

CURRICULUM VITAE

Brian Wilson Baetz, PhD, PEng, FCSCE, FCAE

A) BACKGROUND MATERIAL

HOME ADDRESS

245 Park Street W.
Dundas, Ontario, Canada
L9H 1Y4
(905) 628-1140 (phone)

CAMPUS ADDRESS

Department of Civil Engineering
McMaster University
JHE 301
1 Cootes Paradise
Hamilton, Ontario, Canada
L8S 4L7
baetz@mcmaster.ca (email)

OTHER PERSONAL DATA

Birthdate and Location: September 11, 1958; Walkerton, ON, Canada
Spouse: Rashné N. Baetz
Children: Jasmine R. Baetz
Cyrus I. Baetz

EDUCATIONAL BACKGROUND

Ph.D. Duke University, Durham, NC, USA
Department of Civil and Environmental Engineering (1988)

M.A.Sc. University of Toronto, Toronto, Ontario, Canada
Department of Civil Engineering (1983)

B.A.Sc. University of Toronto, Toronto, Ontario, Canada
Department of Civil Engineering (1981)

CURRENT STATUS AT McMASTER

Professor Emeritus, Department of Civil Engineering
Director, Walter Booth School of Engineering Practice and Technology

PROFESSIONAL ORGANIZATIONS

PEng (Registered in 1984), Professional Engineers Ontario

EMPLOYMENT HISTORY

i) Academic

2021-present Director, Walter Booth School of Engineering Practice and Technology
 2018-present Professor Emeritus, Department of Civil Engineering, McMaster University
 2010-2016 Chair, Department of Civil Engineering, McMaster University
 2003-2013 Director, Engineering and Society Program, McMaster University
 2008-2013 Director, Engineering and International Studies Program, McMaster University
 1997-2018 Professor, Department of Civil Engineering, McMaster University
 2001-2002 Professor and Chair, Department of Civil and Environmental Engineering,
 Tulane University, New Orleans, LA, USA
 1995-98 Chair, Department of Civil Engineering, McMaster University
 1992-97 Associate Professor, Department of Civil Engineering, McMaster University
 1988-92 Assistant Professor, Department of Civil Engineering, McMaster University
 1988 Postdoctoral Researcher, Department of Civil Engineering, University of Toronto
 1985-88 Teaching and Research Assistant, Department of Civil and Environmental
 Engineering, Duke University, Durham, NC
 1981 Research Assistant, Department of Civil Engineering, University of Toronto

ii) Consultations

1991 Consultant Astra Pharma Inc.
 Eco Logic International Inc.
 1990 Consultant Metropolitan Water District of Los Angeles
 Bell Canada
 Dept. of Ecology, State of Washington
 1987 External Consultant, J.E. Hanna Associates, Ajax, Ontario

iii) Other

1984-85 Waste Management Engineer, M.M. Dillon Ltd., Toronto, Ontario
 1984 Project Coordinator, Creson Investments, Toronto, Ontario
 1983 Engineering Assistant, Refuse Disposal Division, Department of Works,
 Municipality of Metropolitan Toronto

SCHOLARLY AND PROFESSIONAL ACTIVITIES

Journal Referee

Reviewer for: Civil Engineering Systems
 Journal of Energy Engineering (ASCE)
 Canadian Journal of Civil Engineering
 Water Pollution Research Journal of Canada
 Journal of Environmental Engineering (ASCE)
 Hydrological Science Journal
 Waste Management

AREAS OF INTEREST

Research: Sustainable infrastructure and sustainable communities
 Municipal solid waste management planning
 Green buildings
 Environmental systems analysis

Contemplative pedagogy

Teaching: Civil engineering and sustainability
Waste management
Systems analysis
Livable communities

- **HONOURS** (bolded entries are related to teaching excellence)
- **McMaster Student Union Community Engagement Teaching Award** [as part of the Booth School Community Engagement Team (Bawa/Allen/Baetz)] (2023)
- Fellow, Canadian Academy of Engineering (2022)
- **McMaster Student Union Community Engagement Teaching Award** [as part of the CityLAB Semester in Residence Teaching Team (Heidebrecht/Pietrantonio/Kay/Baetz)] (2020)
- **McMaster Student Union Lifetime Achievement Teaching Award** (2012)
- **President's Teaching Award for Excellence in Instruction** (2008)
- ASCE Journal of Hydrologic Engineering Best Paper Award [with Y. Guo] (2008)
- **McMaster Student Union Teaching Excellence Award** (2007)
- Fellow, Canadian Society of Civil Engineering (2005)
- **McMaster Student Union Teaching Excellence Award** (1999)
- **Professional Engineers of Ontario – Young Engineer Achievement Award** (1993)
- **Innovation in Education Award, Faculty of Engineering** (1992)
- NSERC Postgraduate Scholarship (1985–1988)
- Jeffrey Taub Memorial Award, Duke University (1987)
- NSERC Postgraduate Scholarship (1981–1983)
- Albert E. Berry Fellowship, University of Toronto (1982)
- 3T5 Second Mile Engineering Award, University of Toronto (1981)
- Applied Science and Engineering Graduate Fellowship, University of Toronto (1981)

RESEARCH LEAVES

My first research leave was in the Laboratoire Genie Civil et Habitat (LGCH), Ecole Superieure d'Ingénieurs en Genie de l'Environnement et de la Construction (ESIGEC), Université de Savoie, in Chambéry, France, from July 18, 1993 to July 6, 1994.

My second leave was local, from July 1, 2000 to December 31, 2000. My third leave was also local, from January 1, 2008 to June 30, 2008. As a result of my departmental Chair service, I have had local administrative leaves for January and February of 2014, 2015 and 2016, as well as January-June for 2017 and 2018.

B) RESEARCH RELATED MATERIAL

SUPERVISORSHIPS

Masters Completed:

<u>Name</u>	<u>Current Position</u>
Mr. D.G. Smith (1989)	Assoc. Dir., Waste Management Engineering, Region of Niagara

Mr. J. Arey (1991)	Senior Project Manager, PWGSC
Ms. H. Roberge (1991)	Unit Head, Clean Communities, BC Environment
Mr. E. Evenson (1992)	Associate Director, Program Development, Praxair R&D
Mr. M. Gerbis (1992; co-supervised)	CEO, GLOBE Series & Delphi Group, Ottawa, ON
Mr. P. Yundt (1992; co-supervised)	Principal, YTEC Consultants, Ancaster, ON
Ms. J. Stegemann (1993; co-supervised)	Professor, University College London
Mr. M. Harvey (1994)	Senior Hydrogeologist, AECOM, Guelph, ON
Mr. T. Di Nino (1994)	Sr. Environmental Engineer, EnviroChem Services Inc, Vancouver, BC
Mr. H. Hatami (1995)	General Mgr., Cowichan Valley Regional District, Duncan, BC
Ms. C. Timms (1996)	Owner, Moore House Fine Alpacas, Ridgeville, ON
Mr. C. Churchill (1997)	Director, Eng&Society, McMaster University
Mr. R. Long (1997)	High School Teacher, Belleville, ON
Ms. P. Zheng (1998)	Senior Analyst, Abt Associates, Bethesda, MD, USA
Mr. O. Meyn (1999)	Big Data Consultant, Toronto, ON
Mr. C. Panagiotakapoulos (1999)	Ph.D. Candidate, University of Thessaloniki
Ms. B. Agar (2004)	Editor/Researcher, Renewable Cities, Vancouver, BC
Ms. M. Kirnbauer (2004)	Manager, Service Coordination and Improvement, City of Kitchener, ON
Mr. D. Olsen (2005)	Director, Asset Lifecycle Management, MetroLinx, Toronto, ON
Mr. D. Yates (2005)	Environmental Group Manager, GM Canada, Oshawa, ON
Ms. R. Cooper (2007)	CTO & Principal Consultant, EcoDomus Consulting, Hamilton, ON
Ms. T. Saotome (2007)	Senior Consultant, PwC, Berlin, Germany
Mr. M. Masotti (2007)	Business Development Manager, Mitsubishi Canada, Toronto, ON
Mr. N. Derkach (2008)	Manager, Metro Food Group, Hamilton, ON
Mr. D. Ofield (2009)	YP Director, Stantec Engineering, Edmonton, AB
Mr. J. Lieberman (2009)	Project Management Leader, GE Water, Toronto ON
Mr. D. Reed (2009)	Public Safety Risk Advisor, TSSA, Toronto, ON
Mr. N. Lwin (2009)	Professor, Seneca College, Toronto, ON
Ms. L. Toppozini (2010)	Financial Analyst, Neuberger Berman Breton Hill ULC, Toronto, ON
Mr. M. Tralbousi (2010)	Consultant, Toronto, ON
Mr. R. Morshed (2010)	Lecturer, Bangladesh University, Dhaka
Ms. C. Blakelock (2010; co-supervised)	Coordinator, Green Communities Canada, Peterborough, ON
Mr. F. Salehzadeh (2010; co-supervised)	Project Mgr., Cole Engineering Group, Toronto, ON
Mr. M. Kabbara (2011; co-supervised)	Assistant Manager, Emaar Economic City, Saudi Arabia
Mr. Glen Prevost (2012; co-supervised)	Industry Advisor, FPInnovations, North Bay, ON
Mr. Dan Romanko (2012)	Urban Designer, Quartek Group, St. Catharines, ON
Mr. Farzad Eftekhari (2012)	Senior Environmental Engineer, LVM Inc., Kitchener, ON
Mr. Omar Ghonim (2012)	Analyst, City of Hamilton
Mr. Fady Yousri (2012)	Engineer of Record, AECOM, Toronto, ON
Mr. Alex Vesovic (2013)	Project Manager, Air Canada, Mississauga, ON
Mr. Eyad AlSadi (2013)	Coordinator, Blackbird Constructors, Hamilton, ON
Mr. Anees Syed (2013)	GIS Specialist, Hydro One, Burlington, ON
Ms. Wendy Huang (2013)	Assistant Professor of Civil Engineering, Univ. of Calgary
Ms. Huijing Xu (2013)	Assistant Cost Manager, Greenland Group, Toronto, ON
Mr. Wenqi Zheng (2013)	Structural Designer, DC Group Inc, Toronto, ON
Ms. Jiemen Zheng (2013)	Environmental Engineer, Hotz Env., Hamilton, ON

Mr. Justin Readman (2014)	General Manager, Development Services, City of Kitchener, ON
Mr. Yuhang Jiang (2017)	Banking Advisor, RBC, Hamilton, ON
Mr. Daniel Gonzalez (2017)	Project Coordinator, PCL Constructors Canada Inc.
Mr. Chris Macedo (2017)	Project Coordinator, Dufferin Construction, Oakville, ON
Ms. Jamie Ren (2017)	Jr. Project Manager, Syncrude, Fort McMurray, AB
Mr. Max Zhu (2017)	Engineer in Training, EXP Engineering, Brampton, ON
Mr. Hank Xue (2017)	Design Engineer, Parsons Corporation, Burlington, ON
Mr. Marwan Alaydi (2018)	Project Manager, Peak Power Inc., Toronto, ON
Mr. Zehao Yan (2020; co-supervised)	PhD Candidate, Civil Engineering, McMaster University
Mr. David Kovacs (2022; co-supervised)	EIT, CIMA+, Kitchener, ON
Ms. Karthiga Thevaseelan (2022)	Transportation Eng Coordinator, City of Toronto, ON
Mr. Andre Mascarenhas (2022)	Technical Intern, ATG Pharma, Oakville, ON
Mr. Abhay Sharma (2023)	User Experience Designer, Mississauga, ON
Ms. Palak Mall (2023)	Marketing Coordinator, A.C. Americas, Mississauga, ON
Mr. Anthony Salahor (2024)	Industrial Designer, True Temper Sports, Waterloo, ON
Mr. Sriganesh Kaniarasu (2024)	Visual Artist, Hamilton, ON

Doctoral Completed:

Dr. K. Barlishen (1993)	Senior Approvals Engineer, Manitoba Water Stewardship, Winnipeg, MB
Dr. G. Huang (1994; co-supervised)	Professor (CRC-Tier 1) and Associate Dean, U. of Regina
Dr. C. Boyle (1995)	Professor and Head, Deakin University, Melbourne, AUS
Dr. L. Aultman-Hall (1996; co-supervised)	Professor and Chair, Department of Systems Design Engineering, University of Waterloo, Waterloo, ON
Dr. B. Wilson (2001)	Professor, University of New Brunswick, Fredericton, NB
Dr. T. Randall (2001)	Dean of Science, Lakehead University, Thunder Bay, ON
Dr. S. Nishat (2009; co-supervised)	Design Engineer, Condeland Engineering Ltd., Concord, ON
Dr. G. Muluye (2010; co-supervised)	Lead Engineer, Manitoba Hydro, Winnipeg, MB
Dr. A. Cupido (2012)	Research Chair, Mohawk College, Hamilton, ON
Dr. M. Kirnbauer (2012)	Manager, Service Coordination and Improvement, City of Kitchener, Kitchener, ON
Dr. K. Nasef (2015)	Principal Urban Planner and Designer, Municipality of Dubai, Dubai, UAE
Dr. Lirong Liu (2019; co-supervised)	Lecturer, University of Surrey, Surrey, UK

RESEARCH FUNDING

GRANTS

1. NSERC Discovery Grant (2017-2023) \$24,000/yr, Resilient Green Infrastructure Asset Management.
2. NSERC RTI Grant (2018) \$149,000 Hyper-Converged Infrastructure for Simulation of Complex Interdependent Network Systems, with Drs. Li, El-Dakhakhni, Tait, Dickson and Moataz.
3. NSERC Operating Grant (2003-2009) \$36,800/yr, Decision Support Systems for Sustainable Municipal Infrastructure.
4. NSERC Operating Grant (1998-2003) \$27,400/yr, Decision Support Systems for Sustainable Community Planning and Waste Management Planning Applications.

5. NSERC Operating Grant (1994-1998) \$23,700 yr, Decision Support Systems for Municipal Solid Waste Management Planning
6. NSERC Operating Grant (1991-94) \$27,400 yr, Planning and Design of Sustainable Waste Management Systems
7. NSERC Operating Grant (1988-91) \$14,500 yr, Optimization Modelling for Municipal and Industrial Waste Management
8. Astra Pharma Inc. (1991) \$15,000, Infrastructure Modelling for the Recycling of Pharmaceutical By-products from Hospitals and Community Pharmacies

9. NSERC Equipment Grant (1990) \$79,000, RISC Based Server for Dynamic Modelling of Natural and Engineered Environmental Systems (with Drs. Patry (principal investigator), Kramer, Tsanis)

PUBLICATIONS

i) Peer Reviewed Journal Articles [H-index=39, Google Scholar, June 2022]

- 1) Baetz, B.W., Pas, E.I., and Vesilind, P.A., Planning Hazardous Waste Reduction and Treatment Strategies: An Optimization Approach, **Waste Management and Research**, Vol. 7, 1989, 153–163.
- 2) Baetz, B.W., and Byer, P.H., “Moisture Control During Landfill Operation”, **Waste Management and Research**, Vol. 7, 1989, 259–275.
- 3) Baetz, B.W., Pas, E.I., and Neebe, A.W., “Waste Management: Sizing and Timing Decisions for Incinerator and Landfill Facilities”, **Interfaces**, Vol. 17, No. 6, 1989, 52–61.
- 4) Baetz, B.W., “Optimization\Simulation Modelling for the Capacity Planning of Municipal Solid Waste Management Systems”, **Journal of Urban Planning and Development (ASCE)**, Vol. 116, No. 2, 1990, 59–79.
- 5) Baetz, B.W., Pas, E.I., and Neebe, A.W., “Generating Alternative Solutions for Dynamic Programming Based Planning Problems”, **Socio-Economic Planning Sciences**, Vol. 24, No. 1, 1990, 27–34.
- 6) Blaisdell, M., Lee, D., and Baetz, B.W., “Economic Feasibility of Drying Municipal Solid Waste Combustion Residues”, **Journal of Energy Engineering (ASCE)**, Vol. 116, No. 2, 1990, 87–97.
- 7) Smith, D.G. and Baetz, B.W., “A Comprehensive Costing Methodology for Municipal Solid Waste Management Alternatives”, **Journal of Resource Management and Technology**, Vol. 18, No. 1, 1990, 49–55.
- 8) Baetz, B.W., “Parenteral Packaging Waste Reduction”, **Canadian Journal of Hospital Pharmacy**, Vol. 43, No. 4, 1990, 179–181.
- 9) Thomas, B., Tamblyn, D., and Baetz, B.W., “Expert Systems for Municipal Solid Waste Management Planning”, **Journal of Urban Planning and Development (ASCE)**, Vol. 116, No. 3, 1990, 150–155.
- 10) Attieh, I., and Baetz, B.W., “Multi-Chute Systems for High-Rise Apartment Recycling”, **Canadian Journal of Civil Engineering**, Vol. 17, No. 6, 1990, 1044–1047.

- 11) Baetz, B.W., "Capacity Planning for Waste Management Systems", **Civil Engineering Systems**, Vol. 7, No. 4, 1990, 229–235.
- 12) Baetz, B.W., Pas, E.I., and Vesilind, P.A., "A Waste Reduction Primer for Managers", **Journal of Management and Engineering (ASCE)**, Vol. 7, No. 1, 1991, 33–42.
- 13) Baetz, B.W., "Asthma Relief Products: Environmental Implications", **Canadian Pharmaceutical Journal**, Vol. 124, No. 5, 1991, 256–259.
- 14) Barlishen, K.D. and Baetz, B.W., "Effect of Expanded Waste Reduction/Recycling Programs on Landfills", **Journal of Resource Management and Technology**, Vol. 20, No. 4, 1992, p. 190–196.
- 15) Huang, G.H., Baetz, B.W. and Patry, G.G., "Grey Linear Programming for Municipal Solid Waste Management Planning Under Uncertainty", **Civil Engineering Systems**, Vol. 9, 1992, p. 319–335.
- 16) Baetz, B.W. and Onysko, K.A., "Storage Volume Sizing for Landfill Leachate Recirculation Systems", **Journal of Environmental Engineering (ASCE)**, Vol. 119, No. 2, 1993, p. 378–383.
- 17) Arey, M.J. and Baetz, B.W., "Simulation Modelling for Solid Waste Receiving Facilities", **Canadian Journal of Civil Engineering**, Vol. 20, No. 2, 1993, p. 220–227.
- 18) Huang, G., Baetz, B.W., and Patry, G.G., "Grey Fuzzy Linear Programming for Waste Management Planning Under Uncertainty", **Civil Engineering Systems**, Vol. 10, 1993, p. 123–146.
- 19) Arey, M.J., Baetz, B.W., MacDonald, P.D.M., and Byer, P.H., "Use of Mixed Probability Distributions for the Analysis of Solid Waste Generation Data", **Waste Management and Research**, Vol. 11, 1993, p. 387–402.
- 20) Baetz, B.W., and Arey, M.J., "Determination of Diversion Credits for By-product Reuse Activities", **Waste Management and Research**, Vol. 11, 1993, p. 313–318.
- 21) Boyle, C.A. and Baetz, B.W., "Household Hazardous Waste: Management Options", **Canadian Journal of Civil Engineering**, Vol. 204, 1993, p. 543–549.
- 22) Huang, G., Baetz, B.W., and Patry, G.G., "Grey Fuzzy Dynamic Programming: Application to Municipal Solid Waste Management Planning Problems", **Civil Engineering Systems**, Vol. 11, 1994, p. 43–73.
- 23) Huang, G., Baetz, B.W., and Patry, G.G., "A Grey Chance-Constrained Programming Approach for Municipal Solid Waste Management Planning Under Uncertainty", in K.W. Hipel ed., **Environmental Management**, 1994, Kluwer Academic Publishers, Dordrecht, The Netherlands.
- 24) Roberge, H.R. and Baetz, B.W., "Optimization Modelling for Industrial Waste Reduction Planning", **Waste Management**, Vol. 14(1), 1994, p. 35–48.
- 25) Evenson, E.J., and Baetz, B.W., "Selection and Sequencing of Hazardous Waste Treatment Processes: A Knowledge-Based Systems Approach", **Waste Management**, Vol. 14, No. 2, 1994, p. 161–165.
- 26) Huang, G., Baetz, B.W., and Patry, G.G. "Grey Dynamic Programming for Municipal Solid Waste Management Planning Under Uncertainty", **Journal of Urban Planning and Development (ASCE)**, Vol. 120, no. 3, 1994, p. 132–156.

- 27) Yundt, P.E., Baetz, B.W., and Patry, G.G. "Use of Simulation and Heuristic Approaches for Scheduling in an Integrated Hazardous Waste Treatment Facility", **Canadian Journal of Civil Engineering**, Vol. 21 (5), 1994, p. 752–761.
- 28) Huang, G., Baetz, B.W., and Patry, G.G. "Waste Flow Allocation Under Independent Stipulation Uncertainties: A Grey Fuzzy Quadratic Programming Approach for Waste Management Planning Under Uncertainty", **Civil Engineering Systems**, Vol. 11, 1994, p. 209–243.
- 29) Roberge, H.R., Sikora, R.P., and Baetz, B.W. "Optimization of Waste Reduction Options: Application to a Sour Gas Plant", **Waste Management**, Vol. 14 (7), 1994, p. 649–654.
- 30) Huang, G.H, Anderson, W.P., and Baetz, B.W. "Environmental Input\Output Analysis and its Application to Regional Solid Waste Management Planning", **Journal of Environmental Management**, Vol. 42, 1994, p. 63–79.
- 31) Baetz, B.W. "Landowner Compacts for Sustainable Community Development", **Journal of Urban Planning and Development** (ASCE), Vol. 120 (4), 1994, p.174–182.
- 32) Baetz, B.W. and Neebe, A.W., "Optimization of Waste Material Recycling Programs", **Journal of the Operational Research Society**, Vol. 45 (12), 1994, p.1374–1384.
- 33) Huang, G., Baetz, B.W., and Patry, G.G. "Grey Fuzzy Integer Programming: Application to Municipal Solid Waste Management Planning Under Uncertainty", **Socio–Economic Planning Sciences**, Vol. 29 (1), 1995, p. 17–38.
- 34) Huang, G., Baetz, B.W., and Patry, G.G. "Grey Quadratic Programming: Application to Municipal Solid Waste Management Planning Under Uncertainty", **Engineering Optimization**, Vol. 23, 1995, p. 201–223.
- 35) Huang, G., Baetz, B.W., and Patry, G.G. "A Grey Integer Programming Approach for Municipal Solid Waste Management Planning Under Uncertainty", **European Journal of Operations Research**, Vol. 83 (3), 1995, p. 594–620.
- 36) Baetz, B.W., and Yundt, P.E. "Determination of a Solid Waste User–Pay Charge Level", **Journal of Urban Planning and Development** (ASCE), Vol. 121 (2), 1995, p.75–81.
- 37) Korol, R.M. and Baetz, B.W. "Evaluation of Technical Alternatives From a Sustainability Perspective", **Journal of Professional Issues in Engineering Education and Practice** (ASCE), Vol. 121 (2), 1995, p. 102–107.
- 38) Stegemann, J.A., Schneider, J., Baetz, B.W., and Murphy, K.L. "Lysimeter Washing of MSW Incinerator Bottom Ash", **Waste Management and Research**, Vol. 13, 1995, p. 149–165.
- 39) Barlishen, K.D. and Baetz, B.W. "Development of a Decision Support System for the Planning of Municipal Solid Waste Recycling and Composting Programs", **Canadian Journal of Civil Engineering**, Vol. 22(3), 1995, p. 637-645.
- 40) Barlishen, K.D. and Baetz, B.W. "Development of a Decision Support System for Municipal Solid Waste Management Systems Planning", **Waste Management and Research**, 14(1), 1996, p. 71-86.
- 41) DiNino, T. and Baetz, B.W., "Environmental Linkages Between Urban Form and Municipal Solid Waste Management Infrastructure", **Journal of Urban Planning and Development** (ASCE), Vol. 122(3), 1996, p. 83-100.

- 42) Huang, G.H., Baetz, B.W., and G.G. Patry, "A Grey Hop, Skip and Jump Approach: Generating Alternatives for Expansion Planning of Waste Management Facilities", **Canadian Journal of Civil Engineering**, Vol. 23, 1996, p. 1207-1219.
- 43) Aultman-Hall, L.M., Roorda, M., and Baetz, B.W., "Using GIS for Evaluation of Neighbourhood Pedestrian Accessibility", **Journal of Urban Planning and Development (ASCE)**, Vol. 123, 1997, p. 10-17.
- 44) Huang, G.H., Baetz, B.W., and Patry, G.G. "Development of a Grey Critical Path Method for Construction Planning", **Engineering Optimization**, Vol. 128, 1997, p. 157-174.
- 45) Huang, G.H., Baetz, B.W., Patry, G.G., and Terluk, V. "Capacity Planning of Waste Management Systems Under Uncertainty: A North American Case Study", **Waste Management and Research**, Vol. 15, 1997, p. 523-546.
- 46) Boyle, C.A. and Baetz, B.W., "A Prototype Knowledge-Based Decision Support System for Industrial Waste Management: Part I - The Decision Support System", **Waste Management**, Vol. 18, 1998, p. 87-97.
- 47) Boyle, C.A. and Baetz, B.W., "A Prototype Knowledge-Based Decision Support System for Industrial Waste Management: Part II-Application to a Trinidadian Industrial Estate Case Study", **Waste Management**, Vol. 17, 1997, p. 411-428.
- 48) Aultman-Hall, L.M., Hall, F.L. and Baetz, B.W., "Analysis of Bicycle Commuter Routes Using GIS – Implications for Bicycle Planning", **Transportation Research Record**, Vol. 1578, 1998, p. 102-110.
- 49) Valeo, C., Baetz, B.W., and Tsanis, I.K., "Location of Recycling Depots with a GIS-Based Decision Support System", **Journal of Urban Planning and Development (ASCE)**, Vol. 124, No. 2, 1998, p. 93-97.
- 50) Huang, G.H., Baetz, B.W., and Patry, G.G., "Waste Flow Allocation: Planning Under Uncertainty", **Interfaces**, Vol. 28, No. 6, 1998, p. 36-55.
- 51) Timms, C.A. and Baetz, B.W., "Sizing of Centralized Leaf and Yard Waste Composting Facilities", **Canadian Journal of Civil Engineering**, Vol. 25, No. 5, 1998, p. 967-973.
- 52) Churchill, C.J. and Baetz, B.W., "A Decision Support System for Sustainable Neighbourhood Design", **Journal of Urban Planning and Development (ASCE)**, Vol. 125, No. 1, 1999, p. 17-35.
- 53) Zheng, P. and Baetz, B.W., "A GIS-Based Approach for Evaluating Suburban Design Alternatives from an Urban Hydrology Perspective", **Journal of Urban Planning and Development (ASCE)**, Vol. 125, No. 4, 1999, p. 164-172.
- 54) Baetz, B.W., "Energy Implications of Provision of Municipal Infrastructure for Suburban Development", **Energy Studies Review**, Vol. 9, No. 2, 1999, p. 41-49.
- 55) Randall, T.A. and Baetz, B.W., "Evaluating Pedestrian Connectivity Using GIS", **Journal of Urban Planning and Development (ASCE)**, Vol. 127, No. 1, 2001, p. 1-15.
- 56) Wilson, B.G. and Baetz, B.W., "Modelling Municipal Solid Waste Collection Systems Using Derived Probability Distributions. I: Model Development", **Journal of Environmental Engineering (ASCE)**, Vol. 127, No. 11, 2001, p. 1031-1038.
- 57) Wilson, B.G. and Baetz, B.W., "Modelling Municipal Solid Waste Collection Systems Using Derived Probability Distributions. II: Extensions and Applications", **Journal of Environmental Engineering (ASCE)**, Vol. 127, No. 11, 2001, p. 1039-1047.

- 58) Huang, Y.F., Baetz, B.W., Huang, G.H. and Liu, L., "Violation Analysis for Solid Waste Management Systems: An Internal Fuzzy Programming Approach", **Journal of Environmental Management**, Vol. 65, 2002, p. 431-446.
- 59) Wilson, B.G., Baetz, B.W. and Hall, F.L., (2002) "Reduction of Queueing Delays at Waste Management Facilities", **Civil Engineering and Environmental Systems**, Vol. 19 (4), 2002, p. 311-331.
- 60) Randall, T.A., Baetz, B.W. and Churchill, C.J., (2003) "A GIS-Based Decision Support System for Neighbourhood Greening", **Environment and Planning B: Planning and Design**, Vol. 30, p. 541-563.
- 61) Randall, T.A., Churchill, C.J., and B.W. Baetz (2005). "Geographic Information System (GIS) Based Decision Support for Neighbourhood Traffic Calming". **Canadian Journal of Civil Engineering**, Vol. 32 pp. 86-98.
- 62) Li, Y.P., Huang, G.H. and B.W. Baetz (2006). "Municipal Solid Waste Management Under Uncertainty: An Internal-Parameter Two-Stage Chance-Constrained Mixed Integer Linear Programming Method", **Environmental Engineering Science**, 23(5), pp. 761-779.
- 63) Olsen, D.R., Dickson, S.E., and B.W. Baetz (2006). "A Decision Support System for Water Supply Assessment in Rural India", **Journal of Environmental Informatics**, Vol. 7(1), pp. 1-13.
- 64) Guo, Y. and B.W. Baetz (2007). "Sizing of Rainwater Storage Units for Green Building Applications", **Journal of Hydrologic Engineering (ASCE)**, Vol. 12, No. 2, pp. 197-205 [Winner of this ASCE journal's Best Paper Award in 2008].
- 65) Wilson, B.G., Agar, B.J., Baetz, B.W. and Winning, A. (2007). Practical Applications for GPS Data from Solid Waste Collection Vehicles. **Canadian Journal for Civil Engineering**, Vol. 34, No. 5, pp. 678-681.
- 66) Agar, B.J., Wilson, B.G. and Baetz, B.W. (2007). Fuel Consumption and Emissions Estimation, and Emissions Cost Estimates Using Global Positioning Data, **Journal of the Air and Waste Management Assn.**, Vol. 57, pp. 348-354.
- 67) Nishat, S., Guo, Y. and B.W. Baetz (2007). Development of a Simplified Continuous Simulation Model for Investigating Long-Term Soil Moisture Fluctuations, **Agricultural Water Management**, Vol. 92, pp. 53-63.
- 68) Nishat, S., Guo, Y. and B.W. Baetz (2008). Climate Change and Urban Grassland Moisture Conditions in South-Western Ontario, **Journal of Environmental Informatics**, Vol. 12, No.2, pp. 105-119.
- 69) M.C. Kirnbauer, W.A. Kenney, C.J. Churchill and B.W. Baetz (2009). A Prototype Decision Support System for Sustainable Urban Tree Planting Programs, **Urban Forestry and Urban Greening**, Vol. 8, No. 1, pp. 3-19.
- 70) A.F. Cupido, B.W. Baetz, A. Pujari, and S. Chidiac (2010) "Evaluating Institutional Green Building Policies: A Mixed-Methods Approach", **Journal of Green Building**, Vol. 5, No. 1, pp. 115-130.
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ii) **Book**

A.A. Harms, B.W. Baetz and R.R. Volti, Engineering in Time: The Systematics of Engineering History and Its Contemporary Context, **Imperial College Press**, Summer 2004, 331 pages, ISBN 1-86094-433-7.

C) **ADMINISTRATIVE RESPONSIBILITIES**

i) **Department** – Chair (2010-2016)

*Coordinated preparations for our Fall 2015 CEAB accreditation visit, for which CEAB attributes and learning indicators were measured and reported over a multiple year time horizon. This process led to a six year accreditation result;

*Consolidated our streams in the department to one general Civil Engineering offering, along with the development of a fully integrated Civil Engineering capstone design course experience;

*Recruitment of six new assistant professors to our department;

*Oversaw the development of a final year experiential learning facility, the Sustainable Infrastructure Design Studio; the development of our new undergraduate/graduate Sustainable Water Quality Analysis Laboratory; and the development of a new structural engineering undergraduate laboratory.

– Chair (1995–1998)

*Coordinated preparations for a CEAB visit that led to a six year accreditation

*Oversaw the development of a final year experiential learning facility

ii) **Faculty** Director, Walter Booth School of Engineering Practice and Technology (January 2021-present)

- Director, Engineering and Society Program (2003-2013)
 – Director, Engineering and International Studies Program (2008-2013)
 – Chair, Committee on Engineering and Public Policy (2002)

iii) **University** Design Instructor, CityLAB Semester in Residence Teaching Team (2018-2021)

- Member, Community of Practice Committee for CityLAB (2017)
 Member, President's Advisory Committee on Fossil Fuel Divestment (2017)
 – Member, Community Engagement Sub-Committee, Moving Forward With Integrity (2012-2013)
 – Member, University Senate (1989–1992)
 – Member, University Appeals Committee (1998-2000)
 – Member, Senate Committee for Academic Dishonesty (1989/90, 1991/92)
 – Vice–Chair, Senate Committee for Academic Dishonesty (1990/91)
 – Member, Peace Studies Council (2003-2008)

- (iv) **External**
- Chair, Department of Civil and Environmental Engineering, Tulane University (New Orleans, LA) (2001/02)
 - * Coordinated preparations for an ABET visit that led to a three year accreditation;
 - * Oversaw all construction aspects for the renovation of the 107 year old Civil Engineering Building, and planned the dedication ceremony where it was named Walter E. Blessey Hall;
 - * Developed a plan for allocation of Wall Fund monies to the development of a Centre for Sustainable Infrastructure;
 - * Worked with the School Dean and development officer on a number of alumni projects to enhance the departmental endowment fund.

D) COMMUNITY ENGAGEMENT PROFILE

*Was part of a sub-committee of the Dundas Conserver Society, that successfully protected 840 acres of land in the Pleasant View area within a 1995 OMB hearing context;

*Was a member of a five person citizen committee that successfully lobbied the City of Hamilton to purchase the Veldhuis greenhouses along the Desjardins Canal in 2006, which is now the foundation element for the Hamilton Conservation Authority's Gateway Project;

*Provided technical and mapping support for the opposition to a proposed self-storage facility at 201 King St. E. in Dundas, culminating in a successful result within a 2009 OMB hearing context;

*Was a member on McMaster's President Advisory Committee on Cootes Paradise and Natural Lands, with a particular interest in the enhancement of the 115 acre McMaster Forest and the parking lot ecological retrofit to create the McMarsh initiative (all components of a proposed McMaster Conservation Corridor under the McMaster Watershed Trust umbrella);

*A continuing member of an eight person community initiative to support the Hamilton Conservation Foundations 5M\$ campaign to create the Dundas EcoPark, a part of the Cootes to Escarpment Park system; this has involved the coordination of fundraising efforts, the interviewing of dozens of technical experts and civic leaders for newspaper articles, and the direction of several Youtube features for a social media campaign for fundraising;

*A member of the inaugural and second and third year teaching team for CityLAB Semester in Residence, responsible for teaching Design concepts and facilitating the integration of Design principles into the related community projects.

*Leading the five person team for the fundraising efforts of the Hamilton Naturalists' Club to obtain resources to acquire remaining land parcels in the Cootes to Escarpment EcoPark System, since 2023;

In the last several years, have worked on a number of community engagement projects in the Town of Dundas and West Hamilton, relating to the following topics;

- promoting an assessment of slope stability for the proposed development at 24 Brock St. N;
- advocating for efficient and optimal parking strategies at McMaster to avoid parking structures;
- advocating for GO Bus service to eastern Dundas to provide linkages to Aldershot and beyond;
- securing a historic conservation district designation for downtown Dundas;
- working with the Dundas Sunrise Rotary Club on a trail system for Spencer Creek