



AAPG

Research LAUNCHER Program

About You

First Name: **Antonio** Last name: **Capó Esteva**

Company/University: **University of the Balearic Islands**

Check which apply to you: Student Non Student **Independent Researcher** Professor Corporate Research Other

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Short Bio: (250 words or less)

Antonio Capó held a BSc in Geology in the Universitat Autònoma de Barcelona, and an MSc in hydrocarbon exploration in the Universitat de Barcelona, before going back to the University of Balearic Islands, based as a Research Assistant. He is currently seeking for a PhD or Research Grant to carry on in his career. So far his research topics have involved linking erosion-deposition from source areas to offshore marine environments in the Balearic Islands and erosion processes and stream captures in Western Himalaya.

Project Description

1. Name of project: **The Central Balearics Source-to-Sink system**

2. Brief synopsis/areas of geosciences or engineering (50-75 words)

Source-to-sink studies relate long-term variations in sediment flux to evolution of erosional depositional systems, caused by a combination of mechanisms operating on individual events to large-scale basin fills. Relationships between catchments, shelves/slopes and sediment distribution provide insights into segment scale development. Modern systems can improve the knowledge on internal and external development of source-to-sink systems over different time scales. This can be used to predict similar relationships in systems where data from individual segments is missing.

3. Bullet list of 5-7 main outcomes/goals.

[1] To investigate how an input population of grains is partitioned into different depositional segments, and over what transport length scales this takes place; [2] to investigate the notion that down-system fining in sedimentary successions is driven by sediment mass extraction; [3] to describe sedimentary bodies and patterns in every depositional segment in order to establish relationships between segments; [4] to calculate present to past erosion rates through river analysis, numerical modelling, terrace and cosmogenic dating methods and volumetric and structural reconstructions; [5] to link erosion rates with sedimentation patterns and study area particular climatic and lithologic characteristics.

4. In two or three sentences, describe why your research is important. Please mention who will benefit from your work.

This research can have a strong implication in hydrocarbon exploration by providing prediction tools of reservoir quality and distribution in subsurface-based studies of individual segments within systems. Other systems in Western Mediterranean have been described from a source-to-sink perspective as the Golo system in Corsica (Somme et al, 2011), proving that this technique is useful to establish relationships and to strengthen the parameter prediction between different system segments.

5. Timeline with milestones (12 month/18 month)

- **Months 1 – 12 : fieldwork to Mallorca: stratigraphy and sedimentology. Data analysis and experimental work.**
- **Months 12 - 24: fieldwork to Mallorca: erosion rates and sampling. Data analysis and experimental work.**
- **Months 24 - 36: oceanography and marine data work; paper writing**
- **Months 36 – 48: Report write-up and paper writing**

6. Funding amount needed to achieve first basic goals within 12 months. Please provide a brief summary overview of your budget. List costs of 5-10 main items.

- **Salary: 1,500 (\$) x 12 (months): 18,000\$**
- **Field work (displacements and possible staying): 500\$**
- **Trips:**
 - **Displacement to main cooperating institutions (Liverpool, Manchester): 2 trips per year**
 - **University of Glasgow: 1 trip per year**
 - **Spanish Institute of Oceanography: 1 trip per year**
 - **International meetings, conferences and workshops:**
 - **AAPG 2015 Annual Convention & Exhibition, 31 May - 3 June 2015, Denver, Colorado, USA**
 - **AAPG 2015 International Conference & Exhibition, 13-16 September, Melbourne, Australia**
 - **31st Meeting of Sedimentology, 22-25 June 2015, Krakow, Poland**
 - **Others**
 - **Total estimated: 5,000\$**
- **Laboratory analysis:**
 - **Thin sectioning for sedimentary petrology characterization**
 - **High-precision grain-size analysis**
 - **Carbon isotope dating and/or vegetable fraction dating methods**
 - **Well logging for sedimentary rock properties and basin-scale correlations and architecture.**

Total estimated: 4,000\$

Total requested (to cover costs for the first 12 months): 27,000\$

7. In the process of gaining background knowledge in the field of your proposed research, who did you find to be the top two or three researchers? What are the main concepts that are being explored? Please briefly describe.

- **Phillip Allen (Imperial College).** Process-oriented Earth scientist with particular interests in the interactions and feedbacks between the solid Earth and its 'exosphere' through the critical interface of the Earth's surface. His research projects include topics in basin analysis, sedimentology, geomorphology and tectonics, using theory, laboratory analysis, field studies and numerical modelling.
- **Douglas Burbank (University of California).** Tectonic geomorphology; active tectonics; structural and stratigraphic evolution of fold-and-thrust belts and foreland basins; physiographic evolution of mountain ranges; kinematics of folding; basin analysis and modeling; analysis of digital topography; sedimentology; magneto-stratigraphy; thermochronology, Quaternary paleoclimatology; glacial geology.

- **Lluís Pomar (University of the Balearic Islands).** Carbonate sedimentology and high-resolution sequence stratigraphy. Prof. Lluís Pomar has led several industry-oriented field trips in the Miocene platforms of the Balearic Islands. Current special interest includes the process-product relationships in carbonate systems.

8. Please provide a photo of yourself and a photo related to your proposed project. It will be very helpful in publicizing your project and potentially securing funding.

9. Who will benefit?

The main Institution that will benefit from the research grant and the short-term results of this project will be the University of Balearic Islands through Antonio Capó Esteva (supervised by Dr. Celso García) as the main researcher, but also other research institutions will be involved like the University of Liverpool (Dr. Robert Duller), University of Manchester (Dr. Miquel Poyatos-More), University of Glasgow (Dr. Paul Bishop) and the Spanish Institute of Oceanography (Dr. Victor Díaz-Del-Río). In the mid- to long-term, we strongly believe that the scientific community will benefit via publication of our results and methods in indexed journals, and the applied perspective of this project will have strong impact in oil industry too, providing tools to minimize risks in hydrocarbon exploration.

AAPG Research LAUNCHER supporters receive

The opportunity to work directly with you and receive reports, information, and findings, depending on the level of support.

The Deal

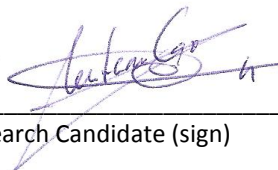
The researcher agrees to:

- ❖ Develop a brief public presentation on the research to be made available to AAPG
- ❖ Share an annotated bibliography and review of relevant published articles
- ❖ Present research findings on project at an AAPG Forum, GTW, or Research Symposium
- ❖ Write a detailed report on the results of your research to be made available to LAUNCHER supporters
- ❖ Write an extended abstract on the results of your research to be made available to AAPG

 Thank you for submitting your research proposal to the AAPG Research LAUNCHER Program. Your proposal will be reviewed and upon acceptance you will be contacted by AAPG Education/Research. If your proposal is accepted, we will publicize your proposal and encourage funders to contact you directly. AAPG does not guarantee funds nor have any connection with the success or failure of the endeavor. The goal is to support scientific research in the petroleum geosciences and engineering and launch the next generation of geological advances.

ANTONIO CAPÓ ESTEVA 11/08/2014
 Research Candidate (print) Date

 AAPG Education/Research (print) Date

 11/08/2014
 Research Candidate (sign) Date

 AAPG Education/Research (sign) Date

AAPG Education/Research

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