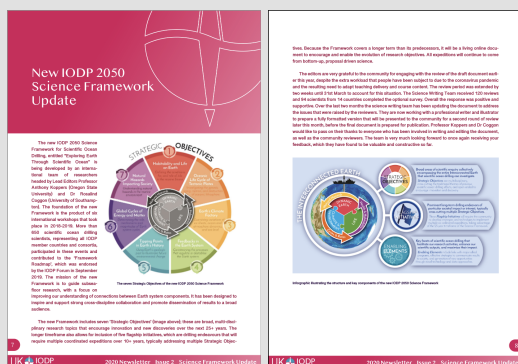


Contents

Opportunities & Events	2
Recent Publications and Media Highlights	3 - 6
New 2050 Science Framework Update	7 - 8



Useful contact details	9
------------------------	---



Opportunities & Events

June 2020

Opportunities

Join the science team for Expedition 377: Arctic Ocean Paleooceanography (ArcOP)

An IODP Mission Specific Platform Expedition organised by the ECORD Science Operator (ESO), scheduled: mid-August to mid-October 2021 (tbc). **Deadline to apply is 19th June 2020.** [Find out more](#)

PhD and Postdoc positions available

The 'DeepRift' Project is offering three PhDs and two Postdoctoral Fellowships at the University of Bergen, Norway, and one PhD at the University of Leeds, UK. The research will build on results of IODP Exp. 381 Corinth Active Rift Development.

University of Bergen positions (open to all nationalities)

PhD 1: Sedimentology and basin analysis: Corinth Rift, Greece

PhDs 2 and 3: Rift Tectonics and Sedimentation: Late Jurassic of the Norwegian Continental Shelf

Postdoctoral Fellowship 1: Numerical Modelling of Surface Processes in Rift Basins

Postdoctoral Fellowship 2: Deep-water Sedimentation in Rift Basins

University of Leeds positions (open to UK and EU nationals)

PhD: Base-of-slope submarine fans: Corinth Rift, Greece [Help to shape the future of Scientific Ocean Drilling!](#)

ECORD Distinguished Lecturers

If you are interested in hosting an ECORD Distinguished Lecturer at your institution please [contact us](#)

Events

GeoUtrecht 2020, 24th - 26th August 2020, Virtual Conference, Utrecht, Netherlands

Free Registration. Includes session 2.1 'Latest Achievements in Scientific Ocean and Continental Drilling'. **Deadline for abstract submission is 26th June.** [Visit website](#)

Recent Publications & Media Highlights

June 2020



Recent Publications

Bialik, O.M., Auer, G., Ogawa, N.O., Kroon, D., Waldmann, N.D., Ohkouchi, N., 2020. Monsoons, Upwelling, and the Deoxygenation of the Northwestern Indian Ocean in Response to Middle to Late Miocene Global Climatic Shifts. *Paleoceanography and Paleoclimatology* 35, 17.

Buchs, D.M., Oemering, S.A.P., 2020. Long-term non-erosive nature of the south Costa Rican margin supported by arc-derived sediments accreted in the Osa Melange. *Earth and Planetary Science Letters* 531, 13.

Cappelli, C., Bown, P.R., De Riu, M., Agnini, C., 2020. Middle Eocene large coccolithaceans: Biostratigraphic implications and paleoclimatic clues. *Marine Micropaleontology* 154, 17.

Casson, M., Bulot, L.G., Jeremiah, J., Redfern, J., 2020. Deep sea rock record exhumed on oceanic volcanic islands: the Cretaceous sediments of Maio, Cape Verde. *Gondwana Research* 81, 252-264.

D'Onofrio, R., Luciani, V., Dickens, G.R., Wade, B.S., Turner, S.K., 2020. Demise of the Planktic Foraminifer Genus *Morozovella* during the Early Eocene Climatic Optimum: New Records from ODP Site 1258 (Demerara Rise, Western Equatorial Atlantic) and Site 1263 (Walvis Ridge, South Atlantic). *Geosciences* 10, 22.

Dailey, S.K., Clift, P.D., Kulhanek, D.K., Blusztajn, J., Routledge, C.M., Calves, G., O'Sullivan, P., Jonell, T.N., Pandey, D.K., Ando, S., Coletti, G., Zhou, P., Li, Y.T., Neubeck, N.E., Bendle, J.A.P., Aharonovich, S., Griffith, E.M., Gurumurthy, G.P., Hahn, A., Iwai, M., Khim, B.K., Kumar, A., Kumar, A.G., Liddy, H.M., Lu, H.Y., Lyle, M.W., Mishra, R., Radhakrishna, T., Saraswat, R., Saxena, R., Scardia, G., Sharma, G.K., Singh, A.D., Steinke, S., Suzuki, K., Tauxe, L., Tiwari, M., Xu, Z.K., Yu, Z.J., 2020. Large-scale mass wasting on the Miocene continental margin of western India. *Geological Society of America Bulletin* 132, 85-112.

Detlef, H., Sosdian, S.M., Kender, S., Lear, C.H., Hall, I.R., 2020. Multi-elemental composition of authigenic carbonates in benthic foraminifera from the eastern Bering Sea continental margin (International Ocean Discovery Program Site U1343). *Geochimica Et Cosmochimica Acta* 268, 1-21.

- Ford, H.L., Raymo, M.E., 2020. Regional and global signals in seawater delta O-18 records across the mid-Pleistocene transition. *Geology* 48, 113-117.
- Fryer, P., Wheat, C.G., Williams, T., Kelley, C., Johnson, K., Ryan, J., Kurz, W., Shervais, J., Albers, E., Bekins, B., Debret, B., Deng, J.H., Dong, Y.H., Eickenbusch, P., Frery, E., Ichiyama, Y., Johnston, R., Kevorkian, R., Magalhaes, V., Mantovanelli, S., Menapace, W., Menzies, C., Michibayashi, K., Moyer, C., Mullane, K., Park, J.W., Price, R., Sissmann, O., Suzuki, S., Takai, K., Walter, B., Zhang, R., Amon, D., Glickson, D., Pomponi, S., 2020. Mariana serpentinite mud volcanism exhumes subducted seamount materials: implications for the origin of life. *Philosophical Transactions of the Royal Society a-Mathematical Physical and Engineering Sciences* 378, 28.
- Huyghe, P., Bernet, M., Galy, A., Naylor, M., Cruz, J., Gyawali, B.R., Gemignani, L., Mugnier, J.L., 2020. Rapid exhumation since at least 13 Ma in the Himalaya recorded by detrital apatite fission-track dating of Bengal fan (IODP Expedition 354) and modern Himalayan river sediments. *Earth and Planetary Science Letters* 534, 14.
- Inglis, G.N., Carmichael, M.J., Farnsworth, A., Lunt, D.J., Pancost, R.D., 2020. A long-term, high-latitude record of Eocene hydrological change in the Greenland region. *Palaeogeography Palaeoclimatology Palaeoecology* 537, 13.
- Karas, C., Khelifi, N., Bahr, A., Naafs, B.D.A., Nurnberg, D., Herrle, J.O., 2020. Did North Atlantic cooling and freshening from 3.65-3.5 Ma precondition Northern Hemisphere ice sheet growth? *Global and Planetary Change* 185, 7.
- Klages, J.P., Salzmann, U., Bickert, T., Hillenbrand, C.D., Gohl, K., Kuhn, G., Bohaty, S.M., Titschack, J., Müller, J., Frederichs, T., Bauersachs, T., Ehrmann, W., van de Flierdt, T., Pereira, P.S., Larter, R.D., Lohmann, G., Niezgodzki, I., Uenzelmann-Neben, G., Zundel, M., Spiegel, C., Mark, C., Chew, D., Francis, J.E., Nehrke, G., Schwarz, F., Smith, J. A., Freudenthal, T., Esper, O., Pälike, H., Ronge, T.A., Dziadek, R., and the Science Team of Expedition PS104, 2020. Temperate rainforests near the South Pole during peak Cretaceous warmth. *Nature* 580, 81–86.
- King, D.J., Wade, B.S., Liska, R.D., Miller, C.G., 2020. A review of the importance of the Caribbean region in Oligo-Miocene low latitude planktonic foraminiferal biostratigraphy and the implications for modern biochronological schemes. *Earth-Science Reviews* 202, 27.
- Kolandaivelu, K.P., Harris, R.N., Lowell, R.P., Robinson, A.H., Wilson, D.J., Hobbs, R.W., 2020. Evolution of heat flow, hydrothermal circulation and permeability on the young southern flank of the Costa Rica Rift. *Geophysical Journal International* 220, 278-295.
- Liautaud, P.R., Hodell, D.A., Huybers, P.J., 2020. Detection of significant climatic precession variability in early Pleistocene glacial cycles. *Earth and Planetary Science Letters* 536, 17.
- Mauder, B., Prytulak, J., Goes, S., Reagan, M., 2020. Rapid subduction initiation and magmatism in the Western Pacific driven by internal vertical forces. *Nature Communications*, 11, 1874.
- McCoy-West, A.J., Millet, M.A., Burton, K.W., 2020. The Neodymium Stable Isotope Composition of the Oceanic Crust: Reconciling the Mismatch Between Erupted Mid-Ocean Ridge Basalts and Lower Crustal Gabbros. *Frontiers in Earth Science* 8, 17.

- Mitchell, N.C., 2020. Comparing the post-WWII publication histories of oceanography and marine geoscience. *Scientometrics*, 24.
- Nirrengarten, M., Mohn, G., Kusznir, N.J., Sapin, F., Despinois, F., Pubellier, M., Chang, S.P., Larsen, H.C., Ringenbach, J.C., 2020. Extension modes and breakup processes of the southeast China-Northwest Palawan conjugate rifted margins. *Marine and Petroleum Geology* 113, 19.
- Nirrengarten, M., Mohn, G., Schito, A., Corrado, S., Gutierrez-Garcia, L., Bowden, S.A., Despinois, F., 2020. The thermal imprint of continental breakup during the formation of the South China Sea. *Earth and Planetary Science Letters* 531, 13.
- Pan, H.J., Li, H.B., Chen, J.Y., Riedel, M., Holland, M., Zhang, Y., Cai, S.J., 2020. Quantification of gas hydrate saturation and morphology based on a generalized effective medium model. *Marine and Petroleum Geology* 113, 16.
- Patten, C.G.C., Pitcairn, I.K., Alt, J.C., Zack, T., Lahaye, Y., Teagle, D.A.H., Markdahl, K., 2020. Metal fluxes during magmatic degassing in the oceanic crust: sulfide mineralisation at ODP site 786B, Izu-Bonin forearc. *Mineralium Deposita* 55, 469-489.
- Pickering, K.T., Pouderoux, H., McNeill, L.C., Backman, J., Chemale, F., Kutterolf, S., Milliken, K.L., Mukoyoshi, H., Henstock, T.J., Stevens, D.E., Parnell, C., Dugan, B., 2020. Sedimentology, stratigraphy and architecture of the Nicobar Fan (Bengal-Nicobar Fan System), Indian Ocean: Results from International Ocean Discovery Program Expedition 362. *Sedimentology*, 34.
- Rodriguez-Tovar, F.J., Miguez-Salas, O., Dorador, J., 2020. Image processing techniques to improve characterization of composite ichnofabrics. *Ichnos-an International Journal for Plant and Animal Traces*, 10.
- Sanchez-Montes, M.L., McClymont, E.L., Lloyd, J.M., Muller, J., Cowan, E.A., Zorzi, C., 2020. Late Pliocene Cordilleran Ice Sheet development with warm northeast Pacific sea surface temperatures. *Climate of the Past* 16, 299-313.
- Satow, C., Grant, K.M., Wulf, S., Schulz, H., Mallon, A., Matthews, I., Lowe, J., 2020. Detection and Characterisation of Eemian Marine Tephra Layers within the Sapropel S5 Sediments of the Aegean and Levantine Seas. *Quaternary* 3, 22.
- Simon, M.H., Babin, D.P., Goldstein, S.L., Cai, M.Y., Liu, T.Z., Han, X.B., Haws, A.A., Johns, M., Lear, C., Hemming, S.R., 2020. Development of a protocol to obtain the composition of terrigenous detritus in marine sediments -a pilot study from International Ocean Discovery Program Expedition 361. *Chemical Geology* 535, 11.
- Stevens, D.E., McNeill, L.C., Henstock, T.J., Delescluse, M., Chamot-Rooke, N., Bull, J.M., 2020. A complete structural model and kinematic history for distributed deformation in the Wharton Basin. *Earth and Planetary Science Letters* 538, 12.
- Sun, Q., Alves, T., 2020. Petrophysics of fine-grained mass-transport deposits: A critical review. *Journal of Asian Earth Sciences* 192.

Sun, Q.L., Alves, T., 2020. Petrophysics of fine-grained mass-transport deposits: A critical review. *Journal of Asian Earth Sciences* 192, 16.

Sutherland, R., Dickens, G.R., Blum, P., Agnini, C., Alegret, L., Asatryan, G., Bhattacharya, J., Bordenave, A., Chang, L., Collot, J., Cramwinckel, M.J., Dallanave, E., Drake, M.K., Etienne, S.J.G., Giorgioni, M., Gurnis, M., Harper, D.T., Huang, H.H.M., Keller, A.L., Lam, A.R., Li, H., Matsui, H., Morgans, H.E.G., Newsam, C., Park, Y.H., Pascher, K.M., Pekar, S.F., Penman, D.E., Saito, S., Stratford, W.R., Westerhold, T., Zhou, X., 2020. Continental-scale geographic change across Zealandia during Paleogene subduction initiation. *Geology* 48, 419-424.

Todd, C.L., Schmidt, D.N., Robinson, M.M., De Schepper, S., 2020. Planktic Foraminiferal Test Size and Weight Response to the Late Pliocene Environment. *Paleoceanography and Paleoclimatology* 35, 15.

Tsang, M.Y., Bowden, S.A., Wang, Z.B., Mohammed, A., Tonai, S., Muirhead, D., Yang, K.H., Yamamoto, Y., Kamiya, N., Okutsu, N., Hirose, T., Kars, M., Schubotz, F., Ijiri, A., Yamada, Y., Kubo, Y., Morono, Y., Inagaki, F., Heuer, V.B., Hinrichs, K.U., 2020. Hot fluids, burial metamorphism and thermal histories in the underthrust sediments at IODP 370 site C0023, Nankai Accretionary Complex. *Marine and Petroleum Geology* 112, 16.

Vahlenkamp, M., De Vleeschouwer, D., Batenburg, S.J., Edgar, K.M., Hanson, E., Martinez, M., Paelike, H., MacLeod, K.G., Li, Y.-X., Richter, C., Bogus, K., Hobbs, R.W., Huber, B.T., Expedition 369 Sci, P., 2020. A lower to middle Eocene astrochronology for the Mentelle Basin (Australia) and its implications for the geologic time scale. *Earth and Planetary Science Letters* 529.

Wainman, C.C., Borissova, I., Harry, D.L., Hobbs, R.W., Mantle, D.J., Maritati, A., Lee, E.Y., Expedition, S., 2020. Evidence for non-marine Jurassic to earliest Cretaceous sediments in the pre-breakup section of the Mentelle Basin, southwestern Australia. *Australian Journal of Earth Sciences* 67, 89-105.

Warnock, J., Andren, E., Juggins, S., Lewis, J., Ryves, D.B., Andren, T., Weckstrom, K., 2020. A high-resolution diatom-based Middle and Late Holocene environmental history of the Little Belt region, Baltic Sea. *Boreas* 49, 1-16.

Wittke, A., Gussone, N., Marz, C., Teichert, B.M.A., 2020. The effect of extraction techniques on calcium concentrations and isotope ratios of marine pore water. *Isotopes in Environmental and Health Studies* 56, 51-68.

Zhao, J.W., Xiao, L., Gulick, S.P.S., Morgan, J.V., Kring, D., Fucugauchi, J.U., Schmieder, M., de Graaff, S.J., Wittmann, A., Ross, C.H., Claeys, P., Pickersgill, A., Kaskes, P., Goderis, S., Rasmussen, C., Vajda, V., Ferriere, L., Feignon, J.G., Chenot, E., Perez-Cruz, L., Sato, H., Yamaguchi, K., Scientist, I.-I.E., 2020. Geochemistry, geochronology and petrogenesis of Maya Block granitoids and dykes from the Chicxulub Impact Crater, Gulf of Mexico: Implications for the assembly of Pangea. *Gondwana Research* 82, 128-150.

New IODP 2050 Science Framework Update

The new IODP 2050 Science Framework for Scientific Ocean Drilling, entitled “Exploring Earth Through Scientific Ocean” is being developed by an international team of researchers headed by Lead Editors Professor Anthony Koppers (Oregon State University) and Dr Rosalind Coggon (University of Southampton). The foundation of the new Framework is the product of six international workshops that took place in 2018-2019. More than 650 scientific ocean drilling scientists, representing all IODP member countries and consortia, participated in these events and contributed to the ‘Framework Roadmap’, which was endorsed by the IODP Forum in September 2019. The mission of the new Framework is to guide subsea-floor research, with a focus on improving our understanding of connections between Earth system components. It has been designed to inspire and support strong cross-discipline collaboration and promote dissemination of results to a broad audience.

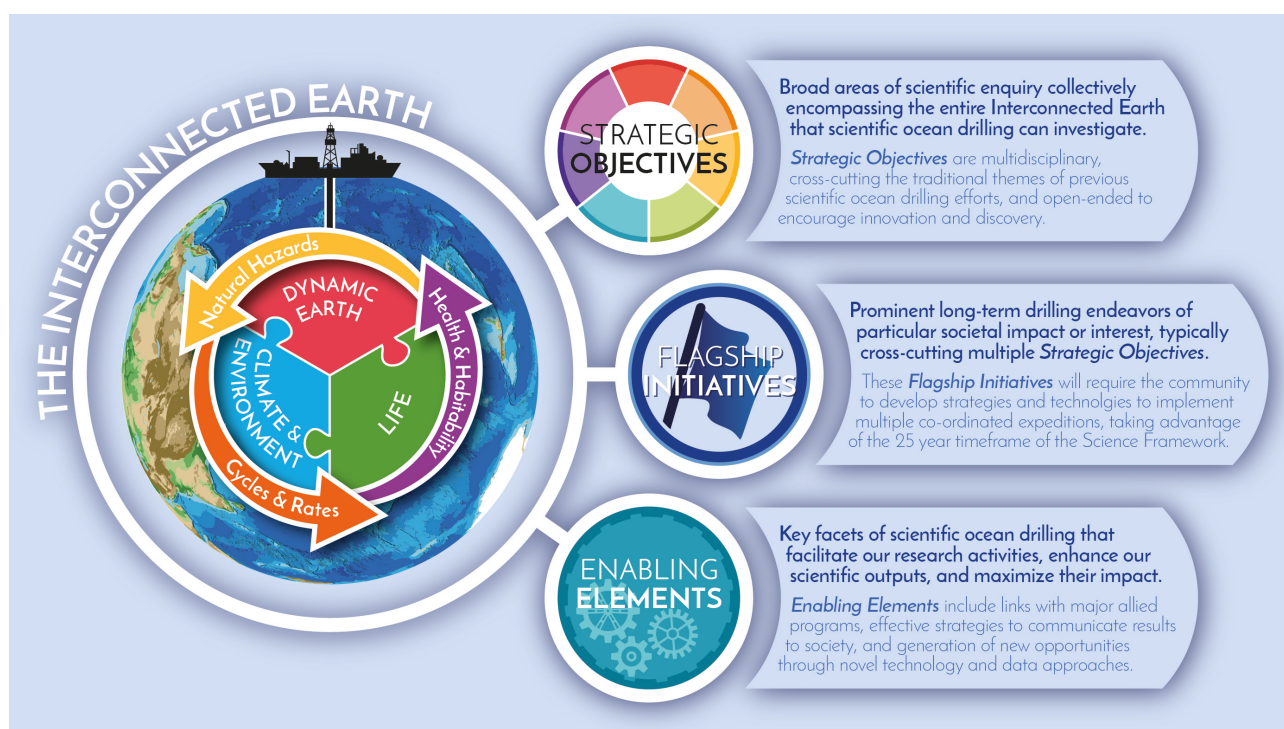


The seven Strategic Objectives of the new IODP 2050 Science Framework

The new Framework includes seven ‘Strategic Objectives’ (image above); these are broad, multi-disciplinary research topics that encourage innovation and new discoveries over the next 25+ years. The longer timeframe also allows for inclusion of five flagship initiatives, which are drilling endeavours that will require multiple coordinated expeditions over 10+ years, typically addressing multiple Strategic Objec-

tives. Because the Framework covers a longer term than its predecessors, it will be a living online document to encourage and enable the evolution of research objectives. All expeditions will continue to come from bottom-up, proposal driven science.

The editors are very grateful to the community for engaging with the review of the draft document earlier this year, despite the extra workload that people have been subject to due to the coronavirus pandemic and the resulting need to adapt teaching delivery and course content. The review period was extended by two weeks until 31st March to account for this situation. The Science Writing Team received 120 reviews and 94 scientists from 14 countries completed the optional survey. Overall the response was positive and supportive. Over the last two months the science writing team has been updating the document to address the issues that were raised by the reviewers. They are now working with a professional writer and illustrator to prepare a fully formatted version that will be presented to the community for a second round of review later this month, before the final document is prepared for publication. Professor Koppers and Dr Coggon would like to pass on their thanks to everyone who has been involved in writing and editing the document, as well as the community reviewers. The team is very much looking forward to once again receiving your feedback, which they have found to be valuable and constructive so far.



Infographic illustrating the structure and key components of the new IODP 2050 Science Framework

Useful Contact Details

Dr Jude Coggon
UK IODP Knowledge Exchange Coordinator
jude.coggon@southampton.ac.uk / info@ukiodp.org
+44 (0)2380 596539

Daniel Knight
NERC UK IODP Programme Manager (Research)
iodp@nerc.ukri.org
+44 (0)1793 411672

Professor Damon Teagle
UK IODP Programme Advisory Group Chair
Damon.Teagle@southampton.ac.uk

Jess Surma
NERC UK IODP Senior Programme Manager
jessica.surma@nerc.ukri.org

Dr Mike Webb
Chair of UK IODP Programme Executive Board
michael.webb@nerc.ukri.org

Professor Tony Morris
ESSAC Chair & UK Representative
A.Morris@plymouth.ac.uk