Exploring IODP Data

Bremen Core Repository (BCR): Archiving IODP cores & data

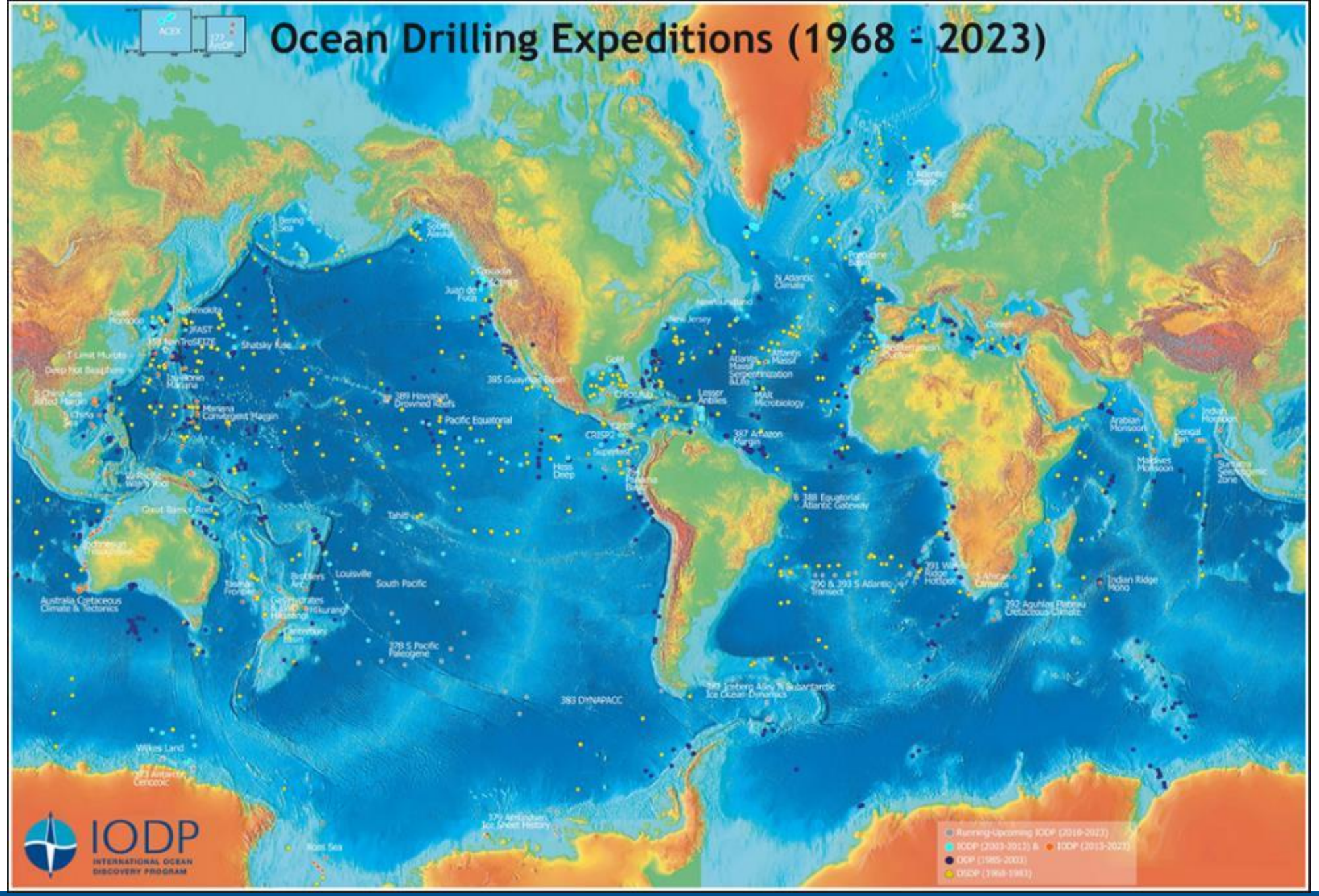
Sampling process

Photos V.Diekamp/MARUM

Ulla Röhl

ECORD EUROPEAN CONSORTIUM FOR OCEAN RESEARCH DRILLING

IODP INTERNATIONAL OCEAN DISCOVERY PROGRAM



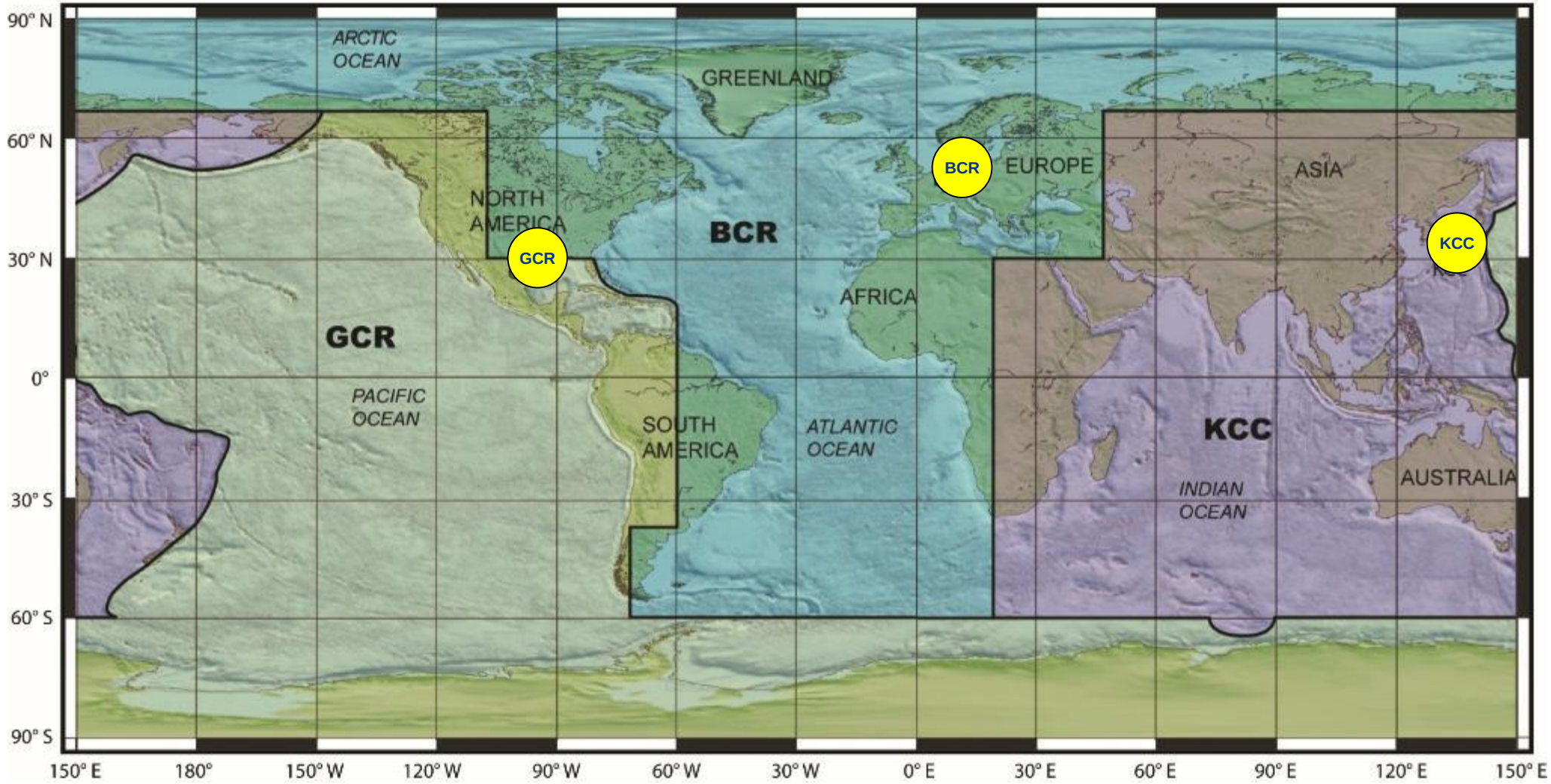
IODP
INTERNATIONAL OCEAN DISCOVERY PROGRAM

>50 years
300 expeditions
4,000 holes
450 km of core

in as shallow as 20 m water depth and deep as more than 8,000 m water depth

Extended the marine sedimentary record from the present day back to nearly 200 million years ago.

IODP Core Repositories



GCR: Gulf Coast Core Repository, College Station, Texas
KCC: Kochi Core Center, Kochi, Japan
BCR: Bremen Core Repository, Bremen, Germany

Bremen Core Repository (BCR)

Photo V.Diekamp/MARUM

TASK - Archiving IODP Cores and Data

158 km of cores – **250,000** core sections – **1,73 million** samples taken

Core Curation includes to **document, preserve and protect the cores** as well as to **promote the responsible taking of samples** from the cores for **scientific purposes**.

Fotos V.Diekamp/MARUM

TASKS – MSP Offshore & Onshore Science Party
Data Management
Outreach
Training

Onshore Science Parties (OSPs) and providing expertise, experience and **mobile laboratories** for IODP Mission Specific Platform Expeditions (MSPs)

Involved in **data management by PANGAEA** (IODP-MSP data portal), **Outreach,** and run the **ECORD Summer Schools** since 2007 and **ECORD Training Courses** since 2015.

Fotos V.Diekamp/MARUM

Non-destructive core measurements

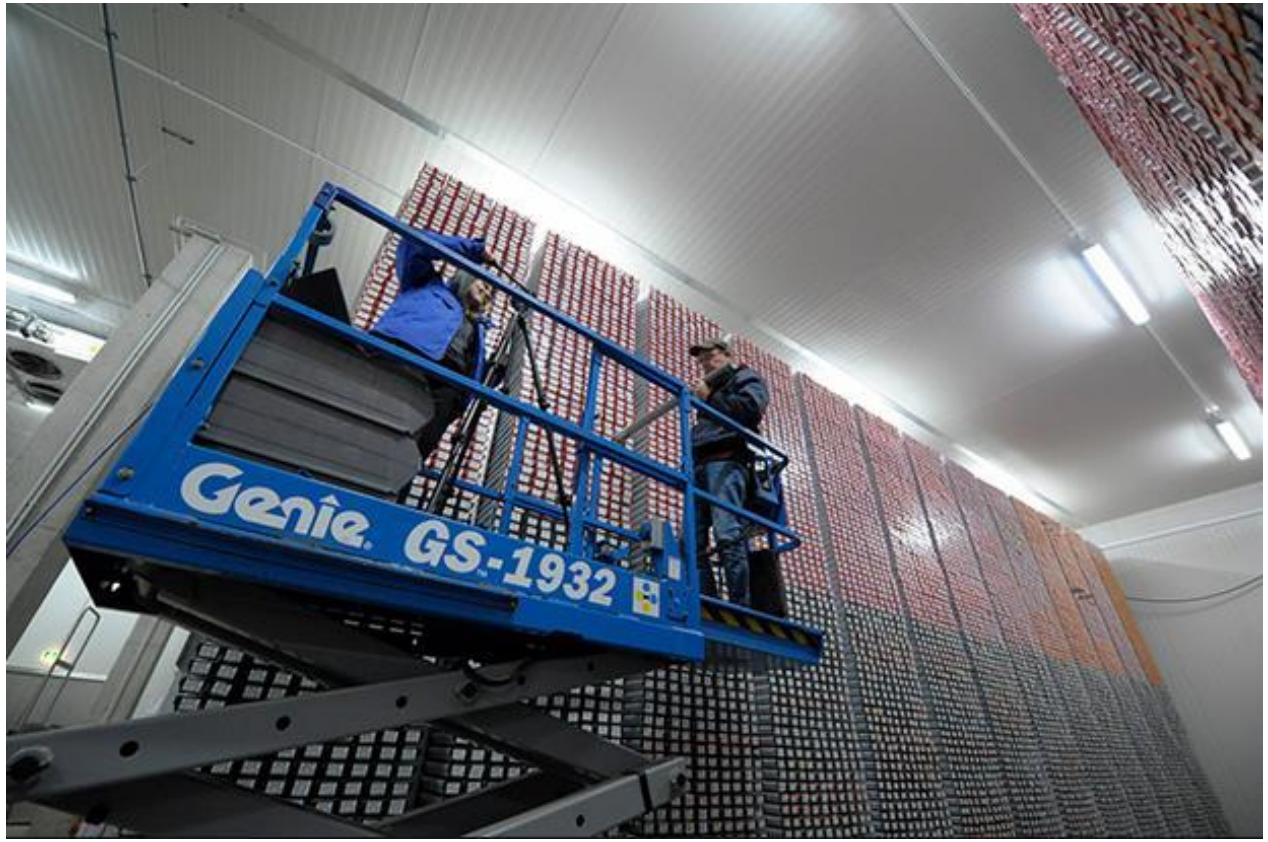
For example XRF core scanning

- on cores from the BCR
- on visiting cores from other repositories/institutes

KCC cores at arrival
(Photos: U. Röhl, ECORD/IODP, MARUM)

How to obtain IODP samples?

New cores arrive at the BCR….



… and will make it into the racks in the reefer

Fotos V.Diekamp/MARUM

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IODP
INTERNATIONAL OCEAN DISCOVERY PROGRAM

Exploring the Earth Under the Sea

Search ...

IODP
INTERNATIONAL OCEAN DISCOVERY PROGRAM

HOME | ABOUT IODP | PROPOSALS | EXPEDITIONS | RESOURCES | PROGRAM ORGANIZATION | IODP FUTURE

IODP Core Repositories

IODP cores - physical samples drilled from the seafloor - are stored and curated at core repositories funded by the platform providers. Cores are assigned to specific repositories based on their ocean of origin as shown below. After the expedition moratorium period, core samples **may be requested** for scientific research. A **Curatorial Advisory Board** makes final decisions regarding distribution of IODP samples.

- **BCR - Bremen Core Repository** University of Bremen, Germany
- **GCR - Gulf Coast Repository** Texas A&M University, College Station, Texas
- **Rutgers/NJGS Repository** satellite repository of the GCR for New Jersey/Delaware land cores
- **KCC - Kochi Core Center** Kochi University, Japan

IODP sample requests are still being accepted but completion and shipment of requests may be delayed due to COVID-19. For the current status of each IODP core repository, contact the repository curator.

Bremen Core Repository – bcr@marum.de
Gulf Coast Repository – curator@iodp.tamu.edu
Rutgers/NJGS Repository – jvb@rutgers.edu
Kochi Core Center – curator@jamstec.go.jp

Geographic Assignment of Core Samples to Repositories

Repository	Institution	Amount of Core	Program(s) Generating Core	Geographic Location
GCR	Texas A&M University	140 km	DSDP, ODP, and IODP	Pacific (Pacific plate east of western boundary); Caribbean Sea and Gulf of Mexico; Southern Oceans (S of 60° except Kerguelan Plateau)
BCR	University of Bremen	158 km	DSDP, ODP, and IODP	Atlantic and Arctic Oceans (north of Bering Strait); Mediterranean, Black, and Baltic Seas
KCC	Kochi University	134 km	DSDP, ODP, and IODP	Pacific (west of western boundary of Pacific plate); Indian Ocean (N of 60°S), all of Kerguelan Plateau, and the Bering Sea
Rutgers/NJGS	Rutgers/NJGS	4.1 km	ODP Leg 150X & 174AX	Land-based New Jersey and Delaware cores

DSDP: Deep Sea Drilling Program ODP: Ocean Drilling Program IODP: Integrated Ocean Drilling Program / International Ocean Discovery Program

http://iodp.org/resources/core-repositories

IODP Bremen Core Repository

MARUM - University of Bremen
Leobener Strasse 8
28359 Bremen

phone +49 (0) 421 218 65566 o. 65567
› bcr@marum.de

IODP
INTERNATIONAL OCEAN DISCOVERY PROGRAM

IODP Bremen Core Repository +
Partner to the ECORD Science Operator +
all IODP expeditions
SEDIS
German IODP Office
ECORD
IODP

› International core repository at the University of Bremen
› Requesting samples from deep-sea cores
› Microbiology Sample Material Availability
› Upcoming events at BCR
› Contacts for the Bremen Core Repository
› How to find us

› Online tour BCR Reefer (in German)

https://www.marum.de/en/Research/IODP-Bremen-Core-Repository.html

BCR – curation and sampling procedures

Core storage

- refrigerated
- organized in racks
- wrapped in foil (sediments)

Typical sampling process

- incl. database & shipping
- sample request approval

MBIO procedures

- freezing, shipping procedures

Thin section loans

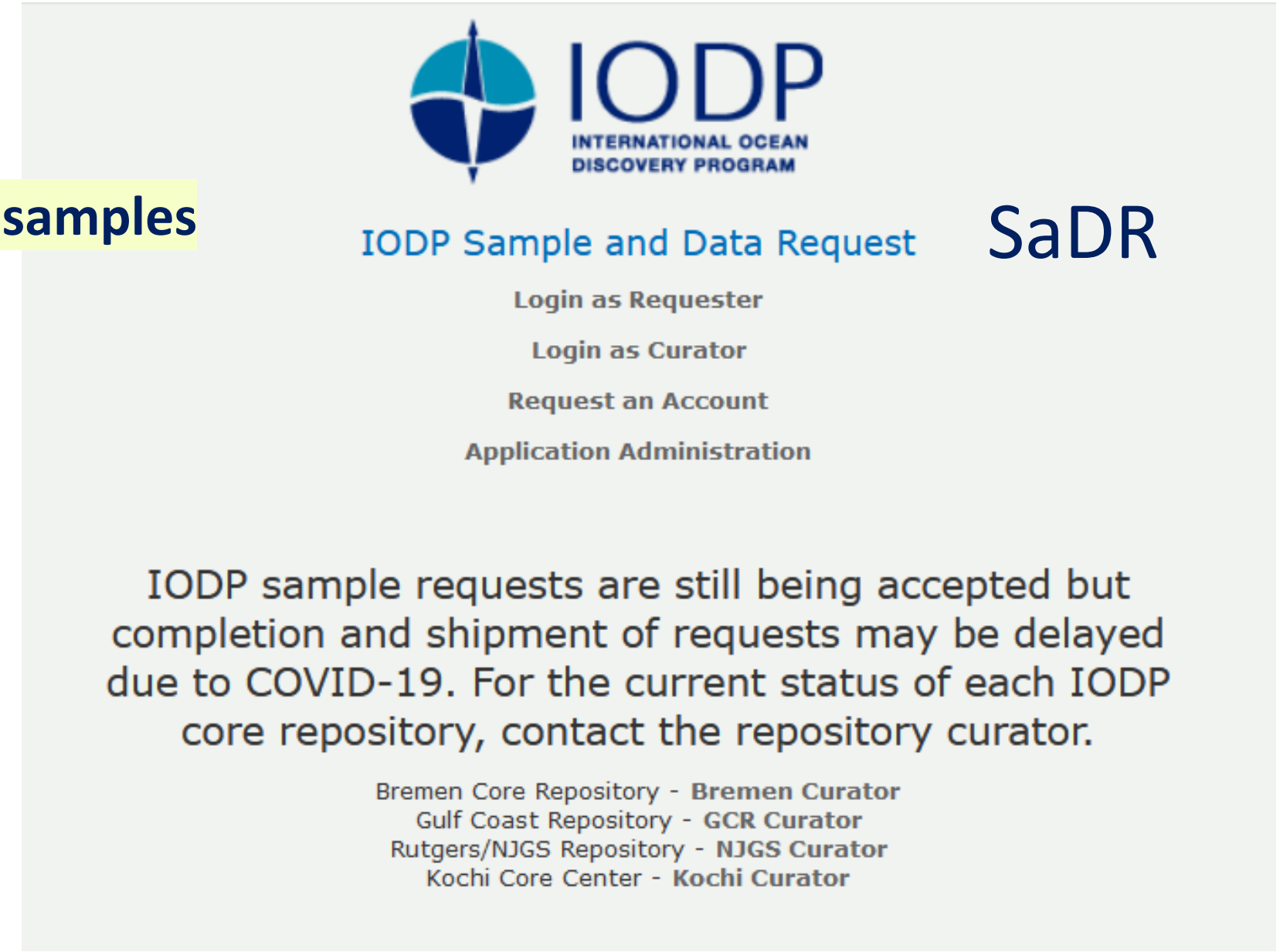
U-channel loans

Definitions:

- Archive and Working Halves
- Composite splice
- Critical Intervals
- Typical Sample Volumes

(www.marum.de/en/BCR_Practices_and_Procedures.html)

Request samples



http://web.iodp.tamu.edu/sdrm/

Request form

IODP
INTERNATIONAL OCEAN DISCOVERY PROGRAM

Home | Start new request | Shipping Addresses | Policies & Information | Contact Name & Email | Logout

1: Sample Request — You are starting a new Request

Save / Update Entries

Descriptive Title (optional):

Request Type: Research

Relation (if any) to previously approved request

- ☐ 074303IODP: ELPE XRF
- ☐ 074971IODP: stable isotopes Paleocene - PETM - e. Eocene

Select future or past expedition(s) (do not mix in one request):

○ Future and Moratorium ○ Past

Summary of project (2000 character max please). Supplementary information can be attached as files. 2000 characters left

Co-investigators roles (2000 character max please). Supplementary information can be attached as files. 2000 characters left

Are you requesting: (check all that apply)

- ☐ Describe/Analyze cores at repository
- ☐ Smear Slides (see policy)

Are you requesting shipboard data: (check all that apply)

- ☐ Carbonate analyses
- ☐ Color reflectance
- ☐ Contamination testing
- ☐ Core logging: Gamma ray attenuation
- ☐ Core logging: Magnetic susceptibility

(Method) Data types produced: (check all that apply)

- ☐ (Sedimentology) Particle (grain) size distribution
- ☐ (Sedimentology) Texture
- ☐ (Sedimentology) Color
- ☐ (Sedimentology) Composition
- ☐ (Sedimentology) Lithification

Other:(if not listed above)

http://web.iodp.tamu.edu/sdrm/

XDIS: check what has already been sampled

IODP
INTERNATIONAL OCEAN DISCOVERY PROGRAM

ECORD Science Operator

BCR

Drilling Information System

Welcome to the BCR DIS Internet Interface
This interface provides online access to the repository database

Please login to use the features of this interface
Click 'Login' to use the public default group 'IODP-MSP' or enter your personal group and password

enter user group •••••••• enter password •••••• Login

marum

http://dis.iodp.pangaea.de/BCRDIS/

XDIS: check what has already been sampled, ctd

ECORD EUROPEAN CONSORTIUM FOR OCEAN RESEARCH DRILLING

BCR Drilling Information System

IODP INTERNATIONAL OCEAN DISCOVERY PROGRAM

- EXPEDITIONS
  - EXPEDITIONS
  - SITES
  - HOLES
- CORES/SECTIONS
  - CORES
  - SECTIONS
- SAMPLES
  - SAMPLES BY EXPEDITION
  - SAMPLES BY REQUEST
  - WATERSAMPLES BY EXP.
  - WATERSAMPLES BY REQ.
- CORE PHOTOS
  - PHOTOS
- TUTORIAL

IODP INTERNATIONAL OCEAN DISCOVERY PROGRAM

DIS View: SAMPLES BY EXPEDITION Displays only data of expeditions not under moratorium! Select expedition 0 to search over all samples!

Select Exp.: 303 ! | Site: 1302 ! | Hole: A ! | Select a Field: EXPEDITION | Apply: Show/Hide | Show: All | Hide: All | PageSize: 100 Set | Export: Excel Export

Select a Field: EXPEDITION | Criterion: = | Value: | Apply: Apply Filter | Remove: Remove Filter | Please, use the toolbar on the left to apply a filter to the displayed data.

Exp.	Site	Hole	Core	C-Type	Sec.	CC	Top Depth (cm)	Bot. Depth (cm)	Vol.	MBSF Top (m)	MCD Top (m)	Half	Curator	Repos.	Request	Req.Part	Code	Date	Sample
303	1302	A	2	H	1	no	42	44	10	0.52	13.57	W	cur	SHI	20043	A	----	10-16-2004	4203063
303	1302	A	2	H	1	no	118	120	10	1.28	14.33	W	cur	SHI	20043	A	----	10-16-2004	4203064
303	1302	A	2	H	1	no	129	130	2	1.39	14.44	W	Samuel Hen	SHI	MSP9999	A	CARB	10-03-2004	4202133
303	1302	A	2	H	1	no	130	132	10	1.40	14.45	W	Samuel Hen	SHI	MSP9999	A	PP	10-03-2004	4202132
303	1302	A	2	H	1	no	145	150	56	1.55	14.60	WR	CUR	SHI	20048	A	----	10-07-2004	4202605
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Sample list planning

Sample Planning Tool - Login

Welcome to the JRSO Sample Planning Tool!

User login Administrator login

Please enter your SaDR credentials log in to the system.

SaDR Username

enter your SaDR username

Password

enter your password

User login

Don't have a SaDR account? Get one here.

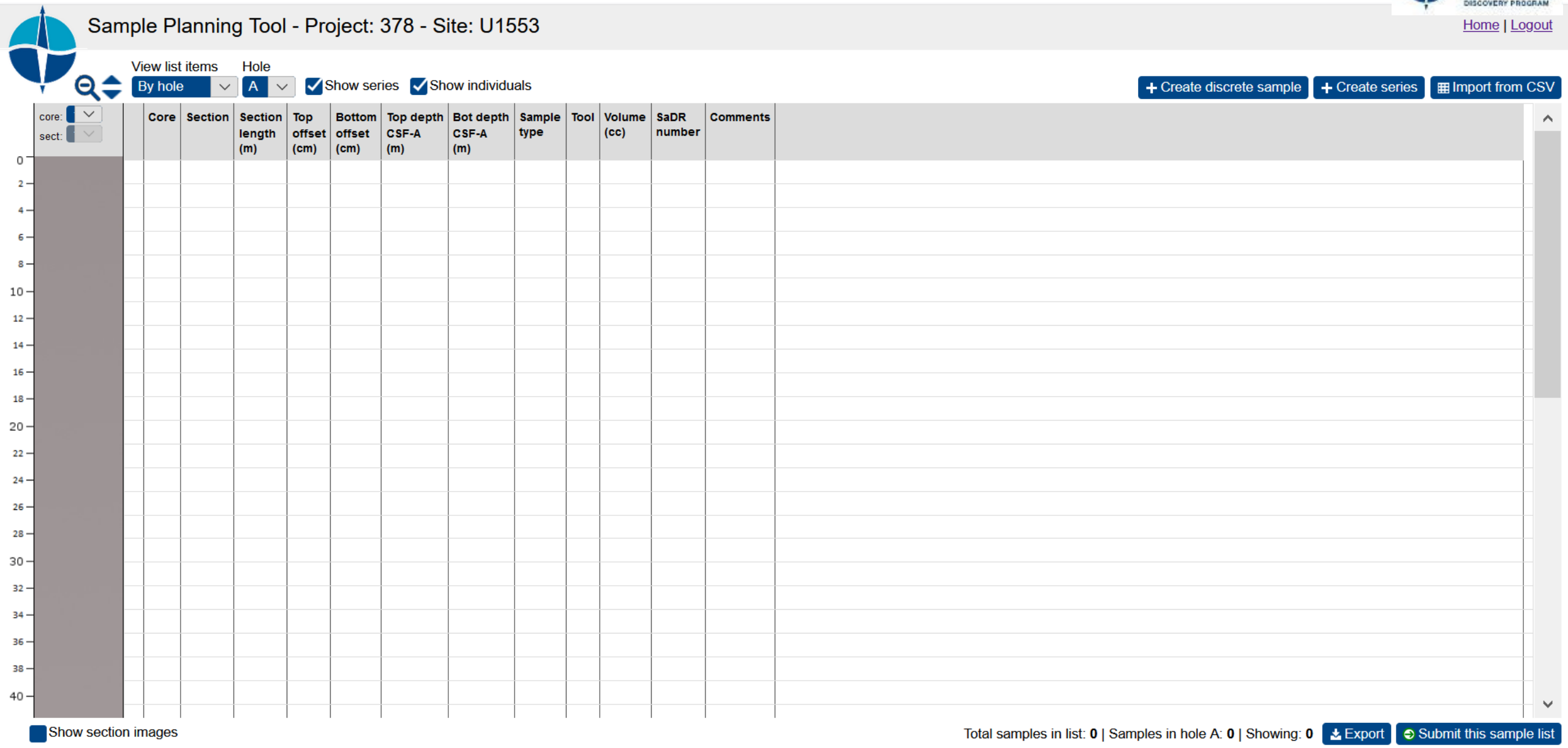
Forgot your password? Request a password reset here.

Download the SPLAT user guide here.

SPLAT is maintained by the JRSO (JOIDES Resolution Science Operator) information technology staff. Send questions or concerns to splat@iodp.tamu.edu.

https://web.iodp.tamu.edu/SPLAT/#/userlogin

Sample list planning



IODP – Policy and Guidelines

International Ocean Discovery Program Sample, Data, and Obligations Policy & Implementation Guidelines

http://www.iodp.org/program-documents

General Outline:

A. Policy – ensure access to IODP, ODP and DSDP samples and data for scientists, educators and museums.
   1) Make available to Science Party
   2) Publish/disseminate scientific findings.
   3) Make available to global science community
   4) Preserve core material for future workers
   5) Loan to educators, museums, public relations.

B. Implementation Guidelines
   1) Types of requests/requesters
      - *Science Party*
      - *Post-moratorium*
      - *Education/outreach*
   2) Obligations
      - *Science Party* – 20 months post-moratorium.
      - *Post-mort. requests* – data/publish 36 months

   APPENDIX A: Definition of terms

   Moratorium

   Curators (repository + vessel)
   Sample Allocation Committee (SAC)
   Curatorial Advisory Board (CAB)

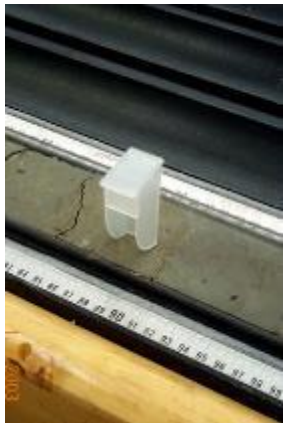
   APPENDIX B: Repository information

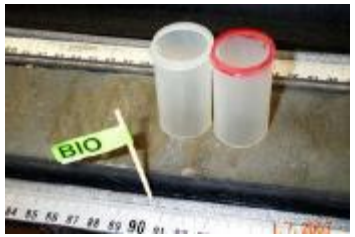
Interpret policy

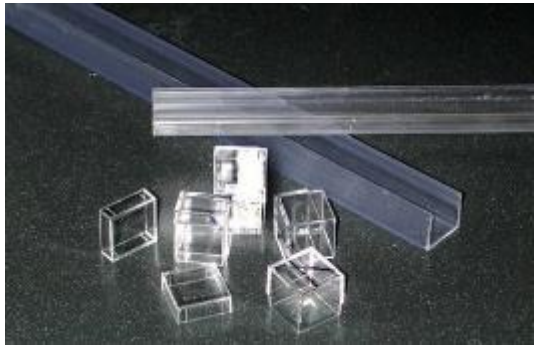
Sampling lab & sampling table

Fotos U. Röhl/MARUM

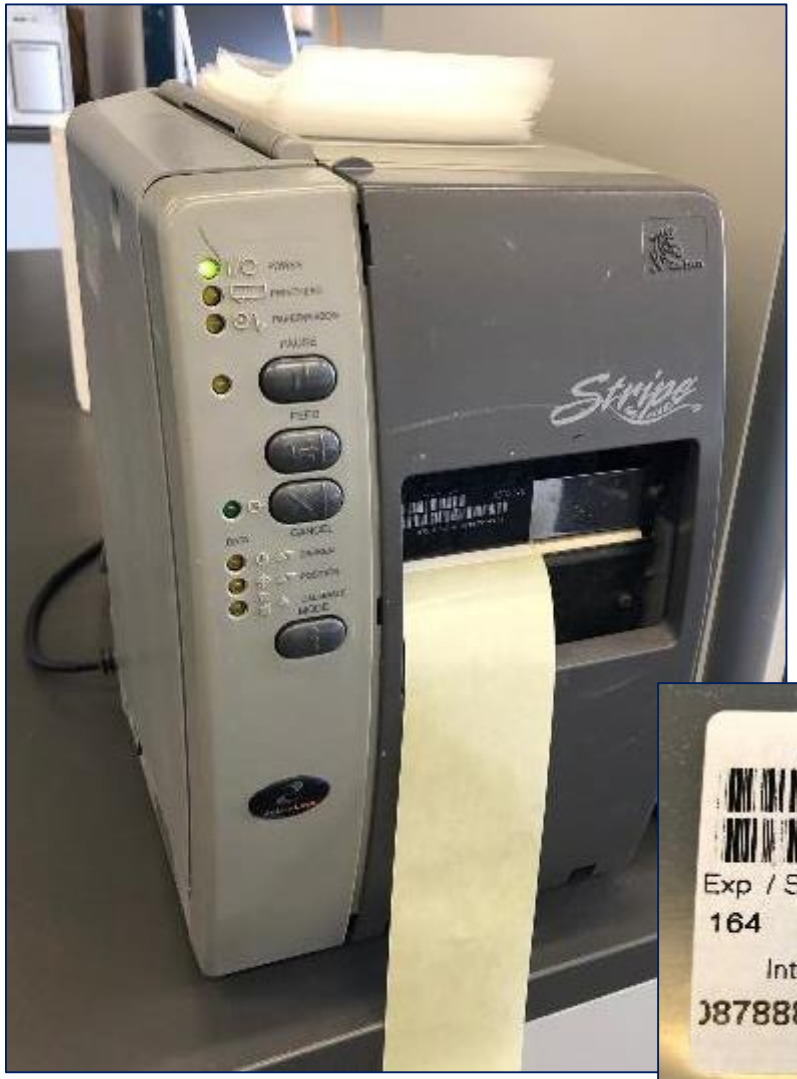
Sampling tools

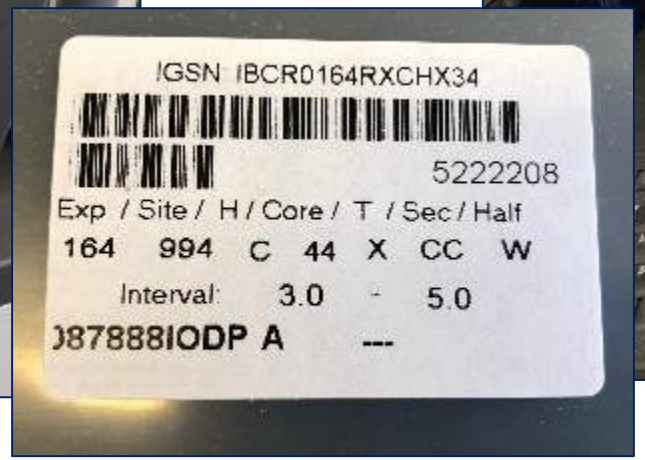


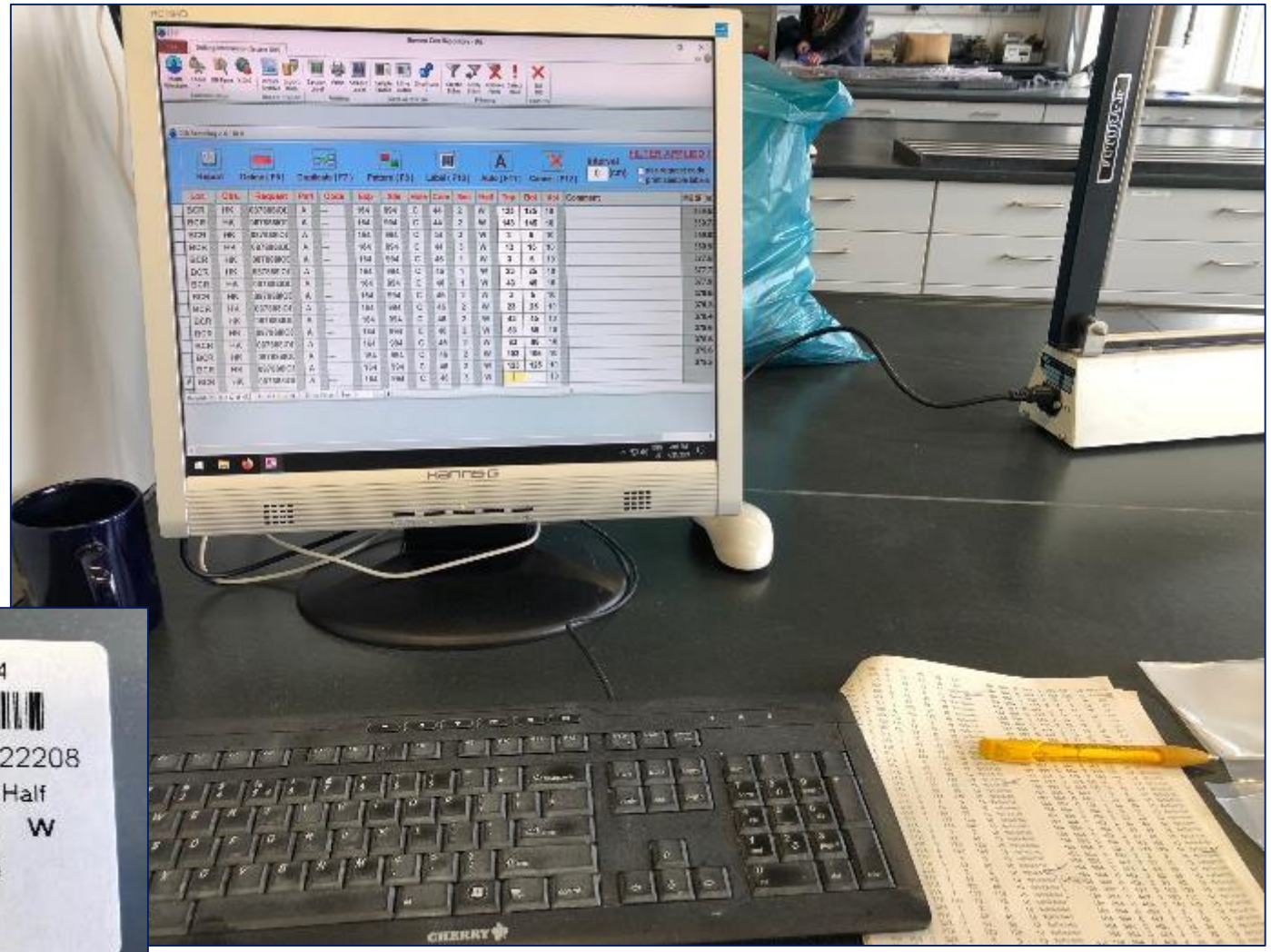




Sampling lab, work station, sample labels



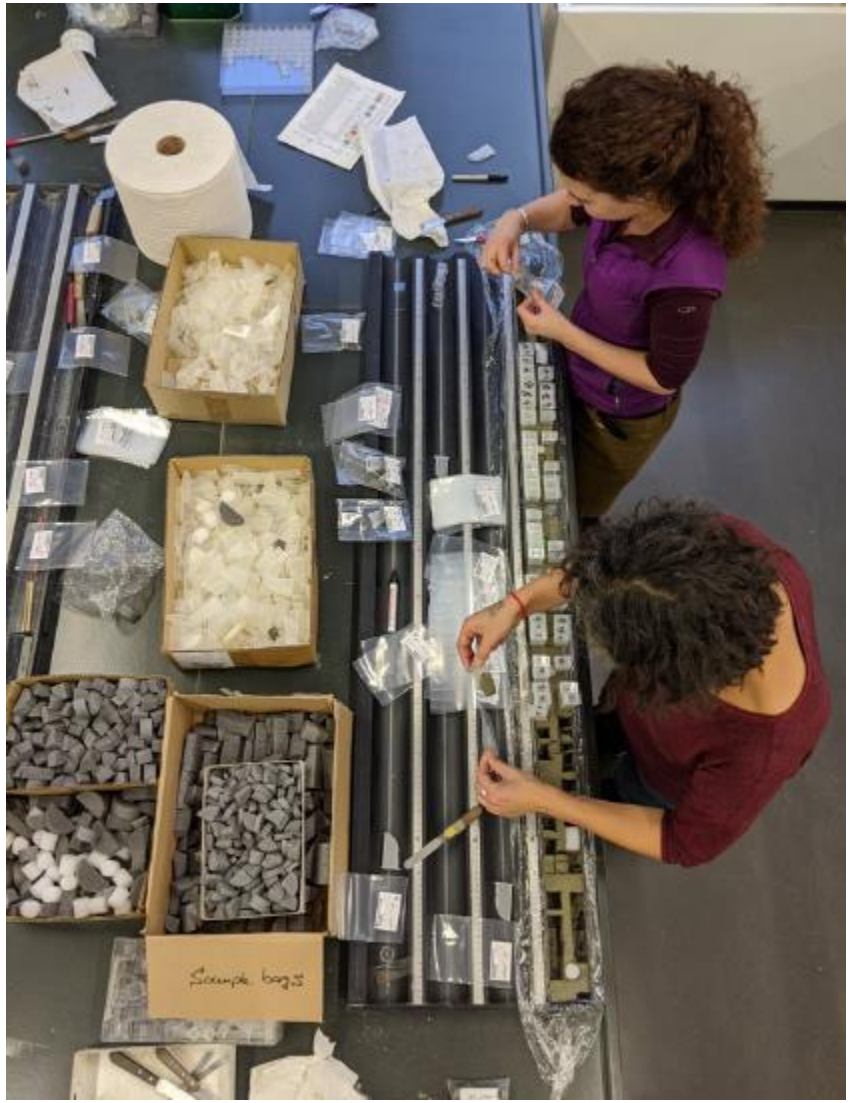




Fotos U. Röhl/MARUM

Sampling tables in the lab

Photo U. Röhl, ECORD

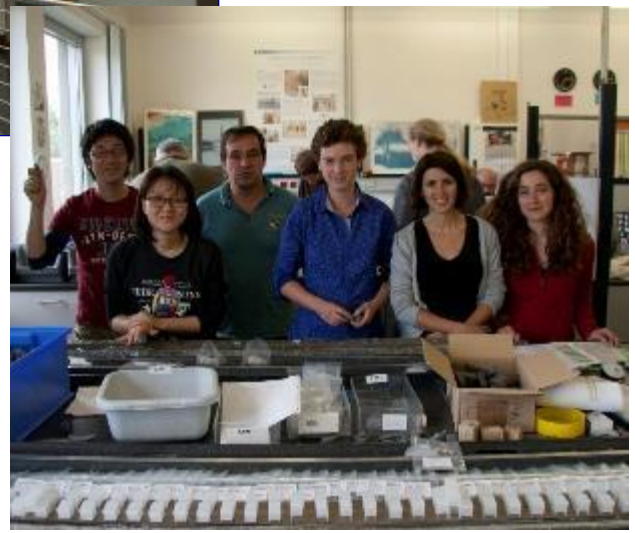


Shipping samples

Sampling Parties

- 2 - 5 km of core
- 20,000 – 40,000 samples
- ~ 10-14 days
- 24 - 45 participants
- Working in shifts incl. weekends
- Database adaptations
- Sample shipping

Credit: V. Diekamp, MARUM



Bremen Core Repository (BCR)

Photo V.Diekamp/MARUM