# Digital Image Editing, Processing and Analysis

## Objective

- Understand which data content comprises a digital image
- Learn how to correctly handle scientific digital images to prevent data alterations and improve publication figures
- Dos and don'ts of publication figures
- Get an insight into efficient image processing and methods of analysis (various topics)
- Preparing images for automatic analysis in ImageJ/Fiji

## Description

This online workshop aims at teaching life scientists how to handle digital images from e.g. a microscope for the incorporation into a publication figure as well as image analysis. This includes some basic theory about digital images as well as methods for image processing and specific analytical purposes, such as correct contrast adjustments and other typical image modifications in a good scientific manner with least data alteration. Various background and lighting correction methods will be also taught in detail.
Purpose of the analysis part is to learn how to extract interesting features from an image, to automatically count and measure objects as well as pixel intensities (e.g. based on fluorescent staining). There will be a strong focus on microscopic images but the techniques taught are general and widely applicable to different types of scientific images.
Additionally, the online workshop includes hands-on sessions and provides methods to save time while performing repetitive processing tasks on images.
The workshop material will be provided in digital form and covers all topics part of the course and some additional typical biological analysis procedures.
The course provides every life scientist working with images with a general basic toolbox to efficiently handle and analyze image data.

Note: It does NOT discuss very specific analyses such as co-localization etc. The latter is covered in a separately available advanced course.

## Methodology

The online workshop makes use of the professional open source software Fiji, which is freely accessible. This software will be provided and introduced in the course.

**Trainer**

**Dr. Jan Brocher**
BioVoxxel, Ludwigshafen

- Dr. Jan Brocher offers teaching as well as consulting services and image integrity analyses
- He has a broad practical experience in several biological research topics with a focus on imaging
- PhD in Biology (Molecular Biology) at the University of Würzburg
- Postdoc at National University of Singapore and at University of Heidelberg
- CEO of BioVoxxel

## Organizational Information

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| **Language / Format** | English / Online |
| **Target group** | Doctoral Candidates at all stages and Postdocs from Natural and Life Sciences |
| **Date** | Wednesday-Friday, 21-23 February 2024, 9:00 – 15:30 |
| **Registration** | For registration click here |