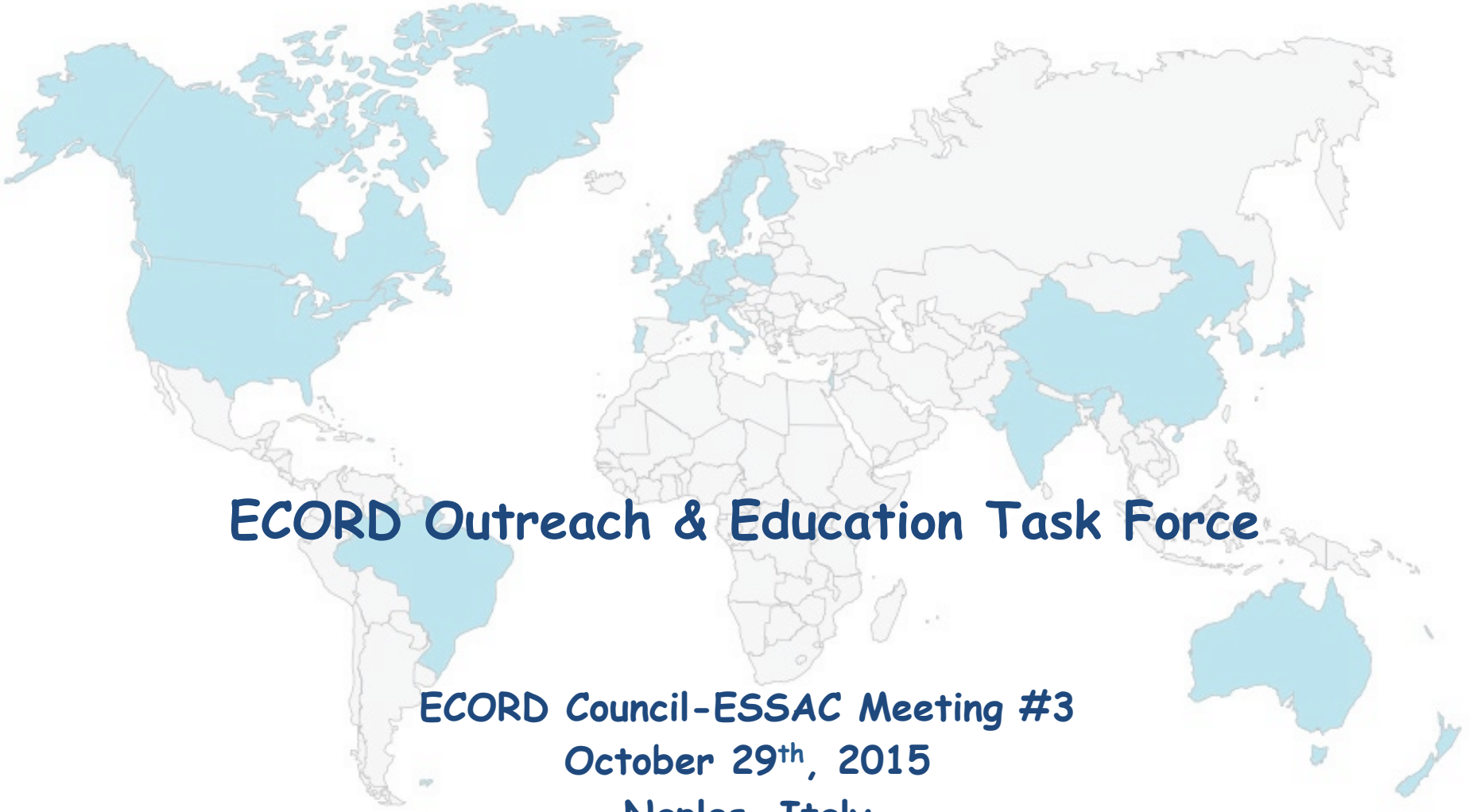
# Outreach & Education activities across IODP



## ECORD Outreach & Education Task Force

ECORD Council-ESSAC Meeting #3
October 29th, 2015
Naples, Italy

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# Outreach & Education activities across IODP

**2003-2013: Integrated outreach activities with unified messages inside and outside the program coming from all IODP partners, and shared resources**

- Within ECORD entities (EMA-ESO-ESSAC) and national member offices
- Through the IODP-MI Office between ECORD, USA, Japan and partners
- Director of communications
- Shared program material and resources
- Joint activities
- etc.

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# Outreach & Education activities across IODP

**Since October 2013: No more integration but ECORD continues to link with IODP partners by**

- Inviting US and Japanese colleagues to the annual ECORD O&E Task Force meeting
- Promoting IODP with partners at science events (*e.g.* Joint IODP-ICDP Townhall Meeting at the AGU 2014)
- Providing/distributing information from partners at booths or online
- Participating in the *JR* 'Teachers at Sea' program
- Exchanging information with SSO (websites; *e.g.* "Google Earth maps KML")

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# Need for a new 'IODP umbrella'

**Aim:**

To increase the visibility of all IODP members as part of an international science program by having common **goals**, O&E **strategies** and **resources**

**Current shared resources:**

- IODP website
- *Scientific Drilling* journal
- IODP brochures (Science Plan)
- Core replicas

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# Need for a new 'IODP umbrella'

## Instruments/means:

- To **coordinate** IODP O&E activities across the program and with our partners (*e.g.* ICDP) at least at a minimum level with no additional costs

- To keep on **exchanging opportunities** on a case-by-case basis (both outreach and education incl. social media)

## Question to USSSP:

How do US partners communicate with the JRSO regarding the O&E activities?

New USSSP office at LDEO
Education and Outreach Officer
Continue many elements of the current O&E program
Try to create common material

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# Need for a new 'IODP umbrella'

## Common goals and strategies:

- The **O&E coordinators** of the 3 platform providers should continue to be in contact on a regular basis and exchange information regarding O&E events (*e.g.* via Skype and/or at science meetings like AGU, EGU, JPGU – no extra cost)

- Review of O&E activities at each **IODP Forum** meeting

- Promote IODP at **science lectures, sessions** or **workshops** and in **press releases**, *e.g.* by including the logo and a short description of IODP agreed by all partners

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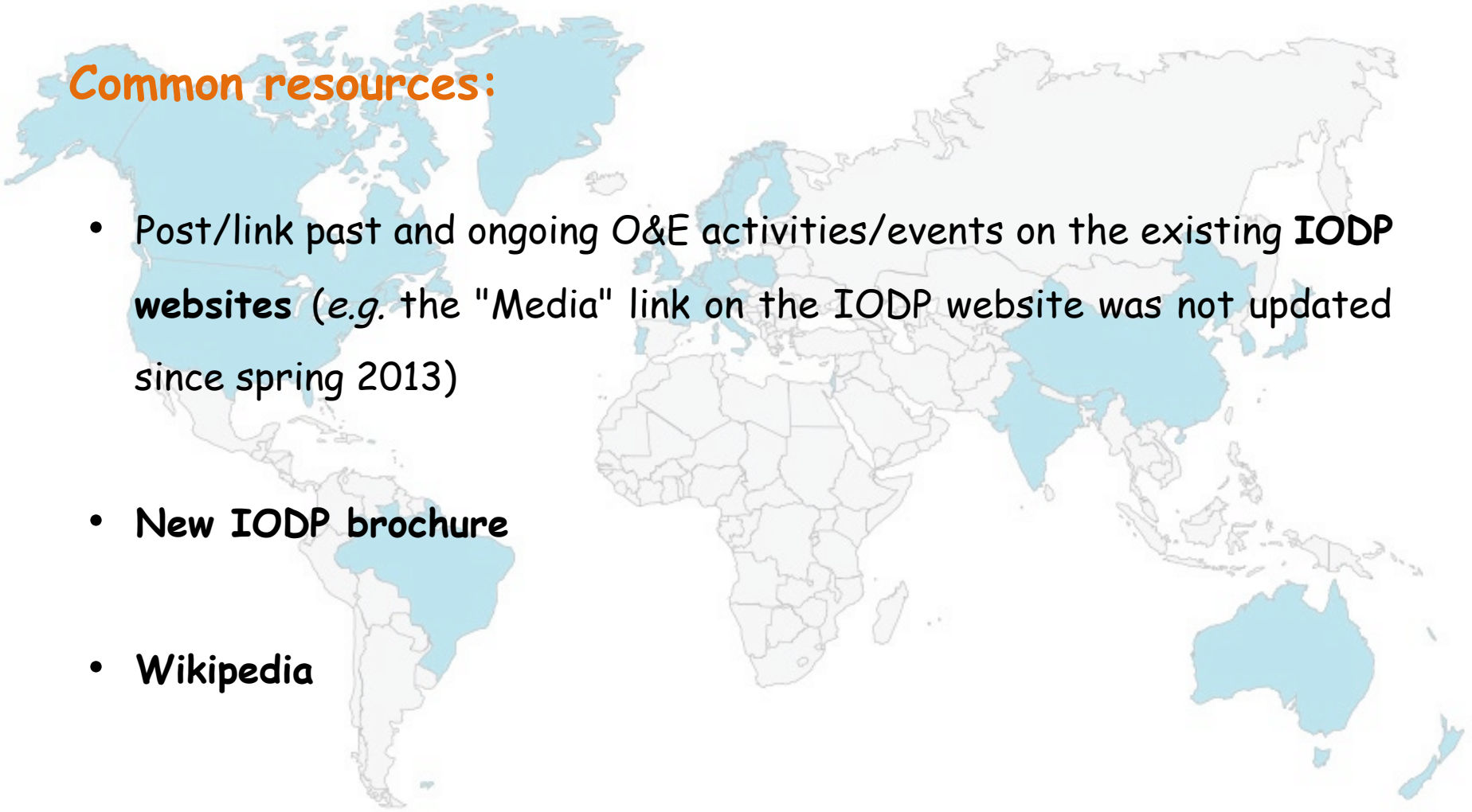
# Need for a new 'IODP umbrella'



## Common resources:

- Post/link past and ongoing O&E activities/events on the existing **IODP websites** (*e.g.* the "Media" link on the IODP website was not updated since spring 2013)

- **New IODP brochure**

- **Wikipedia**

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# New IODP brochure

## Proposition for a new brochure

- 2-page flyer with basic information (like ECORD flyer)
  - ⋆ Page 1: What is IODP? Which partners (maps) and platforms?
  - ⋆ Page 2: Specific information for each partner including contact details (*e.g.* like for some ECORD member countries)
- How to get involved (through each IODP member/consortium)
- Need to agree upon provided information
- Adapt to each language

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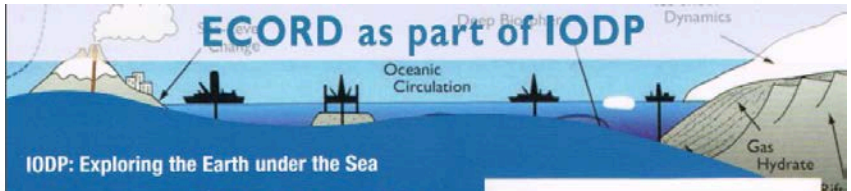
# Example of a new IODP brochure

## ECORD as part of IODP




### IODP: Exploring the Earth under the Sea

Scientific ocean drilling started in the late 1960s with the Deep Sea Drilling Program (DSDP, 1968-1983) followed by the Ocean Drilling Program (ODP, 1983-2003). By providing access to drilling platforms that cover all marine environments, the Integrated Ocean Drilling Program (IODP 2003-2013) has accomplished a major step forward, which since 1st October 2013 has been continued by the **International Ocean Discovery Program (IODP 2013-2023).**

Scientific drilling and coring is the only direct approach to investigating the archives recorded in deposits beneath the seafloor. Access to ocean-drilling technology through the IODP is therefore essential to our understanding of how the Earth functions. IODP brings together hundreds of scientists from its 25 member countries, USA, Japan, China, South Korea, India, Australia, New Zealand, Brazil and the European Consortium for Ocean Research Drilling (ECORD) - a consortium of 15 European countries, Canada and Israel - to conduct cutting-edge investigations of the Earth beneath the seafloor.

The JOIDES Resolution (photo Fernando Barriga)

Chikyu (photo K. Michibayashi)

The **IODP's scientific objectives** are to understand the [illegible] Earth system and its societal impacts by:

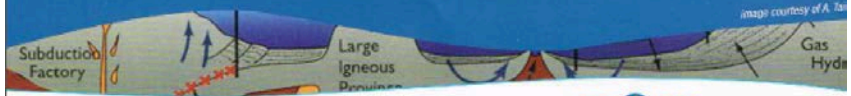
- studying records of past climate changes to better understand the future;
- exploring biodiversity below the seafloor;
- establishing seafloor laboratories for the study of natural hazards in sub-marine systems;
- documenting how tectonic plates move and recycle themselves into Earth's deep mantle.

To achieve these ambitious goals, IODP operates **three types of drilling platforms**:

- A multi-purpose drilling vessel, the *JOIDES Resolution*, is funded and operated by the NSF (USA);
- A riser-drilling-capable vessel, the *Chikyu*, is operated by MEXT and JAMSTEC (Japan) for ultra-deep drilling;
- Mission-specific platforms (MSP's) are contracted on a specific-project basis by ECORD to drill in technically challenging conditions, including high-latitude and shallow-water environments that are inacessible to the *JOIDES Resolution* and *Chikyu*.

Two icebreakers allow the drillship Vidar Viking to stay on station during the Arctic Coring Expedition (photo M. Jakobsson © ECORD/IODP)

image courtesy of A. Tai

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ECORD EUROPEAN CONSORTIUM FOR OCEAN RESEARCH DRILLING

## ECORD: European Consortium for Ocean Research Drilling

To become a significant partner of IODP and provide access to mission-specific platforms, 15 European countries, Canada and Israel have united to form a single programme member, the **European Consortium for Ocean Research Drilling (ECORD)**. All ECORD activities are exclusively funded from the national contributions to the consortium.

The challenges of the International Ocean Discovery Program (IODP 2013-2023) have required a new ECORD structure *(below)* to raise ECORD's profile, visibility and efficiency, and better serve the science community in Europe, Canada and Israel.



- The **ECORD Council** is the funding entity of ECORD. Every member country is represented and the Council Chair changes every year.
- The **ECORD Managing Agency (EMA)** is the legal entity of ECORD. Administered by INSU-CNRS (France), EMA represents ECORD in all IODP entities. EMA pools the funds from all of the member countries and sub-contracts the ECORD entities (ESO and ESSAC) and the IODP Bremen Core Repository.
- The **ECORD Science Operator (ESO)** is the operational entity of ECORD. Managed by the British Geological Survey (part of the UK's Natural Environment Research Council (NERC)), ESO undertakes drilling operations and promotes technological developments for mission-specific platform (MSP) expeditions.
- The **ECORD Science Support and Advisory Committee (ESSAC)** is the scientific committee with responsibility for planning and co-ordination of ECORD's scientific contribution to IODP. The host organisation for the ESSAC Office rotates every two years.
- The **ECORD Facility Board** is the key planning and scheduling forum for MSP expeditions.
- The **ECORD Industry Liaison Panel** is the ECORD link between academia and industry.
- The ECORD **Vision Task Force** is the strategic entity of ECORD.
- The **ECORD Outreach and Education Task Force** is the communications entity of ECORD.

As members of IODP, ECORD scientists are able to contribute to the strategic decisions of the programme, submit drilling proposals, participate in all science expeditions and request samples from IODP and the previous ocean-drilling programme (DSDP, ODP and IODP 2003-2013) expeditions.

**ECORD contact:** Gilbert Camoin, EMA Director - ema@cerege.fr

**ECORD website:** http www.ecord.org

**IODP website:** http www.iodp.org

**ECORD database:** http://ecordbase.ecord.org

@ECORD_Outreach | ESSAC ECORD | YouTube ECORDESO channel

Responsibilities of each platform provider were recognized

# Other new resources: Wikipedia

## ECORD

From Wikipedia, the free encyclopedia

**Online since mid-June 2015**


The **European Consortium for Ocean Research Drilling** is a consortium of 15 European countries, Canada and Israel that was formed in 2003 to join the Integrated Ocean Drilling Program (IODP) as a single member. ECORD is now part of the International Ocean Discovery Progra, which addresses crucial questions in Earth, Ocean, Environmental and Life sciences based on drill cores, borehole imaging, observatory data, and related geophysical imaging obtained from beneath the ocean floor using specialized ocean-going drilling and research vessels and platforms. As a contributing member of IODP, ECORD is entitled to berths on every IODP expedition.



**Contents:**

1) Scientific objectives
2) Operations
3) Management structure
4) Education and Outreach
5) External links

## Scientific objectives [edit]

Sampling and monitoring the sub-seafloor provides access to millions of years of geological history stored in the sub-seafloor sediments and rocks.

Science proposals of global relevance are welcomed from ECORD scientists. ECORD's scientific objectives are guided by the four major science themes to address fundamental science questions about:

- **Climate and Ocean Change: Reading the Past, Informing the Future** targets one of the most pressing questions about the climate, ocean and ice-sheet response to the ongoing increase in greenhouse gases. Only scientific drilling can recover samples and data having sufficient distribution and resolution to understand the causes and impacts of global climate change in Earth's past.
- **Biosphere Frontiers: Deep Life, Biodiversity, and Environmental Forcing of Ecosystems** includes exploration of life within the sub-seafloor, facilitated by rapidly evolving methods in microbiology and related technologies. Scientific drilling also investigates ecosystem response to environmental forcing and the impacts of climate and ocean events on individual and whole ecosystems, including hominid evolution.
- **Earth Connections: Deep Processes and Their Impact on Earth's Surface Environment** concentrates on the links between surface, lithospheric and deep Earth processes. Drilling is an essential tool for unravelling and understanding the geologic, tectonic, geochemical, magmatic and hydrological processes responsible for development and evolution of these solid Earth systems.
- **Earth in Motion: Processes and Hazards on Human Time Scales** addresses dynamic processes that occur on human time scales, including those leading to and resulting from earthquakes, landslides, and tsunamis. Scientific ocean drilling, coupled with real-time observations from individual and linked networks of long-term, sub-seafloor observatories installed in boreholes addresses the frequency, magnitude, mechanisms and impacts of these events.

# Other new resources: Wikipedia

## Operations [edit]

IODP Expedition 310: *DP Hunter* in Papeete harbour (ECORD/IODP).

The IODP scientific objectives can be only achieved by combining multiple drilling platforms. The USA and Japan operate the multipurpose drillship JOIDES Resolution and the riser drilling vessel Chikyū, respectively, to drill in the deep sea. ECORD is an independent platform provider funding and implementing mission-specific platform (MSP) operations for IODP. The advantage of the MSP concept resides with its flexible use of diverse drilling vessels and systems, depending on the scientific objectives and the environment. The MSPs are able to drill in challenging environments like shallow-water reefs and ice-covered areas, thus extending the scientific and operational capability of the programme. A wider geographical distribution can be reached and more diverse science topics can be addressed. ECORD's aim is to implement one MSP expedition per year on average for IODP over the next decade. To date, five IODP MSP expeditions have been carried out since 2004 for the Integrated Ocean Drilling Program. Upcoming expeditions are 'Atlantis Massif Seafloor Processes' in 2015, 'Chicxulub Impact Crater' in 2016, 'Antarctic Paleoclimate' and 'Arctic ACEX2' in 2018.

| Completed and upcoming ECORD MSP expeditions | |
|---|---|
| Arctic ACEX2 (IODP Proposal #708) | 2018 |
| Antarctic Paleoclimate (IODP Proposal #813) | 2018 |
| Chicxulub Impact Crater (Exp. 364) | 2016 |
| Atlantis Massif Seafloor Processes (Exp. 357) | 2015 |
| Baltic Sea Paleoenvironment (Exp. 347) | 2013 |
| Great Barrier Reef Environmental Changes (Exp. 325) | 2010 |
| New Jersey Shallow Shelf (Exp. 313) | 2009 |
| Tahiti Sea Level Expedition (Exp. 310) | 2005 |
| Arctic Coring Expedition – ACEX (Exp. 302) | 2004 |

The ACEX (IODP Expedition 302) fleet with the icebreaker *Sovetskiy Soyuz* leading, the icebreaker *Oden* following, and the drillship *Vidar Viking* (P. Freijwall, ECORD/IODP).

Ocean drill cores are available for scientists from all over the world, and are stored and curated in three core repositories: the US Gulf Coast Repository in College Station, Texas, the Bremen Core Repository at the University of Bremen, Germany (Marum), and the Kochi Core Center at Kochi University, Japan. The boreholes themselves provide important information as borehole logging can be used to get a continuous profile of numerous physical parameters along the depth of a borehole. All expedition-generated data and publications are available online (IODP, ECORD).

Refrigerated hall of the Bremen Core Repository (A. Gerdes, Marum, Bremen).

## Management structure [edit]

ECORD is funded by public money from its 17 member countries.

The consortium is structured into six entities and two Task Forces:

- The ECORD Council is the funding entity and defines the tasks and responsibilities of the ECORD entities.
- The ECORD Facility Board is responsible for the planning of the MSP operations and determines the expedition schedule.
- A managing entity (EMA) manages the participation of the ECORD member countries to IODP.
- The scientific committee is responsible for the planning and coordination of the ECORD scientific contribution to IODP.
- The ECORD Science Operator implements MSP expeditions on various platforms for IODP.
- The ECORD Industry Liaison Panel (ECORD ILP) serves as a link between academia and industry.
- An Outreach and Education Task Force coordinates ECORD communication and education.
- A Vision Task Force develops future strategies regarding ECORD membership and funding opportunities.

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# Other new resources: Wikipedia

The lift boat *Kayd* on site seen from the supply vessel *Rana Miller* during IODP Expedition 313 (E. Gillespie, ECORD/IODP).

IODP Expedition 325: The *Greatship Maya* (D. Smith, ECORD/IODP).

## Education and Outreach [edit]

ECORD offers a number of educational activities to students and early-career scientists, as well as to the science community and educators. ECORD promotes its visibility by conveying scientific discoveries and the societal relevance of the IODP science to targeted groups including teachers, students and the general public through live videoconferences, educational videos, brochures and other materials.

IODP Expedition 310: The Seacore R100 rig in operation aboard the *DP Hunter* (D. Smith, ECORD/IODP).

- The **ECORD Summer Schools** aim at educating young scientists in marine-related sciences and training a new generation to participate in ocean drilling expeditions. **ECORD Scholarships** are provided to young scientists to attend the Summer Schools.
- The **ECORD Research Grants** consist of limited funds provided to young scientists to conduct research related to IODP and previous ocean drilling programmes (ECORD Research Grants).
- The **Distinguished Lecturer Programme** (DLP) sheds light on scientific discoveries related to ocean drilling research to a large audience within universities and institutes in ECORD countries.
- The **MagellanPlus Workshop Series Programme** is co-funded by ECORD and ICDP and supports scientists in developing new and innovative science drilling proposals for submission to IODP and ICDP (MagellanPlus).
- The **Teachers at Sea Programme** offers the opportunity for teachers and educators from ECORD countries to sail on IODP expeditions to gain useful teaching resources, such as classroom curriculum materials (Teachers at Sea).

The **ECORD Newsletter** is a semi-annual publication (April/May and October/November), which presents up-to-date information from the different ECORD entities and reflects the scientific activity of ECORD as part of IODP (ECORD Newsletter).

**Scientific Drilling**, the open access ICDP and IODP Programme Journal, is a multidisciplinary journal focused on bringing the latest science and news from scientific drilling and related programmes to the geosciences community. Scientific Drilling semi-annually delivers peer-reviewed science reports from recently completed and ongoing international scientific drilling projects. The journal also includes reports on Engineering Developments, Technical Developments, Workshops, Progress Reports, and news and updates from the community.

## External links [edit]

- ECORD official site
- IODP official site
- *JOIDES Resolution* official site
- *Chikyū* official site
- Marum official site

Categories: Marine geology

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# Other new resources

Creating a **FAQ document** across IODP platform providers addressing a public audience:

- Relationships with industry
- Environmental issues
- IODP driving objective
- Data available to all scientists
- Continuity between all ocean drilling programs (DSDP, ODP, IODP-1 and IODP-2)

= part of the common goals and strategies

**DISCUSSION** on further resources and strategies

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# Other new resources

Creating a **FAQ document** across IODP platform providers addressing a public audience:

- Relationships with industry
- Environmental issues
- Different legal systems for 3 platform providers
- Data available to all scientists
- Continuity between all ocean drilling programs (DSDP, ODP, IODP-1 and IODP-2)

= part of the common goals and strategies

Responsibilities of each platform provider were recognized

**DISCUSSION** on further resources and strategies

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# New IODP brochure

**ECORD OETF Action:** to discuss and draft a new IODP brochure at the AGU 2015 and to present this draft at the IODP Forum #3 in 2016

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# IODP Forum discussion on overarching O&E activities

Good agreement on the value of overarching O&E throughout IODP, but some uncertainty as to the best approaches.

Positive feedback from Australia, Neville Exon, regarding an overarching IODP brochure.

S. Humphris endorsed the idea of a general IODP brochure, but noted that beyond that, approaches would probably be different in each IODP member country.

Endorsement of the concept that each Forum meeting should include a major agenda item on education and outreach across IODP.

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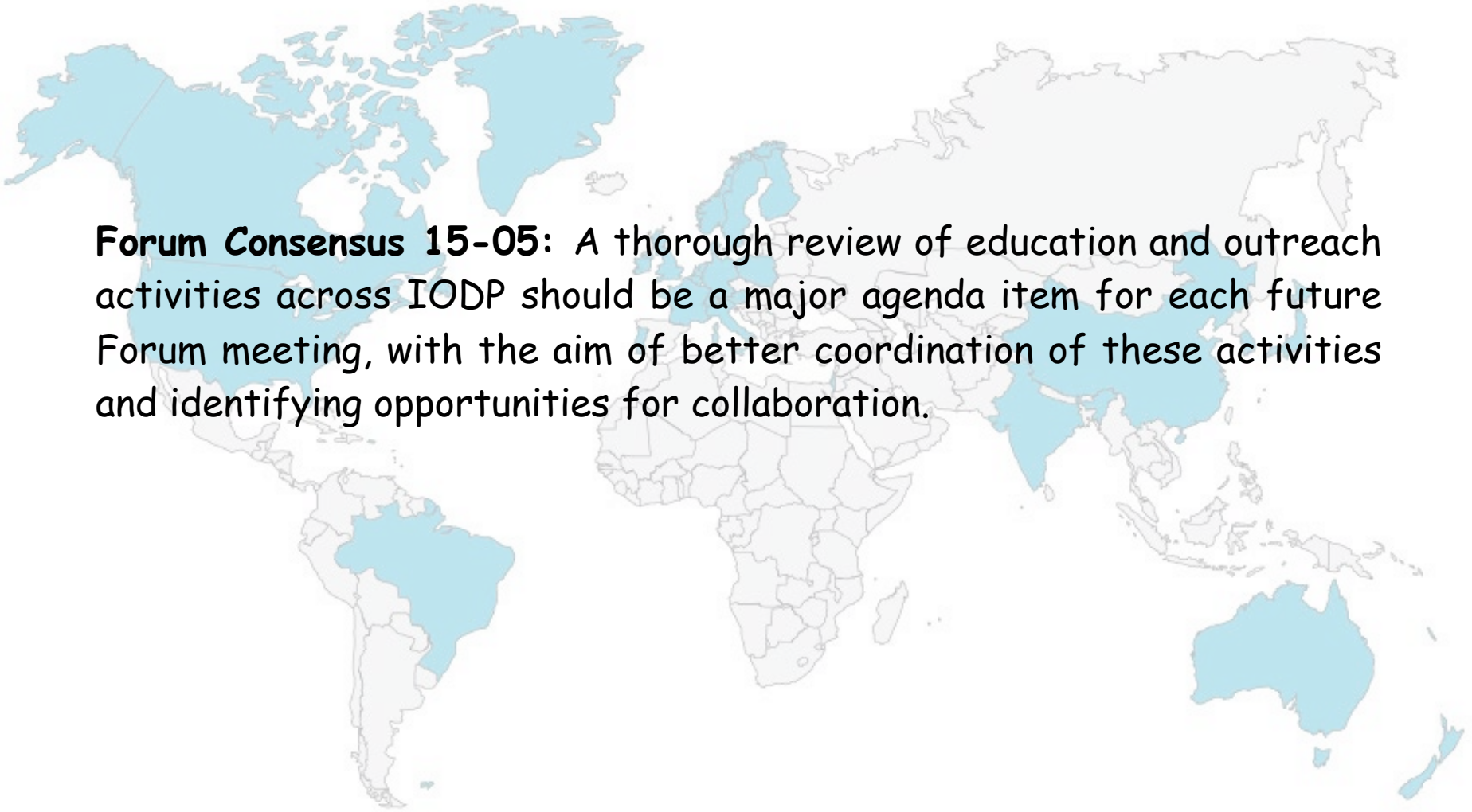
# IODP Forum consensus



**Forum Consensus 15-05:** A thorough review of education and outreach activities across IODP should be a major agenda item for each future Forum meeting, with the aim of better coordination of these activities and identifying opportunities for collaboration.

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