Machinery and Cavitation*, " XVIII IAHR Symposium, International Association for Hydraulic Research, Sept. 1996.

Chaudhry, M.H., "Computation of Open-Channel Flow With Shocks", (keynote address), 7th International Conference on Pressure Surges and Fluid Transients in Pipelines and Open Channels, Harrogate, UK, April, 1996.

Chaudhry, M.H., "Analysis of Transients in Pipelines", (keynote address), 8th International Conference on Transport and Sedimentation of Solid Particles, Prague, Czech Republic, Jan. 1995.

Chaudhry, M.H., "Hydraulic Modeling of Power Intakes", Seminar, Costarriense de Electricidad, San Jose, Costa Rica, December 1994.

Chaudhry, M.H., and Islam, M.R., "Water Quality Modeling in Pipe Networks", Workshop on Improving Efficiency and Reliability in Water Distribution Systems", Universidad Internacional Menendez Pelayo, Valencia, Nov. 1994, 23 pp.

Chaudhry, M.H., "Modeling of Free-Surface Flows With Shocks and Bores", NATO Advanced Study Institute on Computer Modeling of Free-Surface and Pressurized Flows, Pullman, WA, June 28-July 9, 1993.

Chaudhry, M.H., "Transient Analysis of Pipe Networks, "Workshop sponsored by Universidad Internacional Menendez Pelayo, Valencia, Spain, Oct. 1992.

Chaudhry, M.H., "Mathematical Modeling of Transient Flows With Column Separation", International Meeting on Hydraulic Transients With Column Separation, International Association for Hydraulic Research, Valencia, Spain, Sept. 4-6, 1991, pp. 149-155.

Chaudhry, M.H., "Mathematical Modeling of Hydraulic Systems", Seminar, EPFL, Lausanne, Switzerland, May 31, 1991.

Chaudhry, M.H., "Modeling of Transients in Closed Conduits and Open Channels", Seminar, Swiss Federal Institute of Technology, April 30, 1991.

Chaudhry, M.H., "Mathematical Modeling of Hydraulic Systems", Association of Civil Engineers of Ecuador, Quito, Ecuador, May 1990.

Chaudhry, M.H., "Application of Lumped and Distributed System Approaches for Hydraulic Transient Analysis, "International Congress on Cases and Accidents in Fluid Systems", Sao Paulo, Brazil, March, 1989, 8 pp.

Chaudhry, M.H., "Mathematical Modeling of Hydraulic Systems", International Seminar on Physical and Mathematical Modeling in Hydraulic Engineering, Lahore, Pakistan, October 1987.

Chaudhry, M.H., "Accuracy of Computerized Transient Computations, presented at National Convention, American Society of Civil Engineers, Seattle, Washington, April 1986.

Chaudhry, M.H., "Limitations of Waterhammer Analysis", Keynote Address, Seminar IV, 21st Congress, International Association for Hydraulic Research, Melbourne, Australia, August 1985, Vol. 6, pp 132-137.

Chaudhry, M.H., "Transient-Flow Analysis", Proceeding, XII Southeastern Conference on Theoretical and Applied Mechanics, Georgia, May 1984, pp 436-440.

Chaudhry, M.H., “Numerical Methods for Solution of Closed-Conduit Transient-Flow Equations”, Proceedings, International Institute on Hydraulic Transients, Vol. 1, Sao Paulo, Brazil, July 1982, pp A2.1-A2.35.

Chaudhry, M.H., “Numerical Solution of Unsteady Free-Surface Flow Equations”, Proceedings, International Institute on Hydraulic Transients, Vol. 2, Sao Paulo, Brazil, July 1982, pp G2.1-G2.32.

Chaudhry, M.H., “Numerical Solution of Transient Flow Equations”, Proceedings, Hydraulics Division Specialty Conference, American Society of Civil Engineers, Jackson, MS, August 17-20, 1982, pp 633-656.

Proceedings of National and International Conferences

Salaheldin, T.M., Imran, J., and Chaudhry, M. H., “Modeling of Floods in Piedmont Streams”, Second South Carolina Water and Environment Symposium, Nov. 2000, pp. 21-23.

Kassem, A. and Chaudhry, M.H., “Numerical Modeling of Bed Evolution in Alluvial Channels”, Proceedings, First International Conference on Civil Engineering, III, pp. 93-106, Helwan University, Cairo, Egypt, 1998.

Raman, A. and Chaudhry, M.H., “Numerical Simulation of Free-Surface Flows”, Proceedings, Water Resources Engineering, American Society of Civil Engineers, 1998, pp. 1126-1129, Memphis, TN., 1998.

Shatanawi, M. and Chaudhry, M. H., “Application of Computer Models for Water Resource Management under Flood Conditions”, IX World Congress on Water Resources, Montreal, Canada, Sept. 1997.

Silva, W. F. and Chaudhry, M. H., “Transient Flow in Fully Rough Conduits”, *Proceeding, Applied Mechanics in the Americas*, vol. 5, Jan. 1997, pp. 95-103.

Kassem, A., Chaudhry, M. H. and Shatanawi, M., “Inundation Studies in Case of Failure of Talal Dam,”, North American Water and Environment Congress, American Society of Civil Engineers, 1996, 6 pp.

Chaudhry, M. H., “Analysis of Transients Caused by Hydraulic Machinery”, *Hydraulic Machinery and Cavitation*, Proc., XVIII IAHR Symposium, International Association for Hydraulic Research, Kluwer Publications, 1996, pp. 17-22.

Chaudhry, M. H., “Computation of Open-Channel Flow With Shocks”, (keynote address), *Proceeding, 7th International Conference on Pressure Surges and Fluid Transients in Pipelines and Open Channels*, Harrogate, UK, 1996, pp. 563-573.

Rashid, M. and Chaudhry, M. H., “Experimental and Numerical Modeling of Unsteady Flow in a

Compound Channel”, *Proceeding*, National Hydraulic Engineering Conference, American Society of Civil Engineers, 1993.

Chaudhry, M. H., “Transient Analysis of Pipe Networks”, *Proceeding*, Water Supply Systems, edited by Cabrera, E. and Martinez, F., Computational Mechanics Publications, 1993, pp. 199-210.

Rutschmann, Jimenez, and Chaudhry, “Optimum Channel Contraction for Supercritical Flows”, *Proceeding*, National Hydraulic Engineering Conference, American Society of Civil Engineers, August 1992, pp. 754-759.

Khan, K. and Chaudhry, “Numerical Modeling of Flow Around a Spur Dike”, *Proceedings*, Hydrosoft 92, Valencia, Spain, July, 1992, 13 pp.

Chaudhry, M. H. and Gharangik, A. M., “Numerical Modeling of Hydraulic Jump”, *Proceedings*, National Hydraulic Engineering Conference, American Society of Civil Engineers, August 1989.

Bhallamudi, M.S., S. Miller, and M.H. Chaudhry, “One-Dimensional Modeling of Dam-Break Flows”, *Proceedings*, National Hydraulic Engineering Conference, American Society of Civil Engineers, August 1988, pp. 576-581.

Jimenez, O. and Chaudhry, M.H., “Calculo Humerico de Canales Rectangulares Con Flujo Supercritico”, XIII Congreso Latino Americano de Hidraulica, Havana, Cuba, July 1988.

Holloway, M.B., M.H. Chaudhry, and B.W. Karney, “Modeling of Unsteady Flow in Pipe Networks”, International Symposium on Computer Modeling of Water Distribution Systems, Lexington, Kentucky, May 1988, pp. 311-322.

Chaudhry, M.H., “Mathematical Modeling of Hydraulic Systems”, International Seminar, Physical and Mathematical Modeling of Hydraulic Systems, Sponsored by National Science Foundation and Engineering University and Pakistan Council of Research in Water Resources, Lahore, Pakistan, October, 1981, pp. 74-107.

Jimenez, O. and M.H. Chaudhry, “Calculo del Flujo Supercritico en Canales”, 11 Congreso Nacional de Ingenieria de Los Recursos Hidraulicos, San Jose, Costa Rica, October 1987, 16 pp.

Chaudhry, M.H., and K. Zentz, “Long Lake Hydraulic Dam--Model Studies”, *Proceedings*, Water Power '87, American Society of Civil Engineers, Portland, 1987.

Jimenez, O.F., and M.H. Chaudhry, “Computation of Shocks in Free-Surface Flows”, *Proceedings*, Hydraulic Engineering Conference, American Society of Civil Engineers, Williamsburg, Virginia, 1987.

Chaudhry, M.H., “Accuracy of Computerized Transient Computations, presented at National Convention, American Society of Civil Engineers, Seattle, Washington, April 1986.

Chaudhry, M.H., and A. Schulte, "Computation of Steady Gradually-Varied Flow in Channel Networks", Specialty Conference, Hydraulics Division, American Society of Civil Engineers, August 1985.

Chaudhry, M.H., and M.B. Holloway, "Stability of Method of Characteristics", *Proceedings*, Specialty Conference, Hydraulic Division, American Society of Civil Engineers, August 1984, pp 216-220.

Fennema, R.J., and M.H. Chaudhry, "Higher-Order Methods for Transient, Free-Surface Flows", *Proceedings*, Specialty Conference, Hydraulic Division, American Society of Civil Engineers, August 1984, pp 178-183.

Holloway, M.B., and M.H. Chaudhry, "Comparison of Steady-State Network Programs", *Proceedings*, Sixth Canadian Hydrotechnical Conference, Canadian Society of Civil Engineers, June 1983, pp 543-548.

Chaudhry, M.H., and M.Y. Hussaini, "Second-Order Accurate Numerical Methods for Transient-Flow Analysis", *Proceedings*, Symposium on Numerical Methods for Fluid Transients, American Society of Mechanical Engineers, June 1983, pp 4-15.

Chaudhry, M.H., "Experience on Hydraulic Transients in Hydropower and Pumping Plants", *Proceedings*, International Symposium on Operating Problems of Pump Stations and Power Plants, International Association for Hydraulic Research, Amsterdam, The Netherlands, September 1982, Vol. 2, pp 1-13.

Mercer, A.G., M.H. Chaudhry, and D.E. Cass, "Modeling of Landslide-Generated Waves", *Proceedings*, Fourth Canadian Hydraulic Conference, Vancouver, B.C., Canada, May 1979, pp 730-745.

Chaudhry, M.H., and Porfors, E.A., "A Mathematical Model for Analyzing Hydraulic Transients in a Hydro Power Plant" *Proceedings*, First Canadian Hydraulic Conference, Published by the University of Alberta, Alberta, Canada, 1973, pp 298-314.

Theses

"Resonance in Pressurized Piping Systems", *thesis* submitted to the University of British Columbia, Vancouver, B.C., Canada in partial fulfillment for the degree of Doctor of Philosophy, April 1970.

"Boundary Conditions for Analysis of Waterhammer in Pipe Systems", *thesis* submitted to the University of British Columbia, Vancouver, B.C., Canada in partial fulfillment for the degree of Master of Applied Science, April 1968.

III. RESEARCH GRANTS

“Modeling of Flood Hazard and Geomorphic Impacts of Levee Breach and Dam Failure,” Supplement, (Co-PI: J. Imran), *National Science Foundation*, 2009-2112, \$ 400,000.

“Investigations on Levee Breach Closure Procedures,” *Univ. of Mississippi/Department of Homeland Security*, 2007-2010, \$150,000.

“Modeling of Flood Hazard and Geomorphic Impacts of Levee Breach and Dam Failure,” (Co-PI: J. Imran), *National Science Foundation*, 2007-2112, \$ 2.47 million.

“Understanding the Mechanics of Particle Motion in Levee-breach Closure,” *National Science Foundation*, 2006-2008, \$99,690.

“Capacity Building for Research, Education, and Training in Water Resources Management in Pakistan,” (Lead PI: M. H. Chaudhry, PI: M. Latif), *US Agency for International Development and Government of Pakistan*, 2006-2009, \$600,000.

“New Orleans Levee Breaches and Closure Procedures,” (Co-PI: A. Kassem), VPR, *University of South Carolina*, 2005-06, \$25,000.

“ITS and Construction Management Modules,” (Co-PIs: M. Cetin and A. Nichols), *South Carolina Department of Transportation/Federal Highway Administration*, 2003-2007, \$159,438.

“Hydrologic and Hydraulic Computer Models”, (Co-PI: A. Kassem), *National Cooperative Highway Research Program*, Transportation Research Board, 2003-2005, \$100,000.

“Modules for Resident Engineers”, (Co-PIs: L. Haselbach and E. Anderson), *South Carolina Department of Transportation/Federal Highway Administration*, 2002-2005, \$220,682.

“Environmental Research for Increasing Efficiency and Productivity of South Carolina Companies,” (Co-PIs: J. Flora, L. Haselbach, and C. Pierce), CMAT, 2003-04, \$150,000.

“Evaluation of Coronary Lesions by Frequency Response Method”, (Co-PI: J. Moloo), *University of South Carolina*, 2003-2004, \$30,000.

“Non-Invasive Diagnosis and Evaluation of Stenosis in a Cardiovascular System”, (Co-PIs: J. Moloo and A. Kassem), *University of South Carolina*, 2001-2002, \$50,000.

- “Scour Around Bridge Piers of SC”, (Co-PI: J. Imran), *South Carolina Department of Transportation/Federal Highway Administration*, 2001-2002, \$234,000.
- “Hydraulic Modeling of Proposed Bridge over 12-Mile Creek”, (Co-PI: A. Kassem), *The LPA Group*, 2002-2003, \$18,000.
- “Experimental Investigation of Scour Around Bridge Piers”, (Co-PI: J. Imran), *South Carolina Department of Transportation/Federal Highway Administration*, 1999-2003, \$280,000.
- “Enhancing Sustainable Development Through Environmental Education and Research”, (Co-PIs: C. Flora, J. Flora, and A. Cooper), *US Agency for International Development/Association Liaison Office*, 1999-2003, \$100,000.
- “Technology Transfer Program (Concrete)”, (Co-PIs: K. Harries and M. Petrou), *South Carolina Department of Transportation/Federal Highway Administration*, 2000-2001, \$178,236.
- “Technology Transfer Program (Aggregate) Phase II”, (Co-PIs: C. Pierce and M. Petrou), *South Carolina Department of Transportation/Federal Highway Administration*, 2000-2001, \$117,567.
- “Modeling of Floods in Piedmont Streams”, (Co-PI: J. Imran), *South Carolina Department of Transportation/Federal Highway Administration*, 1999-2000, \$40,000.
- “Waterways Navigation Study”, *West Consultants*, 1997, \$13,905.
- “Linkages Development Project with University of Jordan”, (Co-PI: M. Shatanawi, J. Noel), *US Agency for International Development*, 1995-97, \$500,000.
- “Modeling of Transient Flow”, *United Nations*, 1995, \$6,000.
- “Modeling of Hydrodynamics of Bearings”, *Seagate Technologies*, 1995, \$30,771.
- “Monroe Power Intake Hydraulic Model Studies”, *Washington Water Power*, 1993-96, \$208,968.
- “Sediment Transport Modeling”, *Egyptian Embassy*, 1993-95, \$12,500.
- “Computer Modeling of Free Surface and Pressurized Flows”, *National Science Foundation*, 1993-94, \$18,400.
- “Modeling of Unsteady Free Surface Flow”, *National Science Foundation*, 1993-94, \$25,000.
- “Computer Modeling of Free Surface and Pressurized Flows”, *NATO*, 1992-93, \$86,343.
- “Modeling of Unsteady Flows”, *National Science Foundation*, 1991-93, \$19,958.

- “Modeling of Contaminant Transport in Surface Water”, *Battelle*, 1991, \$21,344.
- “International Cooperative Research”, *Agency for International Development*, 1988-91, \$28,200.
- “Long Lake Dam Hydraulic Model Studies”, *Washington Water Power*, 1986-90, \$172,645.
- “Mathematical Modeling of Baker Bay”, *US Army Corps of Engineers*, 1987-88, \$47,935.
- “Two Dimensional Dam-Break Flows”, *National Science Foundation* , 1987-88, \$34,538.
- “Physical and Mathematical Modeling of Hydraulic Systems”, *National Science Foundation*, 1986-87, \$24,328.
- “Modeling in Water Resources Engineering”, *US Agency for International Development* , 1984-85, \$5,000.
- “Analysis and Stability of Closed Surge Tanks”, *National Science Foundation*, 1982-84, \$58,940.
- “Institute on Hydraulic Foundation Transients, Brazil”, *National Science Foundation*, 1982-83, \$9,120.
- “Mathematical Model for Urban Stormwater Drainage”, *City of Newport News*, 1982-83, \$16,374.
- “Lee Hall Water Treatment Plant”, (PI: W. Drewry), *City of Newport News*, 1982, \$10,477.
- “Injection Well Inventory and Aquifer Identification”, (Co-PI: W. Drewry), *Environmental Protection Agency*, 1981-82, \$88,217.
- “Closed Conduit Flow”, *Old Dominion University*, 1980, \$2,800.

IV. INVITED SPECIALIST LECTURER

International

Lecturer, “Water Quality Modeling in Pipe Networks”, Workshop on Improving Efficiency and Reliability in Water Distribution Systems”, Universidad Internacional Menendez Pelayo, Valencia, Nov. 1994, 23 pp.

Director and Lecturer, “Modeling of Free-Surface Flows with Shocks and Bores”, NATO Advanced Study Institute, Computer Modeling of Free-Surface and Pressurized Flows, Pullman, WA, sponsored by NATO and NSF, 14 US and European lecturers made presentations and 56 researchers from 18 countries attended, June-July 1993.

”Transient Analysis of Water Supply Networks”, Water Supply Systems: State of the art and Future Trends, UIMP, Valencia, Spain, October, 1992.

Lecturer, “Computational Hydraulics”, six lectures, VAW, Swiss Federal Institute of Technology, Zurich, Switzerland, May-June 1991.

Lecturer, short course, “Computer Modeling of Floods and Flood Control”, Pakistan Council for Research in Water Resources, sponsored by the United Nations, June, 1990.

Lecturer, short course, “Computer Applications in Hydraulic Engineering”, Center of Excellence in Water Resources Engineering, Lahore, Pakistan, sponsored by the United Nations, June 1988.

Lecturer, short course on Resonance in Pressurized Piping Systems, Chengdu University of Science and Technology, Chengdu, People's Republic of China, November 1988.

Lecturer, special session on “Fluid Transients”, Specialty Conference, American Society of Civil Engineers, Jackson, Mississippi, August 17-20, 1982. About 50 engineers and researchers from USA and Canada attended; there were four lecturers.

Co-Director and Lecturer, “International Institute on Hydraulic Transients”, Sao Paulo, Brazil, July 19-23, 1982. About 60 engineers and researchers from South and North America and Europe attended this meeting.

Lecturer, short course on “Hydraulic Transients”, Sao Paulo, Brazil, July 12-16, 1982. Fifty-seven engineers and professors from Brazil attended the course.

Lecturer, “Analysis and Control of Fluid Transients”, organized by the American Society of Mechanical Engineers, Chicago, Illinois, April 28-May 1, 1982. Fourteen engineers from USA attended the course. Three leading specialists were lecturers.

Lecturer in short course, “Unsteady Flow in Open Channels”, June 16-20, 1980, Colorado State University, Fort Collins, Colorado. The course, co-sponsored by UNESCO and American Society of Civil Engineers, was attended by 46 engineers from USA, Canada, Europe, Central and South America, and Asia. Six leading specialists from USA and Europe were lecturers.

Co-Director and Lecturer of a short course, “Closed-Conduit Flow”, June 9-13, 1980, held at Colorado State University, Fort Collins, Colorado. Course co-sponsored by UNESCO and American Society of Civil Engineers, was attended by 53 engineers from the USA, Canada, Europe, Central and South America, and Asia. Ten leading specialists from USA and Canada were lecturers.

Lecturer in “Institute on Transient Flow and Hydromachinery”, June 4-8, 1979, held at Colorado State University, Fort Collins, Colorado. This institute was attended by 35 engineers and scientists from USA, Canada, Central and South America. Ten leading specialists delivered lectures.

National and Local

Coordinator, short courses for Resident Engineers Academy, South Carolina Department of Transportation, 2004 to 2008.

Coordinator, short courses for Certification of Technicians for Coarse Aggregate (2001 to 2009) and Concrete, South Carolina Department of Transportation, 2001 to date.

Organizer and Lecturer, seminar on “Urban Stormwater Drainage Design and Management”, held at Old Dominion University, Norfolk, Virginia, August 21-22, 1980. There were 18 attendees from consulting engineering firms, government agencies, and municipalities of the eastern part of USA.

Lecturer and instrumental in organizing a seminar, “Dredging Technology in the 80s”, held at old Dominion University, Norfolk, Virginia, August 5-6, 1980, attended by 64 persons from consulting engineering firms and government agencies.

Lecturer in refresher course during 1980-1983 for the engineers preparing for the Professional Engineer Examination.

V. POST-DOCTORAL FELLOWS AND GRADUATE STUDENTS

Research Faculty and Visiting Scholars

Dr. Reddy, P., 2007 to present.

Dr. Silva, W., 2008; 2009.

Dr. Nabi, A., 2009

Mr. Rehman, W., 2008

Dr. Mohapatra, P., 2007; 2002-2003.

Dr. Sattar, A., 2007

Dr. Latif, M. 2007

Dr. Shah, S. M., 2007

Dr. Kassem, A., 2001-2006; 2009.

Mr. Cai, F., 2002-2003

Dr. Elansary, A., 1991-1993,

Dr. Rahman, M., 1993-1995

Dr. Srivastava, Y., 1995

Ph.D.

Sharif, Yusuf, “Experimental Investigation of Shear Stress in Free-Surface Flows,” (In progress).

Alva Solari , Luis, “Modeling of Levee Breach Due to Overtopping,” (In progress).

- El-Kholi, Mohamed, "Modeling of Sandbag Motion During Closure of Levee Breach," (In progress).
- Riahi-Nezhad, Cyrus K., "Experimental Investigation of Levee Breach Flows," (In progress).
- Sattar, Ahmed Abdel, "Leak and Blockage Detection in Pipelines" (Nov. 2006).
- Salaheldin, Tarek, "Modeling of Scour of Cohesive Soils," (Co-Advisor: J. Imran), August 2003.
- Mphesha, Witness, "Leak Detection in Pipes by Frequency Response Method", October, 1999.
- Al-Omari, Abbas, "Inverse Chlorine Modeling in Pipe Networks", April, 1999.
- Kassem, Ahmad A, "Modeling of Sediment Transport in Unsteady, Two-Dimensional, Open-Channel Flows", July 1996.
- Islam, Rashid, "Modeling of Chlorine Concentration in Unsteady Flows in Pipe Networks", May 1995.
- Rashid, Mizan, "Numerical Modeling of Two-Dimensional, Open-Channel Flow With Movable Beds", March 1995.
- Silva, Walter, "Simulation of Energy Losses in Transient Flows", December 1993.
- Younus, M., "Computation of Free- Surface Flow by Using Depth-Averaged Turbulence Model", April 1993.
- Molls, Tom, "A General Two-Dimensional Free-Surface Flow Model for Solving the Depth-Averaged Equations Using an Implicit ADI Scheme", December 1992.
- Bhallamudi, Murty S, "Numerical Modeling of Open-Channel Flows with Fixed and Movable Beds", August, 1989.
- Holloway, Michael B., "Dynamic Pipe Network Computer Model", August, 1985.
- Fennema, Robert J., "Numerical Solution of Two-Dimensional Transient Free-Surface Flows", July 1985.
- Sabbah, Mostafa A., "Stability of a Closed Surge Tank by Phase Plane Method", November 1983.

M.S.

- Raman, Anand, "Modeling of Two-Dimensional Flow in a Hydraulic Jump", December 1995.

Islam, Rashid, "Numerical Solution of Advection Equation for Application in Environmental Hydraulics", May 1992.

Khan, Khalid W., "Modeling of Two-Dimensional Flows Near Flood Dykes", May 1992.

Musa, M., "Modeling of Chlorine Concentration in Water Supply Networks", September 1991.

Rashid, M., "Modeling of Flood Plain Flows", January 1991.

Bell, Stoner, "Numerical Modeling of Dam-Break Flows", December 1990.

Elliot, Robert, "Modeling of Two-Dimensional Dam-Break Waves", December 1989.

Gharangik, Araz, "Computation of Hydraulic Jump", December 1988.

Dammuller, David, "Numerical Simulation of Two-Dimensional Unsteady Flow in a Curved Channel", September 1988.

Miller, Sky, "Investigation of Dam-Break Flows", May 1988.

Jimenez, Oscar, "Modeling of Two-Dimensional, Steady, Free-Surface Flows", April 1987.

Schulte, Andreas, "Computation of Steady-State, Gradually-Varied, Flows in Channel Networks", July 1985.

Fowler, John E., "Analysis and Stability of Closed-Surge Tanks", August 1983.

Fennema, Robert J., "Transient Two-Dimensional Groundwater Flow: Comparison of Numerical and Analytical Results", April 1983.

Holloway, Michael B., "Comparison of Steady State Pipe Network Analysis Programs", August 1982.