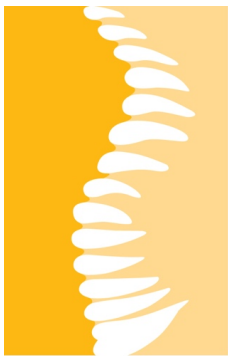


# ANNUAL REPORT

2017



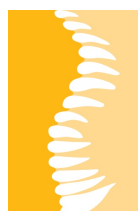
**ICP<sup>R</sup>**

Institut Català de Paleontologia  
Miquel Crusafont

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# ANNUAL REPORT 2017

**INSTITUT CATALÀ DE PALEONTOLOGIA** MIQUEL CRUSAFONT



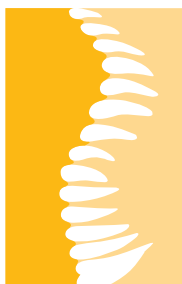
**ICP<sup>R</sup>**

Institut Català de Paleontologia  
Miquel Crusafont

**DAVID M. ALBA**

**Director**

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Institut Català de Paleontologia  
**Miquel Crusafont**

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## FOREWORD

### *From deep time to the future*

This year has been most intense at the Institut Català de Paleontologia Miquel Crusafont (ICP). It can be considered a transitional year, being characterized by the resignation of the former director, ICREA research professor Dr. Salvador Moyà-Solà, in effect since 27 April 2017. This decision will allow him to continue more intensively his research activity as an ICREA Research Professor at the ICP. However, it was mainly motivated by his conviction that, after more than ten years leading the institution, renewed energies were required at its forefront.

Therefore, this is not a time of farewell, but rather of thankfulness, for all of the efforts and sacrifice that he has devoted to the ICP throughout all these years. Even if the merits are attributable to the whole ICP staff, his legacy in this regard is huge, because consolidating the ICP as a CERCA center enabled it to grow and consolidate it further as a renowned institution at the international level.

As the new Director of the ICP, it is for me a great honor and a huge challenge to take over the lead. These are hard times for scientific research, especially for disciplines such as paleontology, largely devoted to basic research. Much work still remains to be done, and there are still many pitfalls and threats lurking out there that cannot be dismissed beforehand. Therefore, there is no room for improvisation: careful planning and foreseeing are required, so as to find the adequate balance between realism and ambitiousness that is required to succeed.

When you are walking along the brink of the abyss, sometimes it is necessary to keep moving to prevent falling off the cliff; but in other occasions, it is necessary to stop for a minute, look briefly at the road behind, and take a deep breath, in order to resume the correct path with renewed energies. This is what 2017 has represented to the ICP, having been intensely devoted to the confection of a new Strategic Plan (2018-2021) as well as an Action Plan toward the implementation of human resources excellence in research.

In ultimate term, the aim is to progressively consolidate the ICP as one of the leading research institutions in vertebrate paleobiology at the international level, as well as the benchmark institution regarding the conservation of the paleontological heritage from Catalonia.

David M. Alba  
Director



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## PART 1

# OVERVIEW OF THE ICP

---

*Established as a CERCA center in 2006, the ICP is the heir of a longstanding tradition of vertebrate paleontology research in Catalonia. It owes its existence to several succeeding generations of paleobiologists devoted to decipher the intricacies of the history of life based on the extraordinary fossil record from Catalonia. Our mission is focused on research, conservation and dissemination of vertebrate and human paleontology at the highest international level.*

---



## INTRODUCTION

### *Research, conservation, and dissemination in vertebrate paleontology*

---

#### History

The Institut Català de Paleontologia Miquel Crusafont (ICP) is the heir of a longstanding tradition of vertebrate paleontology research in Catalonia. It owes its existence to several succeeding generations of paleontologists that have devoted their professional careers to decipher the intricacies of the history of life and the paleobiology of extinct organisms based on the extraordinary Catalan fossil record.

The ICP is the successor of the former Instituto Provincial de Paleontología de Sabadell (IPS), founded in 1969 under the auspices of the Diputació de Barcelona thanks to the efforts and charisma of paleontologist Miquel Crusafont—the ‘father’ of the Catalan school of vertebrate paleontology. After being renamed in his honor after Crusafont’s decease in 1983, and coinciding with the incorporation of a new generation of researchers, the Institut de Paleontologia M. Crusafont witnessed a couple of successful decades. Nonetheless, by the early 2000s it was in peril of becoming a local museum and its prospects were most uncertain.

The situation of the IPS was reverted in 2006, thanks to the refoundation of the ICP within the framework of the CERCA program (Research Centers of Catalonia) of the Generalitat de Catalunya. The last decade has been most successful in terms of research, but not exempt of problems due to the effects of global financial crisis since 2012, which have restrained the growth of the ICP and the implementation of several other aspects.

#### Mission

Our mission is focused on research, conservation and dissemination of vertebrate and human paleontology at the highest international level. We perform research based on the following premises:

- Fieldwork and collection-based research, focused on the extraordinarily rich fossil vertebrate record from Catalonia.
  - Adherence to a paleobiological approach that departs from the classical descriptive paleontology (oriented toward stratigraphy), and instead aims to test evolutionary and macroecological hypotheses within the framework of life sciences.
  - The use of modern visualization and analytical techniques (from CT to paleohistology).
  - The distinction of different research groups, each one with clear research aims and scope.
- Other important aspects of our mission include:
- The conservation of the paleontological heritage of Catalonia.

- The communication of the research results to the general public by means of scientific dissemination.
- The transfer of paleontological knowledge to the benefit of society as a whole by means of training and outreach activities, as well as the provision of services.

### Scientific view

Our view of paleontological research is based on the following premises:

- A modern approach to paleontological research must be grounded on the paleobiological approach, which envisions paleontology as deeply entrenched among life sciences.
- Among life sciences, paleobiology has a voice of its own by uniquely providing direct access to life in the past, thereby adding a deep-time perspective that is essential for testing hypotheses on a geological timescale.
- Paleobiology is not only an idiographic (descriptive) discipline that contributes to the progress in the knowledge of the history of life on Earth, but also a nomothetic discipline based on a rigorous and quantitative hypothesis-testing framework.
- Paleobiological research must be therefore guided by clear research aims and specific hypotheses to be tested.
- Vertebrates have the greatest potential among continental animals and therefore the study of their fossil record is most promising for investigating the evolution of terrestrial ecosystems in relation to paleoenvironmental changes through time.
- Although paleobiology is mostly devoted to basic (fundamental) research, it has important implications for other disciplines among life sciences, such as evolutionary biology, ecology and conservation (paleo)biology.
- Furthermore, paleobiological research is not devoid of applicability and has a great potential with regard to knowledge transfer related to cultural heritage.
- Finally, human origins and evolution need to be approached following the same scientific methods as that for any other group of animals, as regularly done in the subdisciplines of paleoprimatology and paleoanthropology.

### Foresight

Our midterm strategic foresight includes the following challenges:

- Perform high-impact paleobiological research at the international level.
- Promote the international visibility of the ICP as a worldwide renowned and benchmark center in vertebrate paleontology and paleoanthropology research.
- Contribute to the recuperation, conservation and dissemination of the paleontological heritage of Catalonia, including its valorization through research and the promotion of paleontological tourism based on it.
- Contribute to solving current societal challenges, with emphasis on the development of more efficient environmental policies to face climatic change, by means of providing data

on a geological timescale as well as by testing macroecological and evolutionary hypotheses.

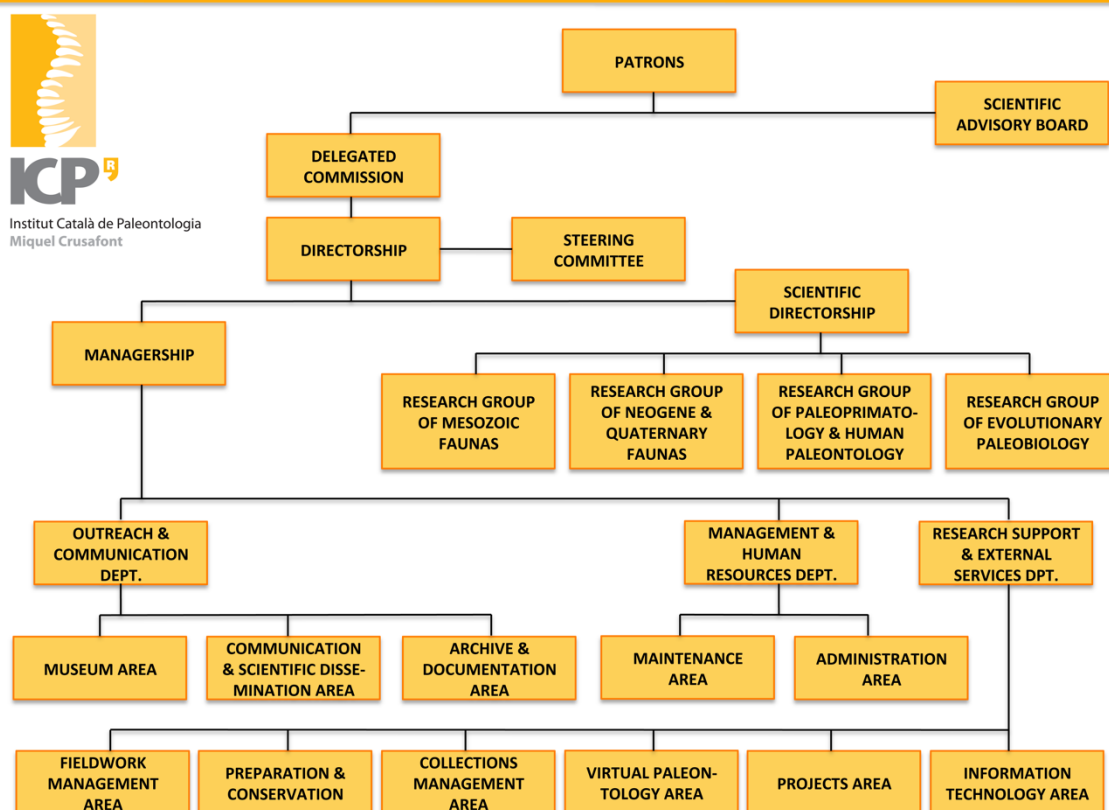
- Make paleontological knowledge and its evolutionary implications accessible to the society as a whole, by means of scientific dissemination, outreach, and training activities, with emphasis on humankind's origins and place in nature.
- Perform knowledge transfer activities by providing specialized paleontological services to research and educational institutions, public administrations, and private companies.

## ORGANIZATION

*Research groups, research support, communication and management*

### Organization chart

A new Organization Chart, proposed by the Director, was approved in late 2017, with the aim to facilitate the coordination between technical areas toward the attainment of common strategic goals.



### Committees and commissions

The ICP has several committees and commissions, aimed to boost the internal coordination as well as to promote the participation of the ICP staff in decision-making.

**Committees.** They are the following:

- **Steering Committee:** Involved in planning, organizational, foresight, strategic, decision-making and advisory functions.

- **Information Systems Security Committee:** Involved in guaranteeing the security of information systems, the safeguard of data, and the fulfillment of personal data protection laws.
- **HRS4R Implementation Committee & Working Group:** Involved in the implementation of the Human Resources Strategy for Researchers (HRS4R) of the European Union.
- **Non-Discrimination Committee:** Involved in the improvement and implementation of the Equality Plan.

**Commissions.** They are the following:

- **Researchers Commission:** Involved in providing advice to the Director, the Steering Committee, and other committees on HRS4R implementation and other aspects related to researchers.
- **Fieldwork Commission:** Internal coordination of resources for paleontological fieldwork performed and provision of external services to third parties.

**Coordination meetings.** In parallel to the meetings of the established committees and commissions, coordination meetings will take place on a quarterly basis, including the Director, the General Manager, the Heads of Research Groups, Departments and Areas, and the persons in charge of remaining Areas.

**Persons in charge.** Some staff members have specific functions in addition to those corresponding to their respective positions in the Organization Chart or in the committees and commissions:

- Person in charge of Information Systems Security.
- Ombudspersons.
- Person in charge of University Teaching Coordination.

## RESEARCH

### *Four research groups with definite aims and scope*

---

#### Scientific policy

**Main guiding principles.** The research performed at the ICP pivots on the following three main guiding principles:

- Collection- and fieldwork-based research focused on the study of fossils as the main source of raw data, with emphasis on the rich and varied vertebrate fossil record from Catalonia—especially for the Permo-Trias, the Late Cretaceous, the Eocene, the Miocene, and the Pleistocene—and with particular relevance of the paleoichnological record of the latest dinosaurs from Europe and the extraordinary record of Miocene apes.
- A paleobiological approach that clearly situates paleontology well within the framework of life sciences in general, and of evolutionary biology in particular, and which emphasizes a quantitative and nomothetic approach based on hypothesis testing—thereby far from the more classical descriptive approach to paleontology (largely oriented toward its stratigraphic implications).
- The application of modern techniques and methodological approaches to paleontological research, such as paleohistological analysis to infer the life-history of extinct organisms, computer-assisted imaging techniques that enable the non-invasive study of internal anatomy, or theoretical approaches to quantitatively analyze the dynamics of paleobiodiversity through time.

**Research groups.** The research performed at the ICP is organized around four research groups, which are coordinated and supervised by the Scientific Director. They are the following:

- Mesozoic Faunas (led by Dr. Àngel Galobart).
- Neogene and Quaternary Faunas (led by Dr. David M. Alba).
- Paleoprimatology & Human Paleontology (led by Dr. Salvador Moyà-Solà).
- Evolutionary Paleobiology (led by Dr. Meike Köhler).

Each group is led by the corresponding leader (research group head, which is a senior researcher, R4), and may include other (experienced) researchers (R3), and/or postdoctoral researchers (R2), predoctoral researchers (R1), as well as research associates, collaborators and technicians. However, most technicians are affiliated to a technical department instead of a research group. In turn, a few researchers are simultaneously or exclusively affiliated to the semitechnical Virtual Paleontology Area.

### **Mesozoic Faunas**

The research group in Mesozoic Faunas focuses on the paleobiodiversity and paleoecology of terrestrial ecosystems during the Mesozoic era (252–66 Ma), with emphasis on those time intervals best represented in the fossil record of Catalonia, which include the Permo-Trias and the latest Cretaceous. Both the Permian-Triassic and the Cretaceous-Tertiary boundaries reflect important mass extinction events that took place, respectively, at 252 Ma (end-Permian extinction or ‘Great Dying’) and 66 Ma (K-T extinction). These mass extinctions wiped out a large proportion of terrestrial vertebrates (including the disappearance of non-avian dinosaurs at the K-T extinction), and therefore the study of the associated paleoecological changes at the community level is of utmost relevance. To a large extent, the research performed by this group builds on the extraordinary fossil record from the Catalan Pyrenees of the latest dinosaurs from Europe and the associated fauna. Besides bony remains, the former also consists of an exceptional paleoichnological record (including eggs, tracks and even skin impressions), which overall provides a unique window to dinosaur paleobiology. Furthermore, the group takes a multidisciplinary approach that, besides paleontologists specializing in several groups and ichnological remains, also involves paleobotanists and geologists specializing in stratigraphy and paleomagnetism, in order to provide with accurate datings and paleoenvironmental reconstructions.

### **Neogene & Quaternary Faunas**

The research group of Neogene & Quaternary Faunas focuses on the paleobiodiversity of continental vertebrates of the Neogene (23.0–2.6 Ma) and Quaternary (2.6–0.0 Ma) periods, with emphasis on the rich Miocene and Pleistocene record from the Vallès-Penedès Basin. Besides investigating the evolutionary history of various vertebrate groups from a phylogenetic and paleobiological perspective (the latter including dietary, locomotor and cognitive adaptations), the group further takes a more holistic approach by focusing on the dynamics of paleobiodiversity in relation to global climate change and local paleoenvironmental indicators through time. In relation to the latter, both the Miocene and the Pleistocene record important faunal turnover events—such as the Vallesian Crisis and the Mid-Pleistocene Revolution, respectively. Therefore, the extraordinarily complete, abundantly sampled and accurately dated vertebrate record from these periods in the Vallès-Penedès Basin provides a unique opportunity to test evolutionary paleoecological hypotheses on the mechanisms and interactions between biotic and abiotic factors that drive the course of evolution on a geological timescale—with significant implications to predict the future and future viability of extant terrestrial ecosystems in the light of current global climate change.

### **Paleoprimatology & Human Paleontology**

From a chronological viewpoint, the scope of the research group in Paleoprimatology & Human Paleontology covers the entire evolutionary history of primates, i.e., the Paleogene (66–23 Ma), the Neogene (23.0–2.6 Ma) and the Quaternary (2.6–0.0 Ma)—even though three main lines of research can be distinguished: one based on the diverse record of Eocene primates from Catalonia; another one based on the exceptional record of Miocene catarrhines, especially apes; and a third one focused on the Plio-Pleistocene record of monkeys and humans. The group studies the paleobiodiversity and phylogenetic relationships of these groups, as well as their paleobiology (diet, locomotion, etc.). Associated faunas are also investigated to contextualize the primate finds from a paleoenvironmental and chronological viewpoint. Of particular relevance is the research focused on the evolution of hominoids—the group that includes lesser apes, great apes, and humans—with emphasis on the hotly debated phylogenetic and paleobiogeographic hypotheses on the origin and evolution of the great-ape-and-human clade, with further implications for deciphering the origin of gibbons, reconstructing the last common ancestor of apes and humans, and evaluating the importance of homoplasy in hominoid evolution.

### **Evolutionary Paleobiology**

The research group of Evolutionary Biology is not restricted to a particular time span, but rather focused on a single—but most important—topic, namely, the evolution of mammalian life-histories under changing ecological conditions. The group takes advantage of the unique deep-time perspective that only paleontology can provide to test hypotheses on the evolution of life-history strategies from the viewpoint of adaptation. To do so, this group takes a methodological approach that mostly relies on the paleohistological study of hard tissues (bone and teeth) of extinct mammals within the analytical framework provided by life history theory of biological evolution—which combines ecology, demography, physiology and adaptation, and further has significant implications for conservation biology (extinction) as well as evolutionary developmental biology (aging). By means of the study of skeletochronological markers and body mass estimation, the group can reconstruct the growth and developmental trajectories of extinct mammals and test the correlation of key life-history traits with environmental indicators, in order to test the evolutionary hypotheses of interest. Particularly relevant for this group is the study of the differential responses provided by large and small mammals to the peculiar ecological conditions provided by insular ecosystems, with emphasis on the study of extinct mammals from the fossil Mediterranean islands of the Mio-Pliocene.



## TECHNICAL DEPARTMENTS

*Three departments to make the institute and museum work*

---

### Departmental organization

We have three technical departments (Outreach & Communication, Management & Human Resources, and Research Support & External Services), each one directed by a Head of Department. They are supervised by and formally depend upon the General Manager. However, the Steering Committee (which includes the Director and the three Heads of Department) further contributes significantly to the coordination among these departments as well as between them and the various research groups. Each department includes several areas, which may have a Head of Area when an intermediate hierarchical level is required to coordinate the personnel included within.

### Outreach & Communication

This department has the aim to improve internal communication as well as to better coordinate external communication, scientific dissemination and outreach activities. It includes the following areas:

- Communication & Scientific Dissemination.
- Museum.
- Archive & Documentation Area.

### Management & Human Resources

This department has the aim to improve and give visibility to our human resources policies within the context of the implementation of HRS4R. It includes the following areas:

- Maintenance.
- Administration.

### Research Support & External Services

This department has the aim to boost remunerated external services provided to third parties, as well as to improve the coordination between the various areas involved in research support. It includes the following areas:

- Fieldwork Management.
- Preparation & Conservation.
- Collections Management.
- Virtual Paleontology.
- Projects.
- Information Technology.

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## PART 2

### ICP ACTIVITIES 2017

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*In 2017, the ICP has demonstrated again excellent levels of scientific production and productivity, while persisting in the recovery, conservation and dissemination of the paleontological heritage from Catalonia. Outreach and communication activities have pivoted around the ICP webpage and Museum; fundraising has emphasized the provision of fieldwork services; and managerial activities have consisted in devising human resources policies for researchers and the confection of a new Strategic Plan.*

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## RESEARCH OUTPUTS

### *High productivity and quality in scientific publications*

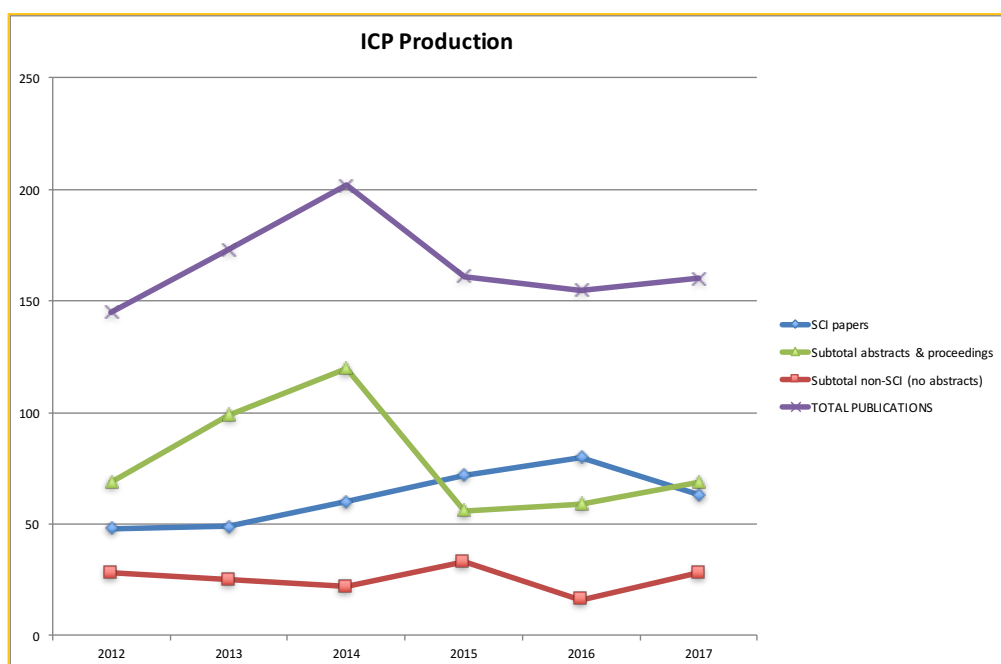
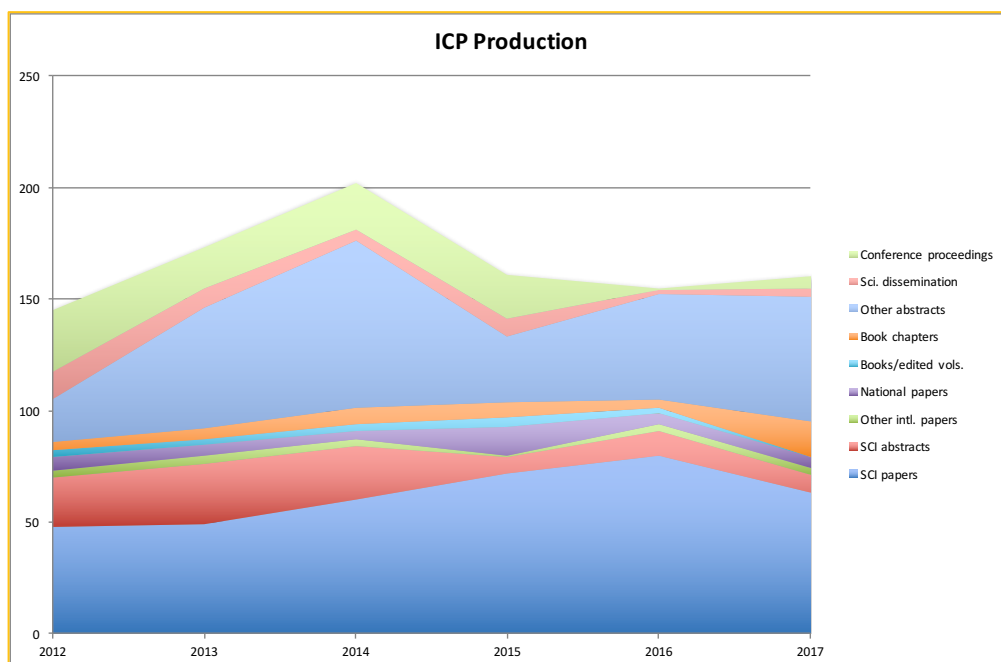
#### Publications

The publications of the ICP in 2017 are reported in the Appendix at the end of this document, being divided into the following categories (SCI refers to journals from the Science Citation Index, i.e., indexed by the Journal Citation Reports, JCR):

- SCI papers.
- SCI abstracts.
- Papers in other international journals.
- Papers in national journals.
- Books and edited volumes.
- Book chapters.
- Conference proceedings.
- Other abstracts.
- Scientific dissemination papers.

ICP PUBLICATIONS (2012–2016 vs. 2017)							
PUBLICATION CATEGORIES	2012	2013	2014	2015	2016	AVERAGE	2017
SCI papers	48	49	60	72	80	<b>61.8</b>	<b>63</b>
SCI abstracts	22	27	24	7	11	<b>18.2</b>	<b>8</b>
Papers in other international journals	3	4	3	1	3	<b>2.8</b>	<b>3</b>
Papers in national journals	6	5	4	13	5	<b>6.6</b>	<b>5</b>
Books and edited volumes	3	2	3	4	2	<b>2.8</b>	<b>0</b>
Book chapters	4	5	7	7	4	<b>5.4</b>	<b>16</b>
Conference proceedings	28	18	21	20	1	<b>17.6</b>	<b>5</b>
Other abstracts	19	54	75	29	47	<b>44.8</b>	<b>56</b>
Scientific dissemination papers	12	9	5	8	2	<b>7.2</b>	<b>4</b>
<b>TOTAL</b>	<b>145</b>	<b>173</b>	<b>202</b>	<b>161</b>	<b>155</b>	<b>167.2</b>	<b>160</b>

The number of total publications in 2017 (160) is slightly below the average for 2012–2016 (167), but the number of SCI papers for 2017 (63) is slightly higher than the average for the preceding five years (62), being lower than in 2015 and 2016, and most similar to that in 2014. When publications are grouped into three main categories (SCI papers, non-SCI papers, and abstracts/conference proceedings), there is a slight trend toward increasing SCI papers in detriment of non-SCI papers, as well as a marked peaked in abstracts/conference proceedings in 2014 that is further reflected in the total number of publications.



## Contributions to meetings

The number of published abstracts and conference proceedings is a good proxy for contributions to meetings. The number of abstracts/conference proceedings published in 2017 is slightly below the average for the five preceding years, being most comparable to that in 2012. In spite of the abrupt decrease in 2015, after reaching a peak in 2014, there is a slight increasing trend during the last two years.

In particular, in 2017 ICP researchers (and sporadically some technicians as well) coauthored up to 67 contributions to a total of 20 meetings, of which 62 (93%) in 15

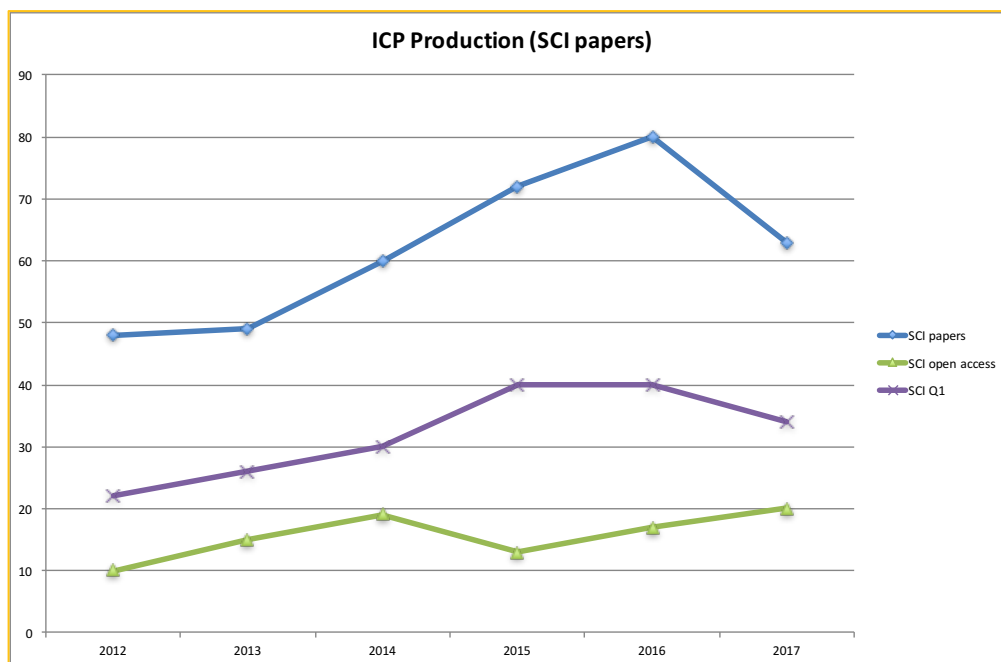
international meetings. Most outstanding is the presence of the ICP at the annual meeting of the European Association of Vertebrate Palaeontologists, with 30 different communications (including a keynote talk).

MEETING	CITY (COUNTRY)	COMMS.
15th Annual Meeting of the European Association of Vertebrate Palaeontologists	Munich (Germany)	30
86th Annual Meeting of the American Association of Physical Anthropologists	New Orleans (USA)	5
7th Annual Meeting of the European Society for the Study of Human Evolution	Leiden (The Netherlands)	4
Fourth International Symposium on Paleohistology	Trenton (USA)	4
XV Encuentro de Jóvenes Investigadores en Paleontología	Pombal (Portugal)	3
XVII Edizione delle Giornate di Paleontologia - Paleodays 2017	Anagni (Italy)	3
77th Annual Meeting Society of Vertebrate Paleontology	Calgary (Canada)	2
15th Congress of the Regional Committee on Mediterranean Neogene Stratigraphy	Athens (Greece)	2
Young Natural History Scientists Meeting	Paris (France)	2
XXII Bienal da Real Sociedad Española de Historia Natural	Coímbra (Portugal)	2
7th European Federation for Primatology Meeting	Strasbourg (France)	1
2nd International Meeting of Early-Stage Researchers in Palaeontology	Sigri, Lesvos (Greece)	1
8th Triennial Conference Secondary Adaptation of Tetrapods to Life in Water	Berlin (Germany)	1
European Geosciences Union General Assembly 2017	Vienna (Austria)	1
9th International Symposium of Integrative Zoology	Xining (China)	1
III Iberian Symposium on Geometric Morphometrics	Girona (Spain)	1
8ª Jornadas de Innovación Educativa de la Universidad de la Laguna	La Laguna, Tenerife (Spain)	1
XX Congreso de la Sociedad Española de Antropología Física	Barcelona (Spain)	1
III Jornadas de Prehistoria Africana	Tarragona (Spain)	1
V Trobada de Tècnics de Col·leccions de Ciències Naturals de Catalunya	Barcelona (Spain)	1

### Scientific production, productivity, and impact

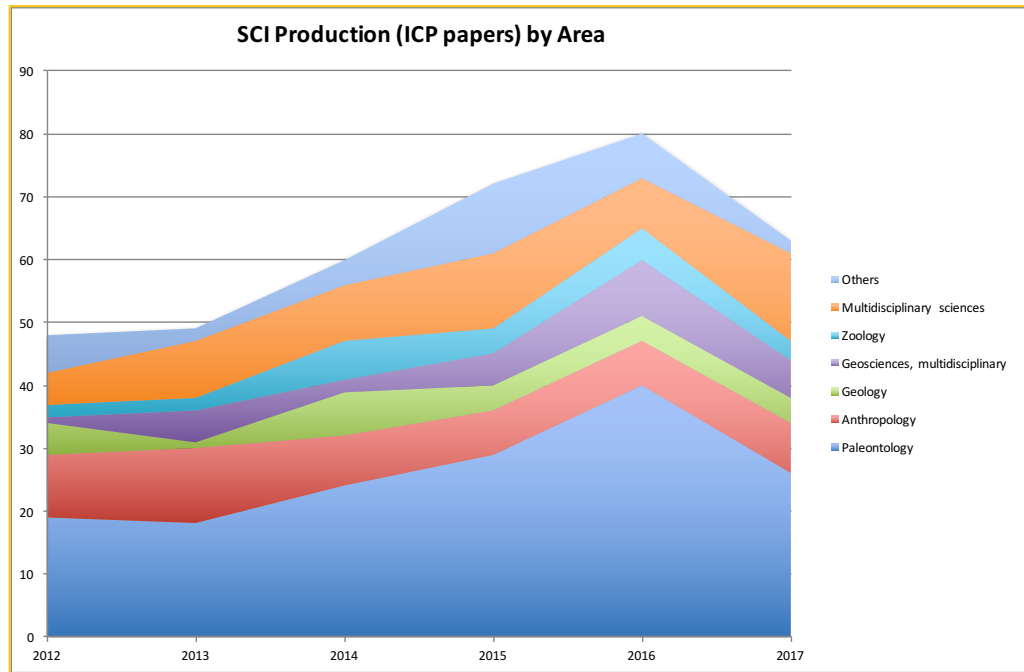
**Production.** The production of the ICP in terms of total SCI papers shows an increasing trend during the last years, with the figure for 2017, as stated above, being slightly higher than the average value for the preceding five years (although it is most similar to that in 2014, with a decrease since the peak reached in 2016). The production in terms of first quartile SCI papers follows a similar trend, whereas open access production is higher in 2017 than in any preceding year.

SCI PRODUCTION (2012–2016 vs. 2017)							
METRICS	2012	2013	2014	2015	2016	AVERAGE	2017
SCI	48	49	60	72	80	<b>61.8</b>	<b>63</b>
Q1	22	26	30	40	40	<b>31.6</b>	<b>34</b>
OA	10	15	19	13	17	<b>14.8</b>	<b>20</b>



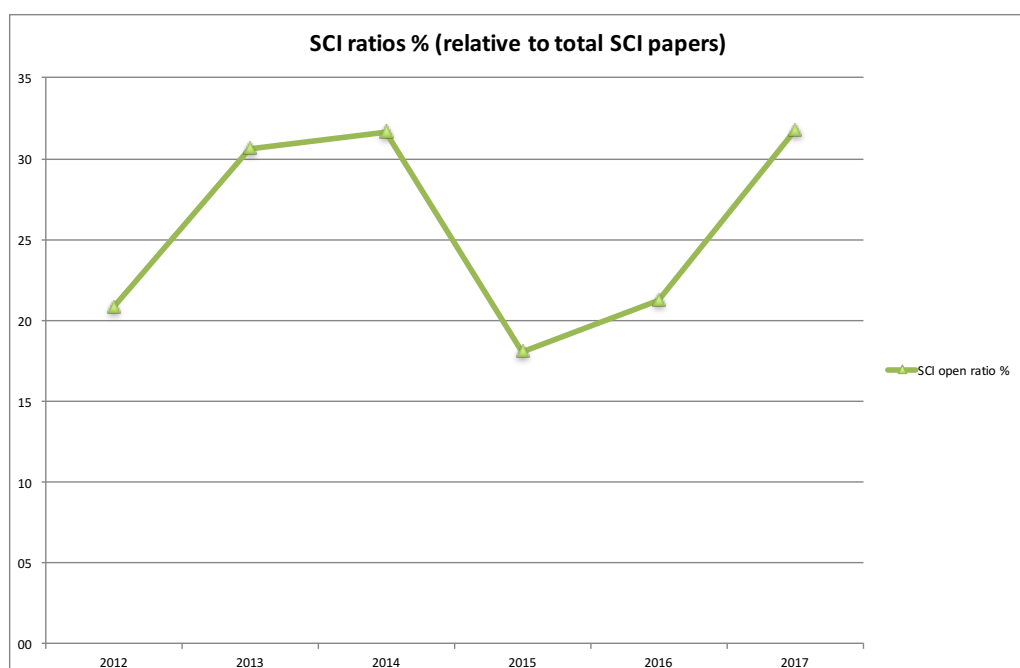
If SCI production is broken down by research areas of the JCR, it can be seen that a large proportion of ICP production corresponds to journals from the area of Paleontology (ca. 40%), followed by Multidisciplinary sciences, Anthropology, Geosciences multidisciplinary, Geology, and Zoology. The percentages for each category in 2017 are generally similar to the corresponding averages for the preceding five years, except for the category of Multidisciplinary sciences, which shows a considerable increase in 2017.

SCI PRODUCTION BY AREAS (2012–2016 vs. 2017)							
JCR AREAS	2012	2013	2014	2015	2016	AVERAGE	2017
Paleontology	19	18	24	29	40	<b>26.0</b>	<b>26</b>
Anthropology	10	12	8	7	7	<b>8.8</b>	<b>8</b>
Geology	5	1	7	4	4	<b>4.2</b>	<b>4</b>
Geosciences, multidisciplinary	1	5	2	5	9	<b>4.4</b>	<b>6</b>
Zoology	2	2	6	4	5	<b>3.8</b>	<b>3</b>
Multidisciplinary sciences	5	9	9	12	8	<b>8.6</b>	<b>14</b>
Others	6	2	4	11	7	<b>6.0</b>	<b>2</b>
%Paleontology	39.6	36.7	40.0	40.3	50.0	<b>42.1</b>	<b>41.3</b>
%Anthropology	20.8	24.5	13.3	9.7	8.8	<b>14.2</b>	<b>12.7</b>
%Geology	10.4	2.0	11.7	5.6	5.0	<b>6.8</b>	<b>6.3</b>
%Geosciences, multidisciplinary	2.1	10.2	3.3	6.9	11.3	<b>7.1</b>	<b>9.5</b>
%Zoology	4.2	4.1	10.0	5.6	6.3	<b>6.1</b>	<b>4.8</b>
%Multidisciplinary sciences	10.4	18.4	15.0	16.7	10.0	<b>13.9</b>	<b>22.2</b>
%Others	12.5	4.1	6.7	15.3	8.8	<b>9.7</b>	<b>3.2</b>



**Quality and impact.** If production is broken down by quartiles, it becomes obvious that most of ICP production in SCI journals is concentrated on the Q1 and, to a lesser extent, the Q2, whereas articles published in Q3 and Q4 journals are a minority.

SCI PRODUCTION BY QUARTILES (2012–2016 vs. 2017)							
QUARTILE	2012	2013	2014	2015	2016	AVERAGE	2017
Q1	22	26	30	40	40	31.6	34
Q2	12	19	19	17	32	19.8	25
Q3	11	2	9	11	7	8.0	3
Q4	3	2	2	4	1	2.4	1



As for the open access ratio, current values are well above the average for the five preceding years, although only slightly higher than those already reached in 2013 and 2014.

OPEN ACCESS (2012–2016 vs. 2017)							
METRICS	2012	2013	2014	2015	2016	AVERAGE	2017
OA ratio	20.8	30.6	31.7	18.1	21.3	<b>23.9</b>	<b>31.8</b>

## PhD Dissertations

Two PhD dissertations by ICP researchers were finished in 2017 (these should not be mistaken with the theses supervised by ICP researchers, which further include other dissertations performed by PhD candidates from other institutions; see the relevant subsection on supervision later in this document):

- **Alejandro Blanco:** Title: “Vertebrate microfossil diversity from the Tremp Formation (Maastrichtian): Contributions to evolution of the Late Cretaceous terrestrial ecosystems from the northeastern Iberian Peninsula” | Supervisors: J. Marmi (ICP), À. Galobart (ICP), O. Oms (UAB).
- **Novella Razzolini:** Title “Morphological variation and ichnotaxonomy of dinosaur tracks: linking footprint shapes to substrate and trackmaker's anatomy and locomotion” | Supervisors: À. Galobart (ICP), B. Vila (ICP).

## Fieldwork

Paleontological fieldwork constitutes an essential component of the research performed by ICP researchers, given that fossils constitute the basic raw data for our research. Even if fieldwork results are not immediately reflected in ICP publications, this activity further results in the corresponding field reports and memoirs that are supplied to the Archeological and Paleontological Survey of the Culture Department of the Generalitat de Catalunya.

The following programmed paleontological interventions were performed in 2017 under the direction of ICP researchers, research associates, technicians and/or collaborators, being partially funded by the various active fieldwork grants from the Culture Department of the Generalitat de Catalunya for the quadrennium 2014–2017:

- **Creu de Conill:** Excavation, sampling, prospection, and surveillance | Municipality: Terrassa | Age: late Miocene | Directors: S. Almécija and S. Moyà-Solà.
- **Pedrerà Maria Teresa (la Gornal):** Prospection and sampling | Municipality: Castellet i la Gornal | Age: middle Miocene | Director: I. Casanovas-Vilar.
- **Hostalets-Masquefa:** Prospection | Municipalities: els Hostalets de Pierola and Masquefa | Age: middle/late Miocene | Directors: S. Moyà-Solà, J. Galindo, and À.H. Luján.
- **Can Poncic:** Prospection | Municipality: Sant Quirze del Vallès | Age: late Miocene | Directors: D.M. Alba and S. Almécija.
- **Sant Mamet:** Sampling | Municipality: Sant Cugat del Vallès | Age: early Miocene | Director: I. Casanovas-Vilar.



- **Móra d'Ebre-Camposines:** Excavation | Municipality: Móra d'Ebre | Age: Middle Triassic | Directors: J. Cartanyà, A. Bolet, J. Fortuny.
- **Surroundings of els Casots:** Prospection | Municipality: Subirats | Age: early Miocene | Director: I. Casanovas-Vilar.
- **Moià area:** Prospection and sampling | Municipalities: Sant Boi de Lluçanès, Sobremunt, Sant Bertomeu del Grau, Oristà, Santa Maria d'Oló, Collsuspina, l'Estany, and Moià | Age: late Eocene-early Oligocene | Directors: R. Minwer-Barakat, and J. Marigó.
- **Santpedor area:** Prospection and sampling | Municipalities: Fonollosa, Santpedor, Castellnou de Bages, Sallent, Navarcles, El Pont de Vilomara, Rocafort, Sant Fruitós del Bages, Sant Joan de Vilatorrada, Rajadell, Aguilar de Segarra, Callús, Sant Mateu del Bages, and Sant Pere Sallavinera | Age: late Eocene-early Oligocene | Directors: R. Minwer-Barakat, and J. Marigó.
- **Cretaceous sites from el Pallars Jussà and la Noguera:** Prospection | Municipalities: Sant Esteve de la Sarga, Tremp, Isona i Conca Dellà, and Camarasa | Age: Late Cretaceous | Directors: À. Galobart, A.G. Sellés, and B. Vila.
- **Els Nerets:** Excavation | Municipality: Tremp | Age: Late Cretaceous | Directors: À. Galobart, A.G. Sellés, and B. Vila.
- **Orcau:** Excavation | Municipality: Isona i Conca Dellà | Age: Late Cretaceous | Directors: À. Galobart, A.G. Sellés, and B. Vila.
- **Planta del Mestre:** Excavation | Municipality: Abella de la Conca | Age: Late Cretaceous | Directors: À. Galobart, A.G. Sellés, and B. Vila.

## FUNDRAISING

### Inspiration and innovation when seeking financial support

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#### Competitive funds and provision of services

The ICP operating budget (i.e., excluding investments) includes the basal budget endowed by the Generalitat de Catalunya as well as the monetary income obtained by the ICP from other sources. The latter can be divided into several categories, such as competitive funds and revenues generated by the provision of external services.

#### Competitive funding sources

**Ministerio de Economía, Industria y Competitividad.** Most of the competitive funds for research at the ICP come from MINECO's Agencia Estatal de Investigación, by means of multiannual R+D projects that are financed with funds from the European Regional Development Fund. They are the following.

- “El registro fósil de primates de la Península Ibérica durante el Cenozoico: paleobiología, biocronología y contexto paleoambiental” (CGL2014-54373-P) | P.I.: S. Moyà-Solà, R. Minwer-Barakat | Duration: 2015–2017.
- “Evolución del ciclo vital de los mamíferos en ecosistemas ibéricos continentales del Mioceno al Pleistoceno” (CGL2015-63777-P) | P.I.: M. Köhler | Duration: 2016–2018.
- “Ecological web models for the last dinosaurs of Europe” (CGL2016-77230-P) | P.I.: À. Galobart | Duration: 2017–2019.
- “Dinámica de la paleobiodiversidad de las faunas de vertebrados fósiles del Vallès-Penedès y comparación con otras cuencas miocenas” (CGL2016-76431-P) | P.I.: D.M. Alba | Duration: 2017–2020.

Besides research funds, it is also remarkable another collective project funded by MINECO in the framework of the FECYT program and devoted to outreach activities:

- “Documental “El último gigante de Europa”” (FCT-16-10864) | P.I.: P. Figuerola | Duration: 2017.

Finally, research at the ICP is also funded by MINECO by means of cofunded contracts for postdoc (‘Ramón y Cajal’ and ‘Juan de la Cierva’) and predoc (FPI) researchers as well as technicians (PTA). The following were active in 2017:

- Gemma Prats (PTA2013-8762-I) | Modality: PTA technician | Duration: 2014–2017 (3 years).
- Xènia Aymerich (PTA2014-09366-I) | Modality: PTA technician | Duration: 2015–2018 (3 years).

- Guillem Pons-Monjo (PTA2015-10789-I) | Modality: PTA technician | Duration: 2016–2019 (3 years).
- Marina Rull (PTA2015-10417-I) | Modality: PTA technician | Duration: 2017–2020 (3 years).
- Carmen Nacarino (BES-2013-066335) | Modality: FPI predoc | Duration: 2014–2017 (4 years).
- Alessandro Urciuoli (BES-2015-071318) | Modality: FPI predoc | Duration: 2015–2018 (4 years).
- Teresa Calderón (BES-2016-078938) | Modality: FPI predoc | Duration: 2016–2020 (4 years).
- Judit Marigó (IJCI-2015-26392) | Modality: JdC postdoc | Duration: 2016–2018 (2 years).
- Isaac Casanovas-Vilar (RYC-2013-12470) | Modality: RyC researcher | Duration: 2014–2019 (5 years).
- Albert Prieto-Márquez (RYC-2015-17388) | Modality: RyC researcher | Duration: 2017–2022 (5 years).

**Generalitat de Catalunya.** Most of the competitive funding provided by the Generalitat de Catalunya in 2017 comes from various fieldwork grants from the Department of Culture, active from 2014 to 2017. They are the following:

- “Canvis climàtics i faunístics al Miocè inferior de Catalunya” (2014/100584) | P.I.: I. Casanovas-Vilar | Duration: 2014–2017.
- “Dinàmica de poblacions i impacte dels canvis climàtics en les associacions de grans mamífers del Pleistocè inferior i mitjà de Catalunya” (2014/100589) | P.I.: J. Madurell-Malapeira | Duration: 2014–2017.
- “Estudi dels primats i faunes associades del Paleogen de Catalunya” (2014/100604) | P.I.: R. Minwer-Barakat | Duration: 2014–2017.
- “Evolució dels ecosistemes amb faunes de vertebrats del Permià i el Triàsic de Catalunya” (2014/100606) | P.I.: J. Fortuny | Duration: 2014–2017.
- “Els primats fòssils del Miocè de la conca del Vallès-Penedès” (2014/100609) | P.I.: D.M. Alba | Duration: 2014–2017.
- “Dinàmica ecològica de la darrera extinció en massa: el Pirineu com a laboratori fòssil” (2014/100927) | P.I.: À. Galobart | Duration: 2014–2017.

Also remarkable are the annual grants provided by the Culture Department of the Catalan Government to the ICP in relation to the management of the Conca Dellà Museum or the ICP collections:

- “Gestió mancomunada del Museu de la Conca Dellà i de l’Espai Dinosfera” (CLT923/17/00016) | Duration: 2017.
- “Proposta d’actuacions programades per a la realització de l’inventari, catalogació i digitalització de la col·lecció de l’ICP” (CLT052/17/00004) | Duration: 2017.

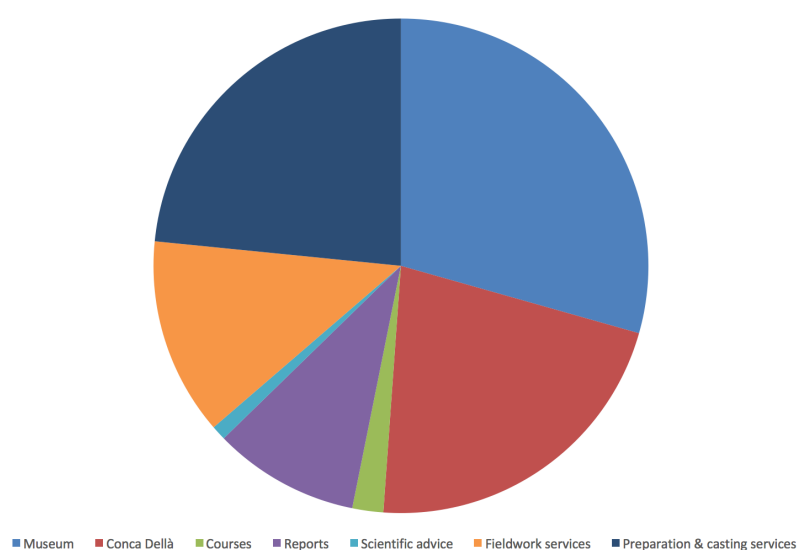
Finally, research at the ICP is also funded by the Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR) of the Department of Business and Knowledge (Generalitat de Catalunya) by means of a series of predoctoral grants:

- Víctor Vinuesa (2015FI\_B00088) | Modality: FI predoc | Duration: 2015–2018 (3 years).
- Guillem Orlandi (2016 FI\_B00202) | Modality: FI predoc | Duration: 2016–2019 (3 years).
- Sílvia Jovells-Vaqué (2017 FI\_B 00054) | Modality: FI predoc | Duration: 2017–2020 (3 years).

### Provision of services

Approximately half of the income from the provision of services in 2017 is associated with outreach activities, either those of our own Museum in Sabadell (29%, including tickets, museum shop, guided visits/workshops, and other outreach activities) or those related to the Conca Dellà Museum in Isona and Diosfera in Coll de Nargó (22%, including both management and personnel). The remaining income must be considered external services in a strict sense, mainly corresponding to preparation and casting services (23%), fieldwork services (13%), and reports (12%).

Provision of Services (€) 2017



## RESEARCH SUPPORT AND KNOWLEDGE TRANSFER

### *Multiple areas with vocation of service*

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#### Research support

The paleontological services provided by various areas of the Research Support & External Services Department are fundamental for accomplishment of the research aims of the research groups of the ICP. Furthermore, as evidenced in the previous section, the Conservation & Preparation Area and the Fieldwork Management Area are very important from the viewpoint of knowledge transfer as well, by means of the provision of external services. Knowledge transfer activities, however, are not restricted to external services that result in monetary revenues, since they further include a series of other activities that are mostly related to training. Below, the activities restricted to research support and reported first, and subsequently we focus on knowledge transfer activities divided into two main categories: training and paleontological services.

**Conservation and preparation.** During 2017, the preparator technicians of the Preparation & Conservation Area have prepared more than 1250 fossil remains in the framework of the support provided to ICP researchers. The prepared fossils mostly come from the following sites:

- Grotte de la Carrière.
- Creu de Conill.
- Masquefa.
- Clariana (la Gornal).
- Vallparadís Estació.
- Els Casots.
- Abocador de Can Mata.
- Can Poncic and Can Pallars i Llobateres.

Other research support actions performed by our preparators include molding, casting, large-sized rigid packaging, special packaging for transport/shipping, as well as the writing of conservation reports.

**Collection management.** During 2017, 7,739 new catalog numbers have been registered into the inventory of the ICP collections, of which 3,776 have been included in Museum Plus (the museographic software used by Catalan Museums). A total of 83 petitions to study materials from the ICP collections have been attended by the Collections Management Area of

the ICP, of which 51 internal and 22 external. Finally, 21 loans of original material and/or casts have been done for exhibits organized by other institutions, of which two are from abroad.

**Fieldwork.** The programmed paleontological excavations directed by ICP researchers in the framework of research projects have been already reported in a previous section and need not be repeated here. However, it is noteworthy that several of these interventions have been performed with the aid of the human resources of the Fieldwork Management area, including its head, the fieldwork officer, and two field technicians.

**Virtual paleontology.** In 2017, ICP researchers from several research groups benefited from the assistance of a specialized technician from the 3D Virtual Lab of the Virtual Paleontology Area concerning the processing of 3D virtual reconstructions based on CT and photogrammetry data. Most of the time devoted by the 3D Virtual Lab to research support was related to the segmentation of craniodental remains of both extant and fossil vertebrates (reptiles and mammals), although part of the time was also devoted to photogrammetry, performing CT scans in other institutions, repositioning 3D models for reconstructing fossil specimens, and preparing material for publications (e.g., videos of 3D reconstructions).

### **Paleontological services**

The paleontological services provided by the ICP consist in putting the scientificotechnical know-how of both researchers and technicians of the ICP at the service of external third parties (either public entities or private companies) and obtaining in return pecuniary revenues that contribute to the total operating budget of the ICP. These paleontological services are quite varied, but generally resemble the internal research support services that are regularly provided by ICP technical areas to the research groups.

The performance and processing of CT scans, including both fossils for other paleontological research institutions and mechanical pieces for the industry, is most promising with regard to the provision of services. Unfortunately, the industrial CT scan of the ICP is currently broken and requires a high amount of money to be fixed. Nevertheless, in 2017 the ICP managed to increase the amount of external services provided.

**Preparation services.** During 2017, the Preparation & Conservation Area of the ICP has prepared more than 200 fossils in the framework of the provision of services to private companies and other entities. They come from the following sites:

- Autovia Orbital de Barcelona (B40).
- Can Roqueta 2.

**Fieldwork services.** The following rescue paleontological interventions were performed in 2017 under the direction of the ICP in the framework of the specialized remunerated services provided by the ICP to both private companies and administrations:

- **Abocador de Can Mata:** Excavation, sampling, prospection, and surveillance | Municipality: els Hostalets de Pierola | Director: J.M. Robles.
- **Pàrquing Carreras:** Excavation, sampling, prospection, and surveillance | Municipality: Masquefa | Age: middle/late Miocene | Age: late Miocene? | Director: A. Bolet.
- **Roques Blanques:** Excavation, sampling, and surveillance | Municipality: el Papiol | Age: early Miocene | Director: J.M. Robles.
- **Coll de Guils:** Consolidation, restoration, and conditioning | Municipality: Montferrer i Castellbó | Age: Triassic | Director: E. Muià.

**Virtual paleontology services.** The performance and processing of CT scans, including both fossils for other paleontological research institutions and mechanical pieces for the industry, are most promising with regard to the paleontological services that the ICP can offer. Unfortunately, the fact that the industrial CT scan of the ICP is currently broken—and that it requires a high amount of money to be fixed—has considerably diminished the potential of this kind of external services in 2017. Nevertheless, during 2017 the Virtual Paleontology Area provided services in the form of CT scan segmentation to a publisher in the framework of a science popularizing publication.

## Training

Knowledge transfer activities at the ICP are to a large extent related to academic teaching and supervision, to a large extent (but not exclusively) within the framework of the university.

**Scientific courses.** From the viewpoint of training, it is noteworthy the ongoing collaboration of the ICP with the private company Transmitting Science (TS), which organizes scientific courses in the framework of life sciences that have a large proportion of international attendees. By means of an ongoing agreement that was renewed in 2017, the ICP participated as coorganizer in 23 different courses instructed by TS, with a total attendance of 290 alumni. Some of these courses were coorganized exclusively by TS and the ICP, being normally performed at the ICP Museum in Sabadell, whereas others were coorganized at other locations and with additional partners—particularly, with the Centre de Restauració i Interpretació Paleontològica (CRIP) in els Hostalets de Pierola. Overall, these courses were taught by 37 different instructors, mostly foreign, but also including a researcher and a technician of the ICP.

In 2017, the Conservation & Preparation Area of the ICP further coorganized a course about the conservation of natural history collections:

- “Curs d’Introducció a la Conservació de Col·leccions d’Història Natural”, organized by the Institut Català de Paleontologia Miquel Crusafont and the Museu de Ciències Naturals de Barcelona, with the collaboration of the Escola Superior de Conservació i Restauració de Béns Culturals de Catalunya. Barcelona/Sabadell, June 2017.

COURSES COORGANIZED WITH TRANSMITTING SCIENCE (2017)			
COURSE TITLE	VENUE	DATE	ORGANIZERS
Técnicas de Análisis de Imagen: Tratamiento y Cuantificación de la Imagen Digital (6 <sup>th</sup> ed.)	Sabadell	16-20 January	TS, ICP
Geometric Morphometrics in R (3 <sup>rd</sup> ed.)	Piera	23-27 January	TS, Aj. Piera, ICP
Introduction to Genomic Data Analysis Using HapMap and 1000 Genomes Projects (6 <sup>th</sup> ed.)	Sabadell	13-17 February	TS, ICP
Phylogenetic Analysis Using R (4 <sup>th</sup> ed.)	Hostalets	6-10 March	TS, CRIP, ICP
Introduction to Ecological Niche Modelling (1 <sup>st</sup> ed.)	Hostalets	27-31 March	TS, CRIP, ICP
Introduction to R (1 <sup>st</sup> ed.)	Hostalets	22-26 May	TS, CRIP, ICP
Introduction to Geometric Morphometrics (9 <sup>th</sup> ed.)	Hostalets	29 May-2 June	TS, CRIP, ICP
Mapping Trait Evolution (1 <sup>st</sup> ed.)	Hostalets	5-9 June	TS, CRIP, ICP
Introduction to Phylogenetic Inference and its Applications (1 <sup>st</sup> ed.)	Hostalets	26-30 June	TS, CRIP, ICP
Introduction to 3D Imaging Technologies: Photogrammetry, Laser, CT-scan and (μ)CT-scan for Life Sciences (2 <sup>nd</sup> ed.)	Sabadell	26 June-2 July	TS, ICP
Finite Element Analysis Applied to Life Sciences (5 <sup>th</sup> ed.)	Sabadell	3-8 July	TS, ICP
Técnicas Avanzadas de Microscopía de Fluorescencia y Confocal (1 <sup>st</sup> ed.)	UAB	10-14 July	TS, ICP
Introducción a las Técnicas de Microscopía: Óptica y Electrónica	UAB	17-21 July	TS, ICP
R without Fear: Applied R for Biologists (3 <sup>rd</sup> ed.)	Sabadell	4-8 September	TS, ICP
Geometric Morphometrics and Phylogeny (8 <sup>th</sup> ed.)	Hostalets	11-15 September	TS, CRIP, ICP
Introduction to Agent Based-Models Using NetLogo (4 <sup>th</sup> ed.)	Hostalets	18-22 September	TS, CRIP, ICP
Introduction to Network Analysis in Life Sciences (4 <sup>th</sup> ed.)	Hostalets	18-22 September	TS, CRIP, ICP
2 Interactive Data Analysis and Visualization with R Shiny	Hostalets	25-29 September	TS, CRIP, ICP
Introduction to Macroevolutionary Analyses Using Phylogenies (5 <sup>th</sup> ed.)	Hostalets	16-20 October	TS, CRIP, ICP
Integral Projection Models: Demography in a Continuous World (2 <sup>nd</sup> ed.)	Hostalets	6-10 November	TS, CRIP, ICP
The Art of Science: Scientific Illustration (1 <sup>st</sup> ed.)	Sabadell	20-24 November	TS, ICP
3D Geometric Morphometrics (7 <sup>th</sup> ed.)	Hostalets	11-15 December	TS, CRIP, ICP
Model-based Statistical Inference in Ecological and Evolutionary Biogeography (2 <sup>nd</sup> ed.)	Hostalets	11-15 December	TS, CRIP, ICP

**University teaching.** The ICP is a university research institute of the UAB by virtue of an agreement signed in 2013 and subsequently ratified by the Generalitat de Catalunya in 2014, which contemplate the possibility that ICP researchers that are involved in master teaching automatically become teaching collaborators. Punctual agreements have been also established with regard to master teaching with the UB.

In 2017, ICP researchers and technicians participated in the following three different official master degrees:



- **Master in Paleobiology and Fossil Record (UAB/UB):** academic course 2017–2018.
- **Master in Biological Anthropology (UB/UAB):** academic courses 2016–2017 and 2017–2018.
- **Master in Cultural Heritage Management and Museology (UB):** academic courses 2016–2017 and 2017–2018.

It is noteworthy that the Master in Paleobiology and Fossil Record (coorganized by the ICP, the UAB and UB) was resumed in academic year 2017–2018. This master is the successor of the former Master in Paleontology, in which the ICP participated since its start in 2007, until it was temporarily suspended in 2015 to be remodeled. The ICP played a prominent role in the remodeling of the master, and its teaching contribution represents as much as 35% (21/60) of the total ECTS credits (equating 146 teaching hours, the supervision of master theses excluded), by virtue of an agreement signed with the UAB and the UB in 2016. More than twenty ICP researchers and research associates participate as instructors in the master.

**Supervision.** As in previous years, in 2017 the experienced researchers from the ICP were regularly involved in the training of early career researchers and undergraduate students. In the case of young researchers, training takes the form of supervision of the research performed by either dependent postdoctoral students (e.g., ‘Juan de la Cierva’), PhD candidates, or master students. In turn, the training of undergraduate students is usually accomplished by means of practicums performed by the students at the ICP under the guidance of an ICP researcher/technicians or by through the supervision of bachelor theses. It is noteworthy that practicums are not restricted to research in a strict sense, but are also performed by research support technicians (especially preparators). The Volunteering Program of the ICP is also relevant with regard to training, in the sense that it allows not only university students, but also people outside academia to collaborate not only in research, but also research support and outreach activities performed at the ICP.

The supervisory efforts by ICP researchers can be measured on the basis of the number of finished master theses and PhD dissertations that have been (co)supervised by them. In 2017, no finished master theses were supervised, given that the paleontology master was resumed in September 2017 and master theses will not be presented until 2018. In contrast, up to five finished PhD dissertations were (co)supervised by ICP researchers and research associates (À. Galobart, J. Marmi, J. Fortuny, B. Vila, I.M. Sánchez)—a figure that is higher than the average for the five preceding years.

Up to twenty different PhD dissertations under way in 2017 were (co)supervised by ICP experienced researchers (S. Moyà-Solà, M. Köhler, À. Galobart, D.M. Alba, I. Casanovas-Vilar, J. Madurell-Malapeira, J. Fortuny) and research associates (E. Delson, S. Almécija, M. Delfino, R. Minwer-Barakat, Daniel DeMiguel, J. Abella, A. Bolet, E. Muijal). Seven of these dissertations were performed by current or former ICP predoc researchers (Joan Femenias-Gual, Carmen Nacarino-Meneses, Guillem Orlandi-Oliveras, Víctor Vinuesa, Teresa Calderón, Alessandro Urciuoli, and Sílvia Jovells-Vaqué).

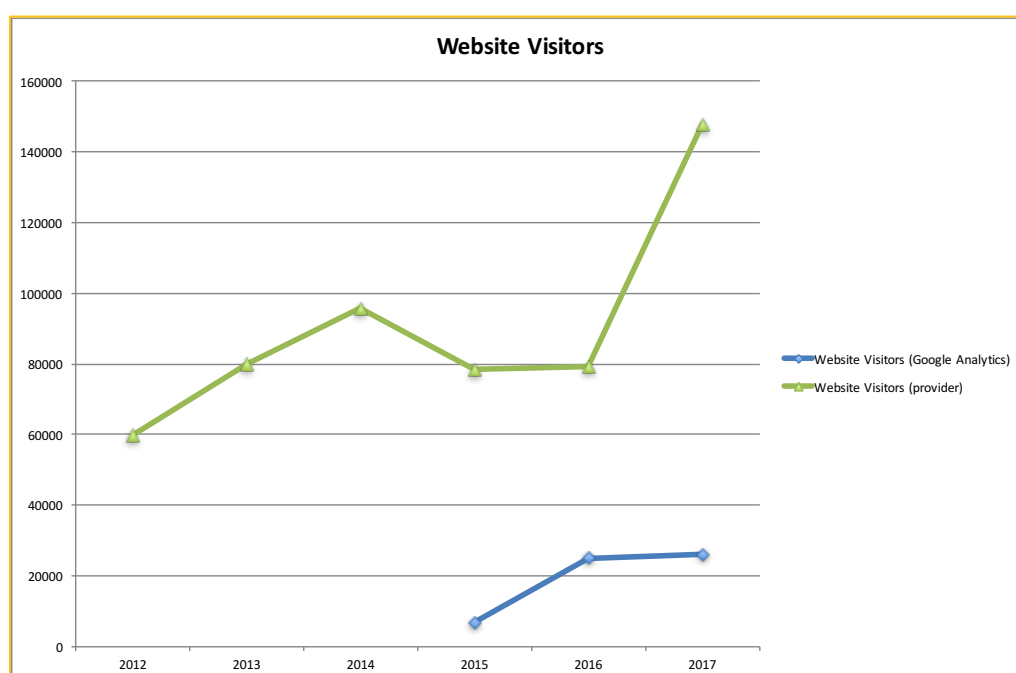
## OUTREACH AND COMMUNICATION

### Disseminating to the general public the knowledge hidden in fossils

#### Website

The ICP website (<http://www.icp.cat>) constitutes an essential tool to disseminate the work performed at the ICP to the general public, with particular emphasis on transmitting the knowledge that derives from the research performed by ICP researchers and research associates, but further including the most significant actions of knowledge transfer as well as scientific dissemination and outreach, among other relevant news.

**Website visitors.** There are two different data sources to monitor the annual number of visitors of the ICP website visitors: those made available by the web service provider (data available since 2009); and those recorded by Google Analytics (data available since late 2015). The data from the ICP web service provider are included in this report, in order to compare the figure for 2017 with those of the preceding five years. However, the marked increased experienced in 2017 does not hold upon a close scrutiny, since the high number of visiting Ips correspond to foreign countries such as Russia, with all probability artifactually reflecting the action of Internet bots. The data provided by Google Analytics are more reliable, and indicate that the number of visitors to the ICP webpage in 2017 only displayed a very slight increased as compared with that of 2016 (ca. 25,000 visitors).



**Web news.** The ICP website has a section devoted to paleontological news, which are regularly posted and subsequently disseminated through the ICP social networks. The news posted by the ICP can be divided into four main categories depending on their content:

- **Research:** devoted to ICP publications, fieldwork, stays abroad and visiting researchers.
- **Dissemination and outreach:** related to scientific dissemination, outreach activities, museum exhibits, and other issues related to the ICP Museum.
- **Knowledge transfer:** mostly related to scientific courses and master teaching.
- **Others:** any other news related to the ICP (e.g., inauguration of the new building, appointment of the new director, etc.).

The total number of news posted in 2017 (35) is similar to that in 2016 (34).

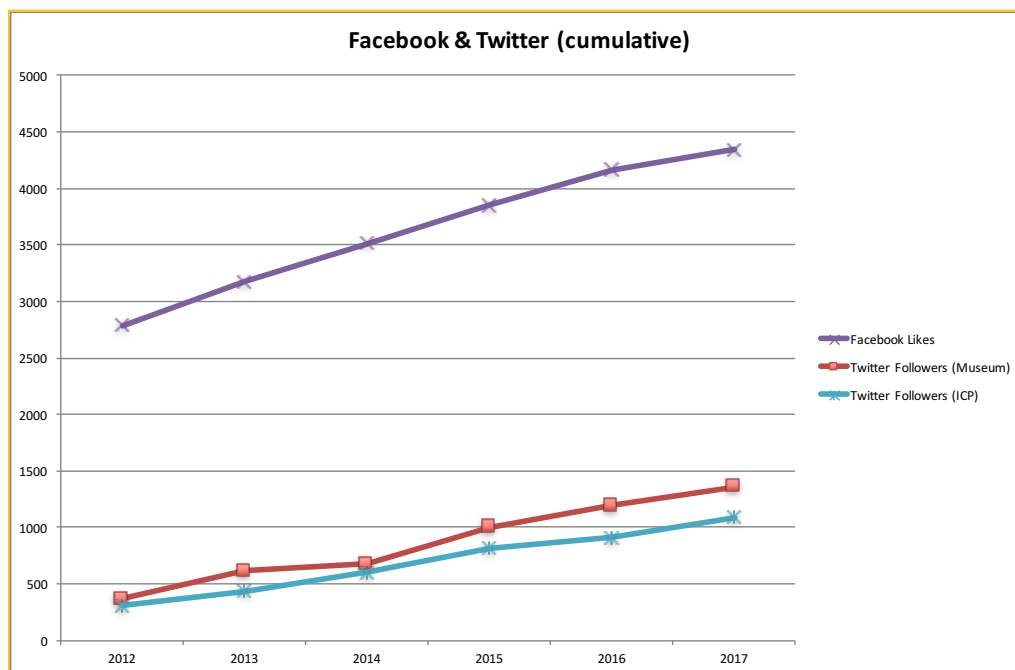
ICP WEB NEWS (2017)			
DATE	TITLE (CATALAN VERSION)	LANGUAGE	CATEGORY
10/1/17	Més de 4.500 registres nous a la col·lecció de l'ICP	CAT	Other
10/1/17	David M. Alba nomenat nou editor en cap del JHE	CAT ES EN	Other
18/1/17	Una finestra per observar 25 milions d'anys de la fauna d'Euràsia	CAT ES EN	Research
23/1/17	El rastre dels dinosaures, objecte d'una tesi doctoral a l'ICP	CAT ES	Research
14/2/17	Es presenta una tesi sobre petits i mitjans vertebrats del Cretaci de la Formació Tremp	CAT ES	Research
13/3/17	Les grans extincions del passat als Cafès Científics	CAT	Diss. & Outreach
17/3/17	En Pau i en Jordi reben visites internacionals a l'ICP	CAT ES EN	Research
23/3/17	Dues noves seus del Campus d'Arqueologia i Paleontologia de la UAB a Lleida	CAT ES	Diss. & Outreach
19/4/17	Descobreixen petjades d'una espècie desconeguda de rèptil que va viure fa 247 milions d'anys	CAT ES EN	Research
27/4/17	David M. Alba, nou director de l'ICP	CAT ES EN	Other
16/5/17	Tot punt pel Dia Internacional i la Nit dels Museus a Sabadell	CAT	Diss. & Outreach
17/5/17	En Jordi, la Laia i en Pau: tres hominoïdeus del Miocè a CosmoCaixa	CAT ES	Diss. & Outreach
30/5/17	Bona acollida de l'itinerari geològic i paleontològic pel Riu Ripoll	CAT ES	Diss. & Outreach
12/6/17	A la recerca dels llangardaixos amagats de l'Eocè i Oligocè	CAT ES	Research
14/6/17	Un mar de fòssils al Museu de l'ICP	CAT ES	Diss. & Outreach
14/6/17	L'ICP participarà en un documental sobre els dinosaures dels Pirineus	CAT ES	Diss. & Outreach
28/6/17	Campanya de mostratge al jaciment de Sant Mamet de Sant Cugat del Vallès	CAT ES	Research
29/6/17	Un estiu entre els dinosaures dels Pirineus	CAT ES	Diss. & Outreach
18/7/17	Rere el rastre de dinosaures carnívors en una autopista suïssa	CAT ES EN	Research
24/7/17	El Museu de l'ICP renova el segell SICTED de qualitat turística	CAT ES	Diss. & Outreach
25/7/17	La paleontologia catalana a l'Espai Patrimoni del Palau Moja	CAT ES	Diss. & Outreach
27/7/17	L'ICP participa en la descripció de la fauna del jaciment murcià de Puerto de la Cadena	CAT ES EN	Research
28/7/17	L'ICP presenta 30 treballs a l'EAVP 2017	CAT ES	Research
4/9/17	Obituari - Josep Vicent Santafé (1934-2017), paleontòleg	CAT	Other
19/9/17	Gairebé 3.000 persones visiten el Museu de la Conca Dellà i Dinosfera durant l'estiu	CAT	Diss. & Outreach
22/9/17	Comunicat de les universitats i dels centres de recerca de Catalunya	CAT	Other
27/9/17	Arrenca el nou màster universitari en Paleobiologia i Registre Fòssil	CAT ES	Knowledge transfer

18/10/17	Cercant pistes sobre l'origen dels cérvols en la seva oïda interna	CAT ES EN	Research
23/10/17	L'estrès va afectar la reproducció dels últims titanosaures d'Europa	CAT ES EN	Research
31/10/17	Quan Madrid era una sabana	CAT ES	Research
2/11/17	Descriuen una nova espècie giràfid que ajuda a entendre l'evolució de les girafes gegants de quatre "banyes"	CAT ES	Research
8/11/17	L'exposició "Dinosaures de Catalunya. Un segle de descobertes" arriba al Museu de l'ICP	CAT ES	Diss. & Outreach
23/11/17	TV3 emet el documental "L'últim gegant d'Europa" sobre els dinosaures dels Pirineus	CAT	Diss. & Outreach
28/11/17	L'ICP lliura a la família Crusafont documents personals de l'arxiu del paleontòleg sabadellenc	CAT ES	Diss. & Outreach

## Social networks

The ICP has a Facebook fan page and two Twitter accounts (one for the ICP as a whole, and the other for the ICP Museum), which can be monitored on the basis of 'likes' and followers, respectively. All these metrics have progressively increased since 2012 to 2017. The number of new followers of the ICP Twitter is comparable to the average of the preceding five years, which nevertheless is quite variable from one year to another.

SOCIAL NETWORKS (2012–2016 vs. 2017)							
LIKES OR FOLLOWERS	2012	2013	2014	2015	2016	AVERAGE	2017
Facebook Likes (new)	433	389	336	343	314	<b>363</b>	<b>175</b>
Twitter Followers – Museum (new)	370	246	62	323	189	<b>238</b>	<b>170</b>
Twitter Followers – ICP (new)	304	133	166	215	92	<b>182</b>	<b>179</b>
Facebook Likes (cumulative)	2786	3175	3511	3854	4168	—	<b>4343</b>
Twitter Followers – Museum (cumulative)	370	616	678	1001	1190	—	<b>1360</b>
Twitter Followers – ICP (cumulative)	304	437	603	818	910	—	<b>1089</b>



## Press releases

The Scientific Dissemination and Communication Area of the ICP regularly issues press releases to highlight the most important news related to the ICP, with emphasis on new research outputs, but further including dissemination activities and other noticeable events. A total of eleven press releases were issued by the ICP in 2017.

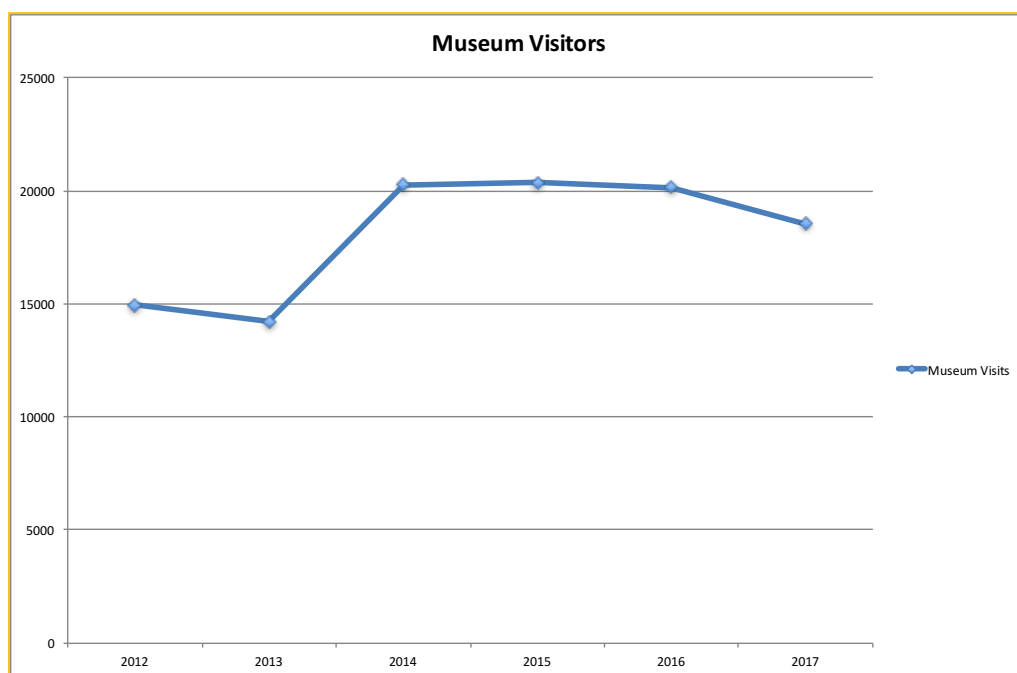
PRESS RELEASES (2017)	
TITLE	DATE
Dues noves seus del Campus d'Arqueologia i Paleontologia de la UAB a Lleida	23 March
Descobreixen petjades d'una espècie desconeguda de rèptil que va viure fa 247 milions d'anys	19 April
En Jordi, la Laia i en Pau: tres hominoïdeus del Miocè a CosmoCaixa	17 May
Un mar de fòssils al Museu de l'ICP	14 June
Rere el rastre de dinosaures carnívors en una autopista suïssa	18 July
L'ICP participa en la descripció de la fauna del jaciment murcià de Puerto de la Cadena	27 July
Obituari - Josep Vicent Santafé (1934-2017), paleontòleg	4 September
Gairebé 3.000 persones visiten el Museu de la Conca Dellà i Dinosfera durant l'estiu	19 September
Cercant pistes sobre l'origen dels cérvols en la seva oïda interna	18 October
L'estrès va afectar la reproducció dels últims titanosaures d'Europa	23 October
Descriuen una nova espècie de giràfid que ajuda a entendre l'evolució de les girafes gegants de quatre "banyes"	2 November

## Museum visitors

The ICP Museum in Sabadell, besides being an indispensable requirement for the research performed at the ICP, is also a very powerful tool from the viewpoint of scientific dissemination and outreach when transmitting paleontological knowledge to a general public. The activity of the ICP Museum can be monitored by means of the number of annual visitors, which include individual visitors and, to a greater extent, organized groups (including schools and families) that attend guided visits and/or various workshops that are organized regularly throughout the year with the aid of external monitors. The museum also offers a wide range of workshops related to paleontology for schoolchildren.

The number of visitors in 2017 is slightly below that of the three previous years, but still higher than the average of the preceding five years.

MUSEUM (2012–2016 vs. 2017)							
MUSEUM VISITORS	2012	2013	2014	2015	2016	AVERAGE	2017
Visitors	14,963	14,200	20,278	20,376	20,160	17995.4	18,560



### Museum activities

The most significant outreached activities of the ICP Museum during 2017 are summarized below.

**Permanent exhibit.** The permanent exhibit, entitled ‘Today you investigate’, is intended to explain to the general public how the various research groups of the ICP perform their research. The exhibit has not been remodeled since 2010, although during the last years it has been enriched with several additional elements and, periodically, also with temporary exhibits.

**Temporary exhibits.** Through 2017, the temporary exhibit “El Triceratops torna a Sabadell”, inaugurated in 2015, has been maintained at the first floor of the exhibit at the ICP Museum. This exhibit pivots around the cast of a *Triceratops* skeleton that was exhibited at the former Institut de Paleontologia M. Crusafont since 1986 until 2009, when the permanent exhibit of the ICP was remodeled. The need to exhibit again this skeleton responded to the requests by many ICP visitors, for which the *Triceratops* had become an icon of paleontology in Sabadell.

In June-September 2017, the ICP Museum hold a temporary exhibit entitled “Un mar de fòssils”, which displayed 17 fossil invertebrate specimens representative of marine environments from different geological periods. The fossils were loaned to the ICP by CosmoCaixa, and the exhibit also had the collaboration of Fundació Antiga Caixa de Sabadell 1859 and high-school students from Institut Bitàcola (Barberà del Vallès), who participated in the museography.

**Guided visits and workshops.** A total of 12 different workshops are offered to the school community. A total of 239 sessions of these workshops, with 5,861 participant schoolchildren,

were performed in 2017. Furthermore, 26 family workshop sessions were performed, with a total of 555 participants. Finally eight guided visits were organized in 2017, with up to 155 attending people.

**Night at the Museum.** The “Nit al Museu” is one of the most successful outreach activities performed at the ICP Museum in Sabadell. Kids between 6 and 13 years old stay at the Museum during the night, in the company of a researcher and the scientific illustrator of the ICP, and perform different activities related to paleontology. Six editions of this activity took place in 2017, with a total of 120 participants.

**Literary contest.** As in previous years, the ICP Museum organized a literary contest focused on short stories. This year’s edition was entitled “Històries fòssils” and focused on *Pliobates* as the main theme. The contest was divided into three different participant categories: children (7-11 years old), youngsters (12-17 years old) and adults (>18 years old). The deadline was close on 26 February 2017, and the prizes given on 21 April 2017.

**Open Days.** Coinciding with the Week Science (see below), Carnival and the festivity of la Salut, during November 2017 the ICP celebrated several Open Days. Besides, admittance to the Museum is free the first Sunday of every-month.

### **Outreach activities outside the Museum**

**Presence in the mass media.** The most significant action performed in 2017 with regard to the presence in the mass media was the participation of researchers from the Mesozoic Faunas research group in a documentary about dinosaur finds from the Catalan Pyrenees entitled “The last giant of Europe”). This documentary, which was broadcasted by TV3 on 27 November, was possible thanks to FECYT funds from MINECO raised by the Outreach & Communication Department of the ICP.

Another relevant action of scientific dissemination in relation to the mass media was the collaboration with Ràdio Sabadell. During most of 2017, this collaboration consisted in the elaboration of weekly ‘capsules’ of 3-5 min, produced by the Scientific Dissemination & Communication Area in collaboration with ICP researchers and technicians. These ‘capsules’ were broadcasted in section “Batecs” and further distributed online. A total of 23 capsules were broadcasted during the first half of 2017. The new ICP Director was also interviewed in Ràdio Sabadell on 25 May in program “Desperta Sabadell” from Ràdio Sabadell. This gave rise to a new collaboration, consisting in monthly interviews to the ICP Director, with the aim to disseminate paleontological knowledge to the general public beginning in October 2017.

Some of the press releases issued by the ICP during 2017 caught the attention of the main Spanish and Catalan media (e.g., the newspapers El Mundo or La Vanguardia).

**International Day and Night of Museums.** As in previous years, the ICP participated, together with the city council of Sabadell and other museums from the city, in the 'International Day and Night of Museums in Sabadell'. A total of 3,200 people visited on 18-20 May the various museums and museographic spaces that coordinate this initiative, which includes activities for family audiences throughout the day as well as cultural proposals for adult audiences during the night.

**Science Cafés.** As in previous years, in 2017 the ICP coorganized with other entities from Sabadell the series of talks entitled "Cafès Científics". These scientific dissemination talks are intended to promote the contact between the scientific community and the general public, with the ultimate aim to boost the debate about scientific topics among the society. In 2017, ICP paleontologist Marc Furió gave a talk entitled "Les grans extincions del passat" on 21 March, with an attendance of 55 people.

**Science Week.** The 22<sup>nd</sup> edition of the "Setmana de la Ciència", organized by the Fundació Catalana per a la Recerca i la Innovació, took place between 10 and 19 November. The ICP took part in this initiative, by organizing a guided visit to the ICTA-ICP on 14 November. The visit was guided by the head of the Communication & Outreach Department, and included access to the storerooms and laboratories of the ICP, as well as chats with some of its researchers. A total of 20 people attended. Moreover, during those days the admittance to the ICP Museum was free.

**Magnet Program.** For several years, the ICP has been collaborating in the "Magnet Program. Alliances for educational success", promoted by the Jaume Bofill Foundation in collaboration with the Catalan Government and the Institut de Ciències de l'Educació of the UAB. This innovative educational program intends to valorize educational centers that require special attention to prevent discrimination by means of implementing projects in collaboration with cultural and scientific benchmark institutions. By virtue of this program, which aims to favor the development in the educational centers involved of innovative and attractive educational projects of reference in their territory, the ICP has been involved in outreach activities with kids and teachers from Escola Samuntada in Sabadell. The collaboration between the ICP and Escola Samuntada started in academic course 2013-2014, with the aim to promote an innovative educational project with paleontology as its cornerstone. The project came to an end in July 2017, with very satisfactory results.

**Other outreach activities.** Other relevant outreach activities performed by the Communication & Outreach Department of the ICP include the following:

- Social network actions within the framework of the "Dia del Restaurador" celebration on 27 January.



- Participation in the Saló de l'Ensenyament within the stand of CERCA, with an activity entitled "Taller de preparació de fòssils i pintat de rèpliques", on 23 March.
- Organization of an excursion to the Ripoll River, in collaboration with the Unió Excursionista de Sabadell, to discover the geology and paleontology of the area. The visit was guided by ICP technician Manel Llenas, with an attendance of 15 people, on 27 May.
- Organization of the workshop entitled "Casos pràctics de comunicació des d'un centre de recerca", within the framework of Campus Gutenberg, organized by the Barcelona School of Management (Universitat Pompeu Fabra) on 18 September.

### Outreach activities throughout Catalonia

Outreach activities of the ICP are considerably further extended in territorial scope by means of agreements with other museums and interpretation centers. The most significant ones during 2017 are summarized below.

**Dinosaurs from the Pyrenees.** Since 2015, there is a collaboration agreement between the ICP and the city councils of Isona i Conca Dellà and Coll de Nargó, by virtue of which the ICP assumed a leading role in the management of the Conca Dellà Museum and the associated exhibit Dinosfera in Coll de Nargó. This activity has been developed since then within the framework of 'Dinosaurs of the Pyrenees' project led by the ICP and thanks to the financial support of the Culture Department of the Catalan Government. This project focuses on the research, conservation, study and dissemination of dinosaur fossil remains from the Catalan Pre-Pyrenees (el Berguedà, l'Alt Urgell, el Pallars Jussà and la Noguera), and is directed by Dr. Àngel Galobart, head of the Mesozoic Faunas research group of the ICP and also the Director of the Conca Dellà Museum. Two postdoc researchers of this research group are also involved in the project, and the head of the Outreach & Communication Department of ICP is the responsible to manage the communication of the 'Dinosaurs of the Pyrenees' project (including the website and social networks).

The results of the above-mentioned collaboration, in the framework of the 'Dinosaurs of the Pyrenees' project, are very satisfactory from the viewpoint of increasing the territorial scope of outreach activities performed by the ICP. Such activities were designed in 2015 and 2016, being directed to a school and family public, and performed with the participation of local companies and monitors. Up to 13,131 people visited the Conca Dellà Museum (5,937) and Dinosfera exhibit (7,194) in 2017 (including normal tickets, guided visits, and school visits). Additionally, 4,791 people visited touring exhibits or participated in other activities organized by the Conca Dellà Museum (3,469) or Dinosfera (1,132).

The main paleontological outreach activities performed in 2017 in the framework of the aforementioned project are reported below:

- Guided visits to the sites from Isona i Conca Dellà and Coll de Nargó.
- Guided visit to the dinosaur neck from Orcau.
- Visit to the preparation tasks of dinosaur remains at Dinosfera.

- Popularizing talks.
- Nights at the museum.
- International Geoparc fieldwork camp.
- Paleontological summer course (Geoparc-Universitat de Lleida).

**CosmoCaixa (Barcelona).** CosmoCaixa from Obra Social “la Caixa” in Barcelona has a number of visitors several orders of magnitude higher than the ICP Museum in Sabadell. Therefore, collaborative agreements with CosmoCaixa not only extend the territorial scope of the ICP, but further amplify to a great extent the outreach capacity that the ICP would have on its own. The most significant initiative in this regard was the temporary exhibit (18 May to 7 September) of the original partial skeletons of the Miocene apes *Pliobates* (‘Laia’), *Pierolapithecus* (‘Pau’) and *Hispanopithecus* (‘Jordi’), together with their sculptoric recreations. The inauguration of the exhibit coincided with the International Day of Museums (see above).

Other collaborations with CosmoCaixa included the confection of some panels about Catalan dinosaurs to accompany CosmoCaixa’s temporary exhibit “Trix, the world’s best preserved *Tyrannosaurus rex*”, inaugurated on 28 October. Researchers from the Mesozoic Faunas group also helped in the training of the monitors that performed the guided visits to the exhibit.

**Palau Moja (Barcelona).** On 25 July, a showcase with casts of several emblematic fossils from Catalonia, whose originals are housed at the ICP, was inaugurated in the ‘Heritage Space of Palau Moja’ in Barcelona. The fossils displayed include the skulls of the Miocene apes *Pliobates* and *Pierolapithecus* and the false sabertooth *Albanosmilus*, from Abocador de Can Mata; an archosaur footprint, from Olesa de Montserrat; and a titanosaur egg, from Fumanya. Located in a very touristic setting (les Rambles de Barcelona), The Heritage Space of Palau Moja is managed was inaugurated by the Agència Catalana del Patrimoni Cultural (Culture Department, Generalitat de Catalunya) in 2016 with the aim to promote the cultural heritage from Catalonia among the citizens and visitors of the city alike. The casts loaned by the ICP will be on display until the end of June 2018.

**CRIP (els Hostalets de Pierola).** In 2017, the ICP loaned several fossils to be exhibited at the Centre d’Interpretació i Restauració Paleontològica (CRIP) in els Hostalets de Pierola. Conversations with the people in charge of this interpretation center were further resumed in 2017, with the aim to more intensively collaborate in years to come.

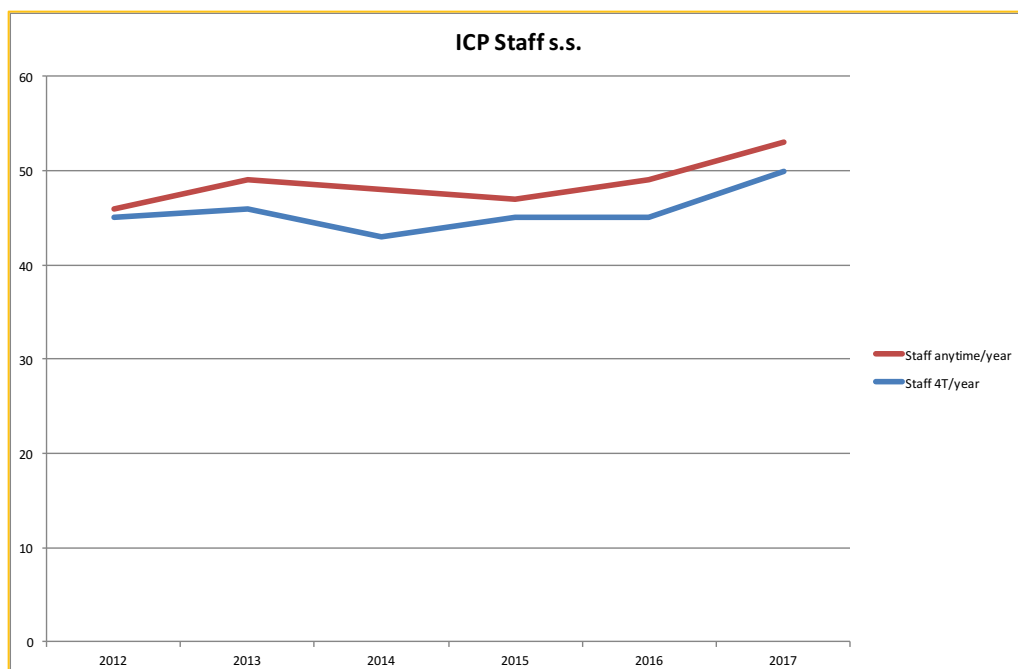
## HUMAN RESOURCES

*Aiming for excellence in the human resources policies for researchers*

### The staff personnel

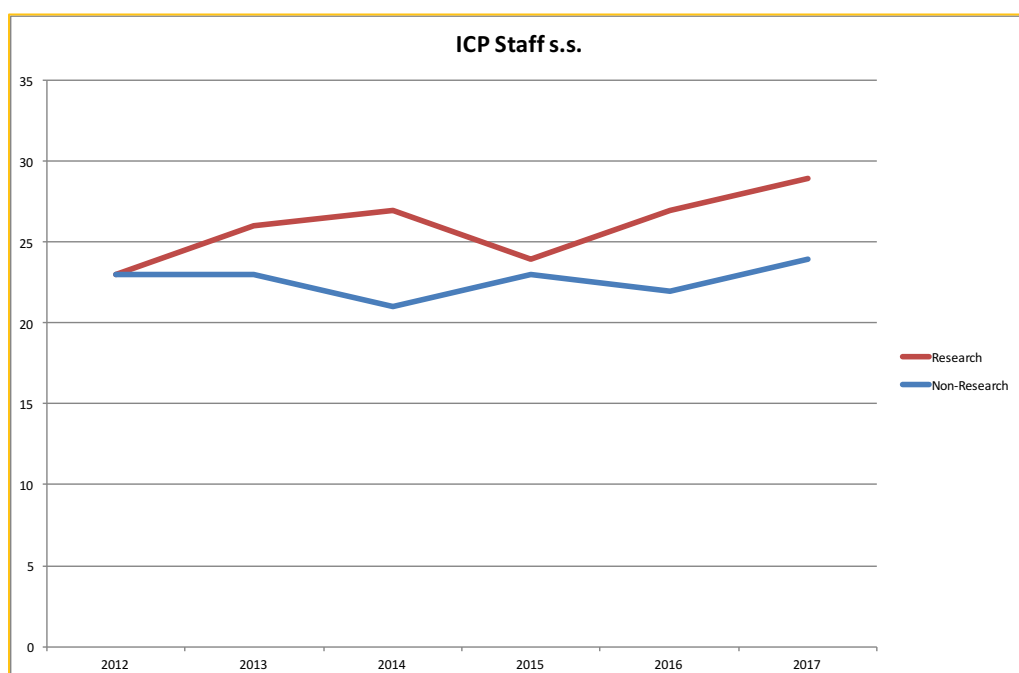
**Staff composition.** The composition of the staff personnel of the ICP (i.e., people with a contractual relationship with or formally ascribed to the ICP, thereby excluding research associates, collaborators, and people hired occasionally as freelance) is variably through time. Irrespective of how it is computed, the number of staff members has remained rather constant between 40 and 50 during the last years, which the exception of 2017, which is not only above the average values for the five preceding years, but further represents the highest figures attained in the history of the institution. The same applies to research and non-research staff alike.

STAFF (2012–2016 vs. 2017)							
STAFF COMPOSITION	2012	2013	2014	2015	2016	AVERAGE	2017
Total staff members (total year)	46	49	48	47	49	<b>47.8</b>	<b>53</b>
Total staff members (4T)	45	46	43	45	45	<b>44.8</b>	<b>50</b>



**Research staff.** Even more relevant than the total number of ICP staff personnel is the proportion between research and non-research staff. With some fluctuations, this proportion has been maintained above 50% during the last years, with the figure for 2017 being slightly higher than the average for the preceding five years.

RESEARCH STAFF (2012–2016 vs. 2017)							
STAFF COMPOSITION	2012	2013	2014	2015	2016	AVERAGE	2017
Research staff members	23	26	27	24	27	<b>25.4</b>	<b>29</b>
Non-Research staff members	23	23	21	23	22	<b>22.4</b>	<b>24</b>
% Research/Total	50.0	53.1	56.3	51.1	55.1	<b>53.1</b>	<b>54.7</b>



**New Organization Chart.** As explained earlier in this document, a new Organization Chart was introduced in late 2017, being immediately publicized to the ICP personnel by means of a specific document that further includes the ICP professional categories ([http://www.icp.cat/attachments/transparencia/Organigrama\\_ICP\\_2017.pdf](http://www.icp.cat/attachments/transparencia/Organigrama_ICP_2017.pdf)).

From an organizational viewpoint, the modifications introduced to the new ICP Organization Chart were mainly intended to add a new hierarchical level—between the Director and the General Manager, on the one hand, and the former Heads of Department (now converted into Areas), on the other—with the main aim to facilitate the coordination between the various ICP technical Areas when pursuing common goals related to the ICP strategic aims.

Furthermore, the former Virtual Paleontology Research Group was converted into an area within the larger Research Support & External Services Department, because this group lacked enough critical mass and was to a larger extent devoted to research support and external

services—thereby contrasting with the remaining research groups, which are exclusively focused on research.

### Continuous training

Two main different opportunities to continuous training were offered for free to ICP employees, research associates, and collaborators: language courses (defrayed with funds available from the Spanish Social Security); and scientificotechnical courses (thanks to an agreement with the company Transmitting Science).

**Language courses.** The language courses offered by the ICP to its personnel and their corresponding attendance are reported below. These courses were held at the facilities of the ICP at the ICTA-ICP building within the UAB university campus.

- German: 6 attendees.
- English (upper level): 4 attendees.
- English (intermediate level): 5 attendees.
- Catalan: 2 attendees.

**Scientificotechnical courses.** The researchers, research associates and technicians of the ICP have the opportunity to attend for free the scientific courses coorganized with Transmitting Science. In 2017, a total of 8 ICP employees or research associates attended up to six different courses:

- “Técnicas de Análisis de Imagen: Tratamiento y Cuantificación de la Imagen Digital”. Sabadell, 16-20 January 2017. 1 ICP attendee.
- “Introduction to R”. 22-26 May 2017. 3 ICP attendees.
- “Finite Element Analysis Applied to Life Sciences”. 3-8 Juny 2017. 1 ICP attendee.
- “R without Fear: Applied R for Biologists”. 4-8 September 2017. 2 ICP attendees.
- “Geometric Morphometrics and Phylogeny”. 11-15 September 2017. 1 ICP attendee.
- “Introduction to the Art of Science: Scientific Illustration”. 20-24 November 2017. 1 ICP attendee.

In turn, technicians from the Conservation & Preparation Area attended the following training activities:

- “Jornada sobre Avenços en la Conservació i Restauració del Patrimoni”, organized by the Escola Superior de Conservació i Restauració de Béns Culturals de Catalunya (ESCRBCC). Barcelona, 29 March 2017.
- “V Trobada de Tècnics de Col·leccions de Ciències naturals de Catalunya: Museus, col·leccions i recerca”, organized by the Institut de Ciències del Mar (ICM). Barcelona, 25 October 2017.
- “XV Reunió Tècnica de Conservació i Restauració: Sistemes i materials per al muntatge, exhibició i emmagatzematge de béns patrimonials”, organized by Conservadors i

Restauradors Associats de Catalunya (CRAC) with the collaboration of Museu d'Art Contemporani de Barcelona (MACBA). Barcelona, 27-28 November 2017.

### Gap Analysis

The ICP endorsed the general principles and requirements of the 'European Charter for Researchers' and the 'Code of Conduct for the Recruitment of Researchers' of the Human Resources Strategy for Researchers (HRS4R) of the European Union in December 2016.

During 2017, with the aim to implement this policy at the ICP, the HRS4R Implementation Committee and Working Group, with advice from the Researchers Commission, performed a 'Gap Analysis' to evaluate the current degree of implementation of the forty principles included in the Charter and Code. The final version of the Gap Analysis was approved by the aforementioned organs as well as by the Steering Committee, and submitted to the European Commission in November 2017.

### OTM-R evaluation

Having an Open, Transparent and Merit-based Recruitment (OTM-R) policy is a key element in HRS4R strategy, in order to ensure that the best possible person for a given job is recruited for a new or a vacant position. Therefore, in the framework of the aforementioned Gap Analysis, the HRS4R Implementation Committee & Working Group also performed an internal evaluation of the researcher recruitment policy of the ICP with regard to an OTM-R system.

**Future actions of OTM-R implementation.** Measures to improve recruitment strategy have been included in the HRS4R Action Plan and will be implemented in the following years by using the toolkit of the "Open, Transparent and Merit-based Recruitment of Researchers" (OTM-R) Package of the European Union as a guide to elaborate two important documents:

- "ICP Strategy for the Professional Development of Researchers": It will establish a definite strategy for the professional development of researchers at the ICP.
- "ICP Protocol for the Evaluation, Internal Promotion and Recruitment of Researchers and Technicians": It will regulate the principles that must rule the recruitment of new researchers as well as the career progression of ICP researchers (i.e., internal promotion).

### HRS4R Action Plan

The Action Plan devised by the HRS4R Implementation Committee & Working Group was submitted to the European Commission in November 2017 along with the corresponding Gap Analysis. It includes 25 specific actions intended to attain a complete implementation of the forty principles included in the Charter & Code.

The HRS4R Action Plan of the ICP is available online from the following URL: [http://www.icp.cat/attachments/transparencia/HRS4R\\_ICP\\_Action\\_Plan.pdf](http://www.icp.cat/attachments/transparencia/HRS4R_ICP_Action_Plan.pdf). Its implementation already began in late 2017, with the approval of the new Organization Chart,

although most of the Action Plan initiatives are expected to be implemented during 2018–2019. The process will be overseen by the HRS4R Implementation Committee & Working Group, and further supervised by the Steering Committee, with the aid of other committees and commissions of the ICP (particularly, the Researchers Commission).

## STRATEGIC MANAGEMENT

### A new Strategic Plan for 2018–2021

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#### SWOT Analysis

A SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis of the ICP was performed by the Director in late 2017 in the framework of the elaboration of a new Strategic Plan. The SWOT analysis was aimed to detect the opportunities and threats that the ICP currently faces or will face in the near future, as well as to identify the strengths upon which the ICP will have to rely and the weaknesses that must be overcome to successfully attain its strategic goals.

Overall, these results are positive and indicate that the ICP is generally performing well, being a solid institution that is making good use of available opportunities, but with several strengths and serious threats. There is still room for improvement, and even though strengths are more important than weaknesses, the institution is not powerful enough to plan growing further on the midterm. Instead, efforts should focus on maintaining the most important current ‘assets’ of the ICP, by trying to take advantage of some opportunities but leaving others unexplored due to excessive risk or lack of resources.

#### Strategic Plan

Based on the aforementioned SWOT analysis, a draft of a new Strategic Plan for 2018–2021 was elaborated by the Director, with input from the members of the Steering Committee of the ICP, in late 2017.

The new Strategic Plan is conceived as a management tool that seeks to identify the current situation of the institution, including its risks and opportunities, as well as to define its main strategic aims, in order to guarantee on the midterm the successful accomplishment of its mission with regard to paleontological research, knowledge transfer, and conservation of the paleontological heritage of Catalonia.

Based on the results of the SWOT analysis, several strategic goals were defined within each of the following four strategic areas:

- Scientific policy & research.
- Management & human resources.
- Fundraising & knowledge transfer.
- Outreach & communication.



The definitive version of the Strategic Plan (2018–2021) was provisionally approved by the Steering Committee in early 2018 ([http://www.icp.cat/attachments/transparencia/Strategic\\_plan\\_2018\\_2021.pdf](http://www.icp.cat/attachments/transparencia/Strategic_plan_2018_2021.pdf)), when it took immediate effect, pending the amendments and definitive approval by the Board of Patrons during 2018.

## APPENDIX

### ICP publications 2017

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The following list includes the publications (co)authored by authors with ICP affiliation in 2017, distributed in the different categories recognized in this report. Only those papers published in final form are included; those published online in 2017 without volume and pagination, pending publication in 2018, have been excluded (pending their inclusion in the 2018 Annual Report).

#### SCI papers (indexed in JCR)

1. Alba, D. M., Casanovas-Vilar, I., Garcés, M., & Robles, J. M. (2017). Ten years in the dump: An updated review of the Miocene primate-bearing localities from Abocador de Can Mata (NE Iberian Peninsula). *Journal of Human Evolution*, 102, 12-20. <https://doi.org/10.1016/j.jhevol.2016.09.012>
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### Books and edited volumes

[None]

### Book chapters

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