terractiva

Corporate CV

Oskar Vidal-Royo ***Co-Founder & Managing Director***

PhD (High Hons), MSc, BSc

PROFESSIONAL PROFILE

Structural and Exploration geologist with more than 12 years of worldwide experience in structural geology, exploration and integrated projects for the Oil and Gas and mining industries. Expertise in multiple geological settings and petroleum systems (Bolivian, Colombian and Argentinean Andes, Gulf of Mexico, offshore Perú, offshore Brazil, the North Sea, Norwegian Continental Margin, Papua New Guinea, Eastern Mediterranean) with a special focus on seismic interpretation, geological modeling, geomechanical and kinematic restoration of salt tectonics, fold and thrust belts and inverted settings. In 2016 he co-founded **terractiva** to deliver world-class geological consulting and advice for the hydrocarbon and mining industries at regional, basin and prospect/deposit scale. His research track record includes 12 publications in peer-reviewed journals and over 10 oral communications in international conferences.

LANGUAGES

English, Spanish, French, Catalan, Basic Italian.

EDUCATION

2010 **PhD in Earth Sciences**

University of Barcelona (High Hons. Cum Laude)
Thesis project: 3D Reconstruction and Modelling of the Sierras Exteriores Aragonesas (Southern Pyrenees, Spain). Structural Evolution of the Pico del Águila anticline

2006 **MSc in Exploration**
Analysis and Modelling of Basins and Orogenic Belts (High Hons), University of Barcelona

2004 **BSc in Geology**
University of Barcelona (High Hons)
Dissertation topic: "Structure of the Sierra de Cantabria thrust across the diapir of Maeztu"

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EMPLOYMENT

2016-today	**Co-Founder & Managing Director at terractiva** Geological consultancy and training for O&G Exploration
2013-2016	**Structural Geologist at Midland Valley Exploration** *Geological consultancy and training using Move software*
2010-2012	**Postdoctoral Researcher at Geomodels Research Institute (University of Barcelona)**
2005-2009	**Researcher at GGAC-UB**

PROFESSIONAL AFFILIATIONS

Member, American Association of Petroleum Geologists.

PROFESSIONAL EXPERIENCE

Geological characterization and interpretation of geophysical, subsurface and field based datasets for the oil and gas sector. Geomechanical modelling and kinematic restoration in 2D and 3D, salt tectonics, extensional, compressional and inverted settings. Expertise in the North Sea, Norwegian Continental Shelf (NCS), Gulf of Mexico (GoM), Papua New Guinea (PNG), Far East, Pyrenees, Andean basins, East Mediterranean (East Med) and Zagros (Iran). Structural modelling of highly deformed areas and salt tectonics worldwide.

Exploration Studies

South America

- 3D Model Building from seismic data, Eastern Cordillera, onshore Colombia: *inverted system*.
- 3D Geological Modelling in Llanos basin, Colombia: *compressional and strike-slip system*
- 2D restoration and forward modelling of inverted fault systems, Eastern Cordillera, onshore Colombia: *inverted system.*
- 2D seismic interpretation, cross-section construction, restoration and modelling in the Sub-Andean region, Bolivia: *compressional system.*
- 2D seismic interpretation, cross-section construction, restoration and modelling in forearc basins, offshore Perú: *inverted system.*
- Section construction and 3D model building in Faja Plegada, Nequén Andes, Argentina: *inverted system.*

Asia

- 2D Seismic interpretation in the Nankai trough, offshore Japan: *compressional system.*
- Stress analysis and validation of the geological evolution of an offshore pull-apart basin, SE offshore Japan: *strike-slip system*.

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Oceania (Australia and New Guinea)

- 2D and 3D Modelling of Tembagapura fold and fault system, Irian Jaya, Indonesia: *polyphase deformation*.
- Construction and structural validation of 3D geological models for porphyry copper deposit characterization, Indonesia: *polyphase deformation*.
- Seismic Interpretation, Geophysical and Structural modelling in the Lengguru fold and thrust belt, West Papua, Indonesia: *compressional system*.
- Geological mapping, 2D and 3D modelling of Warraweena diapirs and salt-related thrusting in the Northern Flinders, Australia: *salt tectonics in compressional systems.*

Europe (East Med, NCS and UK)

- 2D section construction and restoration in the salt-bearing Levant basin: *salt tectonics and extensional system*.
- 2D restoration focusing on Cretaceous units, West Shetland basin: *extensional system*
- QC of interpretation and restoration of Jurassic grabens associated to salt mobilization, Norwegian margin: *salt tectonics and extensional system*.
- QC of interpretation and restoration of 2 sections, offshore Norway: *extensional setting, inversion and salt tectonics.*
- 2D and 3D restoration in the Northern North Sea to define erosional risk: *linked extensional system*.
- 2D and 3D restoration, Norwegian Sea: *extensional setting and salt tectonics*.
- 2D and 3D restoration of salt diapirs in the Norwegian Sea: *extensional setting, inversion and salt tectonics*.

Africa (Southern Mediterranean)

- 2D and 3D restoration, offshore Tunisia: *extensional setting and inversion*.
- Structural analysis and 2D restoration, onshore Tunisia: *strike-slip setting*.

COMPUTER SOFTWARE EXPERTISE

Geological Modelling	Midland Valley	Move, FieldMove and FieldMove Clino
	Blue Marble	Global Mapper
	Paradigm	GOCAD 2006-2014
	Schlumberger	Igeoss (Dynel and Poly3D)
Seismic Interpretation	IHS	The Kingdom Suite
	Schlumberger	Petrel 2013-2015
	dGB Earth Sciences	OpendTtect
GIS:	Microstation & AutoCAD	
Graphical:	Corel Draw, Canvas, Adobe Illustrator and Photoshop	
Microsoft Office:	Word, Excel, PowerPoint, Access	
Operating Systems:	Windows, Linux, Mac OS	

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TEACHING EXPERIENCE

- Digital field mapping course in the Tremp Basin, Pyrenees, 17th-24th May 2014.
- Move Public training: Glasgow, March 2014.
- Structural Geology Training: Modelling Structural Evolution to Improve 3D Models for Exploration and Mine Development, Society of Economic Geologists, Littleton, Colorado, USA, 25th – 26th October 2013.
- Move Public training: Modelling Structural Evolution to Improve Geological Models: 1 day, MVE user meeting, Glasgow 2013.
- Multiple in-house training courses worldwide on Structural Geology and modelling applied to Hydrocarbon Exploration.

SOFTWARE DEVELOPEMENT

Input into Move software development; model building functionality, Trishear 3D, Stress Analysis, digital field-mapping.

FIELD EXPERIENCE

2016	Geological mapping in salt-bearing fold and thrust belts: Northern Flinders Ranges, South Australia.
2014	Digital field mapping in compressional settings: Tremp piggyback basin, Southern Pyrenees.
2008	Metamorphic deformations in the Apuan Alps, analysis of thrust systems in the Apennine chain and Po Plain margin, mud volcanism at the Po Plain-Apennine margin, Italy.
2000 – 2012	Pyrenees fold and thrust belt and associated foreland basins; Cantabrian Mountains; Balearic Islands; and Pre-Betics range.

PROFESSIONAL DEVELOPMENT

- Practical Salt Tectonics; Mark Rowan, Glasgow, December 2013.
- Advanced Structural Geology for Petroleum Exploration; Ken McClay, Barcelona, May 2007.
- GOCAD for Building Geologic Models, Seismic and Velocity Modeling; Nancy, June 6-7th, 2006.
- Structural Analysis in internal orogenic areas; Oviedo, June, 2005.
- Construction of balanced cross sections; Josep Poblet, Oviedo, June 2005.
- Numerical modeling of Structures and Sedimentary Basins; Stuart Hardy, Barcelona, March 2005.

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- Reservoir Characterization in detritic and carbonate environments; Mariano Marzo and Lluís Pomar, Barcelona and Menorca, March-April 2005.

EDITORIAL COMMITMENTS

- Organiser and Invited Assistant Editor of the Special Volume in *Balancing, Restoration and Palinspastic Reconstruction* for the journal *Interpretation* (co-published by AAPG and SEG). November 2015.
- Reviewer of technical contributions in AAPG ACE 2015 in Denver for Theme 5: Structure, Tectonics and Geomechanics.
- Active member of the Editorial Board of *Interpretation* (co-published by the AAPG and the SEG). Appointed Editor in September 2015.

SELECTED PUBLICATIONS

Roma, M., **Vidal-Royo, O**., McClay, K., Ferrer, O., Muñoz, J.A., 2018. Tectonic inversion of salt-detached ramp-syncline basins as illustrated by analog modeling and kinematic restoration. Interpretation, In press.

Ferrer, O., Dooley, T.P., Corti, G., **Vidal-Royo, O.**, Hearon, T.E., Reber, J., Graveleau, F., 2017. Introduction to special section: Analog modeling as an aid to structural interpretation. Interpretation, *In press*.

Carola, E., Ferrer, O., **Vidal-Royo, O.**, Muñoz, J.A., 2017. Interpretation of salt-cored frontal structures in the Southern Pyrenees guided by analog modeling, surface and subsurface data. Interpretation, 5, (1), pp. SD39-SD54. doi: 10.1190/INT-2016-0093.1.

Vidal-Royo, O., 2015. Introduction to special section: Balancing, restoration, and palinspastic reconstruction. Interpretation, 3 (4), pp. SAAi-SAAiii. *doi: 10.1190/INT2015-0916-SPSEINTRO.1*.

Lingrey, S., **Vidal-Royo, O.**, 2015. Evaluating the quality of bed length and area balance in 2D structural restorations. Interpretation, 3 (4), pp. SAA133-SAA160. *doi: 10.1190/INT-2015-0126.1*.

Vidal-Royo, O., Muñoz, J.A., Hardy, S., Koyi, H.A., Cardozo, N., 2013. Integration of modelling techniques in the understanding of the structural evolution of the Pico del Águila anticline (External Sierras, Southern Pyrenees). Geologica Acta, 11 (1), pp. 1-26.

Vidal-Royo, O., Cardozo, N., Muñoz, J., Hardy, S. and Maerten, L. 2012. Multiple mechanisms driving detachment folding as deduced from 3D reconstruction and geomechanical restoration: The Pico del Águila anticline (External Sierras, Southern Pyrenees). Basin Research, 24 (3), pp. 295-313.

Vidal-Royo, O., Hardy, S., Muñoz, J.A. 2011. The roles of complex mechanical stratigraphy and syn-kinematic sedimentation in fold development: Insights from discrete-element modelling and application to the Pico del Aguila anticline (External Sierras, Southern Pyrenees). In: Kinematic Evolution and Structural Styles of Fold-and-Thrust Belts (Poblet, J. and Lisle, R.J.), Special Publication of the Geological Society of London, 349, pp. 45-60.

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Vidal-Royo, O., Koyi, H.A., Muñoz, J.A. 2009. Formation of orogen-perpendicular thrusts due to mechanical contrasts in the basal décollement in the Central External Sierras (Southern Pyrenees, Spain). Journal of Structural Geology, 31 (5), pp. 523-539.

SELECTED CONFERENCE ABSTRACTS

Ferrer, O., **Vidal-Royo, O.**, Gratacós, O., Roca, E., Muñoz, J.A. 2017. Interaction between cover deformation and pre-salt seamounts in passive margins: Physical models applied to the Northwest and Eastern Mediterranean basins. AAPG European Regional Conference 2017, Larnaca, Cyprus.

Vidal-Royo, O. 2014. Pushing the Limits of Geological Mapping Outside the Earth: 3D Modeling of Strike-Slip and Extensional Fault Systems in Meridiani Planum Region, Mars. American Geophysical Union Meeting, San Francisco, California, USA.

Vidal-Royo, O. 2013. Integration of sandbox, numerical and geomechanical restoration modelling techniques in 3D: Structural evolution of the Pico del Águila anticline (External Sierras, Southern Pyrenees). Geological Society of America Annual Meeting and Exhibition, Denver, Colorado, USA.

Vidal-Royo, O., Muñoz, J.A.; Koyi, H.; Hardy, S. 3-D Structural, Analog and Numerical Modeling Integration Applied to Pico Del Águila Anticline (Sierras Exteriores, Southern Pyrenees). American Association of Petroleum Geologists General Meeting 2008, San Antonio, Texas, USA.

Vidal-Royo, O., S. Hardy, J.A. Muñoz. Influence of multiple decollement stratigraphy and growth strata on a detachment fold development: insights from 2D Discrete-Element modelling and application to Pico del Águila anticline (External Sierras, Spanish Southern Pyrenees). International Meeting of Young Researchers in Structural Geology and Tectonics (YORSGET-08) 2008, Oviedo, Spain.

Vidal-Royo, O., Ferrer, O., Koyi, H.A., Vendeville, B.C., Muñoz, J.A., Roca, E. 2008. 3D Reconstruction of analogue modelling experiments from 2D datasets. International Geomodelling Conference 2008, Florence, Italy.

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