

Maria Immaculada Gálvez Carrillo

Curriculum Vitae

Education

- 2001 **Ph D in Mathematics**, *Departament de Matemàtiques, Universitat Autònoma de Barcelona (UAB)*, thesis: *Modular invariants for manifolds with boundary*, supervised by Carles Casacuberta.
<http://hdl.handle.net/10803/3071>
- 1996 **Master in Mathematics**, *Departament de Matemàtiques, UAB*, masters thesis: *Funcions modulares associades a classes de cobordisme de varietats*, supervised by Carles Casacuberta.
Geometry and Topology doctoral programme
- 1989 - 1993 **Degree in Mathematics: *Llicenciada en Matemàtiques***, *Universitat Autònoma de Barcelona*, degree prize *Premi Extraordinari Fi de Carrera* 1993.
- 1984 - 1989 **Degree in Philosophy: *Llicenciada en Filosofia i Lletres (Filosofia)***, *Universitat Autònoma de Barcelona*, grade average: *Excel·lent*.
- 2008 **Accreditation**, AQU, level: *Professora Lectora*
- 2013 **Positive Evaluation**, ANECA, level: *Profesora Contratada Doctora*
- 2013 **Accreditation**, AQU, level: *Professora Agregada*

Employment and Grants

- 2011- **Professora Lectora**, *Universitat Politècnica de Catalunya*, Escola d'Enginyeria de Terrassa, Departament de Matemàtica Aplicada III.
- 2008 -2011 **Professora Associada**, *Universitat Autònoma de Barcelona*, Departament de Matemàtiques.
- 2011 **Awarded grant and leave for production of teaching materials (not taken up)**, *Materials personalitzables per a les matemàtiques del primer cicle de l'ESO*, Departament d'Educació, under the supervision of Dr Natàlia Castellana, Departament de Matemàtiques, UAB.
- 2009 - 2011 **Professora d'Ensenyament Secundari**, *Generalitat de Catalunya*, Departament d'Educació, IES Federica Montseny, Badia del Vallès.
Teacher of Mathematics and Computing
- 2008 - 2009 **Professora d'Ensenyament Secundari**, *Generalitat de Catalunya*, Departament d'Educació, IES Jaume Mimó School, Cerdanyola del Vallès.
Teacher of Technology, Industrial Technology and Mathematics.
- 2003 - 2008 **Lecturer (Contract Staff)**, *London Metropolitan University*, United Kingdom, Departments of Computing and Mathematics, and Learning Development Unit.
- 2008 - **Honorary Research Fellow**, *STORM, London Metropolitan University*.

- 2001-2, 02-3 **Postdoctoral fellow**, *University of Sheffield*, United Kingdom,
Local Coordinator: Prof. John Greenlees.
European commission grant HPRN-CT-1999-00119
- 2002 **Postdoctoral Fellow**, *Université des Sciences et Technologies de Lille 1*, France,
Local Coordinator: Prof. Daniel Tanré.
European commission grant HPRN-CT-1999-00119
- 1999 **Doctoral Fellow**, *Instituto Tecnológico de Buenos Aires*, Argentina,
supervised by: Dr. Jorge Devoto. Grant 1999-BEAI-200228.
- July 1993 - **Professora del Cos de Professors d'Ensenyament Secundari, Especialitat: Matemàtiques**, *Generalitat de Catalunya, Departament d'Educació*, civil servant: registered secondary school teacher, speciality: mathematics, position held at IES Jaume Mimó, Cerdanyola del Vallès from 1994.
on leave November 2001 – September 2008
- 1993 - 2001 **Professora Associada**, *Universitat Autònoma de Barcelona*, Departament de Matemàtiques.
- 1992 - 1993 **Teaching grant**, *UAB*, Mathematics Department.
Algebra and analysis course, 1st year Mathematics.

Refereed publications in international journals

- 2014 **Groupoids and Faà di Bruno formulae for Green functions in bialgebras of trees**,
I Gálvez-Carrillo, J Kock, A Tonks, *Advances in Mathematics*, 254(2014), 79-117.
<http://dx.doi.org/10.1016/j.aim.2013.12.015>
- 2014 **Central cohomology operations and K -theory**,
I Gálvez-Carrillo, S Whitehouse, *Proceedings of the Edinburgh Mathematical Society*, 57(03) (2014), 699-711 .
<http://dx.doi.org/10.1017/S0013091513000680>
- 2013 **Thomason cohomology of categories**,
I Gálvez-Carrillo, F Neumann, A Tonks, *Journal of Pure and Applied Algebra*, 217 (2013), no. 11, 2163–2179.
<http://dx.doi.org/10.1016/j.jpaa.2013.02.005>
- 2012 **Homotopy Batalin-Vilkovisky algebras**,
I Gálvez-Carrillo, A Tonks, B Vallette, *Journal of Noncommutative Geometry*, 6 (2012), no. 3, 539–602. .
<http://dx.doi.org/10.4171/JNCG/99>
- 2012 **André spectral sequences for Baues-Wirsching cohomology of categories**,
I Gálvez-Carrillo, F Neumann, A Tonks, *Journal of Pure and Applied Algebra*, 216 (2012), no. 11, 2549–2561.
<http://dx.doi.org/10.1016/j.jpaa.2012.03.025>
- 2010 **Homotopy Gerstenhaber structures and vertex algebras**,
I Gálvez, V Gorbounov, A Tonks, *Applied Categorical Structures*, 18, 1–15.
<http://dx.doi.org/10.1007/s10485-008-9170-3>
- 2005 **Infinite sums of Adams operations and cobordism**,
I Gálvez, S Whitehouse, *Mathematische Zeitschrift*, 251, 475–489.
<http://dx.doi.org/10.1007/s00209-005-0816-7>
- 2003 **Differential operators and the Witten genus for projective spaces and Milnor manifolds**,
I Gálvez, A Tonks, *Math Proc Cambridge Philos Soc*, 135, 123–131.
<http://dx.doi.org/10.1017/S0305004102006618>

Thesis

- 2001 **Modular invariants for manifolds with boundary**, 125 pp, Universitat Autònoma de Barcelona, Ph.D. Thesis.
<http://hdl.handle.net/10803/3071>
- 1996 **Funcions modulars associades a classes de cobordisme de varietats**, 77 pp, Departament de Matemàtiques, UAB, Master Thesis.
http://www.ma3.upc.edu/users/galvez/Imma%20Galvez%20Carrillo_files/tesina.pdf

Refereed publications in conference proceedings

- 2014 **Periodic orbits of planar integrable birational maps**,
I Gálvez-Carrillo, V Mañosa,
Proceedings of the International Workshop on Nonlinear Maps and their Applications, Springer Proceedings in Mathematics and Statistics, *to appear*, 24 pp.
<http://hdl.handle.net/2117/21748>
- 2013 **Estructuras A-infinito en la operada de cactus**,
I Gálvez-Carrillo, L Lombardi, A Tonks, *Actas del XIX Encuentro de Topología, A Coruña, 19-20 Octubre 2012*, 91-94, ISBN/ISSN: 978-84-941723-6-6.
<http://hdl.handle.net/2117/22097>

Submitted papers

- 2013 **An A-infinity operad in spineless cacti**,
I Gálvez-Carrillo, L Lombardi, A Tonks.
<http://www.newton.ac.uk/preprints/NI13006.pdf>, <http://arxiv.org/abs/1304.0352>

Preprints

- 2014 **Decomposition spaces, incidence algebras and Mobius inversion**,
I Gálvez-Carrillo, J Kock, A Tonks, 151 pp.
<http://arxiv.org/abs/1404.3202>

Advanced Course Notes

- **Estructuras homotópicas de orden superior, álgebras de vértices y complejo de De Rham quiral**,
I Gálvez-Carrillo, A Tonks, Curso Avanzado, Universidad de Buenos Aires, 2009.
http://www.ma3.upc.edu/users/galvez/Imma%20Galvez%20Carrillo_files/curso-buenos-aires-2009-notas-terrassa-2011-VA.pdf

Research work in progress

- **Three Hopf algebras and their common simplicial and categorical background**,
with R Kaufmann, A Tonks.
- **B_∞ -algebras and separable permutations**,
with M O Ronco, A Tonks.

- **Algebraic structure on the Hochschild cochains of derived A_∞ -algebras**, with C Roitzheim, A Tonks, S Whitehouse.
- **Cohomological localization towers**, with C Casacuberta.
- **On the cohomology of 2-categories**, with F Neumann, S Paoli, A Tonks.
- **Gabriel–Zisman cohomology and the Serre spectral sequence**, with F Neumann, A Tonks.
- **On deviations of commutative Koszul algebras**, with V Gorbounov, Z Shaikh, A Tonks.
- **Generalized Artin Theorem for fusion systems**, with N Castellana, A Tonks.
- **Generalized cohomology theories, the Witten genus and quasimodular forms.**
- **Elliptic genera and Atiyah–Patodi–Singer constructions.**
- **Generalized Eisenstein genera.**
- **Modular η -invariants and elementary number theory.**
- **Some remarks on $Spin^c$ -genera of the elliptic type.**

Participation in publicly funded research projects

- 2012 - 2015 **Homotopía estructurada**, *MINECO*, MTM2013-42178-P, principal researcher Professor Carles Casacuberta, UPC.
52.789 euros, 12 participating researchers
- 2012 - 2015 **GEOMETría algebraica, simpléctica, aritmética, y APLICACIONES-GEOMAP-UPC**, *MINECO*, MTM2012-38122-C03-01, principal researcher Professor Marta Casanellas, UPC.
131.625 euros, 15 participating researchers
- 2010 - 2013 **Análisis local en grupos y espacios topológicos**, *MICINN*, MTM2010-20692, principal researcher Professor Natàlia Castellana, UAB.
132.100 euros, 13 participating researchers
- 2010 - 2013 **Homotopía de orden superior en álgebra y geometría**, *MICINN*, MTM2010-15831, principal researcher Professor Carles Casacuberta, UB.
92400 euros, 9 participating researchers
- 2009 - 2013 **Grup de Topologia Algebraica de Barcelona**, *Generalitat de Catalunya*, 2009 SGR2-1092, principal researcher Professor Jaume Agudé, UAB.
50960 euros, 15 participating researchers
- 2007 - 2010 **Estructuras homotópicas de nivel superior**, *MEC-FEDER*, MTM2007-63277, principal researcher Professor Carles Casacuberta, Universitat de Barcelona.
107085 euros, 9 participating researchers
- 2005 - 2008 **Grup de Topologia Algebraica de Barcelona**, *Generalitat de Catalunya*, SGR2005-00606, principal researcher Professor Jaume Agudé, UAB.
42200 euros, 20 participating researchers

- 2004 - 2007 **Localizaciones en categorías de modelos simpliciales**, *MEC-FEDER*, MTM2004-03629, principal researcher Professor Carles Casacuberta, UB.
80040 euros, 7 participating researchers
- 2001 - 2004 **Construcciones universales en homotopía estable e inestable**, *MECyT*, BFM2001-2031, principal researcher Professor Carles Casacuberta, Universitat de Barcelona.
39907 euros, 7 participating researchers
- 2000 - 2003 **Modern Homotopy Theory**, *European Comission*, HPRN-CT-1999-00119, principal researcher Professor John Hubbuck, Aberdeen University.
1311000 euros, Aarhus, Aberdeen, CRM Barcelona, Lille, Lovaina, Paris 13, Sheffield
- 1998 - 2001 **Localizaciones homológicas y homotópicas**, *DGES*, PB97-0202, principal researcher Professor Prof Carles Casacuberta, UAB.
2000000 Pta, 7 participating researchers
- 1995 - 1998 **Métodos cohomológicos en homotopía inestable**, *DGICyT*, PB94-0725, principal researcher Professor Prof Jaume Agudé, UAB.
4000000 Pta, 12 participating researchers
- 1994 - 1997 **Homotopy Theory and its Applications**, *European Commission*, ERBCHRXCT 940560, principal researcher Professor Renzo Piccinini, University of Milan.
200000 ECU. Aarhus, Aberdeen, CRM Barcelona, Heidelberg, Milan, Oxford, Paris 13, Warwick
- 1994 - 1996 **Elliptic Cohomology**, *European Commission*, ERBCHRXCT 940441, principal researcher Professor Charles Thomas, University of Cambridge. 120000 ECU.

Research visits

- Jul-Aug 2014 **Instituto de Matemáticas y Física**, *Universidad de Talca, Chile*, Profesora Visitante, collaboration with M O Ronco.
- Jan-Apr 2013 **Isaac Newton Institute for Mathematical Sciences**, *Cambridge*, Visiting Fellow, Programme: Grothendieck-Teichmüller Groups, Deformation and Operads.
- 08-2012 **SoMAS, University of Sheffield**, *Sheffield*, collaboration with S Whitehouse.
- 01-2012 **Max-Planck Institut für Mathematik**, *Bonn, Germany*, collaboration with V Gorbounov.
- 01-2012 **Mathematisches Institut, Westfälisches Wilhelm-Universität Münster**, *Münster, Germany*, invited by C Ausoni, M Joachim.
- 11-2011 **STORM-FoC, London Metropolitan University**, *London, UK*, collaboration with A Tonks.
- 10-2011 **School of Mathematics, University of Aberdeen**, *Aberdeen, UK*, collaboration with V Gorbounov.
- 08-2011 **SoMAS, University of Sheffield**, *Sheffield, UK*, collaboration with S Whitehouse.
- 08-2011 **STORM-FoC, London Metropolitan University**, *London, UK*, collaboration with A Tonks.
- 02-2011 **STORM-FoC, London Metropolitan University**, *London, UK*, collaboration with A Tonks / organisation of workshop.
- 02-2010 **Max-Planck Institut für Mathematik**, *Bonn, Germany*, collaboration with V Gorbounov.
- 09-2009 **Universidad de Buenos Aires**, *Argentina*, 3 weeks.
Delivered advanced course "Estructuras homotópicas de orden superior, álgebras de vértices y complejo de De Rham quiral."

- 07-2009 **Max-Planck Institut für Mathematik, Bonn, Germany**,
collaboration with V Gorbounov.
- 2004 **Centre de Recerca Matemàtica, Barcelona, Spain**, 6 weeks.
Programme: "Homotopy Theory"
- 2002 - 2003 **University of Sheffield, UK**, postdoctoral fellow, 36 weeks.
European Commission network "Modern Homotopy Theory", principal researcher: J. Greenlees
- 2002 **Université des Sciences et Technologies de Lille, France**, postdoctoral fellow.
26 weeks, EC network "Modern Homotopy Theory", principal researcher: D. Tanré
- 2001 - 2002 **University of Sheffield, UK**, postdoctoral fellow.
26 weeks, EC network "Modern Homotopy Theory", principal researcher: J. Greenlees
- 1999 **ITBA/UBA, Argentina**, Doctoral student, 22 weeks.
Topic "Cohomología elíptica y el género de Witten", supervised by J. Devoto
- 1998 **School of Mathematics, University of Wales, Bangor, UK**, 5 weeks.

Postgraduate Teaching and Supervision

- 2014 *Research supervision: Assistant Ph D Supervisor*
Student: Leandro Ezequiel Lombardi,
Departamento de Matemática, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Argentina
Local Supervisor: Marco Farinati (UBA).
Thesis: '*Una estructura de álgebra asociativa a menos de homotopía en el operad de cactus*',
Thesis defense 31/03/2014
- 2013-2014 *Advanced course: Differential geometry from a simplicial point of view*
STORM-London Metropolitan University
19-23 August 2013 Part I, 18-23 August 2014 Part II
- 2012-2015 *Master course: Research Methods*
Master in Optometry and Vision Science, Facultat d'Òptica i Optometria, Universitat Politècnica de Catalunya Winter Semester 2012-2013, 2013-2014, 2014-2015
- 2009 *Advanced course: Estructuras homotópicas de orden superior, álgebras de vértices y complejo de De Rham quiral*
Departamento de Matemática, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, 2009

Conferences

Organisation

- 10 - 2014 **Barcelona Topology Workshop BaTaWo'14**, *Grup de Topologia Algebraica de Barcelona*, coorganised with N Castellana, W Pitsch.
Centre de Recerca Matemàtica, Bellaterra, <http://mat.uab.cat/~btw/index.html>
- 7 - 2014 **Homotopical Algebra Summer Days**, coorganised with C Casacuberta, P Pascual, Abdó Roig, Agustí Roig, A Tonks.
IMUB, Facultat de Matemàtiques, Universitat de Barcelona <http://www.imub.ub.edu/activitats/Any2014/hasd2014>

- 6 - 2013 **Métodos Homotópicos en Topología Álgebra y Geometría**, *Jornadas de la Red Española de Topología*, coorganised with Pere Pascual, Agustí Roig i Abdó Roig.
Facultat de Matemàtiques i Estadística, Universitat Politècnica de Catalunya, <http://mhagt.fme.upc.edu/inicio.html>
- 12 - 2012 **Barcelona Topology Workshop BaTaWo'12**, *Grup de Topologia Algebraica de Barcelona*, coorganised with C Broto.
Centre de Recerca Matemàtica, Bellaterra, <http://mat.uab.cat/~btw/2012/>
- 7 - 2012 **Homotopical Algebra Summer Day**, *coorganised with J Gutiérrez*.
IMUB, Facultat de Matemàtiques, Universitat de Barcelona <http://www.imub.ub.edu/activitats/Any2012/hoalg2012/>
- 3 - 2012 **Higher Homotopy in Barcelona**, coorganised with U Buijs y J Gutiérrez.
IMUB, Facultat de Matemàtiques, Universitat de Barcelona <http://www.imub.ub.es/hhinbcn2012/>
- 11 - 2011 **Topological Quantum Field Theories**, coorganised with L. Álvarez-Cónsul, F. Cantero, C. Casacuberta, O. García-Prada, J. Kock, I. Mundet-i-Riera .
IMUB, Facultat de Matemàtiques, Universitat de Barcelona <http://www.imub.ub.es/TQFTs.html>
- 2 - 2011 **Higher Homotopy in London**, coorganised with A Tonks.
STORM, London Metropolitan University, London, <http://www.londonmet.ac.uk/research/storm/news/news.cfm>
- 12 - 2010 **Barcelona Topology Workshop BaTaWo'10**, *Grup de Topologia Algebraica de Barcelona*, coorganised with A Ruiz.
Cal Compte, Torroja del Priorat, <http://mat.uab.cat/~btw/2010/>
- 10 - 2010 **Lectures on equivariant stable homotopy theory**, *Professor Stefan Schwede*, Grup de Topologia Algebraica de Barcelona, Bellaterra.
CRM Minicourse, <http://mat.uab.cat/topalg>

Invited talks at conferences and workshops

- 9-7-2014 **Some bialgebras related to quantum field theory from a simplicial point of view**, *Algebraic Methods in Quantum Field Theory, Mathematical Days in Sofia*, Institute of Mathematics and Informatics, Sofia, Bulgaria.
- 7-6-2014 **Biálgebras desde dos puntos de vista simpliciales**, *Métodos Homotópicos y Categóricos en Álgebra, Geometría y Topología*, Instituto de Matemática, IE-MATH-GR, Universidad de Granada, Spain.
- 23-10-2012 **An A-infinity structure on the cactus operad**, *Higher Homotopy in A Coruña*, Aula Náutica, Universidade da Coruña, A Coruña, Spain.
- 23-10-2011 **Grupoides y fórmulas de Faà di Bruno para funciones de Green**, *Higher Homotopy in Seville*, IMUS, Facultad de Matemáticas, Universidad de Sevilla, Sevilla, Spain.
- 27-09-2011 **Generalized syzygies for commutative Koszul algebras**, *Joint Mathematical Conference CSASC 2011*, Donau-Universität Krems, Krems, Austria.
- 22-09-2011 **Groupoids and Faà di Bruno formulae for Green functions**, *Physical applications of non-commutative Geometry FME/UPC-CIEMAT*, FME, Universitat Politècnica de Catalunya, Barcelona, Spain.
- 03-02-2011 **Koszul duality and cohomology**, *Higher Homotopy in London*, STORM, London Metropolitan University, London, UK.
- 18-06-2008 **Homotopy structures on vertex algebras**, *Workshop on the Chiral de Rham Complex*, Max Planck Institut für Mathematik, Bonn, Germany.

- 03-11-2007 **Álgebras de vértices vistas como álgebras salvo homotopía**,
XIV Encuentro de Topología, Granada, Spain.
- 22-08-2005 **On the Witten genus and quasimodular forms**,
Conference 'Arithmetic of Structured Ring Spectra', Rosendal, Norway.
- 13-09-2003 **On the arithmetic of operations and cooperations in elliptic cohomology**, *ATM03: Algebraic Topology in Málaga*.
- 04-07-2003 **Genre elliptique et équations différentielles**,
Journées de Topologie et Géométrie Algébriques 2, Carthage, Tunisia.
- 19-11-2001 **Elliptic genera and invariants of manifolds with boundary**,
Transpennine Topology Triangle TTT32, Manchester, UK.
- 28-09-2001 **Jacobi forms, formal group laws and manifolds with boundary**,
Conference on Jacobi Forms and Applications, Luminy, France.
- 05-07-2001 **Modular eta invariants and elementary number theory**,
B2001ETC EuroPhD Topology Conference, CRM, Bellaterra, Spain.
- 08-12-1997 **On the Witten Genus of Projective Spaces and Milnor Manifolds**,
Augsburger Geometrietage, Augsburg, Germany.

Other contributions to conferences and workshops

Talks

- 24-03-2012 **Central operations come from K -theory**,
Higher Homotopy in Barcelona, IMUB, Facultat de Matemàtiques, Universitat de Barcelona, Barcelona, Spain.
- 12-09-2007 **Higher homotopy structures on vertex algebras**,
22nd British Topology Meeting, University of Sheffield, UK.
- 04-09-2007 **Vertex Algebra Viewed as Algebra up-to Homotopy**,
EWM: European Women in Mathematics, University of Cambridge, UK.
- 05-09-2006 **Up-to-homotopy structures on Vertex Algebras**, *VASBI*,
ICM Satellite Conference on K-theory and Noncommutative Geometry, Valladolid, Spain.

Posters

- 03-04-2013 **An A_∞ -operad in spineless cacti**,
Higher Structure 2013: Operads and Deformation Theory, Newton Institute, University of Cambridge, UK.
- 19-10-2012 **Estructuras salvo homotopía en la opérada de cactus**,
XIX Encuentro de Topología, Universidade da Coruña, A Coruña, Spain.
- 17-09-2010 **Homotopy Batalin–Vilkovisky Algebras**, *1st Catalan-Swedish Mathematics Conference*,
IEC, Barcelona, Spain.
- 28-08-2010 **Homotopy Batalin–Vilkovisky Algebras**, *International Conference of Mathematicians ICM2010*,
Hyderabad, India.
- 26-06-2010 **Constructing Generalised Leray Spectral Sequences**,
Young Women in Topology, Hausdorff Research Institute for Mathematics, GRK 1150: Homotopie und Kohomologie, Bonn, Germany.
- 07-06-2005 **The Witten genus and quasimodular forms**, *Poster*,
CIMMA International Mediterranean Congress of Mathematics, Almeria, Spain.

- 09-04-2005 **Formas casi modulares y teorías de cohomología generalizadas**, *Poster*, XII Encuentro de Topología, Universidad de La Laguna, Spain.
- 03-05-2003 **Algunas ecuaciones diferenciales relacionadas con los géneros elípticos de nivel uno**, *Poster*, X Encuentro de Topología, Universidad del País Vasco, Bilbao, Spain.
- 26-06-2001 **Modular eta invariants and elementary number theory**, *Poster*, International Conference in Algebraic Topology, Isle of Skye, UK.
- 12-1997 **Ecuaciones Diferenciales y el Género de Witten**, *Poster*, V Encuentro de Topología, Universidad de Santiago de Compostela, Santiago de Compostela, Spain.
- 12-1996 **'El Género de Witten**, *Poster*, IV Encuentro de Topología, Universidad de la Rioja, Logroño, Spain.

Other invited seminars and talks given (since 2000)

- 26-11-2013 'An operadic view of Goncharov's bialgebra of iterated integrals', Algebra and Combinatorics Seminar, ICMAT-UAM (Cantoblanco, Madrid)
- 11-03-2013 'Higher homotopy structures in the spineless cactus operad', Glasgow Geometry and Topology Seminar, (Glasgow)
- 01-11-2012 'Higher homotopy structures in the spineless cacti operad', Leicester Pure Mathematics Seminar Series (Leicester)
- 24-01-2012 'Faà di Bruno formulae for Green Functions and Cardinality from Groupoids', Oberseminar Topologie Münster, (Münster)
- 26-05-2011 'Groupoides i fórmules de Faà di Bruno per a funcions de Green', Seminari GTAB, UAB-CRM, curs 2011-2012 (Bellaterra)
- 26-05-2011 'Generalized Syzygies for Koszul commutative algebras', Algebra and Combinatorics Seminar, CRM-UAB (Bellaterra)
- 18-11-2010 'The Hirzebruch signature theorem', Seminari Junior, Grup de Topologia Algebraica de Barcelona (GTAB), UAB (Bellaterra)
- 14-05-2010 'The spectrum $MU^{((G))}$ — III', Seminari Kervaire, Grup de Topologia Algebraica de Barcelona (GTAB), UAB (Bellaterra)
- 12-05-2010 'La 2-categoria de les categories diferencials graduades', Seminari de Categories Diferencials Graduades, GRGTA, UB-UPC
- 30-04-2010 'The spectrum $MU^{((G))}$ — II', Seminari Kervaire, GTAB, UAB (Bellaterra)
- 16-04-2010 'The spectrum $MU^{((G))}$ — I', Seminari Kervaire, GTAB, UAB (Bellaterra)
- 05-2009 'Teorema de representabilitat de Brown', Seminari Junior de Topologia, UAB
- 11-2008 'Aritmètica p -àdica', 2 xerrades, Seminari Junior de Topologia, UAB
- 12-2007 'Up-to-homotopy structures on Vertex Algebras', Topology Seminar, Aberdeen
- 11-10-2007 'Vertex Operator Algebras and G_∞ Algebras', Universidade do Minho, Portugal
- 09-10-2007 'Álgebras de vértices como álgebras salvo homotopía', Universidad de Santiago de Compostela
- 24-05-2007 'Gerstenhaber-infinity structures on vertex algebras', Pure Maths Colloquium, Leicester
- 15-12-2006 'Estructures homotòpiques per a àlgebres de vèrtexs', Seminari de topologia, UAB
- 01-11-2006 'The Harish–Chandra isomorphism', London Number Theory Study Group
- 13-03-2006 'Vertex algebras, elliptic genera and chiral de Rham complex', Imperial College, London
- 01-2006 'Quasimodular forms and the Witten genus', Universität Münster, Germany
- 24-01-2006 'Witten genus and quasimodular forms', Universität Bonn, Germany
- 09-2005 'Formas casi-modulares y género de Witten', Universidad de Santiago

- 14-03-2005 'A walk through the landscape of elliptic genera', Imperial College, London
- 31-03-2004 'Infinite sums of Adams operations', Seminari de Topologia, UAB
- 03-05-2002 'Constructions d'APS et cohomologie elliptique', Université Paris XIII
- 03-2002 'Constructions d'APS et cohomologie elliptique', Université de Lille
- 12-12-2001 'Elliptic genera and invariants for manifolds with boundary', Sheffield University
- 12-2001 'Elliptic genera and invariants for manifolds with boundary', Glasgow University
- 11-2001 'APS constructions in elliptic cohomology and number theory', Aberdeen University
- 10-2001 'APS constructions in elliptic cohomology and number theory', Leicester University
- 06-2000 'Eta invariants and elliptic cohomology', Centre de Recerca Matemàtica, Barcelona
- 03-2000 'Eta invariants and elliptic cohomology', Massachussets Institute of Technology

Other conferences, advanced courses and workshops attended (since 2001)

- 4-2014 Peripatetic Seminar on Sheaves and Logic, Brno, Czech Republic
- 9-2013 Recent Trends in Algebraic and Geometric Combinatorics, ICMAT, Cantoblanco, Madrid
- 9-2013 Barcelona Topology Workshop GTAB 2013, Món Sant Benet
- 9-2013 Conference on Type Theory, Homotopy Theory, and Univalent Foundations, CRM, Bellaterra
- 9-2013 Homotopy Theory in Type Theory, IMUB, Barcelona
- 9-2013 The Mathematical Legacy of Jean-Louis Loday, Strasbourg, France
- 8-2013 Mathematical Congress of the Americas 2013, Guanajuato, Mexico
- 4-2013 Advanced Course on Flag Manifolds and Schubert Calculus, CRM, Bellaterra
- 8-2012 Fourth Arolla Conference on Algebraic Topology, Arolla, Switzerland
- 8-2012 String and Automorphic Forms in Topology, Ruhr Universität Bochum
- 6-2012 Commutative Algebra and Related Topics+INDAM-Day, DiMA, UdS Genova
- 12-2011 Barcelona Topology Workshop GTAB 2011, UAB
- 10-2011 XVIII Encuentro de Topología, Universidad de Sevilla
- 09-2011 European Women in Mathematics, CRM, Bellaterra
- 09-2011 Large Cardinals in Homotopy Theory, Universitat de Barcelona
- 08-2011 Structured Ring Spectra, University of Hamburg
- 06-2011 Los problemas del milenio, RSME-IMUB, Universitat de Barcelona
- 11-2010 XVII Encuentro de Topología, Universidad de Zaragoza
- 10-2010 Trenzas. Jornada temática interdisciplinar, Red Española de Topología, IMUB(Universitat de Barcelona)
- 08-09-2010 Conference on Homotopy theory and derived algebraic geometry, Fields Institute, Toronto, Canada
- 08-2010 International Conference of Women Mathematicians, University of Hyderabad
- 08-2010 Conference on Complex Geometry, Group actions and Moduli spaces, University of Hyderabad
- 07-2010 Regulators III, IMUB, Universitat de Barcelona
- 03-2010 Métodos homotópicos en geometría y álgebra, IMUS, Sevilla
- 07-2008 Homotopy Structures in Geometry and Algebra; Derived Categories, Higher Categories (HO-CAT 2008) CRM
- 06-2008 Homotopical Group Theory and Topological Algebraic Geometry, Bonn
- 02-2008 Workshop on Algebra and Geometry of Groups and Classifying Spaces, CRM

- 02-2008 Workshop on Categorical and Homotopical Structures in Proof Theory, CRM
- 02-2008 Advanced Course on Simplicial Methods in Higher Categories, CRM
- 04-2008 Topological and Differentiable Stacks, Centre de Recerca Matemàtica
- 11-2007 Workshop on Derived Categories, Centre de Recerca Matemàtica
- 01-2007 Sedano Winter School on K-theory
- 01-2007 Higher structures in geometry and physics, IHP, Paris
- 09-2006 Geometry conference in honour of Nigel Hitchin, CSIC, Madrid
- 08-2006 International Congress of Mathematicians, Madrid
- 01-2006 Stringy Topology, Morelia, Mexico
- 09-2005 SECA III: seminario de categorías y aplicaciones, Santiago de Compostela
- 09-2004 Elliptic Cohomology and Loop Spaces, Fields Institute, Canada
- 09-2004 SECA II: seminario de categorías y aplicaciones, Granada
- 08-2004 Arolla Conference on Algebraic Topology, Switzerland
- 10-2003 'Workshop on Topological Modular Forms', Münster, Germany
- 09-2003 'String Topology and Hochschild Homology; Applications to Mathematical Physics', Almeria
- 07-2003 'Geometry and Cohomology in Group Theory', LMS Durham Symposium
- 04-2001 16th British Topology Meeting, ICMS Edinburgh

Teaching

Professora Lectora, Departament de Matemàtiques III, Universitat Politècnica de Catalunya

- 2012-2015 *Lectures, Example Sessions and Tutorials* for **Numerical Methods in Engineering: Finite Elements Method**
(Mechanical, Electrical, Electronics and Automatics, Chemical and Textile Engineering Degrees, Escola d'Enginyeria de Terrassa, 4th year).
Design and delivery of a new module, as part of a team
- 2012-2013 *Lectures, Example Sessions and Tutorials* for **Mathematics I**
(Mechanical, Electrical, Electronics and Automatics, Chemical and Textile and Product Design and Development Engineering Degrees, Escola d'Enginyeria de Terrassa, 1st year)
- 2012-2015 *Lectures and Tutorials* for **Research Methods**
(Màster Universitari d'Optometria I Ciències de la Visió)
Design and delivery of a new module, as part of a team
- 2011-2012 *Lectures, Example Sessions and Tutorials* for **Mathematics I**.
(Mechanical, Electrical, Electronics and Automatics, Chemical and Textile and Product Design and Development Engineering Degrees, Escola d'Enginyeria de Terrassa, 1st year).
- 2012 *Lectures, Example Sessions and Tutorials* for **Probability and Statistics**
(Mechanical, Electrical, Electronics and Automatics, Chemical and Textile and Product Design and Development Engineering Degrees, Escola d'Enginyeria de Terrassa, 2nd year).
- 2011-2011 *Lectures, Example Sessions and Tutorials* for **Mathematics I**.
(Mechanical, Electrical, Electronics and Automatics, Chemical and Textile and Product Design and Development Engineering Degrees, Escola d'Enginyeria de Terrassa, 1st year).
- 2011-2011, 2013-2015 *Lectures and Tutorials* de for **Mathematics for Optics and Optometry**.
(Optics and Optometry Degrees, Escola d'Òptica i Optometria de Terrassa, 1st year).

Pastoral Care

- 2012-2015 **First Year Tutor**
(Mechanical, Electrical, Electronics and Automatics, Chemical and Textile and Product Design and Development Engineering Degrees, Escola d'Enginyeria de Terrassa, 1st year)

Teaching Innovation in Higher Education Project

- 06-2012 **Poster: 'Aprenentatge actiu de conceptes en probabilitat i estadística per a l'enginyeria'**, *Reptes actuals per a la funció i la formació docent del professorat universitari a la UPC*, Universitat Politècnica de Catalunya.

Profesora Associada, Departament de Matemàtiques, Universitat Autònoma de Barcelona

- 1993 - 2001 *Example Sessions and Tutorials for **Differential Geometry II***. (Mathematics Degree, 3rd year). Years 1994–96 y 1997–98.
*Example Sessions for **Riemannian Geometry***. (Mathematics Degree, 4th year). Years 1998–2001.
*Example Sessions for **Further Differential Geometry***. (Mathematics Degree, 4th year). Years 1997–98.
*Example Sessions for **Topology II***. (Mathematics Degree, 3rd year). Year 1999–2000.
*Example Sessions for **Mathematical Statistics***. (Degree in Statistics, 2nd Year). Year 2000–01.
*Example Sessions for **Statistics***. (Degree in Biotechnology, 2nd year). Years 1999–2001.
*Lectures, Example Sessions and Tutorials for **Statistics***. (Degree in Chemistry, 2nd and 3rd year). Years 1993–1996, 2000–2001 and only *Example Sessions and Tutorials*) 1999–2000.
*Example Sessions for **Mathematics***. Years 1998–99 (Veterinary Degree, 1st year) and 1998–2000 (Geology Degree, 1st year).
*Lectures for **Linear Algebra***. (Computing Engineering, 1st year). Years 1996–1999.
*Lectures, Example Sessions and Tutorials for **Combinatorics and Optimization***. (Computing Engineering, 2nd year). Years 1996–1998.

Profesora Invitada, Departamento de Matemática, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Argentina

- 2009 Advanced Course '**Estructuras homotópicas de orden superior, álgebras de vértices y complejo de De Rham quiral**'.

Fixed Term Lecturer, London Metropolitan University, Department of Computing, Communications Technology and Mathematics and Learning Development Unit

- 2002-2003 *Semester B* (beginning February 2003)
Data Analysis, 60 hours, lectures and tutorials, Core, Level 1, B.Sc (Hons) in Mathematics, Statistics, Biochemistry, Forensic Science, Biological Sciences, Biomedical Sciences, Financial Mathematics, Food Science, Sport Science, Human Nutrition, Microbiology
Formal Specification Methods, 30 hours, tutorials. Core, Level 2, B.Sc (Hons) in Computer Science
Foundation Mathematics II, 30 hours, tutorials. Core, Extended Science Degree
Mathematics and Statistics Workshop, 42 hours, tutorials. Elective, B.Sc, B.Eng, B.Ed, B.A
- 2003-2004 *Semester A* (beginning September 2003)
Mathematics Foundation Year, 90 hours, lectures and tutorials. Core, Extended Science Degree
Discrete Mathematics for Computing, 30 hours, tutorials. Core, HND in Computing
Data Analysis, 90 hours, lectures and tutorials. Core, Level 1, B.Sc (Hons) in Mathematics, Statistics, Biochemistry, Forensic Science, Biological Sciences, Biomedical Sciences, Financial Mathematics, Food Science, Sport Science, Human Nutrition, Microbiology
Mathematics and Statistics Workshop, 105 hours, tutorials. Elective, B.Sc, B.Eng, B.Ed, B.A

- 2003-2004 *Semester B* (beginning February 2004)
Quantitative methods, 30 hours, lectures. Core, Level 1, B.Sc (Hons) in Business and Mathematics
Linear algebra and cryptography, 30 hours, lectures and tutorials. Core, Level 2, B.Sc (Hons) in Business and Mathematics
Formal methods of specification, 30 hours, tutorials. Core, Level 2, B.Sc (Hons) in Computer Science
Mathematics and Statistics Workshop, 70 hours, tutorials. Elective, B.Sc, B.Eng, B.Ed, B.A
- 2004-2005 *Semester A* (beginning September 2004)
Mathematics for Social Workers, 15 hours, lectures and tutorials. Designate, B.A in Social Work
Data Analysis, 30 hours, tutorials. Core, Level 1, B.Sc (Hons) in Mathematics, Statistics, Biochemistry, Forensic Science, Biological Sciences, Biomedical Sciences, Financial Mathematics, Food Science, Sport Science, Human Nutrition, Microbiology
Mathematics for Multimedia-Modelling and Portfolio Development, 30 hours, tutorials. Core, Level 1, B.Sc (Hons) in Computer Visualisation and Games, Multimedia Technology and Applications
Calculus, 30 hours, tutorials. Core, Level 2, B.Sc (Hons) in Mathematics
Mathematics and Statistics Workshops, 70 hours, tutorials. Elective, B.Sc, B.Eng, B.Ed, B.A
- 2004-2005 *Semester B* (beginning February 2005)
Mathematics and Statistics Workshops, 70 hours, tutorials. Elective, B.Sc, B.Eng, B.Ed, B.A
Discrete Mathematics, 30 hours, tutorials. Core, Level 1, B.Sc (Hons) in Business and Mathematics
Formal Specification Methods, 30 hours, tutorials. Core, Level 2, B.Sc (Hons) in Computer Science
- 2005-2006 *Semester A* (beginning September 2005)
Mathematics and Statistics Workshops, 70 hours, tutorials. Elective, B.Sc, B.Eng, B.Ed, B.A. Workshop Coordinator.
Mathematics for Social Workers, 15 hours, lectures and tutorials. Designate, B.A in Social Work
- 2005-2006 *Semester B* (beginning February 2006)
Mathematics and Statistics Workshops, 70 hours, tutorials. Elective, B.Sc, B.Eng, B.Ed, B.A. Workshop Coordinator.
Linear Algebra, 30 hours, tutorials. Core, Level 1, B.Sc (Hons) in Mathematics
- 2006-2007 *Semester A* (beginning September 2006)
Mathematics and Statistics Workshops, 60 hours, tutorials. Elective, B.Sc, B.Eng, B.Ed, B.A. Workshop Coordinator
- 2006-2007 *Semester B* (beginning February 2007)
Linear Algebra, 30 hours, tutorials. Core, Level 1, B.Sc (Hons) in Mathematics
Data Analysis, 60 hours, tutorials. Core, Level 1, B.Sc (Hons) in Mathematics, Statistics, Biochemistry, Forensic Science, Biological Sciences, Biomedical Sciences, Financial Mathematics, Food Science, Sport Science, Human Nutrition, Microbiology
Mathematics and Statistics Workshops, 80 hours, tutorials. Elective, B.Sc, B.Eng, B.Ed, B.A, Workshop Coordinator.
Mathematics for Social Workers, 10 hours, lectures and tutorials. Designate, B.A in Social Work
Statistics with Spreadsheets, 30 hours, tutorials. Core, Extended Science Degree

2007-2008 *Semester A* (beginning September 2007)
Mathematics and Statistics Workshops, 100 hours, tutorials. Elective, B.Sc, B.Eng, B.Ed, B.A. Workshop Coordinator
Quantitative Methods, 25 hours, lectures and tutorials. Elective, B.Sc, B.A
Statistics and Data Interpretation, 12 hours, lectures and tutorials. Elective, B.Sc, B.A

Visiting Lecturer, London Metropolitan University, Statistics, Operational Research and Mathematics Research Center/Faculty of Life Sciences and Computing

2012-2013 *August 2013*
Differential Geometry from a Simplicial Point of View, Part I, 20 hours, lectures. Elective, Ph.D. in Mathematics

2013-2014 *August 2014*
Differential Geometry from a Simplicial Point of View, Part II, 20 hours, lectures. Elective, Ph.D. in Mathematics

Professora d'Ensenyament Secundari (Especialitat de Matemàtiques), Departament d'Ensenyament, Generalitat de Catalunya

1993- **Professora del Cos de Professors d'Ensenyament Secundari, Especialitat de Matemàtiques**, *Departament d'Ensenyament, Generalitat de Catalunya*,
Mathematics Specialist Teacher at the secondary (*Ensenyament Secundari Obligatori (ESO)*), vocational (*Formació Professional*), and pre-university (*Batxillerat*) levels.
Entry as Civil Servant after qualifying exam passed in July 1993

1993-1994 **Destinació en Pràctiques**, *Institut de Formació Professional Mare de Déu de Montserrat, Barcelona*,
Mathematics Teacher in the LODE legal framework, at *Formació Professional*, 5th year (18-19 year olds) and 3rd year (16-17 year olds) for the Specialities of Electricity, Electronics, Optics, Automotion Mechanics, Administration, Systems Computing.,
Tutor of Administration 5th year students.
Training Position

1994-2001 **Destinació Definitiva**, *Institut d'Ensenyament Secundari Jaume Mimó, Cerdanyola del Vallès*.
Titular Position

○ Mathematics 1st and 2nd Cycles ESO, 12-16 year olds.

○ Mathematics 1st and 2nd Years Batxillerat LOGSE (pathways: Scientific, Technological, Technological- Arquitectonical), 16-18 year olds

○ Mathematics applied to the Social Sciences: 1st and 2nd Years Batxillerat LOGSE (pathway: Social Sciences)

○ Statistics (Batxillerat)

○ Computing (ESO, elective)

○ Research Credits in Batxillerat, Synthesis Credits in ESO.

○ Tutor of *Batxillerat Tecnològic* and ESO

○ Head of Mathematics Department

2000 **Further Specialities Recognised**

Technology, Computing, Systems Computing and Software

2001-2008 **On leave.**

On leave to take up appointments in Sheffield, Lille and London

- 2008-2009 **Destinació Provisional**, *IES Jaume Mimó, Cerdanyola del Vallès*, Speciality: Technology, Head of Technology Department.
- Technology 1st and 2nd Cycle ESO
 - Industrial Technology 2nd Batxillerat
 - Mathematics 1st Cycle ESO
- 2009-2011 **Destinació Definitiva**, *IES Federica Montseny, Badia del Vallès*, Speciality: Mathematics. Titular Position
- Head of Mathematics Department
 - Mathematics 1st and 2nd Cycles ESO, 12-16 year olds.
 - Mathematics applied to the Social Sciences: 1st and 2nd Years Batxillerat LOGSE (pathway: Social Sciences)
 - Computing 1st year of ESO (Programming with *Scratch*)
 - Batxillerat Research Credit Supervision '*Finite Geometries*' within the ARGÓ Programme in collaboration with the UAB
- 2011 Grant Tipe B, call 2010 'Materials personalitzables per a les matemàtiques del 1r cicle de l'ESO'. Departament de l'Educació awarded (not taken up)

Teaching in Higher Education and Technical Training (after 2008)

- 2014 **Certificació de l'activitat docent**, *AQU*, Generalitat de Catalunya. Acreditación obtained Febrer 2014
- 2011-2013 **Programa de Formació Inicial del Profesorado-PROFI-UPC**, *ICE-UPC, Barcelona*, Teaching for Higher Education Training Program, UPC, Introduction(2h), How to speak better in public (7h), Planning a module by learning by objectives guidance(8h) , Active methodologies for Learning Development(8h), Lecture recording and analysis (SeSAC) (15h). Acreditación obtained June 2013
- 2011-2012 **MATLAB: a tool for research and teaching** , *ICE-MA3-UPC-EPSAB-Castelldefels Campus Nord*, Castelldefels, (15h+15h).
- 2012 Web of Knowledge, BCT-UPC, Terrassa, 3h
- 2011 Videoconferencing, web conferences and recordings: use of spaces and tools, EET-UPC, Terrassa, 3h
- 2011 Introduction to DRAC, ETSEIAT-UPC, Terrassa, 3h
- 2010-2012 **Programa 'Formació Docent en Educació Superior'**, *IDES, UAB*, *Teaching for Higher Education Training Programme, UAB*, Teaching in the new learning and teaching context (2 h); Oral discourse practices (15 h); Classroom observation; Phoniatrics (15 h), Evaluation systems (15 h), Module specification guides production (15 h), The teaching portfolio. Acreditación obtained July 2012
- 2010-2011 Administration and management of a Teaching Centre Moodle Environment, Departament d'Educació, Generalitat de Catalunya, 45h
- 2010-2011 Joomla! The web in educational environments , Ministerio de Educación, 40h
- 2010-2011 German Language Self-Learning course, CAL-UAB, 50h
- 07-2010 '*Jornada de presentació de materials eines i experiències docents de matemàtiques de primer d'ESO en l'àmbit del projecte eduCAT1x1*', creamat, Citilab Cornellà, 10 h
- 2010 '*L'atenció a la diversitat en l'àmbit de les matemàtiques a secundària: idees, instruments i estratègies*', ICE-Matemàtica Aplicada III, UPC, 36 h
Teaching Secondary Mathematics in diverse environments

- 2010 **Teaching Experimentation in the Classroom. Descartes in the Classroom**, *Instituto de Tecnologías Educativas (ITE) / Direcció General de l'Educació Bàsica i el Batxillerat*, (70 h).
- 2010 **PHP in Education (advanced)**, *IFSTIC, Ministerio de Educación*, (40 h).
- 2010 **Technical Day**, *eduCAT1x1 Project*, Programa d'Innovació en Metodologies d'Aprenentatge i Ensenyament, Generalitat de Catalunya.
- 2010 **II Jornada Catalana de l'Ensenyament de la Programació a Primària i ESO**, *Jornada tècnica de l'Scratch i de la robòtica escolar*, Citilab, Departament d'Educació, Creamat, Aulatec, RobOlot, CDEC, UPC.
- 2010 **Advanced Workshop in GeoGebra**, *Associació Catalana de Geogebra/Creamat*. (5 h)
- 2009 **Introduction to the Linux distribution 'LINKAT'**, *Generalitat de Catalunya*, (60 hours).
- 2009 **Teaching use of the Technology Classroom**, *Generalitat de Catalunya*, (30 h).
- 2009 **Basic Operations in Technology**, *Centre Aulatec, Generalitat de Catalunya (25 h)*, Electricity, mechanical procedures, electronics, including electronical automatism instrumentation.
- 2009 **Resources for the technology classroom (in English)**, *Aulatec CESIRE, Generalitat de Catalunya (20 h)*.
- 2009 **Basic Descartes, Mathematics**, *CESIRE CREAMAT, Generalitat de Catalunya*. (40 h)
- 2009 **Work in the virtual classroom**, *PFZ, Generalitat de Catalunya (15 h)*.
- 2009 **Electronics**, *UPC (36 h)*.
- 2009 **Analogical electronics: the bipolar transistor and its applications**, *UPC*. (36 h)
- 2009 **PHP for education (basic)**, *IFSTIC, Ministerio de Educación (40 h)*.

Languages

- Spanish **Speaking: very good, reading: very good, writing: very good**, Mother tongue.
- Catalan **Speaking: very good, reading: very good, writing: very good.**
Certificat de nivell superior de català CIFOLC (equivalent to Generalitat de Catalunya's level D)
- French **Speaking: very good, reading: very good, writing: very good.**
Certificat Pratique de la Universitat de Toulouse-Le Mirail.
Preuve d'Accès au D.A.L.F., June 1988, Institut Francès de Barcelona
- English **Speaking: very good, reading: very good, writing: very good.**
Certificat de nivell 6è, Servei de Llengües, UAB (MECRL C1)
University lecturing in English Language (London Metropolitan University 2003–2008)
- German **Speaking: good, reading: good, writing: good,**
Certificat de Nivell Avançat Escola Oficial d'Idiomes, Juny 2011 (MECRL B2); .