

Professor Van-Thanh-Van Nguyen, Eng.

Endowed Brace Chair Professor of Civil Engineering

McGill University

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E-mail: van.tv.nguyen@mcgill.caWeb: <http://www.mcgill.ca/civil/people/nguyen>**UNIVERSITY EDUCATION**

- **Doctor of Applied Sciences** (Civil Engineering-Hydrology)
Ecole Polytechnique, University of Montreal, Montreal, Quebec, Canada, 1979.
- **Master of Civil Engineering** (Water Resources Engineering)
Asian Institute of Technology, Thailand, 1975.
- **Bachelor of Mechanical Engineering**
National Institute of Technology, Saigon, Vietnam, 1973.

SUMMARY OF ACADEMIC, RESEARCH, AND INDUSTRIAL EXPERIENCE**McGill University, Montreal, Quebec, Canada**

- **Chair** of Department of Civil Engineering and Applied Mechanics (Aug. 2009 to date).
- **Acting Chair** of Department of Civil Engineering and Applied Mechanics (Sep. 2006-Aug. 2007; Jan. 2009 – Jul. 2009).
- **Director** (Jan. 2007 to date), Brace Centre for Water Resources Management.
- **Associate Director** (Jan. 2000 - Dec. 2006), Brace Centre for Water Resources Management.
- **Acting Director** (Jan. 2007 - May 2008), Global Environmental and Climate Change Centre.
- **Associate Director** (Apr. 2004 - Dec. 2006; June 2008 – Aug. 2010), Global Environmental and Climate Change Centre.
- **Full Professor** (Holder of the **Endowed Brace Professor Chair in Civil Engineering**, Oct. 1998 to date), Department of Civil Engineering and Applied Mechanics.
- **Coordinator** (Sep. 1994 - Aug. 2002), Master's Program in Environmental Engineering, Faculty of Engineering
- **Director** (Sep. 1994 - Aug. 1996), Waste Management-Groundwater Contamination Graduate Diploma Program, Department of Civil Engineering and Applied Mechanics.

Curtin University, Australia

- **Invited University Associate** (Aug. 2012 to date)

Thammasat University, Thailand

- **Invited External Research Supervisor** (Sep. 2006 to date)

Kyoto University, Japan

- **Invited Visiting Professor** (Jan. 2002 - Mar. 2002; May 2009 - July 2009)

Nihon University, Japan

- **Invited Visiting Professor** (Sep. 2001 - Dec. 2001)

Institut de Recherche d'Hydro-Quebec, Canada

- **Invited Research Fellow** (Apr. 2002 - July 2002)

Institut national de la recherche scientifique (University of Quebec), Canada

- **Invited Visiting Professor** (June 1992 - June 2003).

Universiti Teknologi Malaysia, Malaysia

- **Invited Visiting Professor** (Jan. 1993 – Dec. 2010)

National University of Singapore, Singapore

- **Invited Research Fellow** (July 2008 – July 2009)
- **Invited Visiting Professor** (Apr. 1993 – May 1993, 13-25 July 1998, 7-21 August 1999, July 8 – Aug. 19, 2000)

Hydro-Quebec Company, Montreal, Quebec, Canada

- **Invited Research Fellow** (Sep. 1992 - Dec. 1992)

Ecole Polytechnique (University of Montreal), Department of Civil Engineering, Canada

- **Invited Visiting Professor (*Chair of University of Montreal*)** (Sep. 1984 – May 1985).
- **Postdoctoral Research Associate and Lecturer** (Apr. 1979 - Aug. 1980).

MEMBERSHIP IN PROFESSIONAL ASSOCIATIONS

- Order of Engineers of Quebec (**OIQ**)
- Canadian Society of Civil Engineering (**CSCE**)
- American Society of Civil Engineers (**ASCE**)
- American Geophysical Union (**AGU**)
- American Water Resources Association (**AWRA**)
- Asia Pacific Association of Hydrology and Water Resource (**APHW**)
- Asia Oceania Geosciences Society (**AOGS**)
- International Association for Hydro-environment Engineering and Research (**IAHR**)
- International Association of Hydrological Sciences (**IAHS**)
- International Water Association (**IWA**)

EVIDENCE OF INTERNATIONAL LEADERSHIP AND COLLABORATIONS

- Asia Pacific Association of Hydrology and Water Resource (**APHW**) (2002 to date): Member of the Preparatory Committee to establish the APHW in 2002.
- **WORLD METEOROLOGICAL ORGANIZATION:** Member of an international expert committee to revise one of the most important guidelines in hydrological practices, the “Guide to Hydrological Practices” published by WMO in 2008. Expert consultant for WMO to give lectures at the WMO Workshops.

- **UNESCO:** Member of the **Regional Steering Committee for Asia-Pacific Region** (2001 to date) which consists of national representatives from countries in the Asia-Pacific region (Australia, Cambodia, China, Indonesia, Japan, Korea, Laos, Malaysia, New-Zealand, Philippines, Thailand, and Vietnam). My main task is to provide advice on planning of collaborative research activities between these countries.
- **Universitas 21:** Member of the **Steering Committee of the Water Futures for Sustainable Cities Group** which consists of representatives from University of Birmingham (UK), The University of Hong Kong, McGill University (Canada), University of Melbourne (Australia), National University of Singapore, and University of Virginia (USA).
- **Asia Oceania Geosciences Society (AOGS):** President of the Hydrological Science Section (2006 – 2008) and Vice-President of the Section (2005-2006, 2008 – 2009).
- **Research Group Leaderships:** Leader of multidisciplinary international research projects in the areas of Climate and Water Resources Management involving researchers from several universities and research institutions in Canada (McGill, Laval University, University of Montreal, University of Quebec, University of Sherbrooke, University of British Columbia, Environment Canada, OURANOS Consortium, and Hydro-Quebec) and international partners in Europe (the ENSEMBLES research group) and in North-America (the NARCCAP research group).
- Member of the **Scientific Program Committees** for organizing various international conferences in China, Korea, France, Germany, Japan, Malaysia, Thailand, Singapore, Switzerland, UK, USA, Vietnam, etc.
- **International Expert Consulting:** Some examples include: (1) Member of an International Review Panel (Bangladesh, Canada, Egypt, Malaysia, France, USA, and Switzerland) invited by Kyoto University to review the achievements of a major training and research unit at this university; and (2) Member of an International Expert Committee (Canada, France, Greece, Portugal, and UK) invited by the Ho Chi Minh City's Steering Center of Flood Control Program in Vietnam to review the progress of a major consultant project on Flood and Inundation Management for HCM City carried out by a Dutch Consulting Consortium.

EDITORSHIPS

- Guest Editorial Board, *Journal of Atmospheric Research*, Special Issue on Urban Rainfall (2011).
- Editorial Board, *Hydrological Research Letters*, Japan Society of Hydrology and Water Resources (2009-Present)
- Associate Editor, *Journal of Hydro-environment Research*, International Association for Hydro-environment Engineering and Research (2006-Present)
- Associate Editor, *Journal of Hydrologic Engineering*, American Society of Civil Engineers (2002-2008).
- Editorial Board, *Journal of Hydroinformatics*, International Water Association and International Association for Hydro-environment Engineering and Research (2006-2010).
- Guest Editorial Board, *Journal of Water Science and Technology*, Special Issue on Urban Rainfall (Vol. 45, No. 2, 2002).

- Guest Editorial Board, *Journal of Water Science and Technology*, Special Issue on Urban Rainfall (Vol. 37, No. 11, 1998).
- Editorial Board, *Journal of Hydrologic Environment*, International Hydrologic Environment Society (2005-Present).
- Editorial Board, *Malaysian Journal of Civil Engineering* (2006-Present).

PRESTIGIOUS INVITED LECTURES

- **Invited Lecture:** *Advances in Statistical Modeling of Extreme Rainfall Processes in the Context of Climate Change*, International Symposium on Typhoon Prediction and Hazard Mitigation, June 5-6, 2012, Taipei, Taiwan.
- **Invited Lecture:** *Climate Change Research and Engineering Education*, International Symposium on Sustainability and Survivability Science for a Resilient Society Adaptable to Extreme Weather Conditions, August 3-4, 2012, Kyoto, Japan.
- **Invited Lecture:** *On Regional Estimation of Extreme Rainfalls for Partially-Gaged or Ungaged Sites*, 18th Congress of the Asia and Pacific Division of International Association for Hydro-Environment Engineering and Research, August 19-23, 2012, Jeju, Korea.
- **Invited Lecture:** *Statistical Downscaling of Multisite Multivariate Daily Extreme Temperature Series for Climate-Related Impact Assessment Studies*, 6th International Conference on Asian and Pacific Coasts, December 14-16, 2011, Hong Kong, China.
- **Keynote Lecture:** *Recent Advances in the Statistical Modeling of Extreme Rainfalls and Floods for Urban Drainage Design in the Context of Climate Change*, Third International Conference on Managing Rivers in the 21st Century, December 6-9, 2011, Penang, Malaysia.
- **Keynote Lecture:** *Statistical Modeling of Short-Time-Increment Extreme Rainfall Processes in the Context of Climate Change*, Conference on Probabilistic Methodologies in Water and Wastewater Engineering, September 23-24, 2011, Toronto, Ontario, Canada.
- **Special Invited Lecture:** *Statistical Modeling of Extreme Rainfall Processes in the Context of Climate Change*, Annual Conference of the Korea Water Resources Association, May 18-20, 2011, Daegu, South-Korea.
- **Keynote Lecture:** *Statistical Modeling of Extreme Rainfall Processes in the Context of Climate Change*, the Royal Golden Jubilee Ph.D.Congress XII, April 1-3, 2011, Pattaya, Thailand.
- **Invited Lead Lecture:** *Statistical Downscaling of Sub-daily Extreme Rainfall Processes for Urban Water Management in the Context of Climate Change*, International Workshop on Mathematical Science of Understanding and Predicting Regional Climate, March 7-11, 2011, Singapore.
- **Keynote Lecture,** *Construction of Point-to-Area Rainfall Relations in the Context of Climate Change*, International Conference on Hydrology Regime and Water Resources Management in the Context of Climate Change, November 8-12, 2010, Hanoi, Vietnam.
- **Invited Lecture:** *On Statistical Modeling of Extreme Rainfall Processes in the Context of Climate Change*, Fifth International Conference on Water Resources and Environment Research, July 5-7, 2010, Quebec City, Canada.

- **Invited Lecture:** *Some Advances in Downscaling Methods for Climate-Related Impact and Adaptation Studies*, Workshop of the Japan Hydraulic Engineering Association - Tohoku Region, March 7, 2010, Koriyama, Japan.
- **Keynote Lecture:** *Modeling of Extreme Rainfall Processes in Urban Areas in the Context of Climate Change*, International Workshop on the Impacts of Climate Change on Urban Flooding, June 24-25, 2009, Ho-Chi-Minh City, Vietnam.
- **Keynote Lecture:** *Estimation of an Optimal Rainfall Temporal Pattern for Urban Drainage Design in Consideration of Climate Change*, Keynote Lecture delivered at the International Conference on Environmental Management and Technology, December 10-12, 2008, Kuala Lumpur, Malaysia.
- **Keynote Lecture:** *Estimation of Urban Design Storms in the Context of Climate Change*, 24th Eastern Canadian Symposium of the Canadian Association for Water Quality, November 7, 2008, Montreal, Quebec, Canada.
- **Keynote Lecture:** *Recent advances in downscaling methods for climate change adaptation planning in water resources management*, Integrated Workshop on Coping with Climate Change in the Typhoon Committee Area, United Nations Economic and Social Commission for Asia and the Pacific, September 22-26, 2008, Beijing, China.
- **Keynote Lecture:** *Estimation of Urban Design Storms in Consideration of GCM-Based Climate Change Scenarios*, International Conference on Water and Urban Development Paradigms: Towards an integration of engineering, design and management approaches, September 15-19, 2008, Leuven, Belgium.
- **Keynote Lecture:** *Élaboration de la pluie de conception en considérant les changements climatiques (Estimation of design storms in consideration of climate changes)*, Workshop on "Changements climatiques – Impact sur les réseaux municipaux de drainage", RÉSEAU Environnement, June 12, 2008, Montreal, Quebec, Canada.
- **Keynote Lecture:** *Advances in Downscaling Methods for Climate-related Impact Assessment Studies*, International Seminar on Climate Variability, Change and Extreme Weather Events, February 26-27, 2008, Bangi, Selangor, Malaysia.
- **Keynote Lecture**, 24th Eastern Canadian Symp. of the CAWQ, Montreal, Quebec (2008).
- **Invited Lead Lecture:** *Downscaling methods for climate-related impact assessment studies*, International Workshop on Data-driven and Physically-based Models for Characterization of Processes in Hydrology, Hydraulics, Oceanography and Climate Change, January 6-28, 2008, Institute for Mathematical Sciences, National University of Singapore, Singapore.
- **Invited Lead Lecture:** A spatial-temporal downscaling approach to construction of intensity duration frequency relations in consideration of GCM-based climate change scenarios, International Workshop on Data-driven and Physically-based Models for Characterization of Processes in Hydrology, Hydraulics, Oceanography and Climate Change, January 6-28, 2008, Institute for Mathematical Sciences, National University of Singapore, Singapore.
- **Keynote Lecture:** *Assessment of Climate Change Impacts on Hydrology and Water Resources*, Second International Symposium on Water Resources and Renewable Energy Development in Asia, March 10-11, 2008, Danang, Vietnam.

- **Keynote Lecture:** *A Spatial-Temporal Approach to Construction of Intensity Duration Frequency Relations in Consideration of GCM-Based Climate Change Scenarios*, Expert Symposium on Climate Change: Modelling, Impacts and Adaptations, December 17-19, 2007, Singapore.
- **Keynote Lecture:** *Downscaling Methods for Climate-Related Impact Assessment Studies*, Expert Symposium on Climate Change: Modelling, Impacts and Adaptations, December 17-19, 2007, Singapore.
- **Keynote Lecture:** Recent Advances in Modeling of Rainfall Process for Climate-Related Impact Assessment Studies, Invited Keynote Lecture delivered at the Second National Conference on Water Resources Engineering, August 30 - 31, 2007, Kasetsart University, Bangkok, Thailand,.
- **Keynote Lecture,** Expert Symposium on Climate Change, Singapore, December (2007).
- **Distinguished Lecture:** *Impacts of Climate Variability and Change on Hydrology and Water Resources*, 3rd Meeting of the Asia Oceania Geosciences Society, July 10-14, 2006, Singapore.
- **Keynote Lecture:** *Downscaling Methods for Evaluating the Impact of Climate Change and Variability on Hydrological Regime at Basin Scale*, Workshop on Study of Ecological Life Cycles in Cities and Middle Grade Mountain Areas, Nihon University, Koriyama, August 2, 2006, Japan.
- **Keynote Lecture:** *Downscaling Methods for Evaluating the Impacts of Climate Change and Variability on Hydrological Regime at Basin Scale*, International Symposium on Role of Water Sciences in Transboundary River Basin Management, March 10-12, 2005, Ubon Ratchathani, Thailand.
- **Keynote Lecture:** *Some Recent Advances in Statistical Modeling of Extreme Rainfall Processes*, International Conference on Modeling Tools for Environment Resources Management, June 06-10, 2005, Asian Institute of Technology, Thailand.
- **Keynote Lecture:** *Some Recent Advances in the Estimation of Extreme Rainfall Events*, International Conference on Sustainable Water Resources Management, November 17-19, 2004, Colombo, Sri Lanka.
- **Special Scientific Lecture** invited by the World Meteorological Organization (WMO) on "*Climate Change: How to discern the hydrological impacts at basin level?*" at the Twelfth Session of the WMO Commission for Hydrology, October 20-29, 2004, Geneva, Switzerland (2004). This meeting is held with the participation of delegates from many different WMO member countries in the world.
- **Keynote Lecture:** *Progress and Challenges in Hydrological Modelling for Sustainable Water Resource Management*, Workshop on Stormwater Analysis and Modeling, February 26-27, 2001, Kuala Lumpur, Malaysia.
- **Keynote Lecture:** *Some Recent Advances in Modelling of Extreme Hydrologic Processes*, International Conference on Hydrology and Water Resources of Humid Tropics, November 24-26, 1998, Ipoh, Malaysia.
- **Keynote Lecture:** *Multi-site multi-season streamflow simulation methods*, Third Regional Conference on Computer Applications in Civil Engineering, 2-4 August 1994, Kuala Lumpur, Malaysia.

PUBLICATIONS

(Over 200 articles in refereed journals, peer-reviewed specialized monographs and refereed conference proceedings have been published since 1979 to date)

Selected Peer-Reviewed Books and Book Chapters

WILLEMS, P., OLSSON, J., ARNBJERG-NIELSEN, K., BEECHAM, S., PATHIRANA, A., BULOW GREGERSEN, I., MADSEN, H., and NGUYEN, V-T-V. (2012). Impacts of Climate Change on Rainfall Extremes and Urban Drainage Systems, International Water Association Publishing, 226 pages.

NGUYEN, V-T-V. (2009). Section 5.7: Rainfall Frequency Analysis, in “Guide to Hydrological Practices”, Volume II: Management of Water Resources and Application of Hydrological Practices, WMO-No. 168, World Meteorological Organization, Geneva, Switzerland, pp. II.5.15 - II.5.31.

NGUYEN, V-T-V., and NGUYEN, T-D. (2008). Statistical Downscaling of Daily Precipitation Process for Climate-Related Impact Studies, Chapter 16 in “Hydrology and Hydraulics”, V.P. Singh (Ed.), Water Resources Publications, pp. 587-604.

NGUYEN, V-T-V., DESRAMAUT, N., and NGUYEN, T-D. (2008). Estimation of Urban Design Storms in Consideration of GCM-Based Climate Change Scenarios, in « Water and Urban Development Paradigms, J. Feyen, K. Shannon, and M. Neville (Eds.), Taylor and Francis Group, London, UK, pp. 347-356.

NGUYEN, T-D., NGUYEN, V-T-V., and GACHON, P. (2007). A spatial-temporal downscaling approach for construction of intensity-duration-frequency curves in consideration of GCM-based climate change scenarios, in “Advances in Geosciences, Vol. 6: Hydrological Science”, N. Park et al. (Eds.), World Scientific Publishing Company, pp. 11-21.

Selected Refereed Journal Publications

ARTLERT, K., CHALEERAKTRAKOON, C., and NGUYEN, V-T-V. (2013). Modeling and Analysis of Rainfall Processes in the Context of Climate Change for Mekong, Chi, and Mun River Basins (Thailand), *Journal of Hydro-environment Research*, DOI: 10.1016/j.jher.2013.01.001, pp. 2-17.

WILLEMS, P., ARNBJERG-NIELSEN, K., OLSSON, J., and NGUYEN, V-T-V. (2012). Climate Change Impact Assessment on Urban Rainfall Extremes and Urban Drainage: Methods and Shortcomings, *Atmospheric Research*, Vol. 103, pp. 106-118., DOI: 10.1016/j.atmosres.2011.04.003.

WILLEMS, P., MOLNAR, P., EINFALT, T., ARNBJERG-NIELSEN, K., ONOF, C., NGUYEN, V-T-V., and BURLANDO, P. (2012). Rainfall in the Urban Context: Forecasting, Risk, and Climate Change, *Atmospheric Research*, Vol. 103, pp. 1-3., DOI: 10.1016/j.atmosres.2011.11.004.

KHALILI, M., NGUYEN, V-T-V., and GACHON, P. (2011). A Statistical Approach to Multi-Site Downscaling of Daily Extreme Temperature Series, *International Journal of Climatology*, DOI: 10.1002/joc.3402, 18 pages.

NGUYEN, VTV., DESRAMAUT, N., and NGUYEN, T-D. (2010). Optimal rainfall temporal patterns for urban drainage design in the context of climate change, *Water Science and Technology*, Vol. 62, No. 5, pp. 1170-1176.

HARDING, A.E., GACHON, P., and NGUYEN, V-T-V. (2010). Replication of atmospheric oscillations, and their patterns, in predictors derived from Atmosphere–Ocean Global Climate Model output, *International Journal of Climatology*, DOI: 10.1002/joc.2191.

NGUYEN, V-T-V. (2009). Recent Advances in Statistical Modeling of Extreme Rainfalls and Floods, *International Journal on Hydropower & Dams*, Vol. 16, No. 2, pp. 65-70.

DIBIKE, Y.B., GACHON, P., ST-HILAIRE, A., OUARDA, T., and NGUYEN, V-T-V. (2008) Uncertainty Analysis of Statistically Downscaled Temperature and Precipitation Regimes in Northern Canada, *Theoretical and Applied Climatology*, Vol. 91, No. 1-4, pp. 149-170.

NGUYEN, V-T-V., NGUYEN, T-D., and CUNG, A. (2007), A Statistical Approach to Downscaling of Sub-daily Extreme Rainfall Processes for Climate-Related Impacts Studies in Urban Areas, *Water Science and Technology: Water Supply*, Vol. 7, No. 2, pp. 183-192.

COOPER, V., NGUYEN, V-T-V., and NICELL, J. (2007) Calibration of conceptual rainfall runoff models using global optimization methods with hydrologic process-based parameter constraints. *Journal of Hydrology*, Vol. 334, No. 3-4, pp. 455-466.

NGUYEN, V-T-V., NGUYEN, T-D., and ASHKAR, F. (2002), Regional Frequency Analysis of Extreme Rainfalls, *Water Science and Technology*, Vol. 45, No. 2, pp. 75-81.

ZALINA, M.D., DESA, M.N.M., NGUYEN, V-T-V., and AMIR, K. (2002), Selecting a Probability Distribution for Extreme Rainfall Series in Malaysia, *Water Science and Technology*, Vol. 45, No.2, pp. 63-68.

PANDEY, G.R., and NGUYEN, V-T-V. (1999). A comparative study of regression based methods in regional flood frequency analysis, *Journal of Hydrology*, Vol. 225, pp. 92-101.

GREHYS (Adamowski, K., Ashkar, F., Bobée, B., Nguyen, V-T-V., Rousselle, J., and Roy, R.) (1996). Intercomparison of regional flood frequency procedures for Canadian rivers, *Journal of Hydrology*, Vol. 186, pp. 85-104.

NGUYEN, V-T-V., IN-NA, N., and BOBEE, B. (1989). A new plotting position formula for Pearson type III distribution, *ASCE Journal of Hydraulic Engineering*, Vol. 115, No. 6, pp. 709-730.