**Bertrand MARESCHAL**                              Brussels, October 10, 2014.
28 rue du Culot
B - 1435 Mont Saint Guibert
BELGIUM
bmaresc@ulb.ac.be
http://homepages.ulb.ac.be/~bmaresc
Phone: +32(475)716191

# CURRICULUM VITAE

## Personal Record

Date of birth: January 4, 1962.
Birthplace: Brussels, Belgium.
Civil status: Married, one child.
Nationality: Belgian.
Languages: French (native)
English (fluent)
Dutch (good level)
Spanish (basic)

## Education

- **Classical primary and secondary (Latin-Greek) studies**, Athénée Adolphe Max, Ville de Bruxelles, Belgium.

- **Licence en Sciences Mathématiques** (4 year Master degree in mathematics), Brussels Free University (U.L.B.), Belgium, 1983, obtained with "La Plus Grande Distinction" (highest distinction).
  *Thesis* : « Etude théorique et pratique des méthodes de surclassement en analyse multicritère. » (multicriteria decision aid)

- **Licence en Sciences Actuarielles** (Master degree in actuarial science), Brussels Free University (U.L.B.), Belgium, 1986, obtained with « La Plus Grande Distinction » (highest distinction).
  *Thesis*: "Développements récents de l'analyse multicritère : aspects théoriques et informatiques, applications bancaires et actuarielles." (multicriteria analysis in the banking and insurance sectors)

- **Doctorat en Sciences** (doctorate in science - applied mathematics), Brussels Free University (U.L.B.), Belgium, 1989, obtained with "La Plus Grande Distinction" (highest distinction).
  *Doctoral Thesis*: "Aide à la décision multicritère : développements théoriques et applications (le système d'évaluation industrielle BANK ADVISER et le système expert CHRONOS pour la prévision)." (multicriteria decision aid, applications in finance and forecasting)
  *Complementary Thesis*: "L'obtention par calcul symbolique de formules exactes pour les moments permutationnels d'ordre élevé des coefficients d'autocorrélation permet de construire des tests de bruit blanc." (nonparametric statistics)

## Professional Activities

- Since January 2001: **Professor**, Department of Statistics and Operational Research, Centre Emile Bernheim, Solvay Brussels School of Economics & Management, Brussels Free University (U.L.B.), Belgium.

  *Professional Address*:      Université Libre de Bruxelles
  Centre Emile Bernheim,
  Solvay Brussels School of Economics &
  Management
  CP 114/03
  50 avenue F.D. Roosevelt
  B - 1050 Bruxelles - Belgium.
  Tel. (32) (2) 650.48.70
  Fax (32) (2) 650.41.88
  bmaresc@ulb.ac.be
  http://homepages.ulb.ac.be/~bmaresc

- From 2013: **Professor** (part time) at ENSTA (Ecole Nationale Supérieure des Techniques Avancées), Paristech, France.

- 2004-2011: **Professor** (part time) at Université du Littoral Côte d'Opale (Dunkerque, France).

- 2002-2011: **Professor** (part time) at Université de Lille 3 (Lille, France).

- 2001-2004: **Professor** (part time) at EDHEC (Lille, France).

- 2000-2003: **Professor** (part time) at HEC Liège (Belgium).

- 1998-2000: **Professor** (part time) at Ecole Supérieure de Commerce de Lille (France).

- January 1998 to December 2000: **Chef de Travaux** and **Maître d'Enseignement** (assistant professor) at Service de Statistique et de Recherche Opérationnelle, Faculté des Sciences Sociales, Politiques et Economiques, Université Libre de Bruxelles. (Director : Prof. J.J. Droesbeke)

- 1993-1997: **Premier Assistant, Chargé d'Enseignement** and **Maître d'Enseignement** at Service de Statistique et de Recherche Opérationnelle.

- 1986-1993: **Assistant** at Department of Statistics and Operational Research, Faculty of Economics, Brussels Free University (U.L.B.).
  (Directors: Prof. S. Huyberechts and Prof. J.J. Droesbeke)

- 1983-1986: **Researcher** (I.R.S.I.A.-I.W.O.N.L.) at Department of Operational Research (S.M.G.), Faculty of Applied Science, Brussels Free University (U.L.B.).
  (Director: Prof. J.P. Brans)

## Main Activities

### Highlights

- **Co-author (with Prof. J.P. Brans) of the PROMETHEE-GAIA multicriteria methodology**
    o Worldwide leading methodology for multicriteria decision aid.
    o Over 575 publications related to the PROMETHEE-GAIA methodology.
- **Author and developer of the PROMCALC and Visual PROMETHEE MCDA software – Co-author of the Decision Lab software**
    o **PROMCALC** has been one of the first truly interactive and usable multicriteria decision aid software. It has been entirely developed at the ULB and VUB universities together by J.P. Brans and myself.
    o **Decision Lab** was the first Windows implementation of the PROMETHEE-GAIA methodology, developed in collaboration with the Montréal-based Visual Decision company.
    o **Visual PROMETHEE** is the latest implementation of the PROMETHEE-GAIA methodology.
- **Owner and manager of the [WWW.PROMETHEE-GAIA.NET](WWW.PROMETHEE-GAIA.NET) website**
    o Resource center for the PROMETHEE-GAIA methodology: news, papers, presentations, … Over 500 visits per month since 2012.
    o Visual PROMETHEE software download site. Over 250 downloads per month.
    o Online bibliographical database (on average 90 downloads per month).
    o Blog, Forum, FAQ, LinkedIn group, Twitter.

### Scientific activities

- **Operational research**
    o Decision making methodology.
    o Multicriteria decision aid.
    o Negotiation and group decision-making.
    o Development of decision support systems (DSS).
    o Development of web solutions for decision aid.
    o Mathematical programming.
    o Project management.
    o Production and inventory management.
    o Data envelopment analysis.
    o Evaluation methodology.
    o Applications of operational research and decision aid methods in the industry: a.o. Générale de Banque (financial evaluation - BANK ADVISER system), Solvay s.a. (quality assessment of suppliers), ONDRAF-NIRAS (location of a facility), Electrabel (production

planning), Walloon Region (quality assessment of environmental impact studies).
- o Multicriteria decision aid for sustainable development, environmental management and impact analysis.
- o Decision aid in the healthcare sector.

- **Statistics**
  - o Descriptive statistics.
  - o Statistical inference.
  - o Forecasting methods.
  - o Data analysis.
  - o Analysis of surveys.

- **Artificial intelligence**
  - o Development of expert systems in statistics and operational research.

- **Finance**
  - o Development of industrial evaluation and financial analysis systems.
  - o Portfolio analysis.
  - o Analysis of the international banking sector.
  - o Evaluation of options.
  - o Statistics in finance.

- **Computer science**
  - o Good knowledge of the following **operating systems**: Windows 8, OS/X, iOS, Android.
  - o Computer **programming languages**: DELPHI, PASCAL, C and FORTRAN. Basic knowledge of APL and PROLOG.
  - o Implementation of **statistical, decision aid and operational research software** on mainframes (long time ago… Control Data, Pr1me, Digital) and personal computers (Windows and OS/X, using Embarcadero DELPHI, and previously… MS-FORTRAN, BORLAND PASCAL, BORLAND C++ 4.0, BORLAND C++ BUILDER, THINK PASCAL et THINK C).
  - o Good knowledge of the following **productivity software**: MS-Office 365 Win and Mac (Word, PowerPoint, Excel), page layout (Pagemaker), graphics (Freehand, Superpaint, Draw 5), file management (dBase IV, Filemaker Pro, Access), statistics (SPSS, SAS, …), communications (CuteFTP, …), Internet (Outlook, Internet Explorer, Safari, FrontPage, Web Page Maker, NetObjects, …) …

## Academic activities

### In charge of the following courses

- **Statistique Descriptive et Eléments de Probabilités** (descriptive statistics and probability theory), 1st year BA ingénieur de gestion (management, 500 students per year), Solvay Brussels School of Economics & Management, ULB, 5 ECTS. (STAT-S-102)

- **Operations and Supply Chain Management** (operations research, decision aid, partim with A. Ndiaye), 1st year MA ingénieur de gestion (management, 200 students per year), Solvay Brussels School of Economics & Management, ULB, 5 ECTS. (GEST-S-482)

- **Méthodes Quantitatives de Gestion**, 2nd year BA sciences humaines et sociales (50 students per year), ULB, 4 ECTS. (STAT-D-206)

- **Techniques Quantitatives de Gestion 2** (operations research), 2nd year MCC in Management (80 students per year), Solvay Brussels School of Economics & Management, ULB, 4 ECTS. (GEST-S-701)

- **Applications de la Recherche Opérationnelle** (operations research), 3rd year MA civil engineer (elective course, 0 to 5 students per year), Faculté des Sciences appliquées, ULB. 30h. (MATH-H-508)

- **Mathématiques** (mathematics for computer science), Master interuniversitaire en Informatique (orientation Gestion, 40 students per year) (ULB and Université de Mons). 30h+15h.

### *Past courses*

- **Analyse Multicritère** (multicriteria decision aid), 2nd year MA Economie et Gestion de l'Environnement et du Développement Durable (EGEDD, 20 students), Université Lille 3, Lille, France. 24h.

- **Méthodes Quantitatives Appliquées à l'Environnement** (statistics), 1st year MA EGEDD (20 students), Université du Littoral Côte d'Opale, Dunkerque, France. 24h.

- **Analyse Multicritère** (multicriteria decision aid), 2nd year MA EGEDD (20 students), Université du Littoral Côte d'Opale, Dunkerque, France. 24h.

- **Méthodes Quantitatives de la Gestion**, 3rd year BA sciences humaines et sociales, ULB. 30h+30h.

- **Algorithms and Programming I**, (Pascal and C languages) 1st year university studies in Science. 26h+13h+26h.

- **Méthodes Quantitatives de Gestion** (graph theory, including project management and transportation problems), licence en Informatique et Sciences Humaines. 15h+15h.

- **Méthodes Quantitatives de Gestion - Compléments** (linear programming), licence en Informatique et Sciences Humaines. 15h+15h.

- **Méthodes d'Aide à la Décision**, (decision aid) licence en Informatique et Sciences Humaines. 30h.

- **Eléments de Recherche Opérationnelle** (linear programming, graph theory, inventory management, decision aid), 1ère année du grade d'Ingénieur Commercial, 2ème candidature en Informatique, licence en Sciences Actuarielles et licences spéciales de l'Institut de Statistique. (Prof. S. Huyberechts) 30h+30h (in 1993-94 and 1994-95)

### *In charge of the practical exercises for the following courses from 1986 to 1995 (Director Prof. S. Huyberechts)*

- **Statistique I** (descriptive statistics), 1st year Solvay Business School and Economics.

- **Statistique II** (statistical inference), 2nd year Solvay Business School and Economics.

- **Compléments de Statistique I** (regression and forecasting econometrical methods), 3rd year Economics, Actuarial Science and Statistics.

- **Compléments de Statistique II** (time series analysis), 4th year Economics, Actuarial Science and Statistics.

- **Eléments de Recherche Opérationnelle** (linear programming, graph theory), 3rd year Solvay Business School, 2nd year Computer Science, Actuarial Science and Statistics.

### Other Activities

- 2005-06: **Acting President** of the « Institut de Statistique et de Recherche Opérationnelle », Université Libre de Bruxelles.

- 2005-09: **President of the jury** of « Licence en Informatique et Sciences Humaines », Faculté des Sciences Sociales, Politiques et Economiques, Université Libre de Bruxelles.

- From 2004: **Member** of the Joint Education Board in charge of the development of the International Master in Management Science (Solvay Brussels School of Economics and Management) ULB-VUB.

- 2004-2005: **Vice-president** of the « Institut de Statistique et de Recherche Opérationnelle », Université Libre de Bruxelles.

- From 2003: **Director** of Service de Statistique et Recherche Opérationnelle, Faculté des Sciences Sociales, Politiques et Economiques de l'Université Libre de Bruxelles.

- 2001-05: **President** of the Department « Informatique et Sciences Humaines », Faculté des Sciences Sociales, Politiques et Economiques, Université Libre de Bruxelles.

- 2001-2008: **President and founding member** of Innovative Decision for Management, (IDM – www.idm-belgium.com). IDM's mission was to serve as an interface between the academic world where new decision aid methods are created and industrial, business and public organizations.

- 2000-2001: **Vice-president** of the Department « Informatique et Sciences Humaines », Faculté des Sciences Sociales, Politiques et Economiques, Université Libre de Bruxelles.

- 1999-2000: **Secretary** of the Department « Informatique et Sciences Humaines », Faculté des Sciences Sociales, Politiques et Economiques, Université Libre de Bruxelles.

- Since 1998: **Member** of the working group "Europe de l'Est" at U.L.B.

- 1996-: **Member** of CORS (Canadian Operational Research Society).

- Since 1995: **Member** of ETAN (European Technology Assessment Network).

- Since 1993: **Member** of TIMS and INFORMS.

- Since 1992: **Member** of the Council of the Solvay Business School (U.L.B.).

- Since 1987: **Member** of the Council of the Faculty of Economics (U.L.B.).

- 1992-94: **Member** of the Council and Treasurer of the SOGESCI-B.V.W.B. (Belgian O.R. Society).

- 1988-1992: **Secretary** of the Institute of Statistics, Brussels Free University (U.L.B.).

- 1991: **Deputy member** of the Board of the Brussels Free University (U.L.B.).

- 1983: **Member** of the Board of the Brussels Free University (U.L.B.).

- 1982-83: **Member** of the Council of the Faculty of Science (U.L.B.).

## Scientific Distinctions

- G. Sterpenich Award, U.L.B., 1982.

- Fastré Scholarship, U.L.B., 1983.

- National contribution at the International Operational Research Conference IFORS'84, Washington D.C., 1984.

- Selected by the SOGESCI-B.V.W.B. as Belgian participant to the "Second EURO Summer Institute", 1985.

- Grant of a research scholarship in Canadian Studies from the Canadian Government (research: multicriteria decision aid for environmental management in Canada), 1996-97.

## Publications

### Books

1. "PROMETHEE : Une méthodologie d'aide à la décision en présence de critères multiples.", Editions de l'Université de Bruxelles (collection "Statistique et Mathématiques Appliquées"), 187p., 2002. (ISBN 2-8004-1290-9)
   (with J.P. Brans)

### Published papers

1. "PROMETHEE : a new family of outranking methods in multicriteria analysis.", in Operational Research '84, Ed. J.P. Brans, North Holland, 477-490, 1984.
   (with J.P. Brans and Ph. Vincke)

2. "How to select and how to rank projects : the PROMETHEE method.", E.J.O.R., 24, 228-238, 1986.
   (with J.P. Brans and Ph. Vincke)

3. "Stochastic multicriteria decision-making under uncertainty.", E.J.O.R., 26, 58-64, 1986.

4. "Identification et aide à la décision multicritère.", C.C.E.R.O., 28, 153-162, 1986.

5. "Aide à la décision multicritère : développements récents des méthodes PROMETHEE.", C.C.E.R.O., 29, 175-214, 1987.

6. "Multicriteria ranking of alternative locations for small scale hydro plants.", E.J.O.R., 31, 215-222, 1987.
   (with N. Mladineo, J. Margeta et J.P. Brans)

7. "Weight stability intervals in multicriteria decision aid.", E.J.O.R., 33, 54-64, 1988.

8.  "The corner method for identifying autoregressive-moving average models.", J.R.S.S., Ser.C (Applied Statistics), 37, 301-316, 1988.
    (with G. Mélard)

9.  "Geometrical representations for M.C.D.A.", E.J.O.R., 33, 69-77, 1988.
    (with J.P. Brans)

10. "MEDICIS : an expert system for computer-aided diagnosis using the PROMETHEE multicriteria method.", E.J.O.R., 39, 284-292, 1989.
    (with Ph. Du Bois, J.P. Brans and F. Cantraine)

11. "Specialization of hospital services in Québec : an application of the PROMETHEE and GAIA methods.", Mathematical and Computer Modelling, 12, 1393-1400, 1989.
    (with G.R. D'Avignon)

12. "Primjena geometrijske representacije visekriterijalne analize na problemu izbora lokacija.", Pregledni rad, 365-374, 1989.
    (with N. Mladineo, S. Pavasovic and J.P. Brans)

13. "Aide à la décision multicritère : développements théoriques et applications." (thèse de Doctorat en Sciences), C.C.E.R.O., 31, 13-120, 1989.

14. "Nuclear waste management : an application of the multicriteria PROMETHEE methods.", E.J.O.R., 44, 1-10, 1990.
    (with T. Briggs and P. Kunsch)

15. "Evaluation financière par la méthode multicritère GAIA : application au secteur bancaire belge.", Revue de la Banque, 6/90, 317-329, June 1990.
    (with D. Mertens)

16. "BANK ADVISER : an industrial evaluation system.", European Journal of Operational Research, 54, 318-324, 1991.
    (with J.P. Brans)

17. "The PROMETHEE methods for MCDM ; the PROMCALC, GAIA and BANK ADVISER software.", in Readings in multiple criteria decision aid, Ed. C. Bana e Costa, Springer-Verlag, 660p., 1990.
    (with J.P. Brans)

18. "Un Système Expert pour l'Elaboration de Prévisions au Moyen de Modèles ARMA.", C.C.E.R.O., 32, 315-316, 1990.

19. "PROMETHEE V : MCDM problems with segmentation constraints.", INFOR, 30(2), 85-96, 1992.
    (with J.P. Brans)

20. "Evaluation financière des banques belges.", Belgian financial newspaper *L'Echo*, Friday April 12, 1991, p.10.
    (with D. Mertens)

21. "Multiobjective decision support for water resources planning.", dans Jordan's water resources and their future potential, Eds A. Gärber et E. Salameh, Friedrich Ebert Stiftung, 79-97, 1992.
(with M.F. Abu-Taleb, J.P. Deason and E. Salameh)

22. "BANKS : A multicriteria decision support system for financial evaluation in the international banking sector.", Journal of Decision Systems, 1(2-3), 175-189, 1992.
(with D. Mertens)

23. "PROMCALC & GAIA : A new decision support system for multicriteria decision aid.", Decision Support Systems, 12, 297-310, 1994.
(with J.P. Brans)

24. "JUDGES : A descriptive group decision support system for the ranking of items.", Decision Support Systems, 12, ., 1994.
(with G. Colson)

25. "Evaluation financière par la méthode multicritère GAIA : application au secteur de l'assurance.", Actualité Economique, 68, n°4, 1992.
(with D. Mertens)

26. "BANK ADVISER : Un système interactif multicritère pour l'évaluation financière des entreprises à l'aide des méthodes PROMETHEE.", Actualité Economique, 68, n°4, 1992.
(with J.P. Brans)

27. "Le secteur bancaire en Belgique : évaluation financière par la méthode multicritère GAIA.", Crédit & Finance (Revue de l'Association Belge de Crédit), 2/92, pp.9-12, 1992.

28. "A decision support system for the evaluation of bond options in imperfect markets.", in Financial Modelling, Eds L. Peccati et M. Virén, Physica-Verlag, Springer-Verlag, pp.220-237, 1994.
(with B. Daenen)

29. "Water resources planning in the Middle East : Application of the PROMETHEE V multicriteria method.", E.J.O.R., 81, pp. ,1995.
(with M.F. Abu-Taleb)

30. "Novel types of sensitivity analysis for MCDM.", E.J.O.R., 81, pp.281-290, 1995.
(with W. Wolters)

31. "Application of geometrical representation of multicriterional analysis to the problem of locations selection.", E.J.O.R.
(with N. Mladineo and J.P. Brans)

32. "The PROMETHEE-GAIA decision support system for multicriteria investigations.", Investigacion Operativa (Brasilian O.R. journal), 4, pp.107-117, 1994.
(with J.P. Brans)

33. "A dynamic multicriteria approach to health care resources allocation", accepted for publication in Journal of Decision Systems.
(with G.R. D'Avignon)

34. "An Integrated Tool for the Choice of the Assembly Method and the Design of the Logical Layout of the Line", Journal of Engineering Design and Automation, 1996.
(with F. Pellichero et al)

35. "Decision aid tool for the choice of assembly methods in production line design.", in L. J. Eshelman (Editor), Proceedings of the Agile and Intelligent Manufacturing Symposium, 1996.
(with F. Pellichero and A. Delchambre)

36. "Interactive method for grouping operations in assembly line design", in William Sullivan and Munir Ahmad (Editors), Proceedings of the FAIM'97 Conference., pages 111-122, Begell House, inc. June 1997.
(with F. Pellichero and A. Delchambre)

37. "An interval version of PROMETHEE for the comparison of building products design with ill-defined data on environmental quality.", European Journal of Operational Research, 109, pp.522-529,1998.
(with J.F. Le Téno)

38. "The GDSS PROMETHEE procedure (a PROMETHEE-GAIA based procedure for group decision support).", Journal of Decision Systems, 7, Special Issue "Decision support systems – Groupware, Multimedia, Electronic Commerce", pp.283-307, 1998.
(with J.P. Brans and C. Macharis)

39. "An interactive tool for the choice of the assembly methods and its link with the line balancing", in Proceedings of the 31st CIRP International Seminar on Manufacturing Systems, "Networked Manufacturing: Integrated Design, Prototyping and Rapid Fabrication", pages 207-212, University of Berkeley, San-Francisco, USA. May 1998.
(with F. Pellichero and A. Delchambre)

40. "Management of the future. A system dynamics and MCDA approach. ", in **Aiding Decisions with Multiple Criteria**, International Series in Operations Research and Management, Science, Vol.44, Kluwer Academic Publishers, pp.483-502, 2002.
(with J.P. Brans and P. Kunsch)

41. "PROMETHEE methods.", in *Multicriteria Decision Analysis: State of the Art Surveys* (J. Figueira, S. Greco and M. Ehrgott, Eds), Kluwer Academic Publishers, pp.163-196, 2005.
(with J.P. Brans)

42. "Le coût de la prise en charge de l'infarctus du myocarde est-il lié à la sévérité des cas ?", Journal d'économie médicale, Vol.3, 151-165, 2007.
(with M. Pirson et al)

43. "Rank reversal in the PROMETHEE II method: some new results.", proceedings of IEEE 2008 International Conference on Industrial Engineering and Engineering Management, Singapore, 2008 (reviewed).
(with Y. De Smet et Ph. Nemery)

44. "L'enregistrement de l'intensité en soins infirmiers à des fins financières, une expérience développée en 2006 dans un hôpital général belge.", Journal d'économie médicale, Vol.8, 391-409, 2008.
(with M. Pirson et al.)

45. "Visual PROMETHEE: Developments of the PROMETHEE & GAIA multicriteria decision aid methods.", proceedings de IEEE 2009 International Conference on Industrial Engineering and Engineering Management, Hong Kong, 2009 (reviewed).
(with Y. De Smet)

46. "Extending the PROMETHEE II method to continuous and combinatorial multi-objective optimization problems: a first model.", proceedings de IEEE 2009 International Conference on Industrial Engineering and Engineering Management, 1-4, 1608-1611, Hong Kong, 2009 (reviewed).
(with Y. De Smet and C. Verly)

47. "Petrochemical industry: assessment and planning using multicriteria decision aid methods", Technology and Investment, 1, 118-134, 2010.
(with C. Garcia Aranda and C. Escobar Toledo)

48. "Unification of problem formulation with PROMETHEE", OR52 keynote paper, 2010.
(with P. Nemery and A. Ishizaka)

49. "On the usefulness of taking the weights into account in the GAIA visualisations", International Journal of Information and Decision Sciences, 3(3), 228-251, 2011.
(with P. Nemery and K. Lidouh)

50. "Integrating imperfection of information into the PROMETHEE multicriteria decision aid methods: A general framework", Foundations of Computing and Decision Sciences, 37(1), 9-23, 2012.
(with S. Ben Amor)

51. "Energy efficiency, sustainable development and natural resources conservation: multicriteria life-cycle analysis of daily-used materials with a long-term vision", British Journal of Applied Science & Technology, accepted for publication, 2014.
(with C.E. Escobar Toledo)

52. "Fuzzy FlowSort: An integration of the FlowSort method and Fuzzy Set Theory for decision making on the basis of inaccurate quantitative data", Information Sciences, 293, 115-124, 2015.
(with A.C. Scanavachi Moreira Campos and A. Texeira de Almeida)

## Research papers and other unpublished papers

1. **Etude théorique et pratique des méthodes de surclassement en analyse multicritère**, Mémoire de Sciences Mathématiques, U.L.B., 118p., 1983.

2. "Specialization of hospital services : an application of PROMETHEE.", GRADE RR-57, Faculté des Sciences de l'Administration, Université Laval, Québec, 1985.
(with G.R. D'Avignon)

3. "Generalized criteria and $(\lambda,\mu)$-efficiency.", STOOTW/212, V.U.B., 1986.
(with J.P. Brans)

4. "PROMCALC - The PROMETHEE software user's guide.", HWPR/034, V.U.B., 1986.
(with J.P. Brans)

5. **Développpements récents de l'analyse multicritère.**, Mémoire de Sciences Actuarielles, U.L.B., 102p., 1986.

6. "A comparative study of some multicriteria outranking methods for radioactive waste management.", rapport interne, 1986.
(with T. Briggs and P. Kunsch)

7. "Recherche de consensus et désaccords irréductibles dans un petit groupe participatif.", G.R.A.A.L., Research paper 8704, U.Lg., 1987.
(with G. Colson)

8. "A time-dependent outranking model.", G.R.A.D.E. 88/3, Faculté des Sciences de l'Administration, Université Laval, Québec, 1988.
(with G.R. D'Avignon)

9. "The PROMETHEE methods for MCDM, the PROMCALC, GAIA and BANK ADVISER software.", STOO/224, V.U.B., 1989.
(with J.P. Brans)

10. "PROMETHEE - GAIA : visual interactive modelling for multicriteria location problems", V.U.B., 1989.
(with J.P. Brans)

11. "Higher-order permutational moments of autocorrelation coefficients", U.L.B., 1989.
    (with Ph. Boeckx, M. Hallin and G. Mélard)

12. **Aide à la décision multicritère : développements théoriques et applications (le système d'évaluation industrielle BANK ADVISER et le système expert CHRONOS pour la prévision).**, Thèse de Doctorat en Sciences, U.L.B., 152p., 1989.

13. "PROMETHEE V: MCDM problems with segmentation constraints.", STOOTW/250, V.U.B., 1990.
    (with J.P. Brans)

14. "Financial Analysis of the international banking sector : The BANKS multicriteria decision support system.", Proceedings DSI First International Conference, 1991.
    (with D. Mertens)

15. "BANKS: A decision support system for the evaluation of the complex international banking sector.", IEEE Systems, Man and Cybernetics Conference Proceedings, 1993.
    (with J.P. Brans and D. Mertens)

16. "How to differentiate hard from soft multicriteria problems in the discrete case.", CSOOTW/262, V.U.B., 1993.
    (with J.P. Brans)

## Conferences

### Congresses

1. EURO VI, Vienna, Austria, 19-22/07/1983:
   "How to select and how to rank projects: the PROMETHEE method."

2. ORBEL 2, Brussels, Belgium, 07-08/12/1983:
   "PROMETHEE: a new family of outranking methods in multicriteria analysis."

3. IFORS'84, Washington D.C., U.S.A., 06-10/08/1984:
   "PROMETHEE: a new family of outranking methods in multicriteria analysis."

4. EURO VII, Bologna, Italia, 16-19/06/1985:
   "PROMETHEE: a micro-computer multicriteria decision-aid system."
   "Multicriteria ranking of alternative locations for small scale hydro plants."

5. Colloque international de l'Institut des Hautes Etudes de Belgique "Approches Non-paramétriques en Analyse Chronologique", Brussels, Belgium, 23-24/09/1985:
   "Time series identification and multicriteria decision-making."

6.  EURO VIII, Lisbon, Portugal, 16-19/09/1986:
    "Weight stability in the PROMETHEE methods."
    "The PROMETHEE micro-computer software."
    "A comparative study of some multicriteria outranking methods for radioactive waste management."
    "Application of PROMETHEE to a nuclear waste management problem."

7.  Micro-computers and Decision Making, Brussels, Belgium, 15-16/01/1987:
    "PROMCALC: DSS with the PROMETHEE methods."
    "GAIA: Graphical representation using the PROMETHEE methods."
    "BANK ADVISER: An application of the PROMETHEE methods."

8.  25èmes Journées Européennes sur l'Aide à la Décision Multicritère, Brussels, Belgium, 26-27/03/1987:
    "PROMETHEE for client evaluation: the BANK ADVISER system."

9.  IFORS'87, Buenos Aires, Argentina, 10-14/08/1987:
    "Geometrical representations for MCDA."

10. ORBEL 4, Brussels, Belgium, 14-15/01/1988:
    Panel discussion: "The AHP method."

11. EURO IX, Paris, France, 06-08/07/1988:
    "A financial application of the PROMETHEE method: the BANK ADVISER system for client  evaluation."
    "Specialization of hospital services in Québec: an application of the PROMETHEE and GAIA methods."
    "Consensus and irreducible disagreements in a small participative group."
    "A time dependent outranking method."

12. Mini EURO Conference on Visual Interactive Modeling, Warwick, U.K., 30/10-01/11/1988:
    "BANK ADVISER: a PROMETHEE implementation for industrial evaluation."

13. Colloque international de l'Institut des Hautes Etudes de Belgique "Systèmes Experts et Prévisions Economiques", Bruxelles, Belgique, 27-28/04/1989:
    "Un système expert pour l'élaboration de prévisions au moyen de modèles ARMA."

14. EURO X, Belgrade, Yugoslavia, 27-30/06/1989:
    "JUDGES: new developments of a GDSS for the research of a consensus or disagreements in a small participative group (with an application to jobs ranking)."
    "The GAIA microcomputer software."
    "Application of geometrical representation of multicriterional analysis to the problem of locations selection."

15. ORBEL 5, Brussels, Belgium, 18-19/01/1990:
    "CHRONOS: an expert system for ARMA modeling."
    "Multiple criteria group decision aid: JUDGES + ARGOS."

16. CORS-SCRO 90, Ottawa, Canada, 22-24/05/1990:
    "A time-dependent outranking model."

17. IFORS'90, Athens, Greece, 25-29/06/1990:
    "Multicriteria financial evaluation using the GAIA method, with an application to banking in Belgium."
    "PROMETHEE V: MCDM PROMETHEE method with constraints."

18. 1st Meeting of the EURO Working Group on Decision Support Systems, Fontainebleau, France, 10-13/07/1990:
    "The PROMCALC Decision Support System."

19. IFORS - SPC 1 - Decision Support Systems, Bruges, Belgium, 26-29/03/1991:
    "BANK ADVISER: A multicriteria PROMETHEE-based decision support system for industrial evaluation."
    "BANKS: A multicriteria PROMETHEE-based decision support system for the evaluation of the international banking sector."
    "A DSS for preparing an internal audit plan."
    "JUDGES and ARGOS: Two GDSS software oriented toward consensus seeking in a multiple criteria ranking procedure."

20. 9th Meeting of the EURO Working Group on Financial Modelling, Curaçao, Netherlands Antilles, 24-27/04/1991:
    "The BANK ADVISER and BANKS financial evaluation systems."

21. CORS-SCRO 91, Québec, Canada, 21-23/05/1991:
    "BANKS: A multicriteria decision support system for the evaluation of the international banking sector."

22. First International Meeting of the Decision Sciences Institute, Brussels, Belgium, 24-26/06/1991:
    "Financial analysis of the international banking sector: the BANKS multicriteria decision support system."
    "A decision support system for the evaluation of European interest rate options."

23. EURO XI, Aachen, Germany, 16-19/07/1991:
    "Weight stability analysis for multicriteria decision aid."
    "BANKS: A multicriteria DSS for the financial analysis of the international banking sector."
    "The PROMETHEE VI approach: using interval weighting to classify multicriteria decision problems."

24. Colloque international de l'Institut des Hautes Etudes de Belgique
    "Développements Récents en Recherche Opérationnelle : Etat de l'Art.", Brussels,
    Belgium, 14-15/11/1991 :
    "Financial evaluation using multiple criteria decision aid: The BANKS and
    BANK ADVISER systems."

25. ORBEL 6, Bruxelles, Belgique, 23-24/01/1992:
    "Optimal resources allocation in the preparation of an internal audit plan."
    "A DSS for the evaluation of interest rate options."
    "A multicriteria analysis of the American banking sector using the GAIA
    method."
    "JUDGES: A toolbox for group decision aid."

26. 11th Meeting of the EURO Working Group on Financial Modeling, Cogne, Italy,
    23-24/04/1992:
    "A decision support system for the evaluation of interest rate options in imperfect
    markets."

27. EURO XII / TIMS XXXI, Helsinki, Finland, 29/06-01/07/1992:
    "The new PROMCALC & GAIA software."
    "The PROMETHEE V procedure for solving MCDM problems with additional
    constraints."
    "JUDGES: A toolbox for group decision aid."
    "JUDGES: A GDSS for the ranking of items. New developments and its
    implementation in a wider GDSS."
    "AUDIT PLANNER: A decision support system for internal audit."

28. ORBEL 7, Bruxelles, Belgique, 21-22/01/1993:
    "Using the GAIA method to measure performance: a comparison with DEA."
    "A PROMETHEE-based tool to separate hard from soft multicriteria problems."
    "Interpretation of the subjective quality of photocopies using the MCDM method
    PROMETHEE."
    "Novel types of sensitivity analysis for MCDM."

29. 37th Meeting of the European Working Group on Multicriteria Decision Aid,
    Liège, Belgique, 11-12/03/1993:
    "PROMETHEE VI : using interval weighting to assess hard and soft MCDM
    problems."

30. CORS-SCRO 93, Halifax, Canada, 25-27/05/1993:
    "A dynamic extension of the GAIA method and its application to hospital budget
    allocation."

31. IFORS 93, Lisbon, Portugal, 12-16/07/1993:
    "PROMETHEE VI: Using interval weighting to assess hard and soft MCDM
    problems."
    "BANK ADVISER: A PROMETHEE based decision support system for
    industrial evaluation."
    "A decision support system for the evaluation of interest rate options in imperfect
    markets."

"Dynamical multicriteria decision aid using GAIA: an application to banking."
"Dynamic multicriteria decision aid using GAIA: an application to banking."
"A DSS for optimal allocation of audit resources."

32. IEEE Conference "Systems - Man and Cybernetics", Le Touquet, France, 17-20/10/1993:
"BANKS: A decision support system for the evaluation of the complex international banking sector."

33. ORBEL 8, Bruxelles, Belgique, 20-21/01/1994:
"A dynamic multicriteria method based on the PROMETHEE and GAIA methods."
"Canonical analysis: a tool for the explanation of incomparability in the PROMETHEE multicriteria methods."

34. Mini-EURO Conference on Risk Management, Liège, Belgium, 05/1994:
"New developments of the BANK ADVISER support system for industrial evaluation."

35. CORS-SCRO 94 - Journées de l'Optimisation, Montréal, Canada, 05/1994:
"A decision support system for the evaluation of suppliers in a large Belgian company."

36. EURO XIII, Glasgow, United Kingdom, 19-22/07/1994:
"Sensitivity analysis in the PROMETHEE methods."
"Using canonical analysis to explain incomparability in the PROMETHEE I multicriteria method."

37. Journées de l'Optimisation 1995, Montréal, Canada, 10-12/05/1995:
"Environmental Management and Multicriteria Decision Aid"

38. CORS-SCRO 95, Calgary, Canada, 23-25/05/1995:
"Multicriteria Allocation of Health Care Budgets to Regions: Investigation using Dynamic GAIA Planes"

39. EURO XIV, Jerusalem, Israel, 03-06/07/1995:
"Managing the Quality of the Suppliers in a Belgian Company: A Multicriteria Approach."

40. 43èmes Journées du Groupe de Travail Européen en Aide Multicritère à la Décision, Brest, France, 21-22/03/1996:
"Towards an interval version of PROMETHEE for the comparison of building products design with ill-defined data on environmental quality."

41. Journées de l'Optimisation 1996, Montréal, Canada, 13-15/05/1996:
"A Two-Level Implementation of the PROMETHEE multicriteria methods - Applications to environmental management."

42. IFORS 96, Vancouver, Canada, 8-12/07/1996:
    "Quality assessment of suppliers using the PROMETHEE multicriteria method."
    "A two-stage PROMETHEE based procedure for group decision support."

43. 7th Mini EURO Conference on Decision Support systems, Groupware,
    Multimedia and Electronic Commerce, Bruges, Belgium, 25-27/03/1997:
    "A multicriteria pairwise comparison model using flexible weights."
    "Environmental evaluation using multicriteria decision aid."
    "An interval version of PROMETHEE for the comparison of building products'
    design with ill-defined data on environmental quality."
    "A GDSS implementation of PromCalc."

44. Journées de l'Optimisation 1997, Montréal, Canada, 12-14/05/1997:
    "A flexible weight model for multicriteria analysis."
    "A multicriteria decision aid approach to health resources allocation."

45. EURO XV, Barcelona, Spain, 14-17/07/1997:
    "A new implementation of the PROMETHEE methodology."

46. Symposium on Environmental Computer Science, Strasbourg, France, 10-
    12/09/1997:
    "Multicriteria decision support for environmental management: a case study in
    Canada."

47. 4th Procurement Congress, Bruxelles, Belgium, 20-21/10/1997:
    "Assessing the quality of suppliers: a multicriteria approach."

48. INFORMS Conference, Montréal, Canada, 26-29/04/1998:
    "A dynamic multicriteria evaluation of Belgian insurance companies."

54. Third International Conference on Multi-Objective Programming and Goal
    Programming, Québec, Canada, 31/05-03/06/1998:
    "Performance assessment of European airlines: DEA vs MCDA."

55. EURO XVI, Bruxelles, Belgium, 12-15/07/1998:
    "Multicriteria selection of antibiotics using the PROMETHEE methods."
    "The performance assessment of hospitals: Data Envelopment Analysis vs.
    Multicriteria Decision Aid."
    "Environmental site evaluation of waste management technologies: a
    multicriteria approach embedded into EUGENE model."

56. CIMASI'98, Casablanca, Maroc, 27-29/10/1998:
    "Diagnostic de performance des compagnies aériennes européennes : DEA vs
    MCDA."

57. INFORMS Conference, Cincinnati, U.S.A., 02-05/05/1999:
    "A Multicriteria Clinical Decision Model for Antibiotics Selection."

58.  INFORMS Conference, Philadelphia, U.S.A., 07-10/11/1999:
     "Decision Lab – A new interactive multicriteria decision aid software."
     "Multicriteria Evaluation of Urban Waste Management Systems."

54.  INFORMS Conference, Salt Lake City, U.S.A., 05/2000:
     "PharmaRank – A multicriteria clinical decision support system for antibiotics
     selection."

55.  INFORMS Conference, San Antonio, U.S.A., 5-8/11/2000:
     "Using PROMETHEE to evaluate urban waste management systems."
     "Using PROMETHEE for antibiotics selection in an intensive care unit."
     "Decision Lab 2000: a new PROMETHEE software."
     "New efficiency measures: the valued technical efficiency measures."

56.  2$^{nd}$ International Conference on Decision Making in Urban and Civil
     Engineering, Lyon, France, 20-22/11/2000: Invited lecture.
     "A Multicriteria Approach to Decision Aid: New Tools and Applications."

57.  AGORAL 2002, Nancy, France, 26-27/03/2002: Invited lecture.
     "Aide multicritère à la décision, la méthode Prométhée-Gaia."

58.  12$^{th}$ Mini-EURO Conference on Decision Support Systems, Bruxelles, Belgium,
     02-05/04/2002:
     "Environmental assessment and multicriteria decision aid."
     "Multicriteria decision aid for health care - Applications."
     "Decision Lab 2000: implementing multicriteria analysis and designing
     customized end-user solutions."

59.  EURO XXVI, Reykjavik, Iceland, 2-5/07/2006:
     "Missing values in multicriteria decision aid."
     "Application of PROMETHEE TRI and ELECTRE TRI to the semiconductor
     sector."

     EURO XXVII, Prague, Czech Republic, 8-11/07/2007:
     Organizer of two invited sessions in the MCDA stream.
     "Three-dimensional GAIA analysis."
     "Processing crude oil: selection of technologies and petrochemical products using
     MCDA methods."

60.  IFORS 2008, Sandton, South Africa, 13-18/07/2008:
     "Visual MCDA using new GAIA type methods."
     "Using the GAIA method for multicriteria sorting and clustering."

61.  IEEM 2008, Singapore, 8-11/12/2008:
     "Rank reversal in the PROMETHEE II method: some new results."

62.  Journées de l'Optimisation 2009, Montréal, Canada, 4-06/05/2009:
     Invited plenary lecture: "Visual analysis of multicriteria decision problems."

63.  EURO XXIX, Bonn, Germany, 6-08/07/2009:
     Invited session.
     "Tutorial on the PROMETHEE & GAIA methods."
     "D-SIGHT: A new PROMETHEE-based software."

64.  INFORMS 2009, San Diego, USA, 11-14/10/2009:
     "New developments of the PROMETHEE & GAIA MCDA methods."
     "The D-SIGHT project: The next generation of PROMETHEE-GAIA software."

65.  IEEM 2009, Hong Kong, 8-11/12/2009:
     "Visual PROMETHEE: Developments of the PROMETHEE & GAIA
     multicriteria decision aid methods."
     "Extending the PROMETHEE II method to continuous and combinatorial multi-
     objective optimization problems: a first model."

66.  ALIO-INFORMS, Buenos Aires, Argentina, 6-09/06/2010:
     "Robustness in the PROMETHEE MCDA methods."
     "D-SIGHT: A Visual PROMETHEE implementation."

67.  REDS 2010, Recife, Brazil, 11-12/06/2010:
     Invited lecture. "Sustainable decisions with Visual PROMETHEE."

68.  EURO XXX, Lisbon, Portugal, 07/2010:
     "A general framework for integrating imperfect information in the
     PROMETHEE methods."

69.  MCDA'73, Corte, France, 14-15/04/2011:
     "Taking imperfection of information into account in the PROMETHEE
     methods."

70.  MCDM 2011, Jyväskylä, Finland, 13-17/06/2011:
     "Integrating imperfection of information into the PROMETHEE multicriteria
     decision aid methods: a general framework."

71.  INFORMS Healthcare, Montreal, Canada, 20-22/06/2011:
     "Hospital department Performance evaluation using the PROMETHEE
     multicriteria methodology."

72.  MCDA 75, Tarragona, Spain, 12-14/04/2012:
     "Visual PROMETHEE."

73.  EURO, Vilnius, Lithuania, 08-11/07/2012:
     "Visual PROMETHEE - A New Multicriteria Decision Aid Software."

74.  OPDE 2013, Montréal, Canada, 06-07/05/2013:
     "Visual GDSS PROMETHEE."

75.  EURO, Rome, Italy, 07/2013:
     "Performance analysis using Visual PROMETHEE."

76. BALCOR 2013, Belgrade and Zlatibor, Serbia, 07-11/09/2013:
    "Sustainable decisions using a multicriteria approach."
    (Invited plenary lecture)

77. 1st PROMETHEE Workshop, Bruxelles, Belgium, 22/01/2014:
    "New developments of the PROMETHEE methods."

78. IFORS, Barcelona, Spain, 14-18/07/2014:
    "Dynamic MCDA with PROMETHEE and GAIA."

79. SIFEE 2014, Bruxelles, Belgium, 08-10/09/2014:
    "Apport des méthodes d'aide multicritère à la décision."
    (Invited plenary lecture)


## Seminars and lectures

1. Contact group F.N.R.S.-N.F.W.O. in operational research, Brussels, Belgium, 08/06/1984:
   "Développements récents des méthodes PROMETHEE."

2. Contact group F.N.R.S.-N.F.W.O. in statistical analysis, Brussels, Belgium, 06/12/1984:
   "Multiple criteria decision-making and time series model identification."

3. University of Split, Yugoslavia, 10-17/12/1984:
   Several lectures on multicriteria decision making and its financial applications.

4. Second EURO Summer Institute, Brussels, Belgium, 12/07-02/08/1985:
   "Stochastic multicriteria decision-making under uncertainty."

5. Second International Summer School on MCDM Methods, Namur, Belgium, 15-26/07/1985:
   "Exercises with packages on the PROMETHEE methods."

6. University of Fribourg, Switzerland, 19/12/1985:
   Lecture on the PROMETHEE methods.

7. University of Mannheim, R.F.A., 22-25/07/1987:
   "The BANK ADVISER system for client evaluation."

8. University Laval, Québec, 17/09/1987:
   "Les méthodes PROMETHEE et les représentations géométriques pour l'aide à la décision multicritère."

9. University of Split, Yugoslavia, 30-31/03/1988:
   Lectures on multicriteria decision making.

10. University Paris-Dauphine, France, 03/05/1988:
    "Logiciels pour problèmes multicritères."

11. Third International Summer School on MCDM, Monte Estoril, Portugal, 16-
    30/07/1988:
    Lesson on the PROMETHEE methods and practical exercises.

12. Brussels Free University (Seminar of the C.E.M.E.), Brussels, Belgium,
    09/02/1990:
    "BANK ADVISER : un système multicritère pour l'évaluation industrielle."

13. Carleton University, Ottawa, Canada, 25/05/1990:
    " "

14. European University, Brussels, Belgium, 07/05/1991:
    "Multicriteria Decision Aid : Introduction, PROMETHEE Methods and Financial
    Applications."

15. Brussels Free University (Séminar of the C.E.M.E.), Brussels, Belgium,
    17/01/1992:
    "Programme de valorisation d'actifs contingents à la structure temporelle des taux
    : le cas du modèle de Ho et Lee."

16. Seminar of the *3ème cycle F.N.R.S., Aide à la décision et modélisation des
    préférences*, Brussels, 06/03/1992:
    "Data Envelopment Analysis et aide à la décision multicritère."

17. Seminar of the SEPA "Evaluation de la qualité d'images traitées électro-
    niquement.", Bruxelles, Belgium, 10/09/1992:
    "Une approche multicritère pour l'évaluation de la qualité d'une image."

18. Seminar of the 3ème cycle F.N.R.S., Aide à la décision et modélisation des
    préférences, Brussels, Belgium, 25/03/1994:
    "Nouveaux outils d'analyse de sensibilité dans les méthodes multicritères."

19. Fondation Universitaire Luxembourgeoise, Arlon, Belgium, 29/04/1994:
    "Le logiciel d'aide à la décision multicritère PROMCALC - Application pour la
    gestion de l'environnement."

20. Université Laval, Québec, Canada, 20/05/1994:
    "Le logiciel BANK ADVISER pour l'évaluation financière des entreprises."

21. Association Université-Entreprise pour la Formation en Wallonie et à Bruxelles,
    Charleroi, Belgium, 27/03/1995:
    "Décider en présence de facteurs contradictoires : Un logiciel d'aide à la
    décision."

22. Solvay s.a., Usine de Lillo, Belgium, 26/04/1995:
    "Journée de formation : Un outil pour comparer les fournisseurs."

23. Qualichem and Solvay s.a., Wavre, Belgium, 04/05/1995:
    "Evaluer et comparer nos fournisseurs : une solution pratique."

24. Solvay s.a., Bruxelles, Belgium, 05/05/1995:
    "Journée de formation : Un outil pour comparer les fournisseurs."

25. Institut Eco-Conseil, Namur, Belgium, 21-22/06/1995:
    "L'Analyse Multicritère comme Outil d'Aide à la Décision pour la Gestion de l'Environnement."

26. Clean Coal Strategy for Central and Eastern Europe, Meeting of the Energy, Economics and Environment Team, Katowice, Poland, 31/07-01/08/1995.

27. Vrije Universiteit Brussel, Bruxelles, Belgium, 08/01/1996:
    "Evaluation de la qualité des fournisseurs au moyen d'un modèle multicritère."

28. National Bank of Poland, Warsaw, Poland, 21-23/02/1996 and 27-29/03/1996:
    "Organisation of banking data flow and processing - improvement of banking economic information system. (statistical analysis)"

29. Université du Québec à Montréal, Montréal, Canada, 05/1996:
    "Aide à la décision multicritère et gestion de l'environnement."

30. GERAD, Montréal, Canada, 05/1996:
    "Nouveaux développements des méthodes PROMETHEE."

31. Qualichem, Bruxelles, Belgium, 24/09/1996:
    "Evalueren en vergelijken van leveranciers"

32. Institut Eco-Conseil, Namur, Belgium, 18-19/11/1996:
    "L'Analyse Multicritère comme Outil d'Aide à la Décision pour la Gestion de l'Environnement."

33. Fondation Universitaire Luxembourgeoise, Arlon, Belgium, 17/12/1996 and 17/04/1997:
    "Aide à la décision multicritère - Un outil pour la gestion de l'environnement."

34. GERAD, Montréal, Canada, 12/1997:
    "Aide à la décision de groupe."

35. Fondation Universitaire Luxembourgeoise, Arlon, Belgium, 15-16/12/1997:
    "Processus de prise de décision en gestion de l'environnement."

39. Vrije Universiteit Brussel, C.S.O.O., Bruxelles, Belgium, 06/01/1997:
    "Quality assessment of suppliers using the PROMETHEE method."

40. Electrabel, Tervuren, Belgium, 20/01/1998:
    "Workshop : Analyse multicritère."

41. GERAD, Montréal, Canada, 01/12/1998:
    "Applications et développements récents des méthodes multicritères PROMETHEE."

42. Conseil Wallon de l'Environnement pour le Développement Durable, Liège, Belgium, 25-26/02 et 05/03/1999:
    "Aide à la décision multicritère : Un outil pour la gestion de l'environnement."

43. Gendarmerie Belge, Bruxelles, Belgium, 01 et 17/08/2000:
    "Journées de formation : Aide à la décision multicritère et utilisation du logiciel Decision Lab."

44. CEPULB, Bruxelles, Belgium, 03/10/2000:
    "Les mathématiques au service de l'entreprise."

45. Chambre de Commerce et d'Industrie de Bruxelles, Bruxelles, Belgium, 30/11/2000:
    "De nouveaux outils d'aide à la décision au service des entreprises."

46. Communauté des Entreprises du Port de Bruxelles, Matinée de réflexion, Bruxelles, Belgium, 20/02/2001:
    "Et si le port de Bruxelles n'existait pas ?"

47. Ecole des Mines de Nancy, Nancy, France, 03/2001:
    Course "Aide à la décision multicritère." (Invited professor)

48. Ecole des Mines de Nancy, Nancy, France, 12-15/03/2002:
    Conference "Décider en tenant compte de critères multiples."
    Course "Aide à la décision multicritère." (Invited professor)

49. Colloque « La décision d'investir dans des projets industriels et technologiques », Société Royale Belge des Ingénieurs et Industriels, Bruxelles, Belgium, 26/03/2002:
    "Comment sélectionner des projets et élaborer des portefeuilles de projets sur plusieurs critères ?"

50. ICN and Ecole des Mines de Nancy, Nancy, France, 04-05/09/2002:
    Formation en "Aide à la décision multicritère." (Programme CORA-Magellan)

51. NATO/CCMS Working Group Meeting "Environmental Decision-Making for Sustainable Development in Central Asia", Bruxelles, Belgium, 17-18/03/2003:
    Environment and Decision-Making: a Multiple Criteria Approach." (Invited)

52. ICN et Ecole des Mines de Nancy, Nancy, France, 23-24/04/2003:
    Formation en "Aide à la décision multicritère." (Programme CORA-Magellan)

53. UNAM, Mexico City, Mexico, 13-24/05/2007:
    Course: "Multicriteria Decision Support System."

54. Helsinki University of Technology, Helsinki, Finland, 04/2008:
    Course: "Multicriteria Decision Aid: the Outranking Approach."

55. GERAD, Montréal, Canada, 29-30/10/2008:
    Workshop GERAD: "Aide multicritère à la décision : le surclassement et les méthodes PROMETHEE et GAIA."

56. Telfer School of Management, University of Ottawa, Ottawa, Canada, 21/01/2010:
    Seminar: "Sustainable decisions and health care?"

57. UNAM, Mexico City, Mexico, 28/03-08/04/2011:
    Course: "Multicriteria Decision Support System."

55. CIE, UNAM, Temixco, Mexico, 02/2012:
    Short course on "Multicriteria Decision Aid and the PROMETHEE Methods."

56. Faculty of Economics, University of Split, 06/2012:
    Lecture on multicriteria decision aid and the Visual PROMETHEE software.

57. UNAM, Mexico City, Mexico, 08/2012:
    Inaugural lesson on multicriteria decision aid.

58. Université de Liège (HEC), Liège, Belgium, 11/2012:
    Invited lesson on multicriteria decision aid.

59. Domaine Cataraqui, Québec, Canada, 12/06/2014:
    Workshop on multicriteria decision aid and project management.

60. SIFEE 2014, Bruxelles, Belgium, 11-12/09/2014:
    Workshop on multicriteria decision aid and environmental evaluation.

## Organization of conferences

1. IFORS - SPC 1 - Decision Support Systems, Bruges, Belgium, 26-29/03/1991:
   Member of the organizing committee.

2. Second Meeting of the EURO Working Group on DSS, Bruges, Belgique, 23-26/03/1991:
   Coordinator

3. ORBEL 6, Brussels, Belgium, 01/1992:
   Member of the organizing and programme committee.

4. ORBEL 7, Brussels, Belgium, 21-22/01/1993:
   Chaiman of the conference (135 participants).

5. ORBEL 8, Bruxelles, Belgium, 01/1994:
   Member of the organizing and programme committee.

6. 4th Mini-EURO Conference on Risk Management, Liège, Belgium, 05/1994:
   Member of the organizing and programme committee.

7.  7th Mini-EURO Conference: Decision Support Systems, Groupware, Multimedia and Electronic Commerce, Bruges, Belgium, 24-25/03/1997:
    Member of the organizing and programme committee.

8.  EURO XVI Conference, Bruxelles, Belgium, summer 1998:
    Member of the organizing committee.

9.  Contact day "Aide à la Décision et Gestion de l'Environnement", U.L.B., Bruxelles, Belgium, 21/03/1997:
    Organiser. (40 participants)

10. 2nd International Conference on Risk Management, Liège, Belgium, 05-07/05/1999:
    Member of the programme committee.

11. 2nd International Conference on Decision Making in Urban and Civil Engineering, Lyon, France, 20-22/11/2000:
    Member of the programme committee.

12. Colloque International « 20 années d'Informatique et Sciences Humaines », Section Informatique et Sciences Humaines, U.L.B., Nivelles, Belgium, 05/2001:
    Co-President of the programme committee.

13. 12th Mini-EURO Conference on Decision Support Systems, Bruxelles, Belgium, 02-05/04/2002:
    Member of the programme committee.

14. ORBEL, Bruxelles, Belgium, 01/2004:
    Member of the programme committee.

15. ORBEL, Bruxelles, Belgium, 01/2005:
    Member of the programme committee.

16. 1st PROMETHEE Workshop, Bruxelles, Belgium, 01/2014:
    Member of the scientific committee.

17. SIFEE 2014, Bruxelles, Belgium, 09/2014:
    Member of the organizing and scientific committees.

18. 2nd PROMETHEE Workshop, Bruxelles, Belgium, 01/2015:
    Member of the scientific committee.


## Direction of licence/master theses

1.  E. Baltes, Ecole de Commerce Solvay, 1995/96:
    Gestion de la production : étude des méthodes existantes et de leurs applications dans l'industrie belge.

2.  M. Daskal, Ecole de Commerce Solvay, 1995/96:
    Optimisation de l'utilisation des équipages dans une compagnie de cha          rters
    aériens.

3.  L. Kirch, Ecole de Commerce Solvay, 1995/96:
    Le chois et l'optimisation d'un portefeuille de titres à l'aide d'un modèle
    multicritère.

4.  O. Valentin, Ecole de Commerce Solvay, 1995/96:
    Le 'Data Envelopment Analysis' : un outil pour mesurer les performances d'un
    ensemble d'untiés opérationnelles.

5.  L. Pirau, Section Informatique et Sciences Humaines, 1995/96:
    Conception et implémentation sous Windows d'un système interactif d'aide à la
    décision multicritère utilisant les méthodes PROMETHEE.

6.  D. Defalque, Section Informatique et Sciences Humaines, 1995/96:
    Application de l'aide à la décision multicritère pour la détermination d'un maître-
    achat (with Test-Achats).

7.  M.G. Delabre, Section Informatique et Sciences Humaines, 1995/96:
    Aide multicritère à la décision : étude et implémentation de la méthode Macbeth.

8.  A. Wyngaert, Section Informatique et Sciences Humaines, 1996/97:
    L'utilisation de l'aide multicritère à la décision dans le cadre des études de
    consommation (with Test-Achats).

9.  D. De Bilde, Section Informatique et Sciences Humaines, 1996/97:
    Méthodes multicritères interactives.

10. M. Raskin, Ecole de Commerce Solvay, 1996/97:
    Méthodes quantitatives de la gestion de production - Etude de cas dans le secteur
    des biens de grande consommation.
    (with Prof. Ph. Vincke)

11. P. Installé, Section informatique et Sciences Humaines, 1996/97:
    Application des méthodes d'aide à la décision au routage Internet.
    (with Prof. B. Sales)

12. C. David, Section informatique et Sciences Humaines, 1997/98:
    DECIDE : librairie d'outils d'aide à la décision multicritère.

13. P. Foucart, INFODOC, 1998/99:
    Systèmes d'aide à la décision de groupe.

14. F. Del Rio, Section informatique et Sciences Humaines, 1999/00:
    Méthodes d'optimisation non linéaire.

15. D. Claus, Section informatique et Sciences Humaines, 1998/99:
    Logique floue et méthodes d'aide à la décision multicritères.

16. P. Verstichel, Section informatique et Sciences Humaines, 1999/00:
    Aide à l'évaluation multicritère des actions en gestion de portefeuille.

17. F. Heneffe, Licence en Informatique – orientation Gestion (UMH), 1999/00:
    Application du génie logiciel.

18. E. Torisaen, Section informatique et Sciences Humaines, 2000/01:
    Algorithme génétique et méthode tabou appliqués au partitionnement d'un graphe.

19. F. Gilbart, Ecole de commerce Solvay, 2000/01 (en collaboration avec Ph. Vincke):
    L'évaluation du risque-pays dans le secteur bancaire : une approche multicritère.

20. A. Celebioglu, IGEAT, 2000/01:
    Outils et méthodes d'analyse pour l'évaluation de la qualité des études d'incidences sur l'environnement.

21. D. Renault, Sciences Appliquées, 2001/02 (en collaboration avec J.P. Brans):
    Modélisation de la prise de décision d'un chef d'entreprise dans le cadre d'un emprunt obligataire échangeable en actions.

22. W. Kasuku, Section informatique et Sciences Humaines, 2003/04:
    Mise en place d'une méthodologie multicritère d'évaluation de la fragilité et de classement des banques congolaises.

23. F. Verbraeck, INFODOC, 2002/03:
    Négociation et prise de décision de groupe.

24. N. Mascaux, Licence en Informatique – orientation Gestion (UMH), 2002/03:
    e-Gouvernement : Choix et utilisation d'une solution EAI pour l'intégration d'interfaces entre applications au Ministère de la Région de  Bruxelles-Capitale.

25. B. Simba, Licence en Informatique – orientation Gestion (UMH), 2002/03:
    .

26. L. Princen, Section informatique et Sciences Humaines, 2004/05:
    Sélection multicritère sous contraintes.

27. J. Depessemier, Section informatique et Sciences Humaines, 2004/05:
    Loi de Moore et gestion des stocks dans le secteur informatique.

28. M. El Hadouchi, ISRO, 2004/05:
    Valeurs manquantes en analyse multicritère.

**From 2005 to current, several master theses directed each year.**

## Doctoral theses

1.  W.T.M. Wolters, Technische Universiteit Eindhoven, Netherlands, 08/06/1994:
    Sustainable Industrial Production - an energy perspective.

2.  N. Pettiaux, Université Libre de Bruxelles, Belgium, 20/01/1995:
    Dynamique de processus à deux photons en optique nonlinéaire. (Direction de la
    thèse annexe portant sur l'utilisation de l'analyse canonique pour étudier les
    incomparabilités dans la méthode multicritère PROMETHEE I)

3.  J.F. Le Téno, Université de Savoie, France, 09/12/1996:
    Développement d'un modèle d'aide à la décision et à l'amélioration de la qualité
    environnementale des produits de construction.

4.  R. Khamliche, Université Libre de Bruxelles, 09/1999:
    Efficacité productive en gestion – Nouvelles approches.

5.  B. Rekiek, Université Libre de Bruxelles, 12/2000:
    Gestion de la production.

6.  A. Ayadi, Université Libre de Bruxelles, 10/2001:
    On the numerical and statistical properties of autocorrelations and partial
    autocorrelations. (Direction de la thèse annexe sur l'optimisation des opérations
    de manutention et de livraison dans un terminal routier de transport des
    marchandises)

7.  L. Montano Guzman, Université Libre de Bruxelles, 12/2002:
    Méthodes de tri multicritères.

8.  Y. De Smet, Université Libre de Bruxelles, 12/2005:
    Enchères multicritères.

9.  R. Hites, Université Libre de Bruxelles, 2005:

10. C. Lamboray, Université libre de Bruxelles, 2007:

11. M. El Battiui, Solvay Business School, Université Libre de Bruxelles, 2008:
    (direction)
    L'eau au Moyen-Orient : entre gestion et instrumentalisation.

12. C. Garcia Aranda, UNAM, Mexico, 2008: (president of jury)
    Seleccion multicriterio de technologias para el procesamiento de crudo en
    la produccion alternativa de petroquimicos en Mexico.

13. Ph. Nemery, 2008.
    Multicriteria sorting methods.

14. K. Sabri, Université de Liège, 2010.
    Mesures et approches multidimensionnelles multicritères des performances
    comparées des services publics en Afrique.

## Research contracts

1.  Development of a multicriteria decision support system for industrial evaluation (BANK ADVISER).
    Générale de Banque, Siège de Charleroi, 1987.

2.  Man/machine/man dialogue for a group decision support system.
    S.P.P.S. contract, Impulse programme "Technologie de l'Information", Volet informatique du futur, 1990-1993.

3.  Definition of a methodology for the evaluation and comparison of suppliers.
    Solvay s.a., 1992.

4.  Implementation of a multicriteria methodology for the evaluation and comparison of suppliers.
    Solvay s.a., 1994/95.

5.  Comparative study of potential locations for a nuclear waste repository in Belgium.
    ONDRAF, 1994/95.

6.  Clean Coal Strategy for Central and Eastern Europe (PHARE Multi-country Programme)
    European Commission, 1995/96.

7.  Short term seminar for the National Bank of Poland (PHARE Project) (applied statistics for finance)
    Association Belge des Banques, 1996.

8.  Development of a multicriteria decision support system for the planning of the electricity production and transportation networks of Electrabel.
    Electrabel, 1997/1998

9.  Development of an evaluation methodology for alternative solutions and for the quality of environmental impact studies.
    Ministère de la Région Wallonne, Direction Générale des Ressources Naturelles et de l'Environnement (ministry of environment, Walloon Region), 1999/2000.

10. Development of a software for the multicriteria evaluation of environmental impact studies.
    Ministère de la Région Wallonne, Direction Générale des Ressources Naturelles et de l'Environnement (ministry of environment, Walloon Region), 2000/2001.

11. Analysis of the insolvency fund of the ONDRAF (the Belgian nuclear waste management organization).
    ONDRAF, 2001.

12. Statistical survey analysis on the use of antibiotics.
    Bayer, 2002.

13. Training in decision aid for CORA managers, with ICN and Ecole des Mines de Nancy, France, 2002/2003.

14. Q-E-D project (development of a web-based DSS and of a demo multicriteria decision aid site), with Argon7, Belgium, 2002/2005.

15. Analysis of the insolvency risk level for ONDRAF (the Belgian nuclear waste management organization).
    ONDRAF, 2003.

16. Development of a sampling methodology for the evaluation of commercial credit in the balance of payments.
    National Bank of Belgium, 2004.

17. Development of a multicriteria evaluation model of the Belgian electricity transportation network, Elia, 2005.

18. Comparative analysis of multicriteria methods taking into account the needs of the Belgian Federal Police, Police Fédérale, 2007.

19. iVision, First-Spin Off project, 2007-2010.

20. Analysis of a flow management model for the Belgian natural gas transportation network, Fluxys, 2008.


## International cooperation

1. Cooperation agreement between ULB and the Université Laval (Québec) in the field of decision aid.

2. Cooperation agreement between ULB and the Université du Québec à Montréal in the field of multicriteria decision aid applied to environmental problems.

3. Research project on 'Decision Making in environmental evaluation: aggregation of impacts and participation of actors', grant from PARRI, Canada, collaboration with Université du Québec and University of Maryland.

4. Cooperation project "Communauté Française de Belgique (CGRI) - Fédération de Russie" with the Institute of Mathematics of Novosibirsk (Russia) : "Multicriteria decision support systems : methodology and applications in the banking sector.", 1997/1998.

5. Invited researcher at GERAD (Montréal) in 1997 and 1998.

6.  Project "Communauté Française de Belgique (CGRI) - Hongrie" en collaboration with the Hungarian Academy of Science: "Modèle multicritère et système d'aide à la décision pour l'évaluation et l'amélioration des processus de développement de logiciels", 1998/1999.

7.  NATO Collaborative Research Grant with Professor J.Ph. Waaub (UQAM, Montréal): "The treatment of missing values in multicriteria decision aid", 1998/1999.

8.  Convention with Visual Decision Inc. (Montréal, Canada) for the development of the Decision Lab multicriteria decision aid software, 1999/2004.

9.  Optimisation multicritère de l'élaboration par extrusion réactive de matériaux composites nano structurés à base de polymères, ENSAIA, Nancy, France, 2005.

10. Setup of a cooperation agreement between ULB and UNAM (Mexico), 2007.

11. Cooperation project with the University of Pernambuco (Recife, Brasil), 2010-2011.

12. Participation in the CONACYT (México) project "Evaluación económica y ambiental de escenarios al 2030 de la inserción de fuentes alternas de energía y medidas de eficiencia energética en el sistema energético mexicano con base a su potencial de reducción de GEI" (2012).