

**Curriculum Vitae**  
**Miquel Canals-Artigas**  
(Date of completion: December 2007)

**DNI/Passport Num.:** 78065303Z

**Born:** 15<sup>th</sup> June 1957, Torà de R., Lleida, Spain

**Sex:** Male

**Present professional position:** Full Professor of Marine Geology at Universitat de Barcelona

**Administrative status:** Permanent

**Dedication:** Full time

**Professional address:** Universitat de Barcelona, Fac. Geologia, Departament d'Estratigrafia, P. i Geociències Marines, CRG Geociències Marines, Campus de Pedralbes, C/Martí i Franquès s/n, 08028 Barcelona, Spain.

**Other recent relevant professional positions:** Directeur de Recherche Associé at Centre de Formation et de Recherche sur l'Environnement Marin (CEFREM), CNRS - Univ. Perpignan, France (2000-01).

**Formation:** *Master Degree:* Geology, Universitat de Barcelona, June 1979 / *PhD:* Geology, Universitat de Barcelona, September 1985.

**Main research topics:** Sedimentary processes and products in ocean margins and basins / Paleoceanography / Ocean particle fluxes and biogeochemical cycles / Seafloor mapping

**Management positions at Universitat de Barcelona**

Founder and head of the excelency research group GRC Geociències Marines at Universitat de Barcelona (since 1992). It consists now of 30 researchers.

Head of GRC Geociències Marines at Universitat de Barcelona (since 1992).

Head of the Stratigraphy and Marine Geosciences Unit at Fac. Geologia of Universitat de Barcelona (since 2005).

**Relevant management and evaluation positions outside Universitat de Barcelona**

Expert evaluator of the European Commission in the area of Environment and Global Change (Marine Sciences and Technologies) and of funding agencies from Australia, Belgium, France, Italy, Norway, Spain, United Kingdom, and the United States.

Member of the Steering Committee of the European "Deep Sea Frontiers Initiative" and chairman of Working Group 5 on "The deep sea landscape – sediment transport and fluxes" (2006 onwards).

Member of IFREMER's "Comité Scientifique". Nominated by decree of 30.04.02 ("Journal Officiel de la République Française" of 02.05.02). The "Comité Scientifique" consists of 16 members, appointed for 5 year periods.

Director of the Thematic Network *Barcelona Consortium on Marine Geosciences*, formed by eight research centres from CSIC, CNRS-Université de Perpignan, Universitat Autònoma de Barcelona, Universitat de Barcelona, and Universidad de Salamanca (2000-04).

Leading member of the Experts Commission responsible for the preparation of the Spanish "Programa Nacional de Investigación en la Antártida" (PNIA), created by "Comisión Interministerial de Ciencia y Tecnología" of the Spanish Government. The works done by the Experts Commission lead to the official approval by the Spanish Parliament of the above mentioned program, which has been the main funding mechanism for Antarctic research in Spain since then as part of the successive RTD National Programs (1995).

Elected Coordinator of the Experts Commission responsible for the preparation of the Spanish "Programa Nacional de Ciencia y Tecnología Marinas" (CYTMAR), created by "Comisión Interministerial de Ciencia y Tecnología" of the Spanish Government. The works done by the Experts Commission lead to the official approval by the Spanish Parliament of the above mentioned program, which was the main funding mechanism for Marine Science and Technology in Spain in between 1995 and 2002 (III and IV RTD National Programs) (1994).

## PUBLICATIONS

220 papers, books and book chapters published to date.

**Most cited scientist in Geosciences** according to the *Essential Science Indicators* of the *ISI Web of knowledge* (December 13th, 2007), with 879 citations and a mean number of 13.04 citations per paper in the field of Geosciences only. Hirsch index (H = 21).

### Relevant papers

#### The 12 most cited

- Cacho, I., Grimalt, J.O., Pelejero, C., **Canals, M.**, Sierro, F.J., Flores, J.A. and Shackleton, N.J., 1999. Dansgaard-Oeschger and Heinrich event imprints in the Alboran Sea paleotemperature; ***Paleoceanography***, 14 (6): 698-705. [Citations per year: 12.56; total citations **113**; *ISI Highly Cited Paper* (0,5% of most cited papers) for the period 1981-2006].
- Canals, M.**, Urgeles, R. and Calafat, A.M., 2000. Deep sea-floor evidence of past ice streams off the Antarctic Peninsula; ***Geology***, 28 (1): 31-34. [Citations per year: 9.5; total citations **76**; included in the section "Highlights of the recent literature, Editors' choice" (note entitled "Old ice streams", *Science*, **287**: 549, 2000), which refers to the best scientific papers in all fields according to the criteria of the editors of *Science*].
- Cacho, I., Grimalt, J.O., **Canals, M.**, Sbaffi, L., Shackleton, N.J., Schönfeld, J. and Zahn, R., 2001. Variability of the western Mediterranean Sea surface temperature during the last 25,000 years and its connection with the northern hemisphere climatic changes; ***Paleoceanography***, 16 (1): 40-52. [Citations per year: 9.29; total citations **65**; *ISI Highly Cited Paper* (0,5% of most cited papers) for the period 1981-2005].
- Urgeles, R., **Canals, M.**, Baraza, J., Alonso, B. and Masson, D., 1997. The most recent megaslides in the Canary Islands: The El Golfo debris avalanche and the Canary debris flow, west Hierro Island; ***Journal of Geophysical Research***, 102: 20305-20323. [Citations per year: 4.55; total citations **50**].
- Masson, D.G., Watts, A.B., Gee, M.J.R., Urgeles, R., Mitchell, N.C., Le Bas, T.P. and **Canals, M.**, 2002. Slope failures on the flanks of the western Canary Islands; ***Earth-Science Reviews***, 57: 1-35. [Citations per year: 8.17; total citations **49**].
- Cacho, I., Grimalt, J.O., Sierro, F.J., Shackleton, N.J. and **Canals, M.**, 2000. Evidence for enhanced Mediterranean thermohaline circulation during rapid climatic coolings; ***Earth and Planetary Science Letters***, 183 (3-4): 417-429. [Citations per year: 7.00; total citations **49**].
- Masson, D.G., **Canals, M.**, Alonso, B., Urgeles, R. and Huhnerbach, V., 1998. The Canary Debris flow: source area, morphology and failure mechanisms; ***Sedimentology***, 45: 411-432. [Citations per year: 4.10; total citations **41**].
- Gracia, E., **Canals, M.**, Farrán, M., Prieto, M.J., Sorribas, J. and GEBRA Team, 1996. Morphostructure and recent evolution of the Bransfield back-arc basin (NW Antarctic Peninsula); ***Marine Geophysical Researches***, 18 (1-3): 429-448. [Citations per year: 3.17; total citations **38**].
- Canals, M.** and Ballesteros, E., 1997. Production of carbonate particles by phytobenthic communities on the Mallorca-Menorca shelf, northwestern Mediterranean Sea; ***Deep-Sea Research II***, 44 (3-4): 611-629. [Citations per year: 2.73; total citations **30**].
- Moreno, A., Cacho, I., **Canals, M.**, Prins, M.A., Sanchez-Goñi, M.F., Grimalt, J.O. and Weltje, G.J., 2002. Saharan dust transport and high-latitude glacial climatic variability: the Alboran Sea record; ***Quaternary Research***, 58 (3): 318-328. [Citations per year: 5.60; total citations **28**].
- Urgeles, R., Masson, D.G., **Canals, M.**, Watts, A. and Le Bas, T., 1999. Recurrent giant landslides on the west flank of La Palma, Canary Islands; ***Journal of Geophysical Research***, 104: 25331-25348. [Citations per year: 3,11; total citations **28**].
- Alonso, B., **Canals, M.**, Got, H. and Maldonado, A., 1991. Seavalleys and related depositional systems in the Catalan Sea (northwestern Mediterranean Sea); ***American Association of Petroleum Geologists Bulletin***, 75 (7): 1195-1214. [Citations per year: 1.65; total citations **28**].

#### The most cited in 2007

- Cacho, I., Grimalt, J.O., Pelejero, C., **Canals, M.**, Sierro, F.J., Flores, J.A. and Shackleton, N.J., 1999. Dansgaard-Oeschger and Heinrich event imprints in the Alboran Sea paleotemperature; ***Paleoceanography***, 14 (6): 698-705. [Citations in 2007: **21**].

- Canals, M.**, Urgeles, R. and Calafat, A.M., 2000. Deep sea-floor evidence of past ice streams off the Antarctic Peninsula; **Geology**, 28 (1): 31-34. [Citations in 2007: 13].
- Cacho, I., Grimalt, J.O., Sierro, F.J., Shackleton, N.J. and **Canals, M.**, 2000. Evidence for enhanced Mediterranean thermohaline circulation during rapid climatic coolings; **Earth and Planetary Science Letters**, 183 (3-4): 417-429. [Citations in 2007: 12].
- Martrat, B., Grimalt, J.O., Lopez-Martinez, C., Cacho, I., Sierro, F.J., Flores, J.A., Zahn, R., **Canals, M.**, Curtis, J.H. and Hodell, D.A., 2004. Abrupt temperature changes in the Western Mediterranean over the past 250,000 years; **Science**, 306: 1762-1765. [Citations in 2007: 12].
- Moreno, A., Cacho, I., **Canals, M.**, Grimalt, J., Sánchez-Goñi, M.F., Shackleton, N. and Sierro, F.J., 2005. Links between marine and atmospheric processes oscillating at millennial time-scale. A multi-proxy study of the last 50,000 yr from the Alboran Sea (Western Mediterranean Sea); **Quaternary Science Reviews**, 24: 1623-1636. [Citations in 2007: 12].
- Moreno, A., Cacho, I., **Canals, M.**, Prins, M.A., Sanchez-Goñi, M.F., Grimalt, J.O. and Weltje, G.J., 2002. Saharan dust transport and high-latitude glacial climatic variability: the Alboran Sea record; **Quaternary Research**, 58 (3): 318-328. [Citations in 2007: 11].
- Canals, M.**, Lastras, G., Urgeles, R., Casamor, J.L., Mienert, J., Cattaneo, A., De Batist, M., Hafidason, H., Imbo, Y., Laberg, J.S., Locat, J., Long, D., Longva, O., Masson, D.G., Sultan, N., Trincardi, F. and Bryn, P., 2004. Slope failure dynamics and impacts from seafloor and shallow sub-seafloor geophysical data: Case studies from the COSTA project; **Marine Geology**, 213 (1-4): 9-72. [Citations in 2007: 11] [TOP25 Most Downloaded Paper in Marine Geology (Dec. 04 – January 06 at least)].
- Sultan, N., Cochonat, P., **Canals, M.**, Cattaneo, A., Dennielou, B., Hafidason, H., Laberg, J.S., Long, D., Mienert, J., Urgeles, R., Vorren, T. and Wilson, C., 2004. Triggering mechanisms of slope instability processes and sediment failures on continental margins: a geotechnical approach; **Marine Geology**, 213 (1-4): 291-321. [Citations in 2007: 10] [TOP25 Most Downloaded Paper in Marine Geology (Dec. 04 – January 06 at least)].

Recentmost papers in multidisciplinary journals of high diffusion

- Martrat, B., Grimalt, J.O., Lopez-Martinez, C., Cacho, I., Sierro, F.J., Flores, J.A., Zahn, R., **Canals, M.**, Curtis, J.H. and Hodell, D.A., 2004. Abrupt temperature changes in the Western Mediterranean over the past 250,000 years; **Science**, 306: 1762-1765.
- Canals, M.**, Puig, P., Heussner, S., Durrieu de Madron, X., Palanques, A. and Fabres, J., 2006. Flushing submarine canyons; **Nature**, 444: 354-357.

Other contributions of outstanding interest by any other reason (scientific, practical application, social impact, etc)

- Canals, M.**, Casamor, J.L., Urgeles, R., Farrán, M., Calafat, A.M., Amblás, D., Willmott, V., Estrada, F., Sánchez, A., Arnau, P., Frigola, J. and Colás, S., 2004. *Mapa del relleu submarí de Catalunya (Seafloor relief map of Catalonia)*, 1:250 000; Institut Cartogràfic de Catalunya, 1 map. [Awarded by the Official Committee of the "International Cartographic Association" (ICA) at its XXII International Cartographic Conference, La Coruña, July 2005].

**Recent edition of special issues of scientific journals**

- Monaco, A., Beckers, J.-M., **Canals, M.**, Lykousis, V., Mosetti, R., Price, N.B., Lipiatou, E. and Charriere, B., 2002. European Commission MAST III/MTP II MATER: MAss Transfer and Ecosystem Response. An Integrated and multiscale approach of the Mediterranean System; **Journal of Marine Systems**, 33-34: 1-544.
- Syvitski, J.P.M., Weaver, P.P.E., Berné, S., Nittrouer, C.A., Trincardi, F. and **Canals, M.**, 2004. Strata formation on European margins: A tribute to EC-NA cooperation in Marine Geology; **Oceanography**, 17 (4): 14-165.
- Weaver, P.P.E., **Canals, M.** and Trincardi, F., 2006. EUROSTRATAFORM VOL. 1: Source to Sink Sedimentation on the European Margin; **Marine Geology**, 234 (1-4): 1-292.

**SUPERVISION OF Ph D THESES (last 10 years only)**

Supervision of 12 Ph D theses defended at the universities of Barcelona (9), Gent (1), Utrecht (1) and Western Brittany (1). All of them have obtained the highest qualification. One of them was awarded as the best Ph D Thesis in the academic year ("Premi Claustre de Doctors de la Universitat de Barcelona 2002").  
Supervision of 12 master theses within the same period.

### **RESEARCH PROJECTS AND CONTRACTS (last 10 years only)**

Participation in 58 research projects and contracts, publicly and privately funded, 19 of them funded by the European Commission. Coordinator of 30 of those projects, including 4 EC-funded projects. Co-funding actions, awards to networks and research groups (soft money), and equipment funding not accounted.

Many of these projects are multidisciplinary and cover a broad range of disciplines, from Marine Sedimentology to Paleoceanography, from Biogeochemistry to Geohazard Assessment, from Marine Technologies to Applied Research.

#### **Full coordination of the following projects funded by the Spanish RTD Program (PN I+D+I)**

Evolución geológica del margen pacífico de la Antártida occidental: expansión del fondo oceánico y tectónica de placas (GEBRAP) (ref. ANT95-0889-CO2-01). CICYT. 1996-1997. Funding for the group: 109,745 €.

Obtención de testigos de roca y sedimento en los mares septentrionales de la Península Antártica: Contribuciones al conocimiento de la evolución geológica regional (COREBRAP). Participación en una campaña del BAS con el RRS "James Clark Ross" (ref. ANT97-1958-E). CICYT. 1997-1998. Funding for the group: 10,037 €.

Procesos de inestabilidad sedimentaria en márgenes continentales e insulares españoles: los megadeslizamientos del Ebro y de Canarias (Proyecto GRANDES) (ref. MAR98-0347). CICYT. 1998-2001. Funding for the group: 92,315 €.

Prodeltas del Mediterráneo Español: Estudio Integrado (PRODELTA) (ref. REN2002-02323). PN I+D+I. 2002-2005. Funding for the group: 119,780 €.

Estabilidad del talud continental en los márgenes pasivos de Europa (SPACOMA) (ref. REN2002-11217-E MAR). PN I+D+I. 2003-2006. Funding for the group: 75,000 €.

Los márgenes del Mediterráneo Occidental: interacción entre procesos someros y profundos. Procesos y productos sedimentarios recientes y subrecientes a lo largo de un transecto meridiano desde el sur de Baleares a Argelia (WEST-MED) (ref. REN2002-11216-E MAR). PN I+D+I. 2003-2006. Funding for the group: 47,000 €.

Estudio integrado de cañones y taludes profundos del Mediterráneo Occidental: un hábitat esencial – GEO (PROMETEO-2) (ref. CTM2007-66316-CO2-01/MAR). PN I+D+I. 2007-2010. Funding for the group: 187,000 €.

#### **Full coordination of the following projects funded by the European Commission**

Transfer of matter and energy on European continental margins (EUROMARGE-NB) (ref. MAS2-CT93-0053). 1993-1996. Funding for the group: 303,000 ECU.

Mass Transfer and Ecosystem Response, Mediterranean Targeted Project II (MATER – MTP II) (ref. MAS3-CT96-0051). 1996-1999 (Western Mediterranean subproject coordinator). Funding for the group: 690,000 ECU.

Behavior and fate of dissolved, colloidal and particulate matter in the Alboran Sea. Physical and chemical characterization (ref. ERBFMBICT961519). 1997-1999. Funding for the group: 104,984 ECU.

MAST Advanced Study Course on the Mediterranean Marine System (ref. MAS3-CT98-4005). 1999. Funding for the group: 98,700 ECU.

Research Training Network on EUROpean Deep Ocean Margins (EURODOM) (ref. RTN2-2001-00281). 2002-2006. Funding for the group: 1,451,552 €.

Particulate organic matter and nutrient fluxes in European margins (POMFLUX) (Ref. MOIF-CT-2005-9058). 2005-2008. Funding for the group: 255,188 €.

#### **Coordination of projects funded by other organizations**

Comer Climate Change Fellowship I and II (ref. FBG 302243). Comer Foundation, USA. 2003-2008 (co-coordinator). Funding for the group: 540,000 US \$.

**Full coordination of the following research contracts with private companies and consortia  
(most relevant ones only)**

- The subaerial expression of landslides on El Teide and El Hierro ocean islands as analogues for large submarine slides: A Field trip to Teide and El Hierro island volcanoes (contract FBG 302618). Statoil ASA. 2003.
- Collaborative agreement between Institut Cartogràfic de Catalunya and Universitat de Barcelona on bathymetric mapping I. Institut Cartogràfic de Catalunya. 2003-2005.
- Bathymetry and geology of the seafloor in between Ibiza and Mallorca (contract FBG 303040). MAESSA. 2004-2005.
- Consulting for the strategic investigation of the seafloor between Mallorca and Ibiza, and Ibiza and Formentera (contract FBG 303242). Endesa Distribución Eléctrica. 2005-2006.
- Searching for sandy deposits on the Barcelona continental shelf and nearby areas (contract FBG 303367). Autoritat Portuària de Barcelona – Port de Barcelona. 2005.
- Collaborative agreement between Institut Cartogràfic de Catalunya and Universitat de Barcelona on bathymetric mapping II (contract FBG 303617). Institut Cartogràfic de Catalunya. 2005-2006.
- Characterization of the seafloor of the Balears (contract FBG 303585). GESA-ENDESA. 2005-2006.

**AWARDS (last 10 years)**

2004. Distinction of the Catalan autonomous government Generalitat de Catalunya to the Promotion of University Research, Senior Researchers Class, 5th Call (DOGC 4178 of 20.07.04).
2006. Award NOVARE ENDESA of Energy to CRG Marine Geosciences, member of EOLIMAR Tecnología AIE, within the category "New Renewable Energy and Energy Sources", for the project "Herramienta de Apoyo para la Implantación y Gestión de Campos Eólicos en Mar".

**MAIN COURSES**

- 2005-Present: Coordinator of the Commission of the Official Postgraduate Program on Marine Sciences of Universitat de Barcelona.
2004. *EURODOM Multidisciplinary Research Meeting and Seminar on Communication and Project Management Skills*, Palau de les Heures, Universitat de Barcelona, 24-26 March. Organization and lecturing on *Management of small research groups* and *Team organizative models*.
2004. *EURODOM Submarine Slope Stability Course*, Palau de les Heures, Universitat de Barcelona, 29 March-02 April. Organization and lecturing on *Slope instabilities in the Western Mediterranean and the Canary Islands*.
1999. MAST Advanced Course *The Mediterranean Marine System*, UE, MAST III Program, Barcelona. Organization and lecturing on *Deep-sea depositional systems. The building and destruction of a Mediterranean slope-apron*.

**ORGANIZATION OF RELEVANT SCIENTIFIC MEETINGS, WORKSHOPS AND COURSES (last 4 years only)**

2006. AGU Fall Meeting, San Francisco, CA, USA, December. **Co-president** of sessions OS14A and OS23B: "Studies of sediment transfer from land through the ocean and into the stratigraphic record III and V".
2004. *37th CIESM Conference*, Barcelona, June. **Chairman**, session "Bathymetric synthesis of the Mediterranean Sea".
2004. International Symposium on the Geology and Geophysics of the Southernmost Andes, the Scotia Arc and the Antarctic Peninsula" (GeoSur 2004), Buenos Aires, November. **Chairman** of the sessions "Marine Geology and Geophysics" (6), "Ice-Sheet Dynamics" (8) and "Geophysical Methodologies" (9)
2004. XXVIII SCAR Meeting, Open Science Conference "Antarctica and the Southern Ocean in the Global System", Bremen, July. **Convenor**, session "Evolution of the Antarctic and Southern Ocean climate and biota: the geological record".
2004. 2nd EUROMARGINS Conference, ESF EUROCORES Program, Barcelona, November. **Local organizer**.
2003. Ocean Margin Research Conference, EU-UNESCO, Paris, September. **Co-organizer**.