ABiS-GBI 2023 course - Image data: image analysis, data management and reuse

Jointly organized by Global BioImaging & Advanced Bioimaging Support (Japan)

3-7 July 2023
Okazaki and Kobe, Japan

Monday, 3rd of July

Location: Okazaki, Japan
Themes: bioimage analysis: basics of images & visualization

9:00 - 9:30 Registration
9:30 - 9:45 Welcome by ABiS at National Institute for Basic Biology
   Naoto Ueno (National Institute for Basic Biology, Japan)
9:45 - 10:00 Overview of the course: program, logistics & activities
   Gleb Grebnev (Global BioImaging, EMBL)
10:00 - 12:30 Digital image basics, Lookup table and Spatial calibration
   Ignacio Arganda-Carreras (Ikerbasque - Basque Foundation for Science, Spain)
   Kagayaki Kato (National Institute for Basic Biology, Japan)
   Yusaku Ohta (National Institute for Basic Biology, Japan)
12:30 - 13:30 Networking lunch
13:30 - 15:00 Data types and Image file formats
   Ignacio Arganda-Carreras (Ikerbasque - Basque Foundation for Science, Spain)
   Kagayaki Kato (National Institute for Basic Biology, Japan)
   Yusaku Ohta (National Institute for Basic Biology, Japan)
15:00 - 15:30 Coffee break
15:30 - 18:00 Volume projections, Volume rendering and Volume slicing
   Ignacio Arganda-Carreras (Ikerbasque - Basque Foundation for Science, Spain)
   Kagayaki Kato (National Institute for Basic Biology, Japan)
   Yusaku Ohta (National Institute for Basic Biology, Japan)
18:30 - 20:30 Dinner at Yakitori ToToYa-HIgashiOkazaki (at own cost)
Tuesday, 4th of July

Location: Okazaki, Japan
Themes: bioimage analysis: scripting

09:00 - 12:30  Scripting: Running a script, Recording a script and Variables
Ignacio Arganda-Carreras (Ikerbasque - Basque Foundation for Science, Spain)
Kagayaki Kato (National Institute for Basic Biology, Japan)
Yusaku Ohta (National Institute for Basic Biology, Japan)

12:30 - 13:30  Networking lunch

13:30 - 15:00  Scripting: Working with strings and Output saving
Ignacio Arganda-Carreras (Ikerbasque - Basque Foundation for Science, Spain)
Kagayaki Kato (National Institute for Basic Biology, Japan)
Yusaku Ohta (National Institute for Basic Biology, Japan)

15:00 - 15:30  Coffee break

15:30 - 17:00  Scripting: Batch processing and Handling script parameters
Ignacio Arganda-Carreras (Ikerbasque - Basque Foundation for Science, Spain)
Kagayaki Kato (National Institute for Basic Biology, Japan)
Yusaku Ohta (National Institute for Basic Biology, Japan)
Wednesday, 5th of July

**Location:** Okazaki, Japan

**Themes:** bioimage analysis: segmentation and thresholding, registration and stitching, OMERO data management, IDR repository

9:00 - 10:30 **Segmentation and Thresholding**  
*Ignacio Arganda-Carreras (Ikerbasque - Basque Foundation for Science, Spain)*  
*Kagayaki Kato (National Institute for Basic Biology, Japan)*  
*Yusaku Ohta (National Institute for Basic Biology, Japan)*

10:30 - 11:00 **Coffee break**

11:00 - 12:30 **Registration and Stitching**  
*Ignacio Arganda-Carreras (Ikerbasque - Basque Foundation for Science, Spain)*  
*Kagayaki Kato (National Institute for Basic Biology, Japan)*  
*Yusaku Ohta (National Institute for Basic Biology, Japan)*

12:30 - 13:30 **Networking lunch**

13:30 - 14:30 **Seminar: OMERO data management software**  
*Jean-Marie Burel (University of Dundee, United Kingdom)*  
*Petr Walczysko (University of Dundee, United Kingdom)*

14:30 - 14:45 **Coffee break**

14:45 - 15:45 **Seminar: Image Data Repository**  
*Jean-Marie Burel (University of Dundee, United Kingdom)*  
*Petr Walczysko (University of Dundee, United Kingdom)*

16:00 **Transport: Shuttle bus from Okazaki to Kobe**
Thursday, 6th of July

**Location:** Kobe, Japan

** Themes:** OMERO data management, IDR, BioImage Archive & SSBD repositories

9:00 - 9:15  **Welcome by ABiS at RIKEN**
*Shuichi Onami (RIKEN Center for Biosystems Dynamics Research, Japan)*

9:15 - 10:45  **Workshop: Imaging workflows in OMERO #1**
*Petr Walczysko (University of Dundee, United Kingdom)*
*Jean-Marie Burel (University of Dundee, United Kingdom)*

10:45 - 11:00  **Coffee break**

11:00 - 12:30  **Workshop: Imaging workflows in OMERO/IDR #2**
*Petr Walczysko (University of Dundee, United Kingdom)*
*Jean-Marie Burel (University of Dundee, United Kingdom)*

12:30 - 13:30  **Networking lunch**

13:30 - 14:30  **Seminar: The BioImage Archive repository: FAIR and open data using Recommended Metadata for Biological Images (REMBI)**
*Matthew Hartley (European Bioinformatics Institute EMBL-EBI, United Kingdom)*

14:30 - 15:00  **Group photo & Coffee break**

15:00 - 16:00  **Seminar: SSBD: Systems Science of Biological Dynamics**
*Shuichi Onami (RIKEN Center for Biosystems Dynamics Research, Japan)*
Friday, 7th of July

Location: Kobe, Japan
Themes: BioImage Archive repository, Matthew’s scientific talk

9:00 - 10:30  **Workshop: BioImage Archive repository #1**

*Aybuke Kupcu Yoldas (European Bioinformatics Institute EMBL-EBI, United Kingdom)*

*Matthew Hartley (European Bioinformatics Institute EMBL-EBI, United Kingdom)*

10:30 - 10:45  **Coffee break**

10:45 - 12:15  **Workshop: BioImage Archive repository #2**

*Aybuke Kupcu Yoldas (European Bioinformatics Institute EMBL-EBI, United Kingdom)*

*Matthew Hartley (European Bioinformatics Institute EMBL-EBI, United Kingdom)*

12:15 - 13:15  **Networking lunch**

13:15 - 14:15  **Seminar: Public image data: supporting reuse, AI and long term interoperability**

*Matthew Hartley (European Bioinformatics Institute EMBL-EBI, United Kingdom)*

14:30 - 15:30  **Tour of RIKEN BDR**