Bridging Imaging Users to Imaging Analysis - 2022

The purpose of this study is to inform our priorities and collaborative efforts for the Center for Open Bioimage Analysis (COBA), Bioimaging North America (BINA) and the Royal Microscopical society (RMS). Data resulting from this survey may be used in future publications, but individual responses to this survey will remain anonymous and no potentially identifying information is requested; please do not provide identifying information (such as your email address, name, or affiliation) in any of your responses if you wish to ensure your anonymity, as we will not be manually removing such information. By proceeding with this survey, you are agreeing that you have read, understand, and consent to this use of your data. If you have questions, please email COBA@broadinstitute.org.

* Required

1. I agree to these terms and conditions *

Mark only one oval.

- ◯ Yes
- ◯ No

Demographics

2. Which of the following roles best describes you? *

Mark only one oval.

- ◯ Undergraduate/Graduate student
- ◯ Postdoctoral fellow
- ◯ Research scientist
- ◯ Facility director
- ◯ Facility staff
- ◯ Image/data analyst
- ◯ Principal investigator
- ◯ Clinician

3. Which of the following do you have significant formal training in or experience with? * Select all that apply.

Check all that apply.

- [ ] Physics/Biophysics
- [ ] Chemistry/Biochemistry
- [ ] Cell/Molecular Biology
- [ ] Developmental Biology
- [ ] Medicine
- [ ] Statistics/Biostatistics
- [ ] Computer science
- [ ] Computer vision
- [ ] Deep learning

4. Where do you currently primarily work? *

Mark only one oval.

- ◯ Africa
- ◯ Antarctica
- ◯ Asia
- ◯ Australia
- ◯ Europe
- ◯ North America
- ◯ South America

5. How would you describe your work? *

Mark only one oval.

	Nearly entirely imaging (sample prep, optimizing/deciding on imaging modalities, acquiring images and data, etc)						Nearly entirely image analysis (finding the right tools to analyze a particular experiment, optimizing the analysis, data mining)
	1	2	3	4	5	6	7

6. How would you rate your computational skills? *

Mark only one oval.

	Very Poor
1	
2	
3	
4	
5	
6	
7	
	Excellent

7. How would you rate your comfort in developing new computational skills? *

Mark only one oval.

	Very Uncomfortable
1	
2	
3	
4	
5	
6	
7	
	Very Comfortable

8. How do you generally go about solving an image analysis problem? Check the approach(es) you use the most. *

Check all that apply.

- [ ] Sit down with a tool I know and start playing with the data
- [ ] Ask a friend or colleague to help me
- [ ] Ask on forum.image.sc
- [ ] Look up solutions generally on the internet (Google)
- [ ] Look up solutions on a particular website (please list below)
- [ ] Look up solutions in the scientific literature

9. How frequently do you use scripting to solve image analysis problems? *

Mark only one oval.

- ◯ Never
- ◯ Sometimes
- ◯ Often
- ◯ Most of the time

10. In regards to learning more about image analysis, how preferable do you find each of these instructional methods? *

Mark only one oval per row.

	Not at all preferable	Somewhat preferable	Moderately preferable	Very preferable
Scholarly "best practices" article				
Written step-by-step tutorial				
Video tutorial				
Interactive webinar				
One-on-one "office hours" with an expert				
In person seminar/tutorial lasting <1 day				
Multiday workshop				

11. How interested are you in learning more about the following topics? *

Mark only one oval per row.

	Not at all interested	Somewhat interested	Moderately interested	Very interested
Image analysis theory				
General image analysis practices				
Image analysis practices related to my (sub) discipline				
Learning to use a particular software tool				
Deep learning as applied to image analysis				
Analyzing large images/large numbers of images				
Visualizing image analysis results				

12. The next question will ask you about particular image analysis tools and techniques. Do you want to answer questions about microscopy in the field/area of life sciences or physical sciences? *

Mark only one oval.

- Life Sciences *Skip to question 13*
- Physical Sciences *Skip to question 18*

Life Sciences Image Analysis

13. What image analysis tools have you used before? (check all that apply) *

Check all that apply.

- [ ] Commercial software that comes with my microscope (Columbus, Nikon Elements, Softworx, etc)
- [ ] Other commercial software (Imaris, Volocity, etc)
- [ ] Open source point-and-click software (ImageJ, FIJI, Icy, CellProfiler, etc)
- [ ] Computational libraries and scripts (scikit-image, MATLAB, etc)
- [ ] None

14. What image analysis tools do you use the most? *

Mark only one oval.

- ◯ Commercial software that comes with my microscope (ie Columbus, Elements, Softworx, etc)
- ◯ Other commercial software (Imaris, Volocity, etc)
- ◯ Open source point-and-click software (ImageJ, FIJI, Icy, CellProfiler, etc)
- ◯ Computational libraries and scripts (python (scikit-image), MATLAB, etc)
- ◯ None

15. What kinds of images do you commonly want to analyze (select all that apply?*

Check all that apply.

	2D	2D + time	3D (<3000x3000x100)	3D + time	3D (SPIM/large volume)	3D larg volur + tin
Brightfield/DIC/phase -contrast of cells or organisms from manually selected fields	☐	☐	☐	☐	☐	☐
Brightfield/DIC/phase -contrast of cells or organisms from an automated microscope (such as a high content imager)	☐	☐	☐	☐	☐	☐
Fluorescent images of cells/organisms from manually selected fields	☐	☐	☐	☐	☐	☐
Fluorescent images of cells/organisms from an automated microscope (such as a high content imager)	☐	☐	☐	☐	☐	☐
Histologically stained tissue sections	☐	☐	☐	☐	☐	☐
Electron microscopy	☐	☐	☐	☐	☐	☐
Imaging mass spectrometry	☐	☐	☐	☐	☐	☐
Imaging flow cytometry	☐	☐	☐	☐	☐	☐
Superresolution (PALM/STORM)	☐	☐	☐	☐	☐	☐
Autofluorescence imaging (ie FLIM)	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐

16. What image analysis problems (i.e. finding nuclei, tissue analysis, analysis of super-resolution data, etc) do you think are generally well-solved?

17. What image analysis problems (i.e. finding nuclei, tissue analysis, analysis of super-resolution data, etc) do you wish had easier/better solutions?

Skip to question 23

Physical Sciences Image Analysis

18. What image analysis tools have you used before? (check all that apply) *

Check all that apply.

- [ ] Commercial software that comes with my microscope (AutoMET, Gatan Digital Micrograph. Aztec, etc)
- [ ] Other commercial software (Avizo, Imaris, Volocity, etc)
- [ ] Open source point-and-click software (ImageJ, FIJI, Gwyddion, etc)
- [ ] Computational libraries and scripts (python (scikit-image), MATLAB, etc)
- [ ] None

19. What image analysis tools do you use the most? *

Mark only one oval.

- ◯ Commercial software that comes with my microscope (AutoMET, Gatan Digital Micrograph. Aztec, etc)
- ◯ Other commercial software (Avizo, Imaris, Volocity, etc)
- ◯ Open source point-and-click software (ImageJ, FIJI, Gwyddion, etc)
- ◯ Computational libraries and scripts (python (scikit-image), MATLAB, etc)
- ◯ None

20. What kinds of images do you commonly want to analyze (select all that apply)?

Check all that apply.

	2D	2D + time	3D (<3000x3000x100)	3D + time	3D (large volume)	3D large volume + time
Optical microscopy/DIC/fractography	☐	☐	☐	☐	☐	☐
Scanning electron microscopy (secondary electron or back scattered imaging)	☐	☐	☐	☐	☐	☐
Transmission electron microscopy (including electron diffraction and STEM imaging, e.g. HAADF-STEM)	☐	☐	☐	☐	☐	☐
Spectroscopy/diffractive imaging in the SEM/TEM (eg. EDS, EBSD, EELS, CL)	☐	☐	☐	☐	☐	☐
Imaging with mass spectrometry (eg SIMS/APT)	☐	☐	☐	☐	☐	☐
X-ray microscopy (including tomography)	☐	☐	☐	☐	☐	☐
FM imaging, force spectroscopy, single molecule force spectroscopy	☐	☐	☐	☐	☐	☐
Fluorescence microscopy	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐

21. What image analysis problems (i.e. segmenting particles, 3D reconstruction, spectroscopic analysis, extracting force/mechanical property measurements, etc) do you think are generally well-solved?

22. What image analysis problems (i.e. segmenting particles, 3D reconstruction, spectroscopic analysis, extracting force/mechanical property measurements, etc) do you wish had easier/better solutions?

_____

_____

_____

_____

_____

Skip to question 23

Experiences and suggestions

23. Where did you hear about this survey? Please select all that apply. *

Check all that apply.

- [ ] The Images2Knowledge(I2K) conference
- [ ] Word of mouth
- [ ] My local microscopy facility
- [ ] Postings on image.sc forum or microforum
- [ ] A discipline-specific society or network
- [ ] Twitter
- [ ] Email list
- [ ] Other: _____

24. Please select any of the following you have attended in the past

Check all that apply.

- [ ] Workshop/tutorial on imaging or image analysis
- [ ] Conference session on imaging or image analysis
- [ ] Conference dedicated to imaging or image analysis

25. Are there any image analysis workshops, tutorials, or conferences you are aware of and attended or considered attending? If so, how many?

Mark only one oval.

- ◯ None
- ◯ Few
- ◯ Some
- ◯ Many

26. How would you most prefer to be notified about image analysis workshops, sessions, or conferences being planned?

Mark only one oval.

- ◯ Word of mouth
- ◯ My local microscopy facility
- ◯ Postings on image.sc forum or microforum
- ◯ A discipline-specific society or network
- ◯ Twitter
- ◯ Email list
- ◯ Other: _____

27. Are there any image analysis workshops, tutorials, or conferences that you have participated in and found particularly helpful? If yes, what made them beneficial?

28. Are there any conferences you've attended in the past that you think would particularly benefit from the addition/expansion of image analysis offerings?

29. What specific topics (i.e. overviews of a particular tool, comparisons between pieces of software, or how to use a certain tool for a certain kind of experiment) would you like to see prioritized for future image analysis workshop and tutorial offerings?

30. What do you think analysis tool CREATORS (such as software developers) could/should do to make image analysis better and more successful? How best could we encourage them to do it?

31. What do you think analysis tool USERS (such as microscopists) could/should do to make image analysis better and more successful? How best could we encourage them to do it?

32. Any other thoughts?

33. Would you be interested in subscribing to a mailing list (announcing workshops, new tools, collaboration opportunities, etc) for EITHER the Center for Open Bioimage Analysis OR Bioimaging North America OR the Royal Microscopical society? If yes, you will be taken to a page to subscribe, if not this form will submit. *

Mark only one oval.

- Yes *Skip to section 6 (Further Communications)*
- No

Further Communications	If you would like to sign up for email updates from any of the survey partners, please see below for their preferred process for signing up. This will not otherwise affect the handling of your survey data. Center for Open Bioimage Analysis - http://eepurl.com/g2v0t5 BioImaging North America - https://www.bioimagingnorthamerica.org/join/ RMS - https://www.rms.org.uk/community/rms-discussion-groups.html