

Elisabet Rosàs Canyelles

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Education

Ph.D. in Bioengineering Berkeley CA 2013-Present
University of California Berkeley and University of California San Francisco
Advisor: Prof. Amy Herr

B.S. in Chemical Engineering with Highest Honors Barcelona, Spain 2012
Thesis: "Targeting Photodynamic Therapy to Microvascular Endothelial Cells with a Novel Conjugated Sensitizer".
Advisors: Prof. Mercedes Balcells, Prof. Santi Nonell

Research Experience

Graduate Student Researcher, UC Berkeley/UCSF Berkeley CA 2014-Present
Advisor: Prof. Amy Herr
Single cell profiling of breast cancer cell lines using microfabricated single-cell Western blot platform.

Graduate Student Rotation, Schaffer Lab, UC Berkeley Berkeley CA Jan-March 2014
Advisor: Prof. David Schaffer
Design and synthesis of transcription activator-like effector nucleases (TALENs) for gene therapy of autosomal dominant retinitis pigmentosa using adeno associated virus (AAV) vectors.

Graduate Student Rotation, Lee Lab, UC Berkeley Berkeley CA Oct-Dec 2013
Advisor: Prof. Seung-Wuk Lee
Self-assembly of genetically engineered M13 bacteriophage into piezoelectric films.

Research Assistant, Edelman Lab, MIT Cambridge MA 2012-2013
Advisor: Prof. Elazer Edelman

- Studied the effects of shear stress on uptake of cellular adhesion molecule (CAM) antibodies in microvascular and macrovascular endothelial cells.
- Evaluated selective toxicity of a novel antibody-conjugated photodynamic drug in diseased over healthy endothelial cells.
- Isolated and cultured auricular chondrocytes on 3D matrices of polyglycolic acid to create cartilage-like tissue (In collaboration with Regeneare, Spain).
- Studied the anti-inflammatory effects of chondroitin sulfate and glucosamine sulfate on endothelial cells (In collaboration with Prof. Juliana Dreyfuss at Universidade Federal de Sao Paulo, Brasil).

Undergraduate Research, IQS School of Engineering Barcelona Spain 2011-2012
Advisor: Prof. Mercedes Balcells
Coadvisor: Prof. Santiago Nonell
Synthesized and characterized a novel photosensitizer-antibody conjugate for specific targeting of activated microvascular endothelial cells.

Undergraduate Research Internships, Edelman Lab, MIT Cambridge MA 2010-2012

Advisor: Prof. Elazer Edelman

- Constructed *in vitro* models of human coronary and carotid artery bifurcations, in order to study endothelial response to altered shear stress in regions of flow recirculation.
- Assessed reendothelization and thrombogenicity of drug eluting stents deployed in co-culture, tube-like vascular *in vitro* models.

Publications

1. Rosàs E, Santomá P, Duran-Frigola M, Hernandez B, Llinàs MC, Ruiz-González R, Nonell S, Sánchez-García D, Edelman ER, Balcells M. “*Modifications of Microvascular EC Surface Modulate Phototoxicity of a Porphycene anti-ICAM-1 Immunoconjugate; Therapeutic Implications*”. **Langmuir**. 2013 Aug 6; 29(31):9734-43. doi: 10.1021/la401067d.
2. Rosas E, Sobenin I, Orekhov A, Edelman ER, Balcells M. “*Importance of Receptor-targeted Systems in the Battle Against Atherosclerosis*”. **Current Pharmaceutical Design**. 2013; 19(33):5897-903.

Awards and Honors

- IQS Society for Chemical Engineers, AIQS Barcelona Spain 2013-Present
Member of the Associació d'Enginyers Químics of the IQS School of Engineering (AIQS)
- Highest Honors for Undergraduate Thesis, IQS Barcelona Spain 2013
- “I tus Club”, Universitat de Barcelona Barcelona Spain 2007-Present
Member after being selected for Biochemistry Course (“I Tu? Jo Bioquímica”)
- Model United Nations Conference, International School of Beijing Beijing, China 2007

Teaching Experience and Outreach

LAGSES Outreach Coordinator Berkeley CA 2014-Present
Latino Association for Graduate Students in Engineering and Science at Berkeley. Organizing outreach events for undergraduate students interested in applying for doctoral programs at UC Berkeley.

BEAST Social Committee Berkeley CA 2013-Present
Organizing gatherings for students in the UC Berkeley/UCSF Joint Graduate Group through the Bioengineering’s Association of Students (BEAST).

Science and Health Education Partnership at UCSF (SEP) San Francisco CA 2013-2014
Teaching science to 5th grade students of El Dorado Elementary School in San Francisco.

MIT-Spain Mentor Barcelona Spain 2010-2012
Mentor for MIT undergraduate students completing internships in Spain through the MIT International Science and Technology Initiatives (MISTI) Program.

Mentor, Edelman Lab, MIT Cambridge MA 2012-2013
Mentored two UROP students (Undergraduate Research Opportunity Program) as Research Assistant.

Mentor, Tissue Engineering Lab, IQS Barcelona 2012
Mentored two undergraduate students in developing tissue culture skills, under the supervision of Prof. Carlos Semino, Bioengineering Department of IQS School of Engineering.

Skills

Cell biology, biochemistry and molecular biology (tissue culture, primary tissue culture, flow cytometry, bioreactor design, gel electrophoresis, ELISA, PCR, molecular cloning); Optics (fluorescence microscopy, UV-Vis spectroscopy); Photolithography
Programming/Engineering Software: MATLAB, C++, Windows, AutoCAD, Tdyn, Aspen HYSYS
Languages: English, Spanish, Catalan, French