



# MASTER EN BIOINGENIERIA IQS


## Claustro de profesores. Curso 2009-2010

### COORDINADOR DEL MASTER


<p>Dr. Antoni Planas. <a href="mailto:antoni.planas@iqs.es">antoni.planas@iqs.es</a></p>	
	<p>Full Professor of Biochemistry Director of the Bioengineering Department. Head of the research group <i>Laboratory of Biochemistry</i>, Bioengineering Department, IQS-URL.</p>
<p>CV: Graduation in Chemistry (1982, IQS, Barcelona) and Biochemistry (1987, Universitat Autònoma de Barcelona), PhD. in Organic Chemistry (1987, IQS, Barcelona, research work done at IQS and at Max-Planck-Institut für Strahlenchemie, Mulheim, Germany). Post-doctoral fellow in Biochemistry and Molecular Biology (1988-1989, University of California, Berkeley, USA), Assistant Professor (1990-1993, Dept. of Organic Chemistry, IQS, Barcelona), Research Scientist (1990-1992, Universitat Autònoma de Barcelona), Associate Professor (Titular) (1993-2001) IQS, Universitat Ramon Llull, Barcelona), Full Professor (Catedrático) (2002-, IQS, Universitat Ramon Llull, Barcelona).</p>	
<p>Subjects in Masters of Bioengineering: Biomolecules: structure, function and properties (4 ECTS), Enzyme technology and biocatalysis (3 ECTS).</p>	
<p>Research area: Structural and functional studies of protein function and enzyme catalysis by combining molecular biology, protein engineering, enzymology, organic synthesis and molecular modeling techniques. Current research interests are focused on carbohydrate active enzymes (glycosidases, transglycosidases and glycosyltransferases) and amiloidogenic proteins for biomedicine, biotechnology, and food technology applications.</p>	
<p><b>3 recent publications:</b></p> <p>A. Monegal and A. Planas. Chemical rescue of <math>\alpha</math>3-galactosyltransferase. Implications in the mechanism of retaining glycosyltransferases. <i>J. Am. Chem. Soc.</i> 128, 16030-16031(2006).</p> <p>M. Faijes and A. Planas. In vitro synthesis of artificial polysaccharides by glycosidases and glycosynthases. <i>Carbohydr. Res.</i> 342, 1581-1594 (2007).</p> <p>M. Saura-Valls, R. Fauré, H.Brumer, T.T. Teeri, S. Cottaz, H. Driguez and A. Planas. Active-site mapping of a <i>Populus</i> xyloglucan <i>endo</i>-transglycosylase with a library of xylogluco-oligosaccharides. <i>J. Biol. Chem.</i> 283, 21853 – 21863 (2008).</p>	

<p>Dra. Montserrat Agut  <a href="mailto:montserrat.agut@iqs.edu">montserrat.agut@iqs.edu</a></p>	
	<p>Associate professor (Titular)  Coordinator of the Master's Degree Program in Food-Science Chemistry and Engineering.  Head of the Laboratory of Microbiology, Bioengineering Department, IQS-URL.</p>
<p>CV: Doctor of Science (1992, Universitat Autònoma de Barcelona, UAB). Master's Degree in Basic Microbiology (1991, UAB). Degree in Veterinary Science (1988, UAB), Assistant Professor (1988-1998, Faculty of Veterinary Science, UAB), Assistant Professor (1998-2003, Dept. of Analytical Chemistry, IQS-URL, Barcelona), Associate professor (2003-2006, Dept. of Analytical Chemistry, IQS-URL, Barcelona), Associate professor (2007- present, Bioengineering Department, IQS-URL).</p>	
<p>Subjects in Masters of Bioengineering: Extension course in biology (3 ECTS), Physiology and microbial metabolism (4 ECTS), Biochemistry techniques laboratory, 11 ECTS).</p>	
<p>Research area: Mycotoxins and mycotoxigenic moulds. Food Microbiology. Microbiological aspects of photodynamic therapy.</p>	
<p>3 recent publications:  Ventura, M; Guillen, D; Anaya, I; Broto-Puig, F; Lliberia, J. L; Agut, M; Comellas, L. "Ultra-performance liquid chromatography/tandem mass spectrometry for the simultaneous analysis of aflatoxins B1, G1, B2, G2 and ochratoxin A in beer". <i>Rapid Communications in Mass Spectrometry</i>, 20: 3199-3204 (2006).  Pons, A; Agut, M; Fernandez-Ruano, L; Tomas, X. "Application of Taguchi designs in the study of <i>Listeria monocytogenes</i> CECT 4032 growth inhibition". <i>Afinidad</i>, 64 (529): 390-396 (2007).  Anaya, I; Aguirrezabal, A; Ventura, M; Comellas, L; Agut, M. "Survivability of <i>Salmonella</i> cells in popcorn after microwave oven and conventional cooking". <i>Microbiological Research</i>, 163 (1): 73-79 (2008).</p>	

<p>Dra. Judith Báguena  <a href="mailto:judith.baguena@iqs.edu">judith.baguena@iqs.edu</a></p>	
	<p>Assistant Professor of Experimentation in Analytical Chemistry and Quality Management  Responsible of Quality Management, ETS-IQS.</p>
<p>CV: Graduation in Chemistry (1997, IQS, Barcelona), IQS Chemical Engineer (1999, IQS, Barcelona), Environmental Master (2000, IQS, Barcelona), Preventing workplace accidents Master (2002), Responsible of Quality Management (2000- , IQS, Barcelona), Assistant Professor (2005-, IQS, Barcelona), PhD. in Analytical Chemistry and Quality Management (2008, IQS, Barcelona).</p>	
<p>Subjects in Masters of Bioengineering: Extension course in chemistry and engineering ( 3 ECTS).</p>	
<p>Research area: Development and application of the methodology based on process management in chemical laboratories that include analysis-research or academic activities. Implementation of quality systems in analysis-research laboratories: equipment management, analysis processes, activities of metrological confirmation, validation, revalidation and uncertainty calculations. Implantation of a quality system in a Higher Technical School and to provide tools to meet the European Higher Education Space.</p>	
<p>3 recent publications:</p> <p>J. Báguena, M.J. Blanco. Gestión de equipos en laboratorios de análisis químico. <i>Afinidad</i>, Vol. 63, nº 521, 7-12, Enero-Febrero 2006.</p> <p>J: Báguena, Ll. Comellas, M.J. Blanco. Implementación de un Sistema de Calidad basado en la gestión por procesos en laboratorios docentes de experimentación química. <i>Afinidad</i>, Vol .63, nº 524, 270-276, Julio-Agosto 2006.</p> <p>J. Báguena, G. Gotor, F. Broto, M.J. Blanco. Cálculo de la incertidumbre asociada a los resultados basado en la validación de un procedimiento de análisis. Aplicación en la determinación de cloruros por HPLC en lixiviados. <i>Afinidad</i>, Vol .65, nº 533, 11-19, Enero-Febrero 2008.</p>	

<p>Dr. Xevi Biarnés  <a href="mailto:xbiarnes@sissa.it">xbiarnes@sissa.it</a></p>	
	<p>Post-doctoral fellow in Structural Bioinformatics and Drug Design  International School for Advanced Studies, Trieste, Italy.</p>
<p>CV: Graduation in Chemistry (2003, IQS – Institut Químic de Sarrià, Barcelona). PhD in Biotechnology (2007, UB – Universitat de Barcelona, Barcelona. Research done at the PCB – Barcelona Science Park). Postgraduate in Bioinformatics (2008, UOC – Universitat Oberta de Catalunya). Post-doctoral fellow in Structural Bioinformatics and Drug Design (2008 – 2009, SISSA – International School for Advanced Studies, Trieste, Italy).</p>	
<p>Subjects in Masters of Bioengineering: Modeling and simulation (3 ECTS).</p>	
<p>Research area: Protein structure prediction and molecular modelling of protein-ligand interactions by combining computer simulation techniques and bioinformatics tools. Current research interests are focused on structural characterization of G-protein coupled receptors, design of ligands to Prion protein and mechanistic studies of carbohydrate active enzymes.</p>	
<p><b>3 recent publications:</b></p> <p>X. Biarnés, J. Nieto, A. Planas, C. Rovira “Substrate Distortion in the Michaelis Complex of Bacillus 1,3-1,4-β-Glucanase - Insight from First Principles Molecular Dynamics Simulations.” <i>J Biol Chem</i> 281, 1432-1441 (2006).</p> <p>X. Biarnés, A. Ardèvol, A. Planas, C. Rovira, A. Laio, M. Parrinello “The Conformational Free Energy Landscape of β-D-Glucopyranose. Implications for Substrate Preactivation in β-Glucoside Hydrolases.” <i>J Am Chem Soc</i> 129, 10686-10693 (2007).</p> <p>I. Degtyarenko, X. Biarnés, R.M. Nieminen, C. Rovira “Density-functional molecular dynamics studies of biologically relevant iron and cobalt complexes with macrocyclic ligands.” <i>Coordination Chemistry Reviews</i> 252, 1497-1513 (2007).</p>	


<p>Dr Salvador Borrós  <a href="mailto:salvador.borros@iqs.url.edu">salvador.borros@iqs.url.edu</a></p>	
	<p>Full Professor Materials Science.  Head of Grup d'Enginyeria de Materials (GEMAT), IQS-URL</p>
<p>CV: B.Sc. Analytical Chemistry (1981-1986, Institut Químic Sarrià, Spain), M. Sc. Chemical Engineering (1986-1987, Institut Químic de Sarrià, Spain), Ph.D. Chemical Engineering (1987-1993, Institut Químic de Sarrià, Spain) Technical Director (1990-1992, Walter Friedrich Española, Barcelona), Associate Professor (1992-1997, Institut Químic de Sarrià, Spain), Assistant Professor (1997-2004, Institut Químic de Sarrià, Spain), Full Professor (2004-present, Institut Químic de Sarrià, Spain), Associate Professor (2000-present, Institut Superieure des Materiaux du Mans, Le Mans, France), Head of Materials Science Laboratory Institut Químic de Sarrià Barcelona (1994-present), Associate Director Barcelona Bioengineering Center (2002-present), Director Grup d'Enginyeria Materials, Research Group Recognized by The Generalitat de Catalunya (Autonomous Government of Catalonia) (2005-present).</p>	
<p>Subjects in Masters of Bioengineering: Biomaterials and biomedical devices (3 ECTS).</p>	
<p>Research area: The Group is dealing with the development of Biomaterials in three main directions: Nanoparticles for Drug Delivery, development of Bioactive surfaces using Plasma Enhanced Chemical Vapor Deposition and the design, materials synthesis and fabrication of 3D polymeric scaffolds to induce cell growth.</p>	
<p>3 recent publications:  W.Shanan O'Shaughnessy, Núria Marí-Buyé, Salvador Borrós, Karen K. Gleason, Initiated chemical vapor deposition of a surface-modifiable copolymer for covalent attachment and patterning of nucleophilic ligands, <i>Macromolecular Rapid communications</i> Volum 28 issue 18-19, pages 1877-1882.  E. Garreta, D. Gasset, C. Semino, S. Borrós, Fabrication of a Three-Dimensional Nano-Structured Biomaterial for Tissue Engineering of Bone, <i>Biomolecular Engineering Journal</i>, 25, 75-80, 2007.  N. Tricás, E. Garreta, Ll. Quintana, Carlos E. Semino S. Borrós Plasma polymerization on hydroxyapatite powders to increase water dispersability for biomedical application <i>Plasma processes and polymers</i> 3, (2006), 3553.</p>	

<p>Dr. Francesc Canals  <a href="mailto:fcanals@ir.vhebron.net">fcanals@ir.vhebron.net</a></p>	
	<p>Research Scientist  Head of the Proteomics Laboratory, Medical Oncology Research Program, Vall d'Hebron University Hospital Research Institute</p>
<p>CV: Graduation in Chemistry (1982, IQS, Barcelona) and Biochemistry (1987, Universitat Autònoma de Barcelona), PhD in Organic Chemistry (1989, IQS, Barcelona, research work carried out at IQS and at Max-Plank-Institut für Strahlenchemie, Mulheim, Germany). Post-doctoral fellow in Biochemistry (1989-1991, University of California, San Diego, USA), Research Scientist (1991-1995, Institut de Biotecnologia i Biomedicina Universitat Autònoma de Barcelona), Head of Proteomics (1995-2003 Proteomics and Bioinformatics Facility, Universitat Autònoma de Barcelona), Head of Proteomics Laboratory (2003-, Vall d'Hebron University Hospital Research Institute, Barcelona).</p>	
<p>Subjects in Masters of Bioengineering: Screening technologies and bioassays (3 ECTS).</p>	
<p><b>Research area:</b>  Proteomics applied to biomedical research, particularly in oncology. Mass spectrometry and protein array based proteomic analysis. Current research is focused on the application of proteomic techniques to the identification and characterization of substrates of metalloproteases of the ADAM and ADAMTS families, to elucidate their role in tumor growth and metastasis.</p>	
<p><b>3 recent publications:</b>  Canals, F., Colomé, N., Ferrer, C., Plaza-Calonge, M.C., Rodríguez-Manzaneque, J.C., Identification of substrates of the extracellular protease ADAMTS1 by DIGE proteomic analysis, <i>Proteomics</i>, 6, S28-S35, 2006.  Bech-Serra, J-J., Santiago-Josefat, B., Esselens, C., Saftig, P., Baselga, J., Arribas, J., Canals, F., Proteomic Identification of Desmoglein-2 and ALCAM as substrates of ADAM17 and ADAM10 by Difference Gel Electrophoresis, <i>Mol. Cell. Biol.</i>, 26, 5086-5095, 2006.  Canals F., García-Ramírez M., Hernández C., Colomé N., Ferrer C., Carrasco E., García-Arumí J., Simó R. Proteomic Analysis of Human Vitreous Fluid by DIGE: a New Strategy for Identifying Potential Candidates in the Pathogenesis of Proliferative Diabetic Retinopathy. <i>Diabetologia</i>, 50, 1294-1303, 2007.</p>	

<p>Lídia Casas Sanahuja  <a href="mailto:lcasas@pcb.ub.es">lcasas@pcb.ub.es</a>  <a href="mailto:lcasas@zbm-patents.eu">lcasas@zbm-patents.eu</a></p>	
	<p><b>Current position</b>  Patent expert in the Patents Centre of the University of Barcelona.  Patent expert for the IP agency ZBM Patents.</p>
<p>CV: Graduation in Biochemistry (2000, Universitat Autònoma de Barcelona). Professor of the Biotechnology Graduation in the Universitat de Vic (2005- ). Professor of " Curs de doctorat: gestió de la R+D i creació d'empreses en l'àmbit de la biomedicina" (Universitat de Barcelona, 2004- ). Professor of Màster de Biotecnologia Mèdica de la Universitat Pompeu Fabra. Criteris en el disseny de patents per productes biofarmacèutics (Universitat Pompeu Fabra, 2007- ). Professor in Col.legi de Químics de Catalunya (2008-). Professor in Màster d'innovació i desenvolupament d'aliments (Universitat de Barcelona, 2008- ). Professor in Societat Catalana de Biologia (2008- ). Professor in several courses and seminars in universities and other institutions (U. Lleida, U. Girona, IQS, IIR etc).</p>	
<p><b>Subjects in Masters of Bioengineering: Project Management and Legislation (3 ECTS).</b></p>	
<p><b>Research area:</b> Patent searching, preparation of patentability opinions, drafting of patent applications and management of the prosecution of patents. Patent searching and drafting, especially in the fields of biotechnology and life sciences.</p>	


<p>Dr. Juan Cedano  <a href="mailto:jcedano@server.uab.es">jcedano@server.uab.es</a></p>	
	<p><b>Research Support technician</b>  Institut de Biotecnologia i Biomedicina.  Universitat Autònoma de Barcelona.</p>
<p>CV: Graduation in Biology (1991, UAB, Barcelona), Master in Bioengineering (1994, Universidad Politécnica, Barcelona), Master in Bioengineering (1994, UAB, Barcelona), PhD in Biology (2001, UAB, Barcelona), Chief Research technician in Proteomics and bioinformatics Facility (2003-2008, SePBioBB, UAB, Barcelona), Responsible for the Quality control system of the Proteomics and bioinformatics Facility (2002-2003, SePBio, IBB, UAB, Barcelona), Research Fellowship (2001-2008, Molecular Biology lab, IBB, UAB), Teaching Assistant in Bioinformatics (2000-2008, UAB, Barcelona).</p>	
<p><b>Subjects in Masters of Bioengineering:</b> Bioinformatics and information technologies (4 ECTS).</p>	
<p><b>Research area:</b>  Proteomics. Thermostability. Enzymatic Activity. Structure and Function of Proteins. Cloning and Production of Recombinant Proteins. Purification and Characterization of Glucohydrolases. Growth Factors. Bioinformatics. Protein Modelling. Protein Docking. Knowledge Extraction Methods. Data Mining and Microarrays Analysis.</p>	
<p><b>3 recent publications:</b>  Huerta, M., Cedano, J. and Querol, E. Analysis of non-linear relation between expression profiles by the Principal Curves of Oriented-Points approach. <i>Journal of Bioinformatics and Computational Biology</i>, 2008 367-386.  Gómez A, Cedano J, Espadaler J, Hermoso A, Piñol J, Querol E. Prediction of Protein Function Improving Sequence Remote Alignment Search by a Fuzzy Logic Algorithm. <i>Protein J</i>. 2008 Feb 27.  Amela I, Cedano J, Querol E. Pathogen proteins eliciting antibodies do not share epitopes with host proteins: a bioinformatics approach. <i>PLoS ONE</i>. 2007 Jun 6;2(6).</p>	

<p>Dra. Olga Durany  <a href="mailto:odurany@oryzon.com">odurany@oryzon.com</a></p>	
	<p>Functional Genomics and Microarrays Platform Leader at Oryzon Genomics</p>
<p>CV: Graduation in Chemistry (1996, IQS, Barcelona). MSc in Biotechnology for Industrial Application (1998, UB, Barcelona). PhD. in Biotechnology (2002, UAB, Barcelona, research work done at UAB Chemical Engineering Department, Barcelona, and at Cobra BioManufacturing, Keele, UK). Assistant Professor (1999–2002, Dept of Chemical Engineering, UAB, Barcelona). Research Scientist in Microarrays Technology (2002-2004, Oryzon Genomics, PCB, Barcelona). Functional Genomics and Microarrays Platform Group Leader (2004-, Oryzon Genomics, PCB, Barcelona).</p>	
<p>Subjects in Masters of Bioengineering: Screening technologies and bioassays (3 ECTS).</p>	
<p>Research area: DNA-microarrays technology application to transcriptomic (Gene Differential Expression Profiling and Alternative Splicing Profiling Projects) and genomic screening (SNPs, CGH, Methylation Profiling Projects). Participation in biomedicine projects focused on novel diagnostic/prognostic biomarkers and drug targets discovery mainly on oncology and neurodegenerative diseases fields. DNA-microarrays application on toxicogenomics.</p>	
<p>3 recent publications:</p> <p>Cerdà, J., Mercadé, J., Lozano, J., Manchado, M., Halm, S., Infante, C., Tingaud-Sequeira, A., Viñas, J., Castellana, B., Asensio, E., Cañavate, P., Martínez-Rodríguez, G., Piferrer, F., Planas, J., Prat, F., Yúfera, M., Durany, O., Subirada, F., Rosell, E., and Maes, T. Genomic resources for a commercial flatfish, the Senegalese sole (<i>Solea senegalensis</i>): EST sequencing, oligo microarray design, and development of the bioinformatic platform Soleamold. <i>BMC Genomics</i> 2008, <b>9</b>:508.</p> <p>Ferrer, I., Barrachina, M., Subirada, F., Durany, O., Buesa, C., Maes, T. Method for the diagnosis of Alzheimer's disease. Patent Num.: WO2006134185, 2006.</p> <p>Puigjaner, J., Fàbrega, J., de Diego, I., Subirada, S., Durany, O., Rivero-Urgell, M. Two circadian infant formulas produce differential cerebellum gene expression in lactating rat neonatos. <i>Genes Nutr.</i>, 2007, <b>2</b>, 129-131.</p>	


<p>Dr. Jordi Espadaler Mazo  <a href="mailto:wisl@bioinf.uab.es">wisl@bioinf.uab.es</a></p>	
	<p>Chief Research Officer, AB-Biotics S.L.</p>
<p>CV: Graduation in Biochemistry (2000, Autonomous University of Barcelona, Bellaterra). PhD in Biotechnology (2006, Autonomous University of Barcelona, Bellaterra; research done at the Autonomous University of Barcelona, Pompeu Fabra University, Rockefeller University, and University of California San Francisco). Chief Research Officer at AB-Biotics S.L. since 2006 (Biochemistry and Microbiology areas).</p>	
<p>Subjects in Masters of Bioengineering: Bioinformatics and information technologies (4 ECTS).</p>	
<p>Research area:  <i>Bioinformatics</i>: Classification of local motifs in protein structure, such as loops and alpha-helix cappings. Predicting the function of proteins based on local structural motifs and protein-protein interaction homology. Improving comparative modelling of protein structure.  <i>Molecular Biology</i>: R&amp;D of new biotherapeutic agents derived from the human bacterial flora both for the nutraceutical and the pharmaceutical markets.</p>	
<p>3 recent publications:  Espadaler J, Eswar N, Querol E, Avilés FX, Sali A, Marti-Renom MA, Oliva B. Prediction of enzyme function by combining sequence similarity and protein interactions. <i>BMC Bioinformatics</i>. 9: 249 (2008).  Espadaler J, Querol E, Aviles FX, Oliva B. Identification of function-associated loop motifs and application to protein function prediction. <i>Bioinformatics</i> 22: 2237-43 (2006).  Espadaler J, Aragüés R, Eswar N, Marti-Renom MA, Querol E, Avilés FX, Sali A, Oliva B. Detecting remotely related proteins by their interactions and sequence similarity. <i>Proc Natl Acad Sci U S A</i>. 102: 7151-6 (2005).</p>	


<p>Dr. Magda Faijes  <a href="mailto:magda.faijes@iqs.edu">magda.faijes@iqs.edu</a></p>	
	<p>Associate professor  Researcher at the Biochemistry Laboratory.  Bioengineering Department, IQS-URL.</p>
<p>CV: Graduation in Chemistry (1996, Ramon Llull University, Barcelona), Food Chemistry and Technology Master (1997, IQS, Barcelona) and IQS (1998, Barcelona). PhD in Organic chemistry (2003, URL, 2003, research work done at Biochemistry Laboratory of IQS and at CERMAV-CNRS, Grenoble, France and, with Instituto Danone fellowship). Post-doctoral fellow in the project <i>Integrated functional genomics approach for rational improvement of lactic acid bacteria as cell factories</i> (2003-2004, Wageningen Center for Food Sciences, The Netherlands). Associate Professor (2004-, IQS, Ramon Llull University): Experimental Chemistry II (Chemistry studies), Food Sciences (Food Chemistry and Engineering Master studies).</p>	
<p>Subjects in Masters of Bioengineering: Experimental techniques in biosciences (4 ECTS), Bioengineering Master Laboratories.</p>	
<p>Research area: Functional genomics and fermentation technology in lactic acid bacteria. Enzymology and protein engineering of glycosidases. Carbohydrate synthesis: chemical and enzymatically. Carbohydrates and proteins related to food sciences.</p>	
<p>3 recent publications:  M. Faijes and A. Planas. In vitro synthesis of artificial polysaccharides by glycosidases and glycosynthases. <i>Carbohydr. Res.</i> 342, 1581-1594 (2007).  M. Faijes, A.E. Mars i E.J. Smid, Comparison of quenching and extraction methodologies for metabolome analysis of <i>Lactobacillus plantarum</i>, <i>Microb Cell Fact.</i> 6, :27-34 (2007).  M. Faijes, M. Saura-Valls, X. Pérez, M. Conti, A. Planas, Acceptor-dependent regioselectivity of glycosynthase reactions by <i>Streptomyces</i> E138A <math>\beta</math>-glucosidase, <i>Carbohydr. Res.</i>, 341. 2055-2065 (2006).</p>	


<p>Dra. Laura Fernández Ruano  <a href="mailto:laura.fruano@wanadoo.es">laura.fruano@wanadoo.es</a></p>	
	<p><b>Consultant and self-employed advisor</b>  In Statistical Analysis and Methodology for experimental planning in companies of the chemical and food sector.</p>
<p>CV: Graduation in Chemist Engineering (1992, IQS, Barcelona); Graduation in Chemistry (1993, URL-IQS, Barcelona); PhD. In Chemistry (1997, URL-IQS, Barcelona). Assistant Professor (1997-2001, Dept. Chemometrics, IQS, Barcelona); Associate Professor (2001-2004, Dept. Applied Statistics, IQS, Barcelona); Seft-employed advisor, consultant and assistant professor (2004-).</p>	
<p>Subjects in Masters of Bioengineering: Experimental design and analysis (3 ECTS).</p>	
<p>Research area: Strategies based on experimental designs: exploratorial and saturated designs, response surface methodology and experiments with mixtures, Experimental optimisation, Application of the Taguchi methodology in the phase of product and process development</p>	
<p><b>3 recent publications:</b>  M. Agut, L. Comellas, L. Fernández-Ruano, M. Ventura, "Application of an experimental design in the study of the factors that have a greater influence on the production of ocratoxina A by aspergillus ochraceus CECT 2948", <i>Afinidad</i>, 62, 363-372 (2005).  A. Pons, M. Agut, L. Fernández-Ruano, X. Tomás, "Aplicación de los diseños de Taguchi en el estudio de la inhibición del crecimiento de <i>Listeria monocytogenes</i> CECT 4032", <i>Afinidad</i>, 64 , 390-396 (2007).  X. Tomás-Morer, L. G. Sabaté, L. Fernández-Ruano, M.P. Gómez-Carracedo "Implementing a robust methodology: experimental designs and optimization" in "Basic chemometric techniques in atomic spectroscopy" (editor J. M. Andrade), Royal Society of Chemistry RSC (Cambridge, in press).</p>	

<p>Dr. Albert Florensa.  <a href="mailto:albert.florensa@iqs.edu">albert.florensa@iqs.edu</a></p>	
	<p>Professor titular d'Ètica i de Ciència, Tecnologia i Societat a l'Institut Químic de Sarrià, Universitat Ramon Llull</p>
<p>CV: Enginyer Tècnic Industrial (1976, Universitat Politècnica de Catalunya, Barcelona); Llicenciat en Filosofia i Ciències de l'Educació, especialitat Filosofia (1996, Universitat de Barcelona); Doctor en Administració i Direcció d'Empreses (2006, Institut Químic de Sarrià, Universitat Ramon Llull, Barcelona), Professor Associat (1997-2000, Escola Universitària Salesiana de Sarrià, Universitat Autònoma de Barcelona), Professor Associat (1999-2007, Institut Químic de Sarrià, Universitat Ramon Llull, Barcelona); Professor Titular (2008-, Institut Químic de Sarrià, Universitat Ramon Llull, Barcelona).</p>	
<p>Assignatura en el Màster de Bioenginyeria: Bioètica</p>	
<p>Àrea de recerca: Compren dues gran línies: Les ètiques aplicades en relació a la ciència, la tecnologia i l'economia, i la filosofia de la tècnica.</p>	
<p><b>3 publicacions:</b>  Florensa, A., Sols, J., "Is Ethics a Brake for Scientific Research", en: Afinidad, Barcelona, Tomo LXII, número 519, setembre-octubre de 2005, pp. 455-458.  Florensa, A., Sols, J., Jacques Ellul, analista crític de la tècnica", en: Actualidad Bibliogràfica, Sant Cugat del Vallès, número 89, gener-juliol de 2008, pp. 5-13.  Camprodon, M., Sols, J., Florensa, A., "Las agencias estadounidenses de evaluación de la Responsabilidad Social Empresarial", en: Revista de Fomento Social, Córdoba, número 64, pp. 259-286, (2009).</p>	


<p>Dr. Víctor M. González Miguel  <a href="mailto:victor.gonzalez@cid.csic.es">victor.gonzalez@cid.csic.es</a></p>	
	<p>Post-Doctoral Researcher  Centre de Recerca en Agrigenòmica (CRAG), Consorci CSIC-IRTA.</p>
<p>CV: Graduation in Chemistry (1993, Universitat de Barcelona). PhD in Biochemistry (Universitat de Barcelona, 2002). Doctoral thesis entitled "Plant Isoprenoid Biosynthesis Regulation. Study of the molecular control of the pathway at the HMGR enzyme level". Postdoctoral position at the Institut de Biologia Molecular de Barcelona, CID-CSIC working in rice and melon genomics projects from 2002. Graduation in Mathematics (2007, Universitat de Barcelona).</p>	
<p>Subjects in Masters of Bioengineering: Recombinant DNA technology and metabolic engineering (4.5 ECTS).</p>	
<p>Research area: Scientific background: plant molecular biology and metabolic engineering through plant transgenic production. Current research area: plant genomics, construction of physical maps, genome sequencing and annotation, synteny comparisons, involvement in the current Spanish melon genome sequencing project.</p>	
<p><b>3 recent publications:</b>  van Enckevort, L.J.G., Droc, G., Piffanelli, P., Grecco, R., Weber, C., Gagneur, C., González, V., Cabot, P., Fornara, F., Berri, S., Miró, B., Lan, P., Rafel, M., Capell, T., Puigdomènech, P., Ouwerkerk, P.B.F., Meijer, A.H., Pè, E., Colombo, L., Christou, P., Guiderdoni, E., Pereira, A. <i>EU-OSTID: a collection of transposon insertional mutants for functional genomics in rice</i>. <i>Plant Mol. Biol.</i> (2005). 59:99-110.  Leivar, P., González, V., Castel, S., Trelease, R. N., López-Iglesias, C., Arró, M., Boronat, A., Campos, N., Ferrer, A., Fernández-Busquets, X. <i>Subcellular localization of Arabidopsis thaliana 3-Hydroxy-3-Methylglutaryl-Coenzyme A Reductase</i>. <i>Plant Physiol.</i> 137, 57-69 (2005).  Deleu, W., González, V., Monfort, A., Bendahmane, A., Puigdomènech, P., Arús, P., García-Mas, J. <i>Structure of two melon regions reveals high microsynteny with sequenced plant species</i>. <i>Mol. Gen. Genom.</i> 278(6):611-22 (2007).</p>	


<p>Dr. Eva Méndez  <a href="mailto:mendez-research@ferrergrupo.com">mendez-research@ferrergrupo.com</a></p>	
	<p>Head of High Throughput Screening Department at Ferrer Internacional, S.A</p>
<p>CV: Graduation in Biology (1993, University of La Laguna, Tenerife). Research fellow in Marine Biology (1994, Institute of Marine Biology of Crete, Greece). Biologist (1996, Leioa City Hall, Vizcaya). PhD in Biological Sciences (2001, Department of Animal Physiology, University of Barcelona, Barcelona). Post-doctoral fellow (2001, Faculty of Medicine, University of Oslo, Norway). Assistant Professor (2001-2002, Department of Animal Physiology, University of Barcelona, Barcelona). Senior Scientist (2002-2008, Department of Biochemistry and Molecular Biology, Ferrer Internacional SA, Barcelona). Head of HTS Department (2008-, Ferrer Internacional SA, Barcelona).</p>	
<p>Subjects in Masters of Bioengineering: Screening technologies and bioassays (3 ECTS).</p>	
<p>Research area: Ferrer Internacional is a Spanish Pharmaceutical company with a Discovery pipeline focused on searching New Chemical Entities in 4 Areas of Interest: Antibacterial Activity, Central Nervous System (specially hypnotics), Cancer and Antiinflammatory Activity. Work done in HTS Department comprises all phases between identifying a target up to Hit Optimization in the projects with a Random Screening Strategy (that is: target identification, assay development and validation, HTS implementation, data mining and iterative process of hit optimization).</p>	
<p>3 recent publications:</p> <p>Falco, J. L., Plasencia, G., Zamora, I., Pique, M., Gonzalez, M., Morato, A., Borrell, J. I., Teixido, J., Buirra, I., Mendez, E., Terencio, J., Princep, M., Palomer, A., Guglietta, A. Scaffold hopping: application to the discovery of novel GABAA receptor ligands. <i>AFINIDAD</i> (2007), 64 (529), 324-328.</p> <p>Falco, J.L., Pique, M., Gonzalez, M., Buirra, I., Mendez, E., Terencio, J., Perez, C., Princep, M., Palomer, A., Guglietta, A. Synthesis, pharmacology and molecular modeling of N-substituted 2-phenyl-indoles and benzimidazoles as potent GABAA agonists. <i>Eur J Med Chem</i> (2006), 41(8), 985-990.</p> <p>Falco, J.L., Lloveras, M., Buirra, I., Teixido, J., Borrell, J.I., Mendez, E., Terencio, J., Palomer, A., Guglietta, A. Design, synthesis and biological activity of acyl substituted 3-amino-5-methyl-1,4,5,7-tetrahydropyrazolo[3,4-b]pyridin-6-ones as potential hypnotic drugs. <i>Eur J Med Chem</i> (2005), 40(11), 1179-1187.</p>	

<p>Oriol Pou  <a href="mailto:joseppou@iqs.es">joseppou@iqs.es</a></p>	
	<p>Assistant professor  Dept. Chemical engineering IQS</p>
<p>CV: Graduation Chemical engineering (2003, IQS, Barcelona) and Industrial engineering (2007, IQS, Barcelona).  Research work done at Tennessee University (2004, UT, Knoxville).</p>	
<p>Subjects in Masters of Bioengineering: Extension course in chemistry and engineering (3 ECTS).</p>	
<p>Research area: Fine chemistry continuous process and separations. Scale up of batch process and conversion into continuous process focusing on the separation phase.</p>	
<p>3 recent publications:  Sempere, Julià, Nomen, Rosa, Serra, Eduard, Cuevas, Karina, Pou, Oriol, Menacho, Joaquim, Martínez, Sandra. Simulation and optimization of two and three components SMB separations. Submission Spica Zürich 2008.  Sempere Julià, Serra Eduard, Gomà-Camps Oriol, Pou, Oriol. Development of fFine Chemical's advanced process. Submission "Seminar sharing knowledge an vision in industrial safety" ETPIS Milano 2005.</p>	


<p>Dr. Carme Rovira  <a href="mailto:crovira@pcb.ub.es">crovira@pcb.ub.es</a></p>	
	<p>ICREA Research Professor  Head of the group of Quantum Simulation of Biological Processes (Computer Simulation &amp; Modelling Laboratory, CoSMoLab-PCB).</p>
<p>CV: Graduation in Chemistry (1991, UB, Barcelona). PhD. in Physical Chemistry (1995, UB, Barcelona, research work done at the UB and at the University of North Carolina, Raleigh, NC, USA). Post-doctoral fellow at the Max-Planck-Institut für Festkörperforschung (Stuttgart, Germany, 1996-1998) and at the Department of Chemistry of the UB (1999-2001). Ramón y Cajal researcher at the Parc Científic de Barcelona (PCB, 2002-2006). ICREA Research Professor at the PCB since 2007.</p>	
<p>Subjects in Masters of Bioengineering: Modeling and simulation (3 ECTS).</p>	
<p>Research area: Computer simulation of biological processes at atomic and electronic detail (i.e. using computers to understand how biomolecules work). Our goal is to simulate the molecular mechanisms underlying ligand-protein interactions and enzymatic reactions in order to help in the design of more efficient enzymes. Our current research is focused on heme proteins (peroxidases and catalases), carbohydrate active enzymes and aldo-keto reductases.</p>	
<p>3 recent publications:</p> <p>X. Biarnés, J. Nieto, A. Planas and C. Rovira. "Substrate distortion in the Michaelis complex of <i>Bacillus</i> 1,3-1,4-<math>\beta</math>-glucanase. Insight from first principles molecular dynamics simulations. <i>J. Biol. Chem.</i> 281, 1432-1441 (2006).</p> <p>P. Vidossich, M. Alfonso-Prieto, X. Carpena, P. C. Loewen, I. Fita and C. Rovira. Versatility of the electronic structure of compound I in catalase-peroxidases (KatGs). <i>J. Am. Chem. Soc.</i> 129, 13436-13446 (2007).</p> <p>O. Gallego, F. X. Ruiz, A. Ardèvol, M. Domínguez, R. Àlvarez, A. R. de Lera, C. Rovira, J. Farrés, I. Fita and X. Parés. Structural basis for the high all-<i>trans</i>-retinaldehyde reductase activity of the tumor marker AKR1B10. <i>Proc. Natl. Acad. Sci. USA</i> 104, 20764-20769 (2007).</p>	

<p>Dr. Carlos E. Semino  <a href="mailto:carlos.semino@iqs.url.edu">carlos.semino@iqs.url.edu</a></p>	
	<p><b>Associate Professor of Cell Biology and Tissue Engineering</b>  Head of Tissue Engineering Division, Bioengineering Department, IQS-URL, Barcelona, Spain.  Guest Professor at the Translational Centre for Regenerative Medicine, Leipzig University, Germany.  Guest Scientist at the Center for Biomedical Engineering, Biological Engineering Division, Massachusetts Institute of Technology, Cambridge, USA.</p>
<p>CV: BS in Genetics and Molecular Biology (1990, University of Buenos Aires, Buenos Aires, Argentina), PhD in Chemistry (1994, University of Buenos Aires, Buenos Aires, Argentina), Post-doctoral Fellow in Biochemistry and Molecular Biology (1994-1998, Center for Cancer Research, Massachusetts Institute of Technology, Cambridge, MA, USA), Head of Molecular Toxicology (1998-2000, Phylonix Pharmaceuticals, Inc., Cambridge, MA, USA), Research Scientist (2000-2008, Center for Biomedical Engineering, Massachusetts Institute of Technology, Cambridge, MA, USA), Co-Founder (2002-present, 3-Dmatrix Inc., Lexington, MA USA); Co-Founder (2004-present, REGENERATE: European-wide Network for Regenerative Medicine and Tissue Engineering, founded by National Associations for the Advancement of Regenerative Medicine, Europe); Associate Professor (2006-present, Bioengineering Department, IQS-URL, Barcelona, Spain); Guest Professor (2007-present, Translational Centre for Regenerative Medicine, Leipzig University, Germany); Guest Scientist (2008-present, Center for Biomedical Engineering, Biological Engineering Division, Massachusetts Institute of Technology, Cambridge, USA).</p>	
<p>Subjects in Masters of Bioengineering: Molecular cell biology (4 ECTS), Cell cultures and tissue engineering (4 ECTS).</p>	
<p>Research area: Design and fabrication of extracellular matrix analogs using self-assembling biological materials, and self-assembling nanoparticles for drug/protein release. Cellular reprogramming and differentiation control in bioengineered microenvironments. Cellular self-organization and pattern formation. Early principles of tissue hierarchy and development. Target therapeutic areas: Drug delivery, Autologous tissue expansion, Bioconstruct integration, Regeneration.</p>	
<p><b>3 recent publications:</b></p> <ol style="list-style-type: none"> <li>1. Quintana L, Fernández Muiños T, Genové E, del Mar Olmos M, Borrós S, &amp; Semino CE. (2009) Early tissue patterning is recreated by mouse embryonic fibroblasts in a three-dimensional environment. <i>Tissue Engineering Part A</i> 15(1): 45-54.</li> <li>2. Hernández Vera R, Genové E, Alvarez L, Borrós S, Kamm R, Lauffenburger D &amp; Semino CE. (2009) Interstitial fluid flow intensity modulates endothelial sprouting in restricted Src activated cell clusters during capillary morphogenesis. <i>Tissue Engineering Part A</i> 15(1): 175-185.</li> <li>3. Semino CE. Self-Assembling Peptides: From Bioinspired Materials to Bone Regeneration (2008). <i>Journal of Dental Research</i> 87 (7), 606-616.</li> </ol>	

<p>Dr. Xavier Tomas  <a href="mailto:xavier.tomas@iqs.edu">xavier.tomas@iqs.edu</a></p>	
	<p><b>Full Professor of Statistics</b>          Director of the Applied Statistics Department (1998 – 2007).          General Secretary of the IQS (2007- ).</p>
<p>CV: Graduation in Chemical Engineering (1970, IQS, Barcelona) and Chemistry (1989, Universitat de Barcelona), PhD in Chemical Engineering (1975, IQS, Barcelona. Associate Professor (1972 – 1994, Fac of Medecine and Fac of Sciences, Universitat Autònoma de Barcelona), Associate Professor (1972 – 1989, IQS, Barcelona), Full Professor (Catedrático) (1989 -, IQS, Universitat Ramon Llull, Barcelona).</p>	
<p><b>Subjects in Masters of Bioengineering:</b> Experimental design and analysis (3 ECTS).</p>	
<p><b>Research area:</b> Applied Statistics in the chemical and biochemical fields (Chemometrics) with special emphasis in multivariate techniques as well as experimental design and optimization of products and processes. Statistical Process Control and Quality design.</p>	
<p><b>3 recent publications:</b>          Spanish translator of G.E.P. Box, W.G. Hunter, J.S. Hunter. "Statistics for experimenters: design, innovation and discovering". 2ª Edition Ed. Reverté. Barcelona (2008) ISBN 978-84-291-5044-5.          L.G. Sabaté, X. Tomàs, J. Cuadros, M.E. Gracia-Aso. Modelos no lineales de previsión para series temporales de interés farmacéutico. Aplicación al caso de la escarlatina. <i>Afinidad</i>. 65, 20 – 25 (2008).          A. Pons, M. Agut, L. Fernández-Ruano, X. Tomàs. Aplicación de los diseños de Taguchi en el estudio de la inhibición del crecimiento de <i>Listeria monocytogenes</i> CECT 4032. <i>Afinidad</i>. 64, 390 – 396 (2007).          M. Royo, J. Tricás, X. Tomàs. Improving Quality in the Spanish Electrical Sector: A QFD application. <i>Total Quality Management &amp; Business Excellence</i>. 16, 555 – 558 (2005).</p>	

<p>Xavier Turon i Casalprim  <a href="mailto:xavier.turon@iqs.edu">xavier.turon@iqs.edu</a></p>	
	<p>Associate professor          Bioengineering Department, IQS-URL.</p>
<p>CV: Graduation in Environmental sciences (1997, Universitat de Girona). Master Technical Business Administration (2002, Universitat de Girona). PhD in Chemical Engineering (2005, Universitat de Girona and École Polytechnique de Montréal, Canada). Post-doctoral fellow (2005-2008, North Carolina State University, USA. Industrial partnership with Novozymes NA and North Carolina Biotechnology Center). Associate Professor (2008, IQS, Universitat Ramon Llull, Barcelona).</p>	
<p>Subjects in Masters of Bioengineering: Bioreactors and Bioprocess Technology (4.5 ECTS), Downstream processing (4 ECTS), Modelling and simulation (3 ECTS),</p>	
<p>Research area: Bioreactor technology: bioreactor operation and control, process modeling and optimization. Downstream techniques to maximize product isolation and purification. Industrial byproducts as substrates for high-value biotechnological products. Enzymatic saccharification of lignocellulosics and its surface chemistry. Biofuels from lignocellulosics.</p>	
<p>3 recent publications:          Turon, X.; Ahola S., Österberg M., Rojas O. J. "Enzymatic hydrolysis of native cellulose nanofibril and other cellulose model films: Effect of surface structure" <i>Langmuir</i>, 2008, 24 (20), pp 11592–11599. DOI: 10.1021/la801550j.          Turon, X.; Rojas, O.J.; Deinhammer, R.S. "Enzymatic kinetics of cellulose hydrolysis: A QCM-D study" <i>Langmuir</i>, 24(8), 3880 -3887, 2008, DOI: 10.1021/la7032753.          J.Labidi, M.À. Pèlach, X.Turon, P.Mutjé "Predicting flotation efficiency using neural networks" <i>Chemical Engineering and Processing</i>, Vol.46 (4), 2007, pp 314-322.</p>	

<p>Andrea Vera Barrón  <a href="mailto:andrea.vera@iqs.url.edu">andrea.vera@iqs.url.edu</a></p>	
	<p>Assistant Professor  Bioengineering Department, IQS-URL.</p>
<p>CV: Graduation in Biology (2003, Universitat Autònoma de Barcelona, Barcelona), Master in Biotecnologia (2005, Universitat Autònoma de Barcelona, Barcelona). Assistant professor (2004-2007, Department of Genetics and Microbiology, Universitat Autònoma de Barcelona, Barcelona).</p>	
<p>Subjects in Masters of Bioengineering: Laboratorio en Técnicas Bioquímicas (11 ECTS). Laboratorio de Biotecnologías (11 ECTS). Laboratorio Integrado “De Gen a Producto” (11 ECTS).</p>	
<p>Research area: Protein aggregation: Production of recombinant proteins in bacteria. Bacterial inclusion bodies (IBs). Biosensors: Insertional protein engineering. Protein-only biosensors.</p>	
<p>3 recent publications:  Vera A., Gonzalez-Montalban N., Arís A., Villaverde A. “The conformational quality of insoluble recombinant proteins is enhanced at low growth temperatures” <i>Biotechnol Bioeng</i>, 15;96(6): 1101-6, 2007.  Fernández G, Vera A, Villaverde A, Martínez MA. “Analysis of recombinant protein toxicity in E. coli through a phage lambda-based genetic screening system” <i>Biotechnol Lett</i>, 29(9):1381-6, 2007.  Martínez-Alonso M, Vera A, Villaverde A. “Role of the chaperone DnaK in protein solubility and conformational quality in inclusion body-forming Escherichia coli cells” <i>FEMS Microbiol Lett</i>, 273(2):187-95, 2007.</p>	

<p>Bernabé Zea  <a href="mailto:bernabezea@pcb.ub.es">bernabezea@pcb.ub.es</a>  <a href="mailto:bzea@zbm-patents.eu">bzea@zbm-patents.eu</a></p>	
	<p><b>Current position</b>  Partner of the patent agency ZBM Patents (Zea, Barlocchi &amp; Markvardsen Patents). ZBM is the only patent agency in Spain ranked as tier 1 during the last 3 years by the Managing Intellectual Property.  Professor at the Patents Centre of the University of Barcelona. Assessment and protection of inventions of the Universitat de Barcelona researchers.</p>
<p>CV: MSc in Chemistry (1988, Universitat de Barcelona). Spanish Patent and Trademark Attorney. Authorised representative before the OHIM.  Since 1988, he lectures regularly on patent matters in courses organized by the Spanish Patent Office and the University of Barcelona, and also in the main Spanish masters on intellectual property, for example in the Magister Lucentinus (University of Alicante).  He has been representative of Chemical Abstracts Service and STN International since 1995 to 2008.</p>	
<p><b>Subjects in Masters of Bioengineering:</b> Project Management and Legislation (3 ECTS).</p>	
<p><b>Activity area:</b> Bernabé has wide experience in preparing patentability, infringement and freedom to operate opinions, as well as in drafting patents, especially in the fields of organic chemistry and pharmacy. He acts frequently as an expert in patent court actions before Spanish courts.</p>	