



**Call for Shipboard Outreach Staff in IODP Expedition 370:  
"T-Limit of the Deep Biosphere off Muroto"**

CDEX/JAMSTEC

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CDEX currently plans to implement IODP Expedition 370 "T-Limit of the Deep Biosphere off Muroto" (T-Limit). Using the drilling vessel *Chikyu*, Expedition 370 will explore the limits of subseafloor life and the biosphere in the protothrust zone of the Nankai accretionary prism off Cape Muroto, Japan. Expedition 370 will be from 10th September to 10th November in 2016, including 3 days of port call, and accompanied by shore-based activities at Kochi Core Center (KCC). We call out shipboard outreach staff for participation in the Expedition 370. This expedition is based on IODP Proposal 865, "Constraining the temperature limit of the microbial deep biosphere in the Nankai Trough subseafloor".

**IODP Expedition 370**

Expedition 370 aims (1) to study the factors that control biomass, activity and diversity of microbial communities in a subseafloor environment where temperatures increase from ~30°C to ~130°C and which thus likely encompasses the biotic-abiotic transition zone, and (2) to determine geochemical, geophysical and hydrogeological characteristics in sediments and the underlying basaltic basement and elucidate if the supply of fluids containing thermogenic and/or geogenic nutrient and energy substrates may support subseafloor microbial communities in the Nankai accretionary complex.

To achieve these scientific objectives, we will retrieve sediment and basalt core samples from a site near ODP Site 1174 (Leg 190 in 2000), located in the landward protothrust zone of the Nankai Trough accretionary prism down to ~1.2 km below seafloor (water depth: 4730 m). Because of the high heat flow in this particular geological setting off Muroto, we expect temperatures of ~103-106°C at the décollement zone (870-900 m below seafloor [mbsf]) and ~133°C at the sediment-basement interface (1210 mbsf). Full descriptions of cored samples and downhole profiles as the basic data are available from ODP Legs 190. Taking advantage of the enormous progress in microbiological and biogeochemical approaches over the past 15 years, we will expand our knowledge of geosphere-biosphere interactions that define limits of subseafloor life and the biosphere (IODP Science Plan Challenge 6).

The drilling operation will start with installing a casing to top 140 mbsf, as was implemented in ODP Leg 190. Coring with Hydraulic Piston Coring System (HPCS) or Extended Shoe Coring System (ESCS) will start from ~200 mbsf and continue until reaching the basement at 1210 mbsf. A newly modified HPCS coring, with a short stroke and a reinforced design, will be attempted to collect high quality core samples from key intervals. In addition, the upper 50 m of basement will be cored by Rotary Core Barrel (RCB). Formation temperature will be measured



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in the course of coring with sensor tools. After coring operations, a string of multiple temperature sensor-loggers will be installed into the borehole down to the basement and monitor the temperature profile for 1-2 years.

### **Shipboard Outreach Staff:**

This onboard outreach program gives educators, artists, writers, videographers and other participants the opportunity to spend an entire expedition with an IODP shipboard party and translate their experiences for students and the general public via blogs, videos, social networking sites, live ship-to-shore video events and development of educational resources. Shipboard Outreach Staff will be selected through a competitive application and interview process.

CDEX invites 1-2 Shipboard Outreach Staff for the Expedition 370. Expenses for onboard stay through the expedition are paid by CDEX. However, the applicants should be self-funded for expenses through the program, such as travel to and from the ports, meal and accommodation before and after the expedition, and any cost for production of educational material.

CDEX welcomes applications to the Shipboard Outreach Staff from formal and informal educators at all levels, as well as creative individuals who have a passion for IODP and the skills and potential to increase the profile of the program in the public eye. The application package for the Shipboard Outreach Staff should include the following items:

1. Application Form: Basic information about the applicant, including specific interest in an expedition.
2. Curriculum Vitae: An up-to-date resume or CV.
3. Recommendation Letter
4. Contact Information for two additional references.
5. Proposal: The one-page proposal should describe projects that you would like to carry out while sailing on an expedition and post-expedition activities.
6. Letter of Support from an administrator (if applicable).

### **Selection Process**

Shipboard Outreach Staff applications are initially evaluated in CDEX and then forwarded to the expedition Co-Chief scientists. Two to three leading candidates are then interviewed via Skype, Gmail or Zoom.

The final selection of the Shipboard Outreach Staff is made by CDEX, and the selected applicant(s) will receive an invitation letter.



**Proposal guideline / Selection criteria**

1. The proposal should show the entire plan of outreach activities, and clearly indicate the target, method, and expected outcome of the project.
2. The proposal should include the experience of the applicant in the similar outreach activities.
3. The proposal should mention about the funding, and/or plan to secure necessary funds.
4. The proposal should describe the organizational support, if any, for the proposed project.
5. The proposal should mention about any plan of commercial use of photo/video taken, and any information collected, through the activity as Shipboard Outreach Staff.

**Obligation**

Shipboard Outreach Staff is in charge of regular and frequent update of blog/SNS reporting shipboard activities. Final report at the end of the expedition will be posted in CDEX website. Note that text/photo will be, once posted online, copyrighted to JAMSTEC as the posting will be made via JAMSTEC account. All other photos will be copyrighted to the photographer but be made available to JAMSTEC for free of charge.

Please prepare the application materials (listed above), then submit them to [cdex\\_outreach@jamstec.go.jp](mailto:cdex_outreach@jamstec.go.jp). The deadline of the application is **July 18, 2016**. A few candidates will be invited to e-interview on July 28 or 29.

<b>Exp. 370: T-Limit of the Deep Biosphere off Muroto</b>				
Schedule* (shipboard team)	Schedule* (shore-based team)	Place of port	Co-chief scientists	EPM
Sep 10 to Nov 10, 2016**	Sep 27 to Nov 24, 2016	Shimizu to Kochi, Japan	Verena Heuer (MARUM) Fumio Inagaki, Yuki Morono (KCC)	Yusuke Kubo (CDEX)

\* The schedule is subject to change

\*\* Includes 3 days of port call at Shimizu port