

## Research Activity 2012





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## 0. Summary

<b>PERSONNEL</b>	<b>88</b>
Postdoc Researchers	50
PhD students	38
<b>COMPETITIVE PROJECTS</b>	<b>33</b>
New projects	5
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<b>PUBLICATIONS</b>	<b>191</b>
Books	16
Book Chapters	14
Journals with Impact Factor	60
International Conferences	96
Miscellanea	6
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## 1. Personnel (88)

As of 31 December 2012, CVC personnel who perform research activities are composed by:

### POST DOC RESEARCHERS (50):

- Permanent (22): including 4 senior researchers contracted by CVC and also 18 university professors from UAB, UB and UOC.
- Postdoc contracts (28): including Ramon y Cajal, as well as those hired by the CVC and the UAB, UB and UOC universities.

**PHD. STUDENTS (38):** It includes any PhD student with a scholarship (CVC, UAB, FPI or FI) or a contract as an assistant at the UAB, UB, or UOC, as well as the master students.

## 2. Competitive Projects (33)

### 2.1. New projects awarded in 2012 (5)

**TITLE:** PRAGMATA - Desarrollo de la Hermenéutica Visual en la Interpretación de Imágenes.

**REFERENCE:** TIN2012-39051

**FUNDING ENTITY:** Ministerio de Economía y Competitividad

**DURATION:** 2012-2015

**TOTAL AWARDED:** 90.768,60€

**RESEARCHER:** X.Roca

**TITLE:** Co-READ - Reconocimiento Contextual en Documentos Antiguos

**REFERENCE:** TIN2012-37475-C02-02

**FUNDING ENTITY:** Ministerio de Economía y Competitividad

**DURATION:** 2012-2015

**TOTAL AWARDED:** 88.639,20€

**RESEARCHER:** J. Lladós

**TITLE:** FISIOLÓGICA - Integración de datos anatómico-funcionales mediante mapas de coordenadas normalizados basados en marcadores fisiológicos.

**REFERENCE:** TIN2012-33116

**FUNDING ENTITY:** Ministerio de Economía y Competitividad

**DURATION:** 2012-2015

**TOTAL AWARDED:** 116.020,71€

**RESEARCHER:** D.Gil

**TITLE:** Ajuts a la innovació TECCIT

**REFERENCE:** TECCIT12-1-0007-07

**FUNDING ENTITY:** ACC1Ó

**DURATION:** 2012-2013

**TOTAL AWARDED:** 40.000,00€

**RESEARCHER:** D.Rotger

**TITLE:** Multimèdia, aplicacions mòbils i realitat augmentada per divulgar la visió per computador  
**REFERENCE:** 2012ACDC 00108  
**FUNDING ENTITY:** Departament d'Economia i Coneixement.  
**DURATION:** 2012  
**TOTAL AWARDED:** 3.000,00€  
**RESEARCHER:** J. Lladós

## 2.2. Renewals (22)

**TITLE:** SiMeVé Sistema Multiespectral de Visió Estèreo  
**REFERENCE:** TIN2011-25606  
**FUNDING ENTITY:** Ministerio de Ciencia e Innovación  
**DURATION:** 2011-2014  
**TOTAL AWARDED:** 49.368,00 €  
**RESEARCHER:** A. Sappa

**TITLE:** ViDAS-UrbE - Sistemas de Visión por Computador para la Asistencia a la Conducción en Entornos Urbanos.  
**REFERENCE:** TRA2011-29454-C03-01  
**FUNDING ENTITY:** Ministerio de Ciencia e Innovación  
**DURATION:** 2011-2014  
**TOTAL AWARDED:** 87.120,00 €  
**RESEARCHER:** A. López

**TITLE:** FireWatcher - Monitorización de Incendios Mediante la Inspección Aérea del Terreno.  
**REFERENCE:** TIN2011-29494-C03-02  
**FUNDING ENTITY:** Ministerio de Ciencia e Innovación  
**DURATION:** 2011-2014  
**TOTAL AWARDED:** 32.186,00 €  
**RESEARCHER:** D. Ponsa

**TITLE:** TnC - Text en la Ciutat - Comprensió Centrada en Humans de Text en Escenes  
**REFERENCE:** TIN2011-24631  
**FUNDING ENTITY:** Ministerio de Ciencia e Innovación  
**DURATION:** 2011-2014  
**TOTAL AWARDED:** 78.045,00 €  
**RESEARCHER:** D. Karatzas

**TITLE:** CVC - PLAN DE TRANSFERENCIA DE TECNOLOGÍA 2011  
**REFERENCE:** OTR-2011-0292  
**FUNDING ENTITY:** Ministerio de Ciencia e Innovación  
**DURATION:** 2011-2014  
**TOTAL AWARDED:** 95.000,00 €  
**RESEARCHER:** J. Lladós

**TITLE:** C2I: Centre de competència en interpretació ubiqua d'imatges d'alfabets visuals.  
**REFERENCE:** 2010-CONE3-00029  
**FUNDING ENTITY:** AGAUR  
**DURATION:** 04/10/2011 – 03/10/2013  
**TOTAL AWARDED:** 14.570,00 €  
**RESEARCHER:** A. Fornés

**TITLE:** Robot Companions for Citizens  
**REFERENCE:** FP7-ICT-2011-FET-F # 284951  
**FUNDING ENTITY:** UE  
**DURATION:** 01/05/2011 – 30/04/2012  
**TOTAL AWARDED:** 1.629.163 (total amount of the project)  
**RESEARCHER:** Bogdan Raducanu (IP CVC)

**TITLE:** Extracción de conocimiento de imágenes de documentos con contenidos heterogéneos.  
**REFERENCE:** TIN-2009-14633-C03-03  
**FUNDING ENTITY:** Ministerio de Ciencia e Innovación  
**DURATION:** 2010-2012  
**TOTAL AWARDED:** 195.400,00 €  
**RESEARCHER:** J. Lladós

**TITLE:** Tècniques de aprendizaje para sistemas de visión a gran escala: aplicaciones al reconocimiento de objetos.  
**REFERENCE:** TIN2009-14404-C02-01  
**FUNDING ENTITY:** Ministerio de Ciencia e Innovación  
**DURATION:** 2010-2012  
**TOTAL AWARDED:** 136.600,00 €  
**RESEARCHER:** J. Vitrià

**TITLE:** Técnicas de aprendizaje para sistemas de visión a gran escala: aplicaciones al análisis (COORDINADA con la de J.Vitrià)  
**REFERENCE:** TIN2009-14404-C02-02  
**FUNDING ENTITY:** Ministerio de Ciencia e Innovación  
**DURATION:** 2010-2012  
**TOTAL AWARDED:** 112.200,00 €  
**RESEARCHER:** P. Radeva

**TITLE:** Comprensión holística de imágenes en color: combinación de percepción "bottom-up" y semántica "top-D"  
**REFERENCE:** TIN2009-14173  
**FUNDING ENTITY:** Ministerio de Ciencia e Innovación  
**DURATION:** 2010-2012  
**TOTAL AWARDED:** 65.000,00 €  
**RESEARCHER:** J. Van de Weijer

**TITLE:** Detección en tiempo real de cáncer de colon para la evaluación de calidad de las colonoscopias.  
**REFERENCE:** TIN2009-10435  
**FUNDING ENTITY:** Ministerio de Ciencia e Innovación  
**DURATION:** 2010-2012  
**TOTAL AWARDED:** 68.100,00 €  
**RESEARCHER:** F. Vilariño

**TITLE:** Razonamiento epistemológico para la interpretación del contexto y de eventos de seguridad para la vigilancia.  
**REFERENCE:** TIN2009-14501-C02-01  
**FUNDING ENTITY:** Ministerio de Ciencia e Innovación  
**DURATION:** 2010-2012  
**TOTAL AWARDED:** 190.100,00 €  
**RESEARCHER:** X. Roca



**TITLE:** Razonamiento epistemológico para la interpretación del contexto y de eventos de seguridad para la vigilancia. (COORDINADA con X.Roca)

**REFERENCE:** TIN2009-14501-C02-02

**FUNDING ENTITY:** Ministerio de Ciencia e Innovación

**DURATION:** 2010-2012

**TOTAL AWARDED:** 83.400,00 €

**RESEARCHER:** J. González

**TITLE:** Miocardia: Definición de un modelo integrado de la funcionalidad y anatomía muscular del ventrículo.

**REFERENCE:** TIN2009-13618

**FUNDING ENTITY:** Ministerio de Ciencia e Innovación

**DURATION:** 2010-2012

**TOTAL AWARDED:** 123.800,00 €

**RESEARCHER:** D. Gil

**TITLE:** Convenio de colaboración para la creación de un equipo de investigación en materia de reconocimiento de formas y visión artificial.

**REFERENCE:** CSD2007-00018

**FUNDING ENTITY:** Ministerio Educación y Ciencia (CONSOLIDER INGENIO)

**DURATION:** 01/10/2007 – 30/09/2012

**TOTAL AWARDED:** 1.252.800,00 €

**RESEARCHER:** J.J.Villanueva, J.Vitrià

**TITLE:** Introducción de información de color y mecanismos de atención a modelos Bio-inspirados de Visión por Computador

**REFERENCE:** TIN-2010-2177-C02-01

**FUNDING ENTITY:** Ministerio de Ciencia e Innovación

**DURATION:** 2010-2013

**TOTAL AWARDED:** 148.830,00 €

**RESEARCHER:** M.Vanrell

**TITLE:** X-QPA: a Quantitative X-ray-based intraoperative myocardial Re-perfusion Computer-assisted Analysis / Diagnosis Tool.

**REFERENCE:** 2010 VALOR 00158

**FUNDING ENTITY:** Agència de Gestió d'Ajuts Universitaris i de Recerca

**DURATION:** 2011-2013

**TOTAL AWARDED:** 76.005,00 €

**RESEARCHER:** C. Gatta

**TITLE:** Modelo de arterias coronarias adaptado al paciente y predicción de la formación y crecimiento.

**REFERENCE:** AIB2010SE-00210

**FUNDING ENTITY:** Ministerio de Ciencia e Innovación

**DURATION:** 2011-2012

**TOTAL AWARDED:** 8.000,00 €

**RESEARCHER:** S.Balocco

**TITLE:** Tratamiento del texto contenido en imágenes digitales técnicas inspiradas en la Percepción Humana.

**REFERENCE:** TIN2008-04998

**FUNDING ENTITY:** Ministerio de Ciencia e Innovación

**DURATION:** 01/01/2009 – 31/12/2012

**TOTAL AWARDED:** 50.000,00 €

**RESEARCHER:** D.Karatzas

**TITLE:** Aministrative Document Automate Optimization  
**REFERENCE:** FP7-PEOPLE-2008-IAPP-230653  
**FUNDING ENTITY:** Marie Curie  
**DURATION:** 2009 - 2013  
**TOTAL AWARDED:** 184.261,26 €  
**RESEARCHER:** J. Lladós

**TITLE:** 5CofM—Five Centuries of Marriages.  
**REFERENCE:** Project Number 269796  
**FUNDING ENTITY:** Unió Europea  
**DURATION:** 2011-2015  
**TOTAL AWARDED:** 396.800,00 €  
**RESEARCHER:** J.Lladós

### 2.3. Grants (6)

**TITLE:** Beca FI  
**REFERENCE:** 2012FI\_B 01124  
**FUNDING ENTITY:** AGAUR  
**DURATION:** 2012-2015  
**TOTAL AWARDED:** 14.400,00 €  
**RESEARCHER:** S.Petkov  
**RESEARCHER:** D.Rotger

**TITLE:** Beca FPI  
**REFERENCE:** BES-2012-058280  
**FUNDING ENTITY:** Ministerio de Economía y Competitividad  
**DURATION:** 2013-2016  
**TOTAL AWARDED:** 70408,00 €  
**RESEARCHER:** S.Ramos  
**RESEARCHER:** A.López

**TITLE:** Ramón y Cajal Grant  
**REFERENCE:** RYC2011-08174  
**FUNDING ENTITY:** Ministerio de Ciencia e Innovación  
**DURATION:** 2011-2014  
**TOTAL AWARDED:** 183.600,00 €  
**RESEARCHER:** C. Gatta

**TITLE:** Beca BE - Reconeixement de text manuscrit dels històrics llibres matrimonials de Barcelona.  
**REFERENCE:** 2010BE10020  
**FUNDING ENTITY:** AGAUR  
**DURATION:** 15/11/2011 – 15/03/2012  
**TOTAL AWARDED:** 8.438,00 €  
**RESEARCHER:** A. Fornés

**TITLE:** Beca estancia breve en otro centro de I+D ( subprograma FPI-MICINN)  
**REFERENCE:** EEBB-I-12-03949  
**FUNDING ENTITY:** Ministerio de Ciencia e Innovación  
**DURATION:** 02/04/2012 – 31/07/2012  
**TOTAL AWARDED:** 6.650,00 €  
**RESEARCHER:** P. Márquez

**TITLE:** Beca estancia breve en otro centro de I+D ( subprograma FPI-MICINN)  
**REFERENCE:** EEBB-I-12-05783  
**FUNDING ENTITY:** Ministerio de Ciencia e Innovación  
**DURATION:** 01/04/2012 – 31/07/2012  
**TOTAL AWARDED:** 6.700,00 €  
**RESEARCHER:** J. Marín

### 3. PhD Thesis (16)

1. **Ariel Amato**, "*Environment Independent Moving Cast Shadow Suppression in Video Surveillance*", CVC-UAB, March 16, 2012.  
Advisors: Mikhail Mozerov and Jordi González.
2. **Muzzamil Luqman**, "*Fuzzy Multilevel Graph Embedding for Recognition, Indexing and Retrieval of Graphic Document Images*", François Rabelais Université de Tours and CVC-UAB, March 2012.  
Advisors: Jean-Yves Ramel and Josep Lladós; codirector: Thierry Brouard.
3. **Noha Elfiky**, "*Compact, Adaptive and Discriminative Spatial Pyramids for Improved Object and Scene Classification*", CVC-UAB, June 4, 2012.  
Advisors: Jordi González and Xavier Roca.
4. **Marco Pedersoli**, "*Hierarchical Multiresolution Models for Fast Object Detection*", CVC-UAB, June 8, 2012.  
Advisors: Jordi González and Xavier Roca.
5. **Francesco Ciompi**, "*Multiclass Learning for Vessel Characterization in Intravascular Ultrasound*", CVC-UB, July 2012.  
Advisors: Petia Radeva and Oriol Pujol.
6. **Mario A. Rojas Quiñones**, "*On the Use of Geometric and Appearance Information for Facial Analysis*", CVC-UB, July 2012.  
Advisors: Jordi Vitrià and David Masip.
7. **Jaume Gibert**, "*Vector Space Embedding of Graphs via Statistics of Labelling Information*", CVC-UAB, September 2012.  
Advisor: Ernest Valveny.
8. **Mohammad Rouhani**, "*Shape Representation and Registration using Implicit Functions*", CVC-UAB, September 2012.  
Advisor: Angel Sappa.
9. **José Carlos Rubio**, "*Many-to-Many High Order Matching. Applications to Tracking and Object Segmentation*", CVC-UAB, September 2012.  
Advisor: Joan Serrat.
10. **Bhaskar Chakraborty**, "*Model free approach to human action recognition*", CVC-UAB, October 2012.  
Advisors: Jordi González and Xavier Roca.
11. **Josep Maria Gonfaus**, "*Towards Deep Image Understanding: From Pixels to Semantics*", CVC-UAB, November 2012.  
Advisors: Jordi González and Theo Gevers.
12. **José Fernando Barrera**, "*Multimodal Stereo from Thermal Infrared and Visible Spectrum*", CVC-UAB, November 2012.  
Advisors: Felipe Lumbreras and Angel Sappa.
13. **Jordi Roca**, "*Constancy and inconstancy in categorical colour perception*", CVC-UAB, November 2012.  
Advisors: Alejandro Parraga and Maria Vanrell.

14. **Diego Cheda**, "*Monocular Depth Cues in Computer Vision Applications*", CVC-UAB, December 2012.  
Advisors: Daniel Ponsa and Antonio López.
15. **Jorge Bernal**, "*Polyp Localization and Segmentation in Colonoscopy Images by Means of Appearance for Polyps*", CVC-UAB, December 2012.  
Advisors: Fernando Vilariño and Javier Sánchez.
16. **Naila Murray**, "*Prediction Saliency and Aesthetics in Images: A Botto-up Perspective*", CVC-UAB, December 2012.  
Advisors: Xavier Otazu and Maria Vanrell.

#### 4. Master thesis and Master projects (15)

- **Germán Ros**, "*Visual SLAM for Driverless Cars: An Initial Survey*", CVC-UAB, July 2012.  
Advisors: Dr. Angel Sappa and Dr. Daniel Ponsa.
- **Xu Hu**, "*Real-Time Part Based Models for Object Detection*", CVC-UAB, September 7, 2012.  
Advisor: Dr. Xavier Roca
- **Isaac Alonso Marín**, "*Towards Binary DART*", UAB, September 12, 2012.  
Advisor: Dr. Joost van de Weijer.
- Guillem Carles Santacana, "*Eyelid tracking using Optical Flow driven propagation of a parametric model in grey scale video sequences*", UAB, September 14, 2012.  
Advisor: Dr. Debora Gil
- **Lluís Gómez**, "*Perceptual Organization for Text Extraction in Natural Scenes*", CVC-UAB, September 25, 2012.  
Advisor: Dr. Dimosthenis Karatzas
- **Albert Saa**, "*Traffic Lights Detection in Images for Intelligent Vehicles Student*", UAB, September 25, 2012.  
Advisor: Dr. David Gerónimo
- Naoufal Amrani, "*Eyelids Segmentation using Machine Learning Classification*", UAB, September 26, 2012.  
Advisor: Dr. Debora Gil
- **Núria Cirera**, "*Recognition of Handwritten Historical Documents*", CVC-UAB, September 26, 2012.  
Advisors: Dr. Alicia Fornés, Dr. Volkmar Frinken, Dr. Josep Lladós
- Ricard Silvestre, "*Eyelid Segmentation for Palpebral Diseases Analysis*", UAB, September 27, 2012.  
Advisor: Dr. Debora Gil & Dr. Aura Hernández
- **Onur Ferhat**, "*Eye-Tracking with Webcam-based Setups: Implementation of a Real-Time System and an Analysis of Factors Affecting Performance*", CVC-UAB, September 27, 2012.  
Advisor: Dr. Fernando Vilariño
- Oscar Lopes, "*Combining Depth Sensors and Real-Time Finger-Tracking for Gesture Recognition*", UAB, September 27, 2012.  
Advisor: Dr. Sergio Escalera & Dr. Jordi González
- Meysam Madadi, "*Towards Accurate Body Size Estimation using RGB-D Cameras*", UAB, September 27, 2012.  
Advisor: Dr. Felipe Lumbreras & Dr. Jordi González

- Miguel Pousa, *"Incorporating Robust Hand-Tracking using Depth Cameras in Advanced Human-Computer Interfaces"*, UAB, September 27, 2012.  
Advisor: Dr. Sergio Esgalera & Dr. Jordi González
- Oscar Motto, *"Psychophysical Evaluation of Tone Mapping-Algorithms"*, UAB, September 28, 2012.  
Advisor: Dr. Xavier Otazu
- Albert Berenguel, *"3D Automatic Segmentation of Brain MRI"*, UAB, September 28, 2012.  
Advisor: Dr. Laura Igual & Dr. Lluís Garrido

## 5. Research stays: outgoing (16)

During 2012, CVC's research staff had carried out 16 research stays in labs outside Spain. This represents a 20% of our research staff. Of these, a 50% went to centers in Europe, a 31% went to centers in Asia and 19% went to centers in USA.

### Postdoctoral (7):

- **Dra. Alícia Fornés**, Université de la Rochelle (France), November 2011-March 2012.
- **Dr. Alícia Fornés**, Dept. of Computer Science and Intelligent Systems, Graduate School of Engineering, Osaka Prefecture University, (Japan), November 2012.
- **Dr. Jordi González**, Dept. Computer Engineering, Bogaziçi University, Istanbul (Turkey), June 15 – June 205, 2012.
- **Dr. Dimosthenis Karatzas**, University of Salford (UK), December 2011-March 2012.
- **Dr. Dimosthenis Karatzas**, ITESOFT, Aimargues (France), May 2012.
- **Dr. Àgata Lapedriza**, MIT Computer Science and Artificial Intelligence Laboratory, Boston (USA), September – November 2012.
- **Dr. Oriol Ramos**, Dept. of Computer Science and Intelligent Systems, Graduate School of Engineering, Osaka Prefecture University, (Japan), november 2012.

### Predocctoral (9):

- **David Fernández Mota**, University of Massachusetts (USA), February –May 2012.
- **Lluís Pérez de las Heras**, German Research Center for Artificial Intelligence, Kaiserslautern (Germany), March-May, 2012.
- **Marc Serra Vidal**, Stony Brook University, Stony Brook (NY, USA), March – August, 2012.
- **Wenjuang Gong**, Aalborg University, Aalborg (Denmark), April – June, 2012.
- **Patricia Márquez**, Visual Sensorics & Information Processing Lab (VSI), Johan Wolfgang Goethe University, Frankfurt (Germany), April 2 – July 31, 2012.
- **Javier Marín**, UMIC, RWTHA Aachen Univesity (Germany), April 2 – August 1, 2012.
- **Anjan Dutta**, Department of Mathematics and Computer Science, University of Münster (Germany), April 16 – July 31, 2012.

- **Anjan Dutta**, Dept. of Computer Science and Intelligent Systems, Graduate School of Engineering, Osaka Prefecture University, (Japan), november 2012 – January 2013.
- **Jon Almazán**, Dept. of Computer Science and Intelligent Systems, Graduate School of Engineering, Osaka Prefecture University, (Japan), november 2012 – January 2013.

## 6. Research stays: incoming (16)

During 2012, we have receive 15 researchers coming from other centers and institutions. Of these, 2 of them came from other centers in Spain. The rest were from Europe (6), America (3) and Asia (2).

### Postdoctoral (5):

- Dr. Cristian Aguilera, Universidad del Bio-Bio, Talcahuano (Chile), November 14 – May 14, 2012.
- Prof. Horst Bunke, Research Group on Computer Vision and Artificial Intelligence IAM, University of Bern (Switzerland), February 13 – March 9, 2012.
- Dr. Antonio Fernández, Departamento de Diseño en la Ingeniería, Universidad de Vigo (Spain), February 24 – April 25, 2012
- Dr. Simone Marinai, Università degli Studi di Firenze (Italy), July 1 to July 7, 2012.
- Dr. Masakazu Iwashimura, Dept. of Computer Science and Intelligent Systems, Graduate School of Engineering, Osaka Prefecture University, (Japan), September 2012.

### Predoctoral (11):

- Adele Barbulescu, Aalbor University, Aalborg (Denmark), November 2011 – May 2012
- Rahat Khan, CNRS, UMR5516 Laboratoire Hubert Curien – Université de Saint-Etienne, Jean Monnet, Saint Etienne (France), February 1 – July 31, 2012.
- Christian Riess, Friedrich-Alexander University of Erlangen-Nuremberg, Erlangen (Germany), March 11 – April 16, 2012.
- Daniel Gröger, DFK – German Research Center for Artificial (Intelligence), Kaiserslautern (Germany), April – September, 2012.
- Christophe Rigaud, Laboratoire Informatique, Image et Interaction (L3i) – Université de la Rochelle, La Rochelle (France), May1 – July, 2012.
- Romain Bertrand, Laboratoire Informatique, Image et Interaction (L3i) – Université de la Rochelle, La Rochelle (France), May1 – July, 2012.
- Sandra Jiménez, Departamento de Procesado de Imagen, Universidad de Valencia (Spain), May - July 2012.
- Fabián Mamani, Facultad de Ciencias Exactas y Tecnología- UNT, Instituto de Luz, Ambiente y Visión (ILAV) - CONICET – UNT, Tucumán (Argentina), June – July, 2012.
- Tomokazu Sato, Graduate School of Engineering, Osaka Prefecture University, (Japan), setembre-novembre

- Giocchino Vino, Politécnico di Bari, September 2012 – January 2013.
- Marcelo Pistarelli, Universidad Nacional de Rosario (Argentina), November 26, 2012 to February 11, 2013.

## 7. Memberships in Editorial Board of Journals (7)

- **Jordi González**, Editorial Board Member of *Computer Vision and Image Understanding (CVIU)*
- **Jordi González**, Editorial Board Member of *IET –Computer Vision*
- **Josep Lladós**, Editor in Chief of *Electronic Letters on Computer Vision and Image Analysis (ELCVIA)*
- **Josep Lladós**, Editorial Board Member of *International Journal on Document Analysis and Recognition (IJ DAR)*
- **Xavier Otazu**, Executive Editor of *Electronic Letters on Computer Vision and Image Analysis (ELCVIA)*
- **Angel Sappa**, Executive Editor of *Electronic Letters on Computer Vision and Image Analysis (ELCVIA)*
- **Ernest Valveny**, Editorial Board Member of *International Journal on Document Analysis and Recognition (IJ DAR)*

## 8. Chairships in International Conferences (7)

- ARTEMIS 2012 Workshop – 3rd Workshop on Analysis and Retrieval of Tracked Events and motion in Imagery Streams, in conjunction with European Conference on Computer Vision (ECCV), Firenze (Italy), October 13, 2012  
**General Chair: Jordi González**, CVC – UAB
- AVSS 2012 – 9th IEEE International Conference on Advanced Video and Signal-Based Surveillance, Beijing (China), September 18-21, 2012  
**Publicity Chair: Jordi González**, CVC-UAB
- CGIM 2012 - The 13th IASTTED International Conference on Computer Graphics and Imaging, Crete (Greece), June 18-20, 2012  
**Conference Chair: Angel Sappa**, CVC
- CGIV - 6th European Conference on Colour in Graphics, Imaging, and Vision, Amsterdam (The Netherlands), May 6-9, 2012  
**Technical Area Chair Colour Vision/Psychophysics: Maria Vanrell**, CVC-UAB
- CVVT-E2M 2012 – Workshop on Computer Vision in Vehicle Technology: From Earth to Mars, Firenze (Italy), October 7-13, 2012  
**General Co-Chair: Antonio López**, CVC-UAB
- ICPR2012 - the twenty-first Conference on Pattern Recognition, Tsukuba (Japan), November 11-15, 2012.  
**Area Co-Chair – Track 3: Pattern Recognition & Applications, Jordi González**, CVC-UAB  
**Area Co-Chair – Track 4: Document Analysis, Josep Lladós**, CVC-UAB



- VISAPP 2012 - 7th International Conference on Computer Vision Theory and Applications, Rome (Italy), February 24-26, 2012.  
**Area Co-chair, Bogdan Raducanu, CVC**

## 9. Tutorials and Invited Talks by CVC personnel (15)

### TUTORIALS:

**Title:** Visió per Computador, Realitat o Ficció? (2 h)

**Speaker:** **Jorge Bernal** – Computer Vision Center

**Place:** INS Mundet (Barcelona)

**Date:** April 26, 2012

**Title:** 15 Years of Handwritten Word Spotting: Achievements and Remaining Challenges

**Speakers:** **Marçal Rusiñol, Alícia Fornés** and **Volkmar Frinken** – Computer Vision Center

**Conference:** Thirteen International Conference on Frontiers in Handwritten Recognition (ICFHR 2012)

**Place:** Bari (Italy)

**Date:** September 17, 2012

### INVITED TALKS

**Title:** The ADAS Group Activities at the Computer Vision Center of Barcelona

**Speaker:** **Antonio López**, ADAS Group – Computer Vision Center/UAB

**Place:** DAIMLER AG, Ulm (Germany)

**Date:** March 9, 2012

**Title:** Perceptual constraints in computational color

**Speaker:** **Maria Vanrell**, CIC Group – Computer Vision Center/UAB

**Place:** Universitat Pompeu Fabra, Barcelona (Spain)

**Date:** April 15, 2012

**Title:** Monitorizació cooperativa de la carretera i el conductor per a la seguretat vial mitjançant sensors de visió (eCo-DRIVERS: Ecologic Cooperative Driver and Road Intelligent Visual Exploration for Route Safety), in Trobades Empresarials UAB30 - Mobilitat i Transports a les Smart Cities

**Speaker:** **Antonio López**, ADAS Group – Computer Vision Center/UAB

**Place:** Hotel Campus, Campus UAB, Bellaterra

**Date:** May 17, 2012

**Title:** Human Action Recognition in Context

**Speaker:** **Jordi González** – Computer Vision Center/UAB

**Place:** Dept. Computer Science, Bogaziçi University, Istanbul (Turkey)

**Date:** June 21, 2012

**Title:** Handwritten Word Spotting in Historical Documents

**Speakers:** **Josep Lladós** and **Alícia Fornés** – Computer Vision Center

**Conference:** HistDoc Seminar

**Place:** Fribourg (Switzerland)

**Date:** June 22nd, 2012



**Title:** The Five Centuries of Marriages Project (5CofM)  
**Speaker:** **Josep Lladós** – Computer Vision Center  
**Conference:** HistDoc Seminar  
**Place:** Fribourg (Switzerland)  
**Date:** June 22<sup>nd</sup>, 2012

**Title:** Human Behavior Analysis using Depth Maps  
**Speaker:** **Sergio Escalera**, MiLAB Group – CVC/UB  
**Conference:** AMDO 2012 – VII Conference on Articulated Motion and Deformable Objects  
**Place:** Andratx – Mallorca (Spain)  
**Date:** July 11, 2012

**Title:** The Five Centuries of Marriages. Technical and Methodological Aspects  
**Speakers:** **Josep Lladós**, A. Cabré, J.M. Pujades and **Alícia Fornés**  
**Conference:** Residence patters of the elderly: 2<sup>nd</sup> Mosaic Conference  
**Place:** Budapest (Hungary)  
**Date:** September 6-7, 2012

**Title:** Browsing the content of digital libraries of historical documents by word spotting – Latest Achievements  
**Speaker:** **Marçal Rusiñol** – Computer Vision Center  
**Conference:** Historical Documents in the Digital Age Workshop  
**Place:** University of Rouen (France)  
**Date:** October 25-26, 2012

**Title:** Humann Perception Inspired Computer Vision – Applications to Text Detecion in Real Scenes  
**Speaker:** **Dimosthenis Karatzas** – Computer Vision Center/UAB  
**Place:** Prefecture University Osaka (Japan)  
**Date:** November, 2012

**Title:** Supervised Brain Segmentation and Classification in Diagnostic of Attention Deficit/Hyperactivity Disorder  
**Speaker:** **Laura Igual** – Computer Vision Center/UB  
**Conference:** Ciclo de Seminarios del Instituto de Nuevas Tecnologías de la Imagen  
**Place:** Universidad Jaume I, Castellón (Spain)  
**Date:** December 5, 2012

**Title:** Intrinsic Images for Color Image Understandign  
**Speaker:** **Joost van de Weijer** – Computer Vision Center/UAB  
**Place:** Universitat Politècnica de Catalunya, Barcelona (Spain)  
**Date:** 2012

**Title:** Combining Color and Shape Information for Object Recognition  
**Speaker:** **Joost van de Weijer** – Computer Vision Center/UAB  
**Place:** Delft University of Technology, Delft (The Netherlands)  
**Date:** 2012

## 10. Tutorials at CVC (2)

- Course *"Towards the unification of Structural and Statistical Pattern Recognition"* (4h), given in the official master of Computer Vision and Artificial Intelligence. Prof. Horst Bunke, Research Group on Computer Vision and Artificial Intelligence IAM, University of Bern, February 28 and March 6, 2013.
- Course *"Kernel Methods 1 and 2"* (4h), given in the official master of Computer Vision and Artificial Intelligence. Dr. Gustavo Camps, Image Processing Laboratory, Universitat de València, November 27 and 29, 2012

## 11. Invited Talks at CVC (24)

**Title:** Network Analysis using Diffusions, Entropy and Graph Spectra.

**Speaker:** Dr. Edwin Hancock

**Affiliation:** Department of Computer science, University of York (United Kingdom)

**Place:** CVC, Bellaterra

**Date:** February 13, 2012

**Title:** Energy Aware Recognition for Man Made Structures and other Research Projects at the American University of Beirut

**Speaker:** Dr. Mariette Awad

**Affiliation:** University of Beirut (Libanon)

**Place:** CVC, Bellaterra

**Date:** March 14, 2012

**Title:** Brain-inspired Computing for Machine Vision

**Speaker:** Prof. Nicolai Petkov

**Affiliation:** Faculty of Mathematics and Natural Sciences, University of Groningen, (Netherlands)

**Place:** CVC, Bellaterra

**Date:** March 16, 2012

**Title:** Handwriting Recognition in Historical Documents

**Speaker:** Dr. Andreas Dengel

**Affiliation:** Computer Science Department, University of Fribourg (Switzerland)

**Place:** CVC, Bellaterra

**Date:** April 11, 2012

**Title:** Service Robots for Elderly Care

**Speaker:** Dr. Nayden Chivarov

**Affiliation:** Service Robots , ISER-BAS Bulgaria

**Place:** CVC, Bellaterra

**Date:** April 27, 2012

**Title:** Understanding the Structure of Cognition across Individuals – Machine Learning in Neuroimaging

**Speaker:** Dr. Georg Langs

**Affiliation:** CIR LAB, Medical University of Vienna (Austria)

**Place:** CVC, Bellaterra

**Date:** May 2, 2012

**Title:** Visión por Computador en la Universidad del Bio-Bio  
**Speaker:** Dr. Cristhian Aguilera  
**Affiliation:** Universidad del Bio-Bio (Chile)  
**Place:** CVC, Bellaterra  
**Date:** May 9, 2012

**Title:** Disturbing Vision  
**Speaker:** Prof. Arnold Wilkins  
**Affiliation:** Department of Psychology, University of Essex (UK)  
**Place:** CVC, Bellaterra  
**Date:** May 15, 2012

**Title:** Image Categorization using Fisher Kernels of non-iid Image Models  
**Speaker:** Dr. Jakob Verbeek  
**Affiliation:** Computer Vision and Machine Learning LEAR Team – INRIA, Grenoble (France)  
**Place:** CVC, Bellaterra  
**Date:** June 4, 2012

**Title:** Variational Methods and Retinex Theory  
**Speaker:** Dr. Marcelo Bertalmío  
**Affiliation:** Universitat Pompeu Fabra UPF (Spain)  
**Place:** CVC, Bellaterra  
**Date:** June 7, 2012

**Title:** Humans like Watching Humans: Recent Advances in Human-centered Video Analysis  
**Speaker:** Dr. Manuel Jesús Marín Jiménez  
**Affiliation:** Dpt. Informática y Análisis Numérico, Universidad de Córdoba (Spain)  
**Place:** CVC, Bellaterra  
**Date:** June 8, 2012

**Title:** Virtual Colonoscopy (Techniques of CT Colonography)  
**Speaker:** Dr. Ventseslav Valev  
**Affiliation:** Institute of Mathematics and Informatics Bulgarian Academy of Sciences, Sophia (Bulgaria)  
**Place:** CVC, Bellaterra  
**Date:** July 2, 2012

**Title:** Combining Vision, Interaction, and Web Queries: Reasoning about Epistemic Actions and Uncertainty for Autonomous Knowledge Gathering in Robots  
**Speaker:** Dr. Marc Hanheide  
**Affiliation:** School of Computer Science, University of Lincoln (UK)  
**Place:** CVC, Bellaterra  
**Date:** July 6, 2012

**Title:** Lie Groups and Algebras in Computer Vision  
**Speaker:** Dr. Julio Guerrero García  
**Affiliation:** Departamento de Matemática Aplicada, Facultad de Informática, Universidad de Murcia (Spain)  
**Place:** CVC, Bellaterra  
**Date:** July 16, 2012

**Title:** Platforms for Document Image Processing  
**Speaker:** Prof. Rafael Dueire Lins  
**Affiliation:** Centro de Informática Universidade Federal de Pernambuco (Brasil)  
**Place:** CVC, Bellaterra  
**Date:** July 18, 2012

**Title:** Applied Visual Computing: Case Studies from the University of Bradford  
**Speaker:** Dr. David Connah  
**Affiliation:** Centre for visual Computing, University of Bradford (UK)  
**Place:** CVC, Bellaterra  
**Date:** July 19, 2012

**Title:** Why don't we hear lighting and see thunder= The sensorimotor approach to phenomenal consciousness  
**Speaker:** Prof. Kevin O'Reagan  
**Affiliation:** Laboratoire Psychologie de la Perception, Université Paris Descartes (France)  
**Place:** CVC, Bellaterra  
**Date:** September 14, 2012

**Title:** Computer Vision Research at the University of Oulu: from LBP to Computational Photography  
**Speaker:** Prof. Janne Heikkilä  
**Affiliation:** Department of Computer Science and Engineering, University of Oulu (Finland)  
**Place:** CVC, Bellaterra  
**Date:** September 21, 2012

**Title:** Intelligent Vision Systems: A foray into Computer Vision at the University of Auckland  
**Speaker:** Dr. Patrice Delmas  
**Affiliation:** Department of Computer Science, The University of Auckland, New Zealand  
**Place:** CVC, Bellaterra  
**Date:** September 25, 2012

**Title:** Neuromuscular Studies of Handwriting Generation and Representation: Strokes against Strokes, Strokes for Stride  
**Speaker:** Prof. Réjean Plamondon  
**Affiliation:** Laboratoire Scribens, Département de Génie Électrique École Polytechnique de Montréal (Canada)  
**Place:** CVC, Bellaterra  
**Date:** October 3, 2012

**Title:** Figure ground Segmentation for Semantic Scene Understanding  
**Speaker:** Prof. Cristian Sminchisescu  
**Affiliation:** Institute für Numerische Simulation, Universität Bonn (Germany)  
**Place:** CVC, Bellaterra  
**Date:** October 22, 2012

**Title:** Kernel signal to noise ratio form machine learning  
**Speaker:** Dr. Gustavo Camps  
**Affiliation:** Image and Signal Processing Group (ISP), Universitat de València (Spain)  
**Place:** CVC, Bellaterra  
**Date:** November 28, 2012

**Title:** The contribution of color for edge detection in natural scenes

**Speaker:** Prof. Thorsten Hansen

**Affiliation:** Department of General and Experimental Psychology, Justus Liebig University Giessen (Germany)

**Place:** CVC, Bellaterra

**Date:** November 29, 2012

**Title:** Spatio-chromatic Adaptation via Higher-Order Canonical Correlation Analysis

**Speaker:** Dr. Jesús Malo

**Affiliation:** Universitat de Valencia (Spain)

**Place:** CVC, Bellaterra

**Date:** December 17, 2012

## 12. Publications (191)

### 12.1. Books (16)

1. **Angel Sappa** & George A. Triantafyllid, 2012. *Computer Graphics and Imaging*.
2. **Ariel Amato**, 2012. *Environment-Independent Moving Cast Shadow Suppression in Video Surveillance*. Ediciones Gráficas Rey.
3. **Bhaskar Chakraborty**, 2012. *Model free approach to human action recognition*. Ediciones Gráficas Rey.
4. **Diego Cheda**, 2012. *Monocular Depth Cues in Computer Vision Applications*. Ediciones Gráficas Rey.
5. **Fernando Barrera**, 2012. *Multimodal Stereo from Thermal Infrared and Visible Spectrum*. Ediciones Gráficas Rey.
6. **Francesco Ciompi**, 2012. *Multi-Class Learning for Vessel Characterization in Intravascular Ultrasound*. Ediciones Gráficas Rey.
7. **Jaume Gibert**, 2012. *Vector Space Embedding of Graphs via Statistics of Labelling Information*.
8. **Jorge Bernal**, 2012. *Polyp Localization and Segmentation in Colonoscopy Images by Means of a Model of Appearance for Polyps*. Ediciones Gráficas Rey.
9. **Jose Carlos Rubio**, 2012. *Many-to-Many High Order Matching. Applications to Tracking and Object Segmentation*. Ediciones Gráficas Rey.
10. **Josep Maria Gonfaus**, 2012. *Towards Deep Image Understanding: From pixels to semantics*. Ediciones Gráficas Rey.
11. **Marco Pedersoli**, 2012. *Hierarchical Multiresolution Models for fast Object Detection*. Ediciones Gráficas Rey.
12. Mario Hernandez, Joao Sanchez & **Jordi Vitria**, 2012. *Selected papers from Iberian Conference on Pattern Recognition and Image Analysis*. vol. 45.
13. **Mohammad Rouhani**, 2012. *Shape Representation and Registration using Implicit Functions*.
14. **Naila Murray**, 2012. *Predicting Saliency and Aesthetics in Images: A Bottom-up Perspective*.

15. **Noha Elfiky**, 2012. *Compact, Adaptive and Discriminative Spatial Pyramids for Improved Object and Scene Classification*. Ediciones Gráficas Rey.
16. **Theo Gevers**, Arjan Gijsenij, **Joost van de Weijer** & J.M. Geusebroek, 2012. *Color in Computer Vision: Fundamentals and Applications*. Wiley.

## 12.2. Book Chapters (14)

1. **Alicia Fornes**, **Josep Lladós**, **Gemma Sanchez** & Horst Bunke, 2012. Writer Identification in Old Handwritten Music Scores. In Copnstantin Papaodysseus, ed. *Pattern Recognition and Signal Processing in Archaeometry: Mathematical and Computational Solutions for Archaeology*. IGI-Global, p. 27–63.
2. **Angel Sappa** et al, 2012. Moving object detection from mobile platforms using stereo data registration. In Marek R. Ogiela & Lakhmi C. Jain, eds. *Computational Intelligence paradigms in advanced pattern classification*. Springer-Verlag, 25.37.
3. **Aura Hernandez** & **Debora Gil**, 2012. The Benefits of IVUS Dynamics for Retrieving Stable Models of Arteries. In Yasuhiro Honda, ed. *Intravascular Ultrasound*. Intech, p. 185–206.
4. C. Aguilera, M.Ramos & **Angel Sappa**, 2012. Simulated Annealing: A Novel Application of Image Processing in the Wood Area. In Marcos de Sales Guerra Tsuzuki, ed. *Simulated Annealing – Advances, Applications and Hybridizations*.p. 91–104.
5. **Carles Sanchez**, **F. Javier Sanchez**, Antoni Rosell & **Debora Gil**, 2012. An illumination model of the trachea appearance in videobronchoscopy images. In *Image Analysis and Recognition*. vol. 7325. Lecture Notes in Computer Science. Springer Berlin Heidelberg, p. 313–320.
6. Fadi Dornaika & **Bogdan Raducanu**, 2012. Analysis and Recognition of Facial Expressions in Videos Using Facial Shape Deformation. In S.E. Carter, ed. *Facial Expressions: Dynamic Patterns, Impairments and Social Perceptions*. NOVA Publishers, p. 157–178.
7. **Javier Marin**, **David Geronimo**, **David Vazquez** & **Antonio Lopez**, 2012. Pedestrian Detection: Exploring Virtual Worlds. In *Handbook of Pattern Recognition: Methods and Application*. iConcept Press.
8. **Joost van de Weijer** et al, 2012. Color Naming. In Theo Gevers, Arjan Gijsenij, Joost van de Weijer & Jan-Mark Geusebroek, eds. *Color in Computer Vision: Fundamentals and Applications*. John Wiley & Sons, Ltd., p. 287–317.
9. Jose Manuel Alvarez & **Antonio M. Lopez**, 2012. Photometric Invariance by Matchine Learning. In Jan-Mark Geusebroek Joost van de Weijer A.G. Theo Gevers, ed. *Color in Computer Vision: Fundamentals and Applications*. vol. 7. iConcept Press Ltd, p. 113–134.
10. **Laura Igual** et al, 2012. A Supervised Graph-cut Deformable Model for Brain MRI Segmentation. Deformation models: tracking, animation and applications. In *Computational Vision and Biomechanics*. LNCS. Springer Netherlands.
11. **Pau Baiget**, **Carles Fernandez**, **Xavier Roca** & **Jordi Gonzalez**, 2012. Trajectory-Based Abnormality Categorization for Learning Route Patterns in Surveillance. In *Detection and Identification of Rare Audiovisual Cues, Studies in Computational Intelligence*. vol. 384. Springer Netherlands.

12. Sergio Vera et al, 2012. Computation and Evaluation of Medial Surfaces for Shape Representation of Abdominal Organs. In H. Yoshida et al, ed. *Workshop on Computational and Clinical Applications in Abdominal Imaging*. vol. 7029. Lecture Notes in Computer Science. Berlin: Springer Link, p. 223–230.
13. Sergio Vera, Miguel A. González & **Debora Gil**, 2012. Optimal Medial Surface Generation for Anatomical Volume Representations. In Michael W. David and Vannier H. and H. Yoshida, ed. *Abdominal Imaging. Computational and Clinical Applications*. vol. 7601. Lecture Notes in Computer Science. Springer Berlin Heidelberg, p. 265–273.
14. Xavier Perez Sala, **Laura Igual**, **Sergio Escalera** & Cecilio Angulo, 2012. Uniform Sampling of Rotations for Discrete and Continuous Learning of 2D Shape Models. In *Vision Robotics: Technologies for Machine Learning and Vision Applications*. IGI-Global.

### 12.3. Journals with Impact Factor (60)

1. Alberto Hidalgo et al, 2012. Evidence of continuous helical structure of the cardiac ventricular anatomy assessed by diffusion tensor imaging magnetic resonance multiresolution tractography, *European Radiology*, 3 (1), p. 361–362.
2. **Alicia Fornes**, **Anjan Dutta**, **Albert Gordo** & **Josep Lladós**, 2012. CVC-MUSCIMA: A Ground-Truth of Handwritten Music Score Images for Writer Identification and Staff Removal, *International Journal on Document Analysis and Recognition*, 15 (3), p. 243–251.
3. **Anjan Dutta**, **Josep Lladós** & Umapada Pal, 2012. A symbol spotting approach in graphical documents by hashing serialized graphs, *Pattern Recognition*, 46 (3), p. 752–768.
4. **Antonio Hernandez** et al, 2012. Accurate coronary centerline extraction, caliber estimation and catheter detection in angiographies, *IEEE Transactions on Information Technology in Biomedicine*, 166 (1332-1340).
5. **Antonio Hernandez**, **Miguel Reyes**, **Victor Ponce** & **Sergio Escalera**, 2012. GrabCut-Based Human Segmentation in Video Sequences, *Sensors*, 12 (1), p. 15376–15393.
6. **Antonio Hernandez** et al, 2012. Human Limb Segmentation in Depth Maps based on Spatio-Temporal Graph Cuts Optimization, *Journal of Ambient Intelligence and Smart Environments*, 4 (6), p. 535–546.
7. Arjan Gijsenij, R. Lu, **Theo Gevers** & De Xu, 2012. Color Constancy for Multiple Light Source, *IEEE Transactions on Image Processing*, 21 (2), p. 697–707.
8. Arjan Gijsenij, **Theo Gevers** & **Joost van de Weijer**, 2012. Improving Color Constancy by Photometric Edge Weighting, *IEEE Transaction on Pattern Analysis and Machine Intelligence*, 34 (5), p. 918–929.
9. Arnau Ramisa et al, 2012. Evaluation of Three Vision Based Object Perception Methods for a Mobile Robot, *Journal of Intelligent and Robotic Systems*, 68 (2), p. 185–208.
10. **Bhaskar Chakraborty**, Michael Holte, T. Moeslund & **Jordi Gonzalez**, 2012. Selective Spatio-Temporal Interest Points, *Computer Vision and Image Understanding*, 116 (3), p. 396–410.



11. **Bogdan Raducanu** & D. Gatica-Perez, 2012. Inferring competitive role patterns in reality TV show through nonverbal analysis, *Multimedia Tools and Applications*, 56 (1), p. 207–226.
12. **Bogdan Raducanu** & Fadi Dornaika, 2012. A Supervised Non-linear Dimensionality Reduction Approach for Manifold Learning, *Pattern Recognition*, 45 (6), p. 2432–2444.
13. **Bogdan Raducanu** & Fadi Dornaika, 2012. Texture-independent recognition of facial expressions in image snapshots and videos, *Machine Vision and Applications*.
14. C. Aguilera et al, 2012. Multispectral Image Feature Points, *Sensors*, 12 (9), p. 12661–12672.
15. Carolina Malagelada et al, 2012. Functional gut disorders or disordered gut function? Small bowel dysmotility evidenced by an original technique, *Neurogastroenterology & Motility*, 24 (3), p. 223–230.
16. Cesar Isaza, Joaquin Salas & **Bogdan Raducanu**, 2012. Evaluation of Intrinsic Image Algorithms to Detect the Shadows Cast by Static Objects Outdoor, *Sensors*, 12, p. 13333–13348.
17. **Fahad Shahbaz Khan**, **Joost van de Weijer** & **Maria Vanrell**, 2012. Modulating Shape Features by Color Attention for Object Recognition, *International Journal of Computer Vision*, p. 1–16.
18. **Fernando Barrera**, **Felipe Lumbreras** & **Angel Sappa**, 2012. Multimodal Stereo Vision System: 3D Data Extraction and Algorithm Evaluation, *IEEE Journal of Selected Topics in Signal Processing*, 6 (5), p. 437–446.
19. Ferran Diego, **Joan Serrat** & **Antonio M. Lopez**, 2012. Joint spatio-temporal alignment of sequences, *IEEE Transactions on Multimedia*.
20. Ferran Poveda et al, 2012. Helical Structure of Ventricular Anatomy by Diffusion Tensor Cardiac MR Tractography, *Journal of American College of Cardiology*, 5 (7), p. 754–755.
21. Francesc Carreras et al, 2012. Left ventricular torsion and longitudinal shortening: two fundamental components of myocardial mechanics assessed by tagged cine-MRI in normal subjects, *International Journal of Cardiovascular Imaging*, 28 (2), p. 273–284.
22. **Francesco Ciompi** et al, 2012. HoliMab: A Holistic Approach for Media-Adventitia Border Detection in Intravascular Ultrasound, *Medical Image Analysis*, 16 (6), p. 1085–1100.
23. Graham D. Finlayson, **Javier Vazquez**, Sabine Sússtrunk & **Maria Vanrell**, 2012. Spectral sharpening by spherical sampling, *Journal of the Optical Society of America A*, 29 (7), p. 1199–1210.
24. H. Dibeklioğlu, A.A. Salah & **Theo Gevers**, 2012. A Statistical Method for 2D Facial Landmarking, *IEEE Transactions on Image Processing*, 21 (2), p. 844–858.
25. Ivan Huerta, **Ariel Amato**, **Xavier Roca** & **Jordi Gonzalez**, 2012. Exploiting Multiple Cues in Motion Segmentation Based on Background Subtraction, *Neurocomputing*, 100, p. 183–196.
26. J. Stöttinger, A. Hanbury, N. Sebe & **Theo Gevers**, 2012. Spars Color Interest Points for Image Retrieval and Object Categorization, *IEEE Transactions on Image Processing*, 21 (5), p. 2681–2692.



27. **Jaume Gibert, Ernest Valveny** & Horst Bunke, 2012. Feature Selection on Node Statistics Based Embedding of Graphs, *Pattern Recognition Letters*, 33 (15), p. 1980–1990.
28. **Jaume Gibert, Ernest Valveny** & Horst Bunke, 2012. Graph Embedding in Vector Spaces by Node Attribute Statistics, *Pattern Recognition*, 45 (9), p. 3072–3083.
29. **Javier Vazquez**, J. Kevin O'Regan, **Maria Vanrell** & Graham D. Finlayson, 2012. A new spectrally sharpened basis to predict colour naming, unique hues, and hue cancellation, *Journal of Vision*, 12 (6).
30. **Javier Vazquez, Maria Vanrell, Ramon Baldrich** & Francesc Tous, 2012. Color Constancy by Category Correlation, *IEEE Transaction on Image Processing*, 21 (4), p. 1997–2007.
31. **Jon Almazan, Alicia Fornes** & **Ernest Valveny**, 2012. A non-rigid appearance model for shape description and recognition, *Pattern Recognition*, 45 (9), p. 3105–3113.
32. **Jordi Gonzalez**, Thomas B. Moeslund & Liang Wang, 2012. Semantic Understanding of Human Behaviors in Image Sequences: From video-surveillance to video-hermeneutics, *Computer Vision and Image Understanding*, 116 (3), p. 305–306.
33. **Jordi Roca** et al, 2012. Inter-individual Variations in Color Naming and the Structure of 3D Color Space, *Journal of Vision*, 12 (2), 166.
34. **Jorge Bernal, F. Javier Sanchez** & **Fernando Vilariño**, 2012. Towards Automatic Polyp Detection with a Polyp Appearance Model, *Pattern Recognition*, 45 (9), p. 3166–3182.
35. **Jose Carlos Rubio, Joan Serrat, Antonio M. Lopez** & **Daniel Ponsa**, 2012. Multiple target tracking for intelligent headlights control, *IEEE Transactions on Intelligent Transportation Systems*, 13 (2), p. 594–605.
36. **Josep Lladós** et al, 2012. On the Influence of Word Representations for Handwritten Word Spotting in Historical Documents, *International Journal of Pattern Recognition and Artificial Intelligence*, 265.
37. **Laura Igual, Agata Lapedriza** & Ricard Borras, 2012. Robust Gait-Based Gender Classification using Depth Cameras, *EURASIP Journal on Advances in Signal Processing*.
38. **Laura Igual** et al, 2012. Automatic Brain Caudate Nuclei Segmentation and Classification in Diagnostic of Attention-Deficit/Hyperactivity Disorder, *Computerized Medical Imaging and Graphics*, 26 (8), p. 591–600.
39. **Marina Alberti** et al, 2012. Automatic Bifurcation Detection in Coronary IVUS Sequences, *IEEE Transactions on Biomedical Engineering*, 59 (4), p. 1022–2031.
40. Michael Holte, **Bhaskar Chakraborty, Jordi Gonzalez** & Thomas B. Moeslund, 2012. A Local 3D Motion Descriptor for Multi-View Human Action Recognition from 4D Spatio-Temporal Interest Points, *IEEE Journal of Selected Topics in Signal Processing*, 6 (5), p. 553–565.
41. **Michal Drozdal** et al, 2012. Adaptable image cuts for motility inspection using WCE, *Computerized Medical Imaging and Graphics*.
42. **Mohammad Rouhani** & **Angel Sappa**, 2012. Implicit Polynomial Representation through a Fast Fitting Error Estimation, *IEEE Transactions on Image Processing*, 21 (4), p. 2089–2098.

43. **Naila Murray**, Sandra Skaff, Luca Marchesotti & Florent Perronnin, 2012. Towards automatic and flexible concept transfer, *Computers and Graphics*, 36 (6), p. 622–634.
44. **Noha Elfiky**, **Fahad Shahbaz Khan**, **Joost van de Weijer** & **Jordi Gonzalez**, 2012. Discriminative Compact Pyramids for Object and Scene Recognition, *Pattern Recognition*, 45 (4), p. 1627–1636.
45. **Noha Elfiky**, **Jordi Gonzalez** & **Xavier Roca**, 2012. Compact and Adaptive Spatial Pyramids for Scene Recognition, *Image and Vision Computing*, 30 (8), p. 492–500.
46. Partha Pratim Roy, Umapada Pal & **Josep Lladós**, 2012. Text line extraction in graphical documents using background and foreground, *International Journal on Document Analysis and Recognition*, 15 (3), p. 227–241.
47. Partha Pratim Roy, Umapada Pal, **Josep Lladós** & M. Delalandre, 2012. Multi-oriented touching text character segmentation in graphical documents using dynamic programming, *Pattern Recognition*, 45 (5), p. 1972–1983.
48. R. Valenti & **Theo Gevers**, 2012. Accurate Eye Center Location through Invariant Isocentric Patterns, *IEEE Transaction on Pattern Analysis and Machine Intelligence*, 34 (9), p. 1785–1798.
49. R. Valenti & **Theo Gevers**, 2012. Combining Head Pose and Eye Location Information for Gaze Estimation, *IEEE Transactions on Image Processing*, 21 (2), p. 802–815.
50. R. Valenti, N. Sebe & **Theo Gevers**, 2012. What are you looking at? Improving Visual gaze Estimation by Saliency, *International Journal of Computer Vision*.
51. **Santiago Segui** et al, 2012. Categorization and Segmentation of Intestinal Content Frames for Wireless Capsule Endoscopy, *IEEE Transactions on Information Technology in Biomedicine*, 16 (6), p. 1341–1352.
52. **Sergio Escalera** et al, 2012. Social Network Extraction and Analysis Based on Multimodal Dyadic Interaction, *Sensors*, 12 (2), p. 1702–1719.
53. Sergio Vera, **Debora Gil**, **Antonio M. Lopez** & Miguel Angel Gonzalez Ballester, 2012. Multilocal Creaseness Measure, *The Insight Journal*.
54. **Simone Balocco** et al, 2012. Relation between plaque type, plaque thickness, blood shear stress and plaque stress in coronary arteries assessed by X-ray Angiography and Intravascular Ultrasound, *Medical Physics*, 39 (12), p. 7430–7445.
55. Sophie Wuerger et al, 2012. Blue–green color categorization in mandarin–english speakers, *Journal of the Optical Society of America A*, 29 (2), p. A102–A1207.
56. Susana Alvarez & **Maria Vanrell**, 2012. Texton theory revisited: a bag-of-words approach to combine textons, *Pattern Recognition*, 45 (12), p. 4312–4325.
57. Susana Alvarez, Anna Salvatella, **Maria Vanrell** & **Xavier Otazu**, 2012. Low-dimensional and Comprehensive Color Texture Description, *Computer Vision and Image Understanding*, 116 (1), p. 54–67.
58. **Wenjuan Gong**, **Jordi Gonzalez** & **Xavier Roca**, 2012. Human Action Recognition based on Estimated Weak Poses, *EURASIP Journal on Advances in Signal Processing*.

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91. **Volkmar Frinken**, **Alicia Fornes**, **Josep Lladós** & J.M. Ogier, 2012. Bidirectional Language Model for Handwriting Recognition. In *IAPR International Workshop on Structural and Syntactic Pattern Recognition*. vol. 7626. LNCS. Springer Berlin Heidelberg, p. 611–619.
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94. **Wenjuan Gong**, **Jordi Gonzalez**, Joao Manuel R. S. Taveres & **Xavier Roca**, 2012. A New Image Dataset on Human Interactions. In *7th Conference on Articulated Motion and Deformable Objects*. vol. 7378. Springer Berlin Heidelberg, p. 204–209.
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## 12.5. Miscellanea (6)

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4. **Lluís Gómez**, 2012. Perceptual Organization for Text Extraction in Natural Scenes. Master Thesis. *CVC Technical Report # 173*, September 2012.
5. **Núria Cirera**, 2012. Recognition of Handwritten Historical Documents. Master Thesis. *CVC Technical Report # 174*, September 2012.
6. **Sergio Escalera** et al, 2012. Análisis Comportamental Automatizado de TDAH: la Influencia de la Variable Motivación. In *IPSI – Cosmocaixa, Jornadas "Empremtes del present, efectes en la psicoanàlisi, la cultura i la societat*. (POSTER)

## 13. Other research and dissemination activities (6)

### **NDK and Open CV – Android Workshop**, by Rubén Serrano and **Dr. David Rotger** (CVC)

An event of Barcelona-GTUG (Google Technology User Group), in collaboration with CVC

Place: CVC, Bellaterra

Date: February 9, 2012

### **SMI Eye Tracking Roadshow 2012**

An SMI (SensoMotoric Instruments) event

Place: CVC, Bellaterra

Date: February 20, 2012

### **Presentation of NAO – Robotic Platform**, by Mr. Boudot, Aldebaran Robotics (France)

Place: CVC, Bellaterra

Date: February 22, 2012

### **Saló de l'Ensenyament**

"Visió per Computador"

Place: Montjuïc – Barcelona

March 25, 2012

### **Jornada MIPRCV Industry Day**

"Interacción Multimodal en Reconocimiento de Formas y Visión Artificial"

Place: Universitat Politècnica de Catalunya – Barcelona

October 25, 2012

### **Seventh CVC Workshop on Advances in Theory and Applications of Computer Vision (CVCR&D 2012)**

Place: Centre de Visió per Computador

October 26, 2012

## 14. Awards (6)

### **Best Paper Award in the 10th IAPR International Workshop on Document Analysis Systems (DAS'2012)**

Paper Title: Document Classification Using Multiple Views

Authors: **Albert Gordo**, Florent Perronnin and **Ernest Valveny**

Australia, March 2012

### **First Award in Programa de Generació d'Idees 2012, Parc de Recerca UAB**

Project: *Ads on Demand*, by CVC researchers **Dr. Xavier Roca**, **Dr. Jordi González**, **Dr. Marco Pedersoli** and **Dr. Josep M<sup>a</sup> Gonfaus**

UAB, June 29, 2012

### **Second Award in Programa de Generació d'Idees 2012, Parc de Recerca UAB**

Project: *Knowxel*, by CVC researchers **Dr. Angel Sappa**, **Dr. Felipe Lumbreras** and **Dr. Ariel Amato**

UAB, June 29, 2012

### **Outstanding reviewer Award**

**Dr. Joost van de Weijer**, in CVPR 2012 – the 25th IEEE Conference on Computer Vision and Pattern Recognition, Providence, Rhode Island (USA), June 16-21, 2012

### **Outstanding reviewer Award**

**Dr. Joost van de Weijer**, in ECCV 2012 – 12th European Conference on Computer Vision, Florence (Italy), October 7-13, 2012

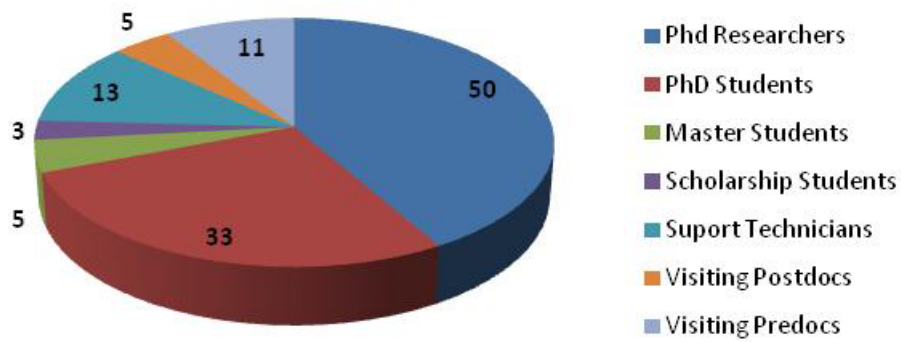
### **Third Award – CHALEARN Gesture Challenge**

Project: *Multi Hand Pose Recognition System using Kinect Depth Sensor*, by **Sergio Escalera** (CVC/UB), Oscar Lopes, Miguel Pousa, **Miguel Reyes** (CVC/UB) and **Jordi González (CVC/UAB)**, in ICPR 2012 – the 21<sup>st</sup> International Conference on Pattern Recognition, Tsukuba (Japan), November 11-15, 2012.

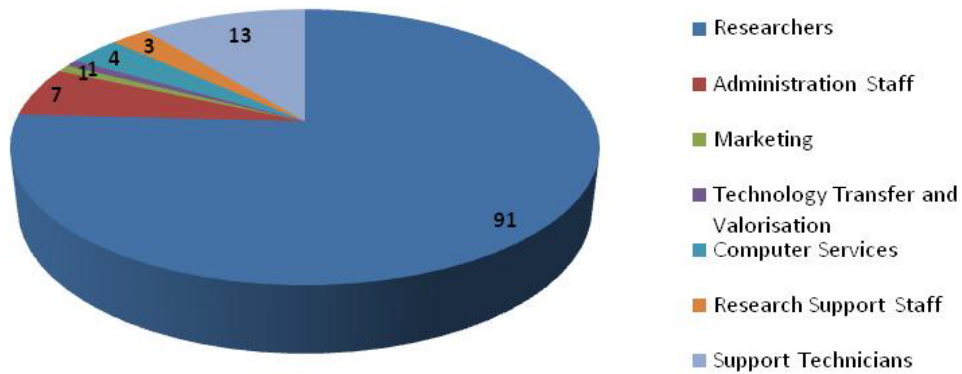
## 15. Fact Sheet

### 15.1. Personnel

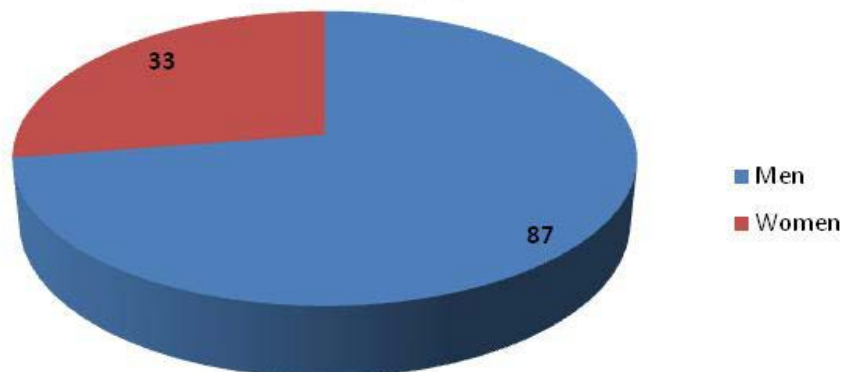
#### CVC Research Staff - 2012



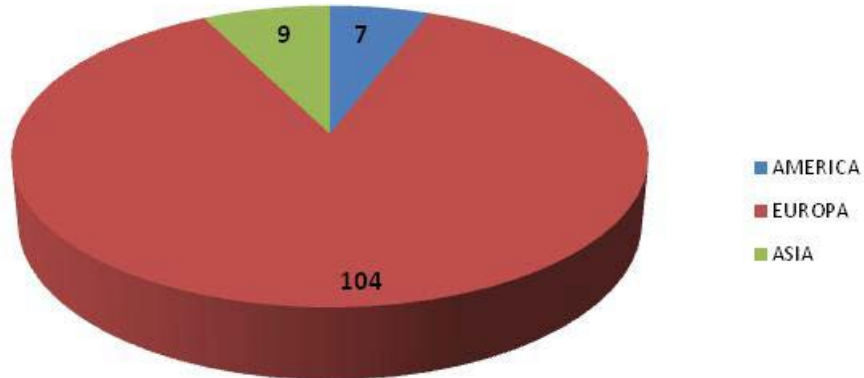
#### CVC Staff - 2012



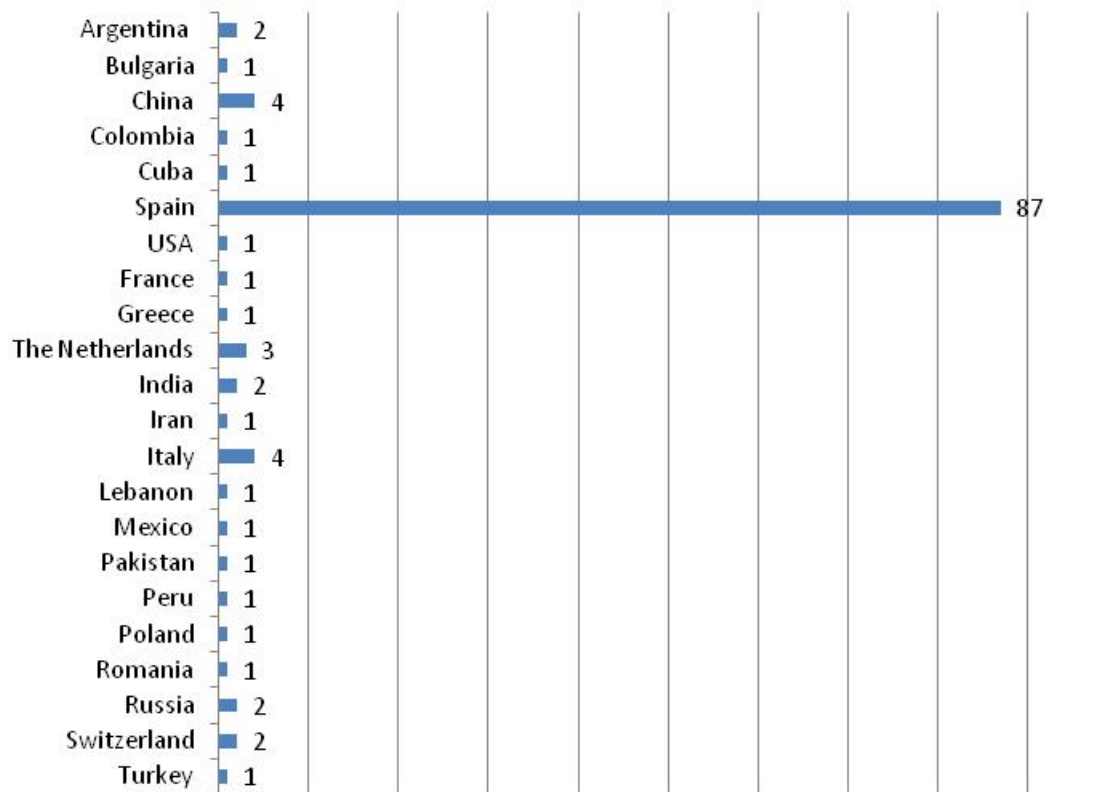
#### CVC staff by gender



### CVC Staff by continent

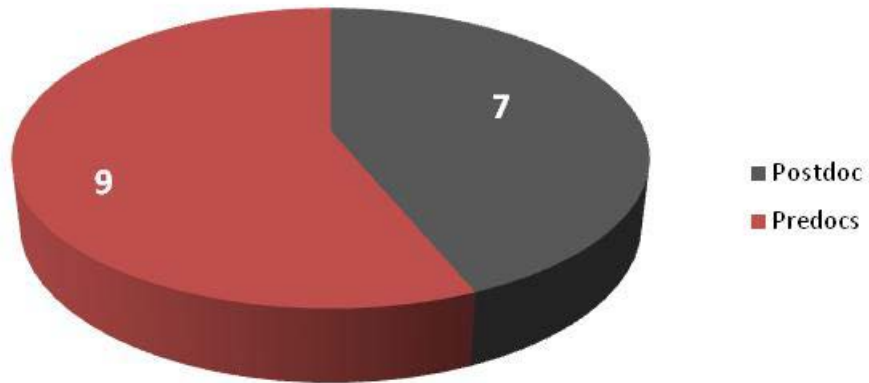


### CVC Staff by countries

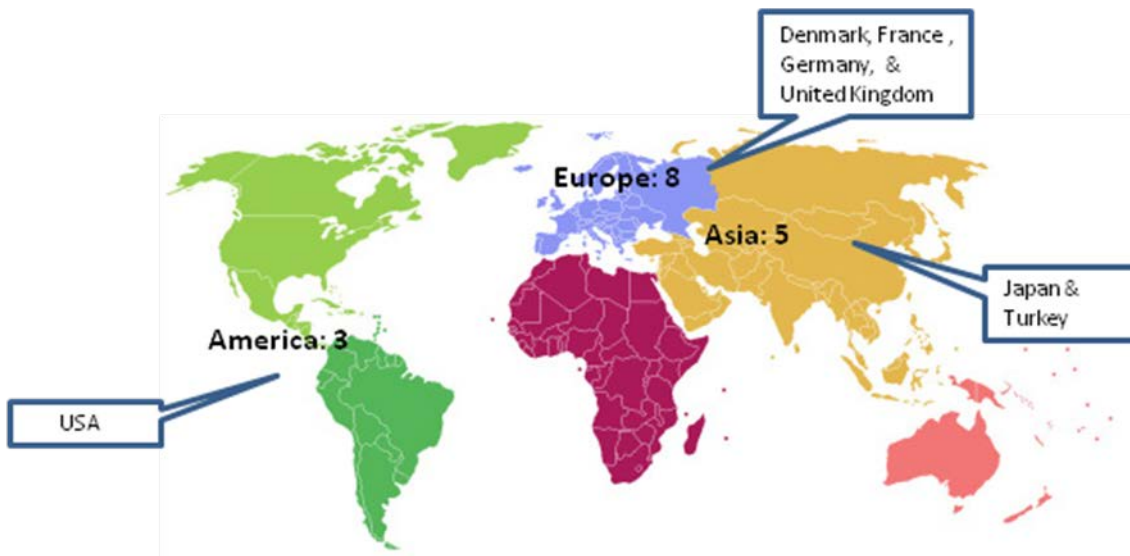


## 15.2. Research Stays

CVC staff research stays - 2012

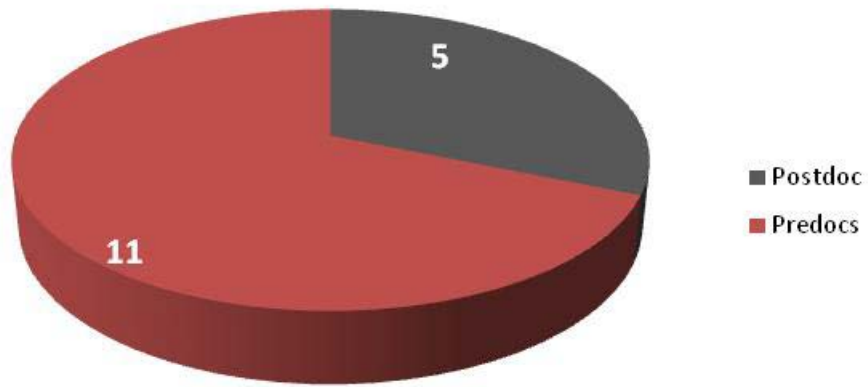


Mobility of CVC research staff by category

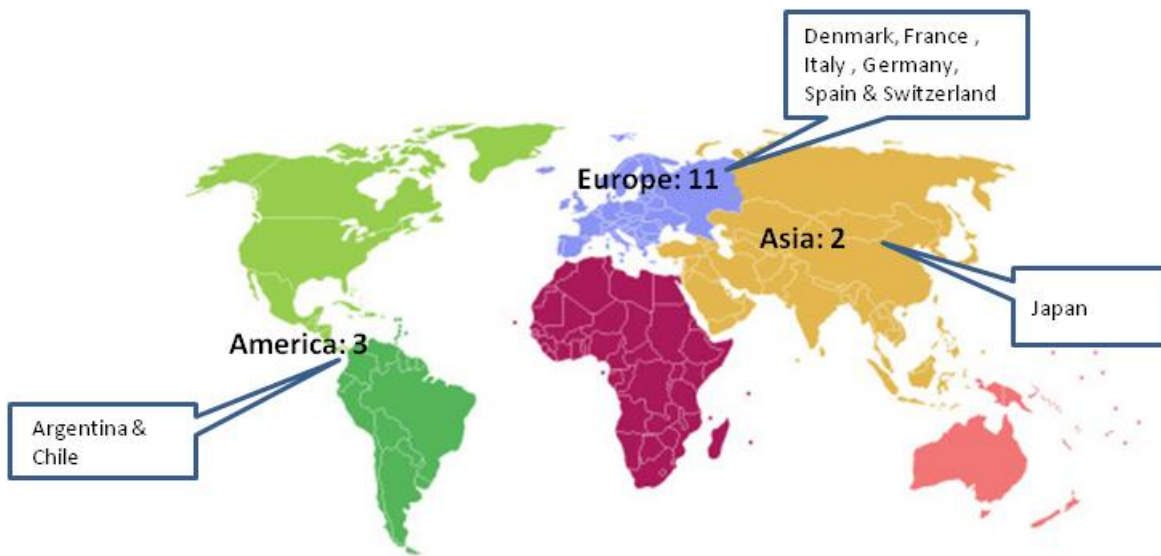


Mobility of CVC research staff by destination

### Visiting resarchers - 2012



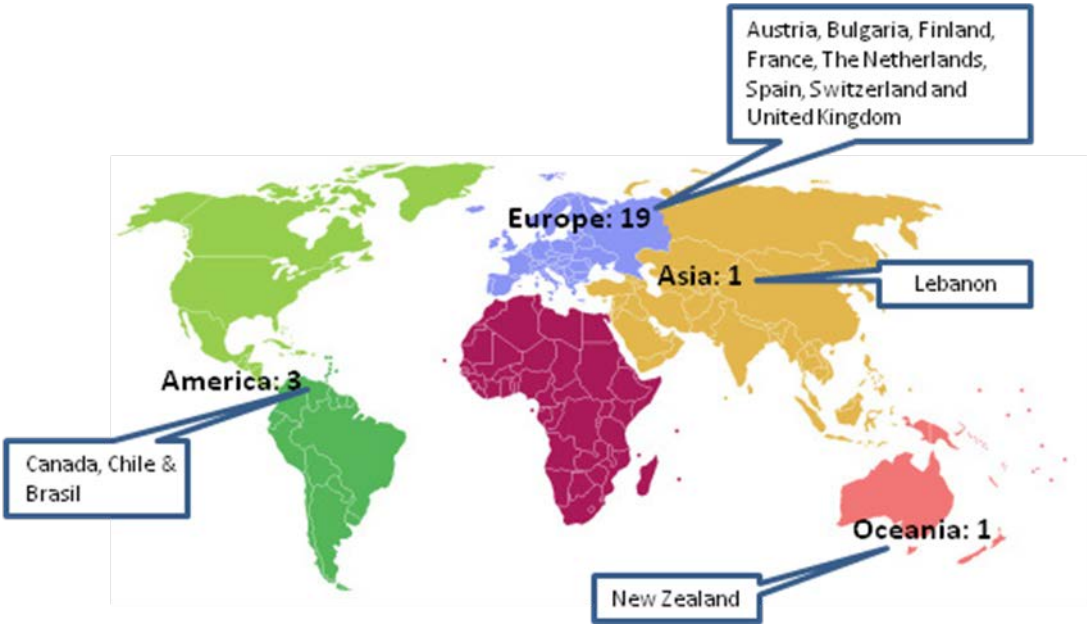
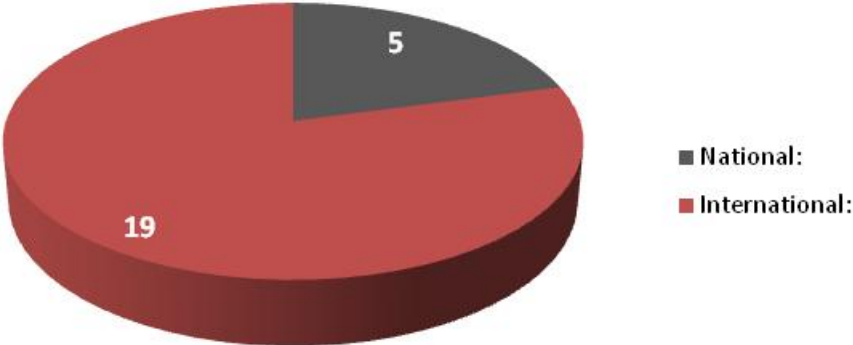
Visiting researchers by category



Visiting researchers by origin

15.3. Invited Talks

### Invited Speakers - 2012

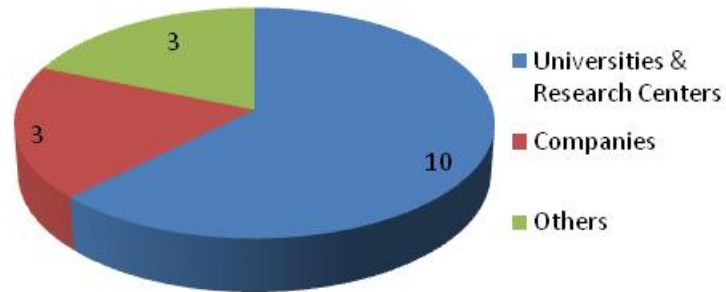


Invited speakers by origin

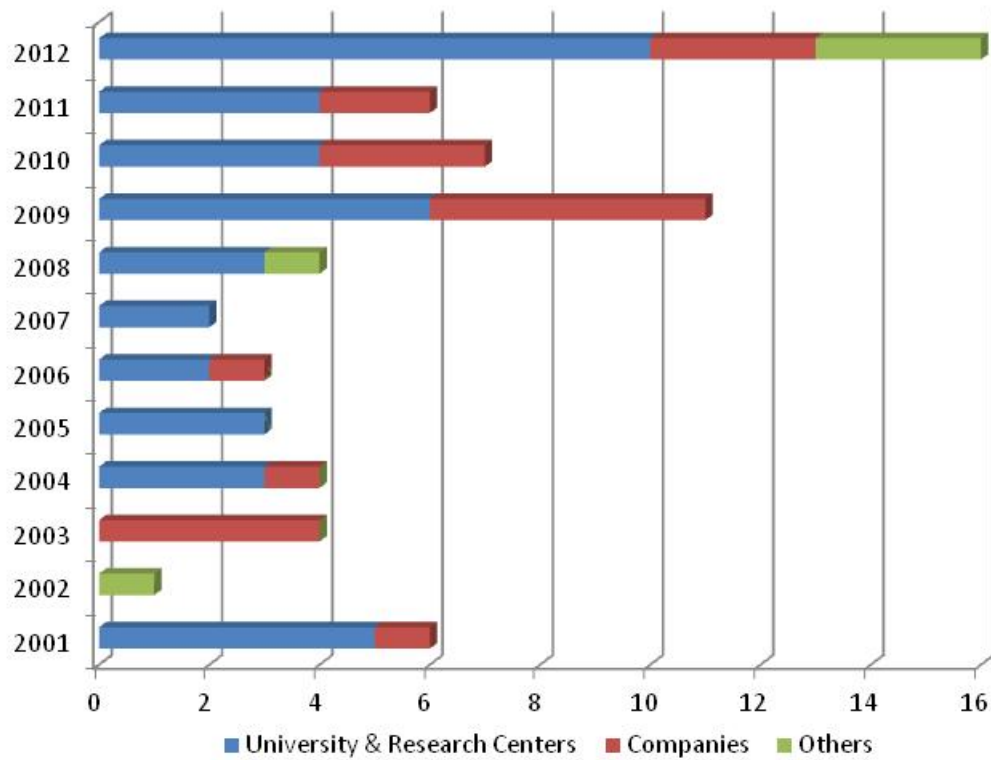


## 15.4. PhD thesis

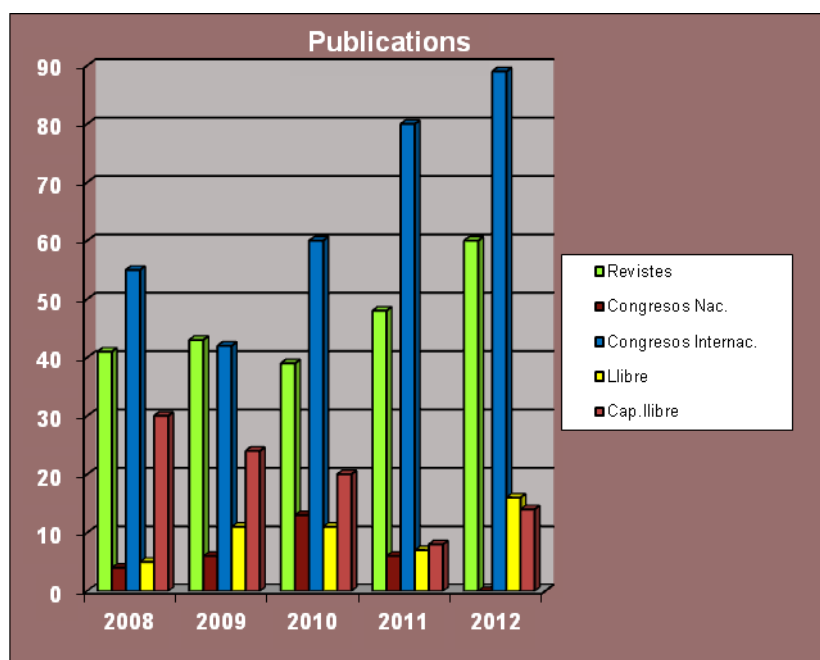
PhD thesis 2012 - Destination



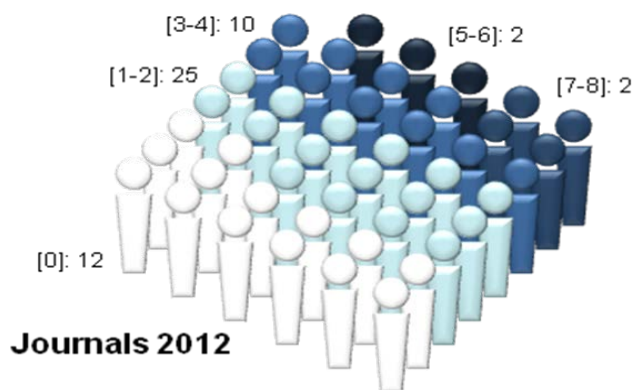
PhD Destination by year



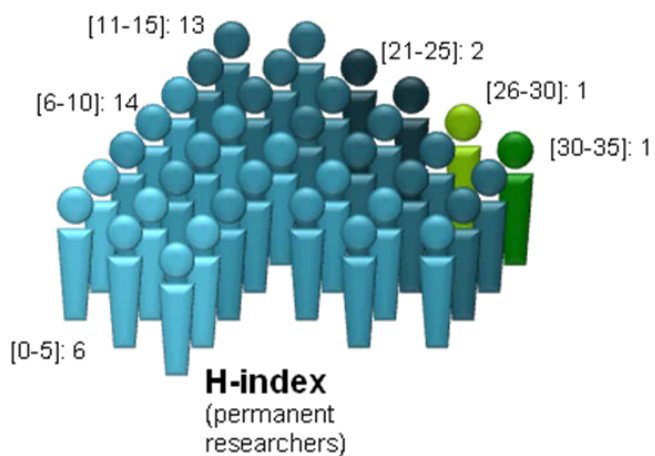
## 15.5. Publications



Publication Evolution



Journals 2012



H-index  
(permanent researchers)